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ABSTRACT
                These three issues of "TECH-NJ" from 2000 to 2002 focus on
technology and children with disabilities in New Jersey. The issues address
how technology can support language development and people with learning
disabilities, and technology tools that support reading. Featured articles
include: (1) "Adaptive Technology Center for New Jersey Colleges at the
College of New Jersey"; (2) "Making It Happen: Integrating Computers into an
Elementary Reading Program" (Sharon Goldberg); (3) "AlphaSmart a Success in
Inclusive Classroom" (Kavita Tanega); (4) "Can We Talk? Software for Language
Development" (Susan Kelley-Smith); (5) "Adaptive Technology Center for New
Jersey Colleges: 2001 Update" (Amy G. Dell); (6) "Using Technology To Foster
Independent Writing in Students with Learning Disabilities" (Karen Pike); (7)
"Computers in Art Class Bring Success to Students with Learning
Disabilities" (Janet Friedman); (8) "Know Your Rights: Know the Procedures To
Follow" (Amy G. Dell), which discusses the rights of school-aged children and
college students with disabilities for support services and accommodations;
(9) "Scan/Read Systems: Powerful Technology To Support Reading"; (10)
"College Student Combines Motivation and Technology To Succeed" (Wolf
Shipon); and (11) "Laptop System Provides a Voice and Access to Curriculum
for 8-Year-Old" (Lisa Howarth). Each issue also includes reviews of computer
software. (CR)

TECH-NJ, 2000-2002

Amy G. Dell, Editor

TECH-NJ
Assistive Technology for People with Disabilities
v11-13 2000-2002

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TECH-NJ 2000

Assistive Technology for People with Disabilities

CONTENTS

TECH-NJ:
Assistive Technology
for People with Disabilities

TECH-NJ is an official publication of the School of Education, Department of Special Education at The College of New Jersey. It is written by students and faculty and 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 region.

ADAPTIVE TECHNOLOGY CENTER FOR NEW JERSEY COLLEGES AT THE COLLEGE OF NEW JERSEY

The editors of *TECH-NJ* are pleased to announce that The College of New Jersey has been awarded a five-year grant by the New Jersey Commission on Higher Education to serve as an assistive technology resource center for all of the colleges and universities in the state. The mission of the newly named Adaptive Technology Center for New Jersey Colleges is to increase opportunities for college students who have disabilities to meet the academic demands of college through access to appropriate technology tools. Typically these technology tools assist with the tasks of notetaking, writing papers, accessing information on the internet, using email, and/or communicating with faculty.

The center provides three major services: information dissemination, equipment loans, and outreach and training.

Information Dissemination

Information on hardware, software, and exemplary uses of assistive technology will be provided to college faculty, disability support services staff, and college students with disabilities through the print version of **TECH-NJ** and on the internet at a new web site: www.tcnj.edu/ ~technj/atcenter. The web site contains a bulletin board which will enable college students with disabilities to post their experiences and opinions about the various technology tools they have tried and to read how others have "reviewed" a product they are considering.

Adaptive Technology Lending Program

The Adaptive Technology Center for New Jersey Colleges maintains an inventory of hardware, software, and assistive devices which can be borrowed by college students who have disabilities for a trial period.

The Adaptive Technology Lending Program is designed to provide *a trial period* for students to determine if a particular technology tool is helpful. It is a *short-term* loan program, with most equipment being loaned for a period of one semester. When a technology tool is found that meets a student's needs and is needed for on-going coursework, the expectation is that the student's institution will assume responsibility for providing that reasonable accommodation. If needed, the Adaptive Technology Center will provide technical assistance to colleges regarding the purchasing of new hardware and software.

Equipment loans are arranged with staff in the Disability Support Services Office of each college/university. Each college/university needs to submit a signed College Lending Agreement for the current school year before loans can be arranged. Students who would like to borrow an item from the Lending Program need to sign and submit a Student Lending

THE COLLEGE OF NEW JERSEY

TECH-NJ 2000

Assistive Technology for People with Disabilities

Volume 11, Number 1

EDITORIAL

EXEMPLARY PROFESSIONALS HONORED

Here at The College of New Jersey, our teacher education programs are committed to preparing professionals who will represent the very best practitioners in their fields. The goal of the School of Education's *Conceptual Framework for the Creation of Exemplary Professionals* is to produce graduates who demonstrate: a commitment to *all* children, including those from diverse cultures and those with disabilities, excellence in practice; up-to-date knowledge of their discipline; successful collaborations with parents and colleagues; and leadership and advocacy. As we work toward these ideals, we can be guided by the commitment and accomplishments of four local special educators who set new standards for "exemplary professionals."

They were honored in 1999 by the Center for Enabling Technology (CET) for their innovative uses of Computers and Educational Technology with children who have disabilities. **Patricia Mervine**, an alumna of The College of New Jersey, serves over 100 children a year through the Bucks County Intermediate Unit in Langhorne, Pennsylvania. As a speech/language specialist she works with parents, teachers, and physical and occupational therapists to select, design, and set up augmentative communication systems for children who cannot speak. She has written books and software programs to assist children with communication (all published by Mayer-Johnson), and she is one of the most sought-after workshop presenters in our region.

Linda Peroff is head of the Speech and Language Services Department for the Horizon School/Cerebral Palsy of North Jersey in East Orange, New Jersey. Working with children who have both physical and cognitive disabilities, she has recognized their potential and provided numerous opportunities for them to learn to read, write, communicate, and develop life skills. One very exciting activity she initiated was a school store which is operated by students using a computer, custom overlays on *IntelliKeys*, and picture icons for product labeling. Students both shop in the store and serve as sales clerks and stock clerks.

Carol Sherman is the computer teacher at the Westlake School in Mountainside where most of the students also have both physical and cognitive disabilities. She has integrated assistive technology throughout the school. In the vocational program, for example, the students run the "Rocket Corporation" for which they design, produce and sell customized buttons, name plaques, and stationary. With various access methods and custom set-ups designed by Carol, students use *ClarisWorks* spreadsheet and database programs for orders, billing, payroll and marketing. They use the *ClarisWorks* drawing program to design and print the buttons, and they access clip art from the internet when they need special graphics. They are learning practical life skills as a direct result of Carol's technology set-ups.

Cathy Tamburello is director of assistive technology for the Bergen County Special Services School District. Cathy was recognized for her leadership in creating custom scanning arrays for single switch users and custom overlays for *IntelliKeys* users, thereby providing them with access to typical classroom activities such as completing worksheets and writing papers with *Microsoft Word*. These custom set-ups are enabling many students with severe disabilities to be included in regular classrooms and to be active participants in classroom routines. Cathy has assumed a major leadership role in New Jersey and is program chairperson of the upcoming 1st Tri-State Conference on Assistive Technology and Augmentative Communication being held on March 14th and 15th at William Paterson University.

These four remarkable professionals stand as models for all teachers and other school personnel. Their exemplary uses of assistive technology have benefited hundreds of children and young adults with disabilities. TECH-NJ salutes them!

CURRICULUM INTEGRATION

Making It Happen:
Integrating Computers into an Elementary Reading Program

by Sharon Goldberg

At the George E. Wilson Elementary School in Hamilton Township, New Jersey, third grade teacher Karen Pouria requires her students to write a book report every month. For the months of February and March the assigned genre is biography, and since February is also African-American History Month, Ms. Pouria has made the assignment a short research report on a famous African-American. To add an exciting dimension to the assignment - and to introduce an important technology skill - she taught her students how to find information about their individual on the *World Book Encyclopedia* CD-ROM.

This third grade class consists of 20 students, five of whom have learning disabilities (they attend a resource center part of the day) and 11 of whom receive supplemental instruction in reading or math. Ms. Pouria designed this reading project to strengthen their skills in reading, writing, following multi-step directions, and information gathering. Specifically, her goals were to get her students to follow oral and written directions to locate the information they wanted; find and read the information on their selected person; type the name of that person; answer five questions about the person, which would serve as an outline; and expand the five answers into a written paragraph.

Structuring the Lesson

To reach these goals, Ms. Pouria structured her class time to include a group lesson on how to use the software program to obtain information. She provided clear, step-by-step instructions while demonstrating each step on the classroom computer which was projected onto a large screen. These basic steps are provided in Box 1. As she demonstrated, she shared simple tips about searching for information, for example, that if many articles are found, the first one is usually the most relevant, and that if a picture is provided, one can click on the picture to hear the person's words or a spoken presentation. Ms. Pouria selected as her example Dr. Martin Luther King, Jr. When she clicked on his picture, her students heard him delivering his now famous "I Have a Dream" speech.

When her group lesson was complete, Ms. Pouria invited two boys to come to the computer to try using the program. They referred to their written directions, although not too often, to find information on Michael Jordan. The boys worked together and were successful. They closed the program and two girls took their places and successfully located information on Harriett Tubman.

During the next few days, students used their assigned "independent computer time" to gather information for their reports. Most remembered the instructions that had been provided during the group lesson, but if they forgot, they could follow the written directions which Ms. Pouria had distributed. Headphones were connected to the computer so that students at the computer could listen to audio segments without disturbing the rest of the class.

All of the students successfully located information about their person, having followed the oral and written directions. They all gained practice manipulating a mouse and using a computer keyboard. Most importantly, they were all able to answer the five questions thoughtfully and compose their African-American History reports [see Box 2 for the list of questions]. Ms. Pouria was so pleased by the results of this lesson that she will use a similar format for the month of March, which is International Women's Month, during which she will have her students research information about famous women.

Sharon Goldberg is a graduate student in the Department of Special Education at The College of New Jersey.

African American History Report Questions

1. What is the name of the African American you researched?
2. What was he/she famous for?
3. Where was he/she born?
4. When was he/she born?
5. When did he/she die? (if appropriate)
6. Who were the other members of his/her family? What were they like?
7. Where did he/she go to school? College?
8. List 3 important things he/she did in hes/her life.
9. Write 2 sentences to describe what you think of him/her.

Box 2

How to Use the World Book Encyclopedia

1. Double click the World Book icon.
2. Click on SEARCH.
3. Type in the name of the person you are studying.
4. Print out the information. (Go to PRINT, then click PRINT THIS SELECTION ONLY, then click OK).
5. Try to find a picture. If not on the first page, look through RESOURCES on the top.
   When you find a picture, click SHOW IT, and then PRINT.
6. Read the article and answer the questions.
7. To exit go to FILE, then EXIT.

Box 1

ALPHASMART A SUCCESS IN INCLUSIVE CLASSROOM

by Kavita Taneja

The Montgomery Township School District in New Jersey prides itself on implementing inclusion in its classrooms. There students with learning disabilities learn side-by-side with their non-disabled peers. The problems which the students with learning disabilities face are typical of many students in special education.

Student Profiles

John, a fouth grade student at the Orchard Hill Elementary School, has a significant discrepancy between his intellectual ability and his written expression. He has delays in visual motor integration skills for paper-pencil tasks, and his poor fine motor control makes his handwriting illegible. He also has great difficulty getting his thoughts down on paper.

Another student, Jessica, has difficulty with visual motor speed, visual closure, fine motor control and visual motor integration. These weaknesses contribute to her difficulties in reading and writing. Reading and writing problems affect both John and Jessica's performance in just about every subject area and interfere with their ability to demonstrate their knowledge.

AlphaSmart in the IEP

To assist them in their written work, the IEP's of both of these students specify that they will be provided with an *AlphaSmart 2000* keyboard (www.alphasmart.com). The *AlphaSmart 2000* is a lightweight, portable, inexpensive word processor with a built-in 4 line by 40-character LCD screen. It has a built-in 70,000 word spell cker. The size of a conventional keyboard, it runs on three AA batteries so students can easily take it to their desks and start working on it. Later it can be connected to a Macintosh or a Windows computer and the students' files can be transferred by pressing the Send key. It is a very simple device to use and no special software is required.

A portion of a handwritten draft prepared for the "Should Peanuts Be Banned in School?" writing assignment.

3/11/99

Should Peanuts Be Banned?

I am███████████and I think peanuts should be banned from schools. I see more lives have been lost because, when people that even touch it, they can die. Thats how bad peanut butter is. There are better things to eat besides peanut butter. You can eat peanut butter but not where people are allergic to it.

A final draft prepared by the same student using the AlphaSmart 2000 keyboard.

The *AlphaSmart* enables students to produce written work which is neat, legible and free of spelling errors. In this class the *AlphaSmart* is used by the students for most of their subjects – reading, writing workshop, social studies and science. What I found particularly interesting was that all the students in the class, classified and non-classified, wait for an opportunity to use the *AlphaSmart*. Since everybody in the class uses it, the classified students are not singled out and stigmatized.

Writing Workshop

Last year I conducted a writing workshop activity in which students were learning the skill of persuasive writing. They were to write a paragraph on "Should Peanuts Be Banned In Schools?" The students followed the steps of process writing. The contrast between John and Jessica's rough drafts, which were written by hand, and their final reports, which were produced on the *AlphaSmart*, clearly demonstrate the benefits of using this technology tool. John's handwritten version (see box at left) illustrates his difficulty with decoding words, which makes his written work very difficult to understand. But his work produced with the help of the *AlphaSmart* is legible and free of spelling errors. The spellcheck feature is especially helpful for him in that it enables him to write without hesitation.
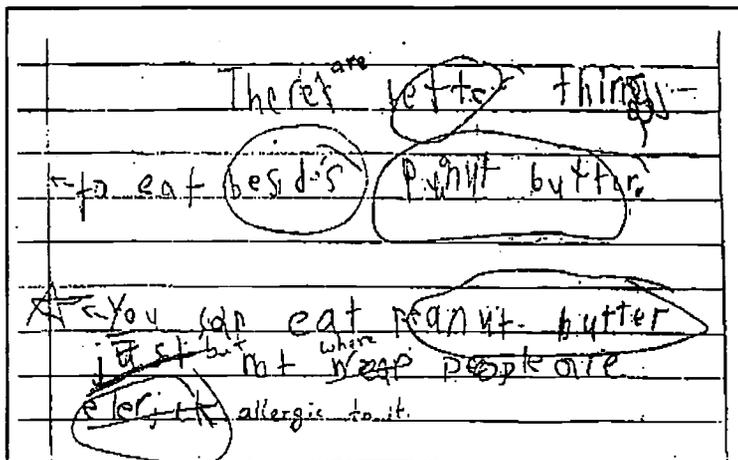
An Inexpensive Solution

Although computers have long been recognized as a powerful tool for writing, schools and teachers are still struggling with ways to provide computer access to every student. The Montgomery Township School District has purchased several *AlphaSmart* keyboards for classroom use as an inexpensive and viable solution to this problem. At less than $250, several *AlphaSmarts* can be purchased for the price of one computer.

Kavita Taneja is a graduate stidemt in the Department of Special Education at The College of New Jersey.

RESOURCES

Adaptive Technology Resources for College Students

AlphaSmart 2000
Intelligent Peripheral Devices
www.alphasmart.com

Braille Lite 2000
Type 'n Speak 2000
Blazie Engineering
www.blazie.com

CAST eReader
Center for Applied Special Technology
(CAST)
www.CAST.org

Dragon Naturally Speaking
Dragon Systems
www.dragonsystems.com

Inspiration
Inspiration Software
www.inspiration.com

JAWS Screen Reading Program
MAGic Screen Magnification
Henter-Joyce
www.hj.com

L & H Kurzweil 1000
L & H Kurzweil 3000
Kurzweil Educational Systems
www.lhsl.com/education

Aladdin series of video magnifiers/
CCTV's
Telesensory
www.telesensory.com

Window-Eyes
GW Micro
www.gwmicro.com

Write Out:Loud
Co:Writer
Don Johnston
www.donjohnston.com

Zoom Text Xtra 7.03
Zoom Text Xtra Level 1
Ai Squared
www.aisquared.com

Informative Websites

Assistive and Adaptive Computing Technology In Special Education
Resources and Advocacy Information for Assistive Technology
http://at-advocacy.phillynews.com/index.html

Axis Disability Rights Website
Site of Norman Kunc and Emma Van der Klift, contains articles on many disability issues.
http://www.normemma.com/

Big Pages of Special Education Links
Many resources listed on wide range of topics related to disabilities
http://www.mts.net/~jgreenco/special.html

Council for Exceptional Children
An international professional organization dedicated to improving educational outcomes for individuals with exceptionalities, students with disabilities, and/or the gifted.
http://www.cec.sped.org/

IDEA Practices
You can get the IDEA law at this site
http://www.ideapractices.org/

IEP Team's Introduction To Functional Behavioral Assessment And BehaviorIntervention Plans (2nd edition)
http://www.air-dc.org/cecp/resources/problembehavior/main.htm

Inclusion: The Book of Inclusive Education
Information on inclusion for elementary and secondary education
http://www.quasar.ualberta.ca/ddc/incl/intro.htm

Inclusion: The MESH Manual for Inclusive Schools - Making Effective Schools Happen For All Students
This manual provides guidelines for the development of inclusive schools
http://www.newhorizons.org/spneeds_meshman.html

Inclusive Education Web Site by the Renaissance Group
The Inclusive Education Web Site is designed to help you learn more about inclusion by answering some of the most frequently asked question on inclusion. There is information about teaching in an inclusive classroom and resources for learning more about inclusion. This site is produced by the Renaissance Group, a consortium of universities working to improve the quality of educator preparation.
http://www.uni.edu/coe/inclusion/

New Jersey Department of Education/ Educators site
http://www.state.nj.us/njded/educators/toc.htm

The National Information Center for Children and Youth with Disabilities (NICHCY)
NICHCY is the national information and referral center that provides easy-to-read information on disabilities and disability-related issues for families, educators, and other professionals.
http://www.nichcy.org/

Special Education Resources on the Internet
A collection of Internet accessible information resources of interest to those involved in the fields related to Special Education.
http://www.hood.edu/seri/serihome.htm

The Special Ed Advocate
This site contains articles, cases, newsletters, and other essential information about special education law and advocacy.
http://www.wrightslaw.com/

U.S. Department of Education
Collection of resources for teachers, parents, educators, and researchers.
http://www.ed.gov

Agreement. Both of these forms can be downloaded from the web site at www.tcnj.edu/~technj/atcenter/two_forms.htm

Outreach and Training

The staff of the Adaptive Technology Center for New Jersey Colleges is available for training workshops at colleges around the state to increase awareness of adaptive technology among students with disabilities, faculty, and disability support services staff. For example, last November a demonstration of Technology Tools for College Students with Learning Disabilities was presented at the New Jersey City University's Annual Conference on Learning Disabilities and Higher Education. The services of the center were also described at a workshop on transitioning from high school to college which was held at Middlesex County College in October.

Technology Tools for Students with Learning Disabilities

College students with learning disabilities often have difficulty with all of the writing that is required in college. They may find that a talking word-processing program such as *Write Out:Loud* (Don Johnston) and a word prediction program such as *Co:Writer* (Don Johnston) facilitate the writing process. Or they may wish to try a "dictation" program (speech recognition) such as *Dragon Naturally Speaking* (Dragon Systems). Students who have difficulty organizing their thoughts on paper may benefit from a graphic organizer such as *Inspiration* (Inspiration Software) [See review on page 14]. For students with learning disabilities who need help with notetaking, lightweight, durable and inexpensive notetakers like the *AlphaSmart 2000* (Intelligent Peripheral Devices) may be a good alternative to heavy, fragile, expensive laptops.(See related story on page 4.)

Many college students with disabilities find the reading demands of college to be daunting. Several software programs can turn a computer into a "reading machine."

CAST eReader (CAST) will read aloud and highlight any electronic text such as a word-processing file or internet site. Used in conjunction with a scanner, it will also read aloud any printed text, as will the *L & H Kurzweil 3000* (Kurzweil Educational Systems).

Hardware and Software for Blind Users

College students who are blind have several options for writing, notetaking and reading. Braille users may choose the *Braille Lite 2000* (Blazie Engineering) which is a very small notetaker which uses a Braille keyboard, refreshable Braille display, and speech output. Other blind students may prefer the *Type 'n Speak 2000* (Blazie Engineering) which uses the standard QWERTY keyboard with speech output. Both connect to computers for file transfers and to printers for Braille and text printouts. Most blind college students need a screen reading program for computer and internet use, such as *JAWS* (Henter-Joyce), *Window-Eyes* (GW Micro), or *Zoom Text Xtra 7.0* (Ai Squared), and most will need a printed text reading program such as the *L & H Kurzweil 1000* (Kurzweil Educational Systems).

For Students with Visual Impairments

College students who have visual impairments will likely need a screen magnification program for computer use such as *Zoom Text Xtra Level 1* (Ai Squared) or *MAGic* (Henter-Joyce). They may also need a video magnifier (previously called a closed-circuit television) for enlarging text from printed materials, such as the *Aladdin* (Telesensory) line of black and white and color systems.

Special Equipment for Math and Science

Students with visual impairments who are registered for biology classes may borrow a video microscope from the Lending Program. This is a high quality microscope equipped with a video camera which enlarges the specimen on an attached video monitor. In math and science courses students who are blind or visually impaired may need to use a talking scientific calculator.

Technology for Students who are Deaf or Hard of Hearing

College students who are hard of hearing may require an assistive listening device. These devices, which may use FM radio waves or infrared technology, amplify sound in a classroom.

Students who are deaf or hard of hearing often can benefit from easy access to email for the purposes of communicating with college faculty and staff. They may also wish to try *C-Print*, which is a new system which uses a trained typist for note-taking. The Mid-Atlantic Postsecondary Center for Deaf and Hard of Hearing Students at Camden County College offers the software and training for C-Print captionists.

These technology tools assist college students who have disabilities with the tasks of notetaking, writing papers, accessing information on the internet, using email, and communicating with faculty.

Regional Centers at NJ Colleges

The Adaptive Technology Center for New Jersey Colleges works closely with seven other Special Needs Regional Centers around the state which are also funded by the New Jersey Commission on Higher Education. The regional centers at Ocean County College, Middlesex County College, Cumberland County College, Fairleigh Dickinson University, and New Jersey City University provide support services to college students who have learning disabilities. The regional centers at Camden County College and Bergen Community College provide supports for college students who are deaf/hard of hearing. This system of regional centers began in 1986 when the New Jersey legislature passed a law called the Higher Education Services for Visually Impaired, Auditorily Impaired (*sic*) and Learning Disabled Students Act.

Adaptive Technology Center for New Jersey Colleges
phone: (609)771-2610,
TTY: (609)771-2309,
email: atcenter @tcnj.edu.
www.tcnj.edu/~technj/atcenter

A list of software mentioned in this article can be found on page 5.

CAN WE TALK?:
SOFTWARE FOR LANGUAGE DEVELOPMENT

By Susan Kelley-Smith

Can we talk?" Joan Rivers frequently asks at the beginning of one of her mono- logues. Talking…communicating…most of us take it for granted. But many individuals have had or know someone who has had communication difficulties some time in their lives. Communication difficulties take the form of a receptive or expressive language impairment that might affect an individual's vocabulary, grammar, processing or social skills. Individuals may also have disfluencies (i.e. stuttering), articulation errors (i.e. speech sound production errors) or voice disorders.

As a speech therapist in a public school, I wanted to find quality software programs that I could use with a diverse population of students to improve their language and communication skills. The following six programs cover a range of communication difficulties. The accom- panying chart highlights the focus of each program, access options, publisher information, and current prices.

Teach Me to Talk
Teach Me to Talk by SoftTouch benefits the student who is at the beginning stages of language development. The program utilizes over 150 Mayer–Johnson photo- graphs of real objects. There are four activities in this program: Teach Me to Talk, Switch-On-Picts, Puzzle Play and Story Time. Clicking a button will display teaching hints for each activity.

The Teach Me to Talk activity is for students who are learning to match pictures to their spoken word names. Students see a photograph and hear the name of the photograph. A display of 6, 9 or 15 photographs may be selected. The photograph moves and morphs into a line drawing of the photo. A musical interlude plays in the background. The teacher has the option of turning off the music, movement or morphing features. The teacher may also deselect the symbol (line drawing) feature. The teacher can choose

from particular categories of pictures to teach: five thematic categories (e.g., food, animals); three bilabial categories (p, b, m); and four general categories (encom- passes a variety of picture types).

The Switch-On-Picts activity gives the student switch practice. A photograph appears on the screen with a picture of a switch in the bottom right corner. The photograph is named once and then the switch picture flashes repeatedly. If the teacher selects the verbal prompt option, the computer will say, "Press the switch." Once the switch (or mouse) is pressed the next picture appears. The teacher has the option to include music and/or movement with the photographs.

The Puzzle Play activity features 100 photographs from which to select. The teacher can choose 2, 3, 4, 8, or 16 puzzle pieces and has the option of selecting one of four different methods of completing the puzzle. For example, when the automatic manner is selected, the student selects a puzzle piece and the piece floats to the correct spot in the puzzle. When the puzzle is complete the name of the picture is spoken.

The Story Time activity puts the training words into a short sentence structure using four-line English rhymes. Each line is highlighted as it is spoken. The teacher can choose rhymes by category or can select rhymes to play in sequence. A sample rhyme from the animal category goes like this:
A dog will always bark,
And a cow will say moo,
And a pig likes to say oink,
And a chicken goes cock-a-doodle-doo.

Strengths of Teach Me to Talk
The use of real-life photographs helps students make the connection between a photograph and the concrete object the photograph represents. Both photographs and line drawings can be used in the Teach Me to Talk activity. This combina- tion helps students make the visual transition from concrete to abstract pictures. The program is easily custom-

ized, and the music, movement and morphing features can be turned off for students who are easily distracted.

TalkTime with Tucker
TalkTime with Tucker by Laureate Learn- ing Systems is designed to help students increase their vocalizations. Wearing a headset microphone, a student can make Tucker move and respond by speaking into the mike. The program covers a range of communication processes and accepts a broad range of verbal input. It can be used sequentially from simple sounds or words to increased volume to increased sentence length to communicative exchanges.

Five activities make up this program: On Stage, On the Farm, A Walk in the Woods, Fantasyland and Let's Talk. The student or teacher can select any of these activities in any order from the activity menu.

The On Stage activity features circus animals in the Amazing Animal Show. A student producing any sound can make an animal perform a trick. For example, Harry the Hippo directs, "Talk to me and I'll dance." After a response from the student Harry dances and then says, "Talk more and I'll jump." Harry's final trick is performed after the student responds to, "Say something else and I'll kick."

The On the Farm activity presents a variety of farm animals that encourage the student to speak. For example, a donkey states, "Donkeys say hee-haw. Talk to me and I'll show you how I kick."

The activity A Walk in the Woods encourages students to increase the length of their verbalizations. For instance, a mother bird directs, "Talk and make sounds and see how the eggs change. The longer you talk the more you'll see happen." As the student talks, eggs in a nest begin to crack open and baby birds emerge.

Tucker is a wizard who encounters fictional characters in the Fantasyland activity. Students adjust the volumes of their voices to make Tucker fly higher on

his way to a castle. The characters Tucker encounters recite poems that encourage speech. For example, the knight recites, "I'm the knight who guards the magic door. Say the magic word and I will show you more."

The Let's Talk activity gives the student the opportunity to participate in a conversation. The student talks for Tucker who is being interviewed by Casey the Chameleon. Casey, who hosts his own talk show, asks Tucker a variety of open-ended questions.

Tiger's Tale

Tiger's Tale, also by Laureate Learning Systems, is a tool that assists students with disfluencies, articulation errors and voice disorders. Using a microphone headset, students record and playback their own voices in order to talk for Tiger who has lost his voice. Tiger's animal friends ask questions to help the students formulate words to say. For example, Cookie the Cockatoo asks, "What would you say if you got hit in the head with a coconut?" Cookie also says, "Help Tiger stop the taxi" while the taxi is banging back and forth between two trees.

Students can select a story with 5, 10, or 14 scenes in it. With each animated scene presented, students have up to ten seconds to record a response for Tiger. Students then click the play and save button to hear their recording so that they can make changes if they wish. This button also saves the latest recording for inclusion in a movie drama. In the final scene students have to click on various objects to find the object that hides Tiger's voice. Once Tiger's voice is found, students view the "home movie" that features their voices as Tiger. Using the play and save button improves students' verbal productions. When they playback their voices they receive auditory feedback and can make revisions by saying sounds more clearly, saying sentences more fluently, and/or raising the volume of their voices.

Old MacDonald Had a Farm

Old MacDonald Had a Farm by Sunburst uses that popular song to assist students with their reading, writing and vocabulary skills. It is amazing what can be done

with just one song. When the program opens with the Old MacDonald toolbar, students can select from the following: Sing to Me, Read to Me, I Can Read, Index, Check Your Work and Paint.

A student selecting the Sing to Me option would hear the Old MacDonald song lyrics and see accompanying pictures. As the words of the song are sung, they are highlighted so that the student may follow along. The Read to Me option is similar to the Sing to Me activity except that the highlighted words are read aloud.

When a student selects the I Can Read option, s/he can independently read the words of Old MacDonald. The student can check his/her reading accuracy by clicking on words to hear them read.

Upon selection of the Index option a student can learn about the various farm animals. When a student selects an animal from the index, the page of the Old MacDonald book representing that animal is displayed. The student can then click that animal on the page, see a real-life video of that animal and hear the sound it makes. The Old MacDonald music plays in the background.

The Check Your Work option allows students to check their answers on worksheets completed away from the computer. Teachers can make copies of the worksheets that are available in the back of the manual and on templates available on the computer (using *ClarisWorks, ClarisWorks for Kids* or *Kids Media Magic*). The nine types of worksheets available are Animal Names, Animal Voices, Beginning Sounds, Ending Sounds, Vowel Sounds, Mommies and Babies, Color Me Silly, Mazes and What's Wrong.

A student checking his/her answers on the Animal Names worksheet, for example, would see pictures of five animals at the top of the page and five animal names at the bottom. To listen to directions for that page, the student would click the begin button and would hear directions asking him/her to click on an animal and compare the line that s/he drew with the line on the worksheet. The computer draws a line connecting the animal to its name and speaks, "Chicken begins with the Ch sound. The Ch sound says 'ch.' Chicken."

Other supplemental worksheets/templates available to the teacher include

an Old MacDonald Sing-Along Song Sheet, My Farm Report, World Maps and a Parent Letter.

The Paint option allows students to draw and paint their own illustrations using the computer. Students can select from 12 different backgrounds. They can add shapes, words, stamps or clip art to their illustrations. They can also paint on their own using the spray can, pencil, marker, crayon or brush tools.

My Town: Language Activities of Daily Living

My Town: Language Activities of Daily Living, by Laureate Learning Systems, is designed to help children and adults understand and express functional vocabulary in typical community scenes. The six scenes represented in this program are a city, a dentist's office, a doctor's office, a park, a restaurant and a suburb. There are four activity options available with each scene: Discover Names, Identify Names, Discover Descriptions and Identify Descriptions.

In the Discover Names activity a student selects an item in the scene by clicking on it. The computer names the item in a carrier phrase, such as "This is a taxi."

Using the Identify Names activity, the computer prompts the student to find particular items, for example, "Find the traffic light." When the correct item is selected, the student hears, "Yes, this is the traffic light" as the picture of that item flashes on and off. If the student does not select an item or selects an incorrect item, the item flashes as an additional prompt. If the item is again not selected, the computer identifies the correct item.

In the Discover Descriptions activity, when a student selects an item in the scene, the computer gives a description of that item. For example, "You can fly a kite on windy days."

In the Identify Descriptions activity, the computer prompts the student to find items according to the spoken description, for example "What bird can swim in a pond?" When the correct item is selected, the student hears, "Yes, a duck can swim in a pond."

Various options are available to a teacher using this program. With both the Identify Names and Identify Descriptions, the teacher can choose the options "item

Can We Talk? - Software for Language Development

Program Name	TEACH ME TO TALK	TALKTIME WITH TUCKER	TIGER'S TALE	OLD MACDONALD HAD A FARM	MY TOWN: LANGUAGE ACTIVITIES OF DAILY LIVING	LET'S GO READ: AN ISLAND ADVENTURE
Program Focus	To assist with early language concepts: match real-life photos to words, cause-effect relationships, words as parts of sentences, problem-solving	To increase vocalizations	To improve communication skills: language, articulation, fluency, voice	To assist with reading, writing and vocabulary skills	To help children and adults understand and express functional vocabulary using typical community scenes	Combines phonics and whole language techniques to assist students with beginning reading skills
Retail Price	MAC or WIN CD $99	MAC/WIN CD $125	MAC/WIN CD $125	MAC/WIN $79.95	MAC/WIN CD $125	School version: MAC or WIN CD $89.95 Home version: MAC $54.95, WIN $44.95
Publisher's Web Site and Phone Number	SoftTouch Software www.funsoftware.com 1-877-763-8868	Laureate Learning Systems, Inc. www.laureatelearning.com 1-800-562-6801	Laureate Learning Systems, Inc. www.laureatelearning.com 1-800-562-6801	Sunburst Communications www.sunburst.com 1-800-321-7511	Laureate Learning Systems, Inc. www.laureatelearning.com 1-800-562-6801	Edmark Corp. www.edmark.com 1-800-320-8377
Computer Access Options	Mouse, touch screen, single switch, Intellikeys, 3 scanning options are available-automatic, step scan with 2 switches and step scan with automatic select	Microphone, keyboard, single switch	Interface options: Touch screen, mouse, Compatible pointing device	None specified in manual. Customer Service Representative indicated program is not set up for switch use	Keyboard, mouse, touch screen, single switch 2 scanning options are available-linear and step scanning	Mouse, built-in scanning for single switch users, Touch Window (available through Edmark)

Editor's Note: Because of their graphic and sound demands, all of these programs have extensive minimum system requirements. Please check with the individual publisher for details.

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BEST COPY AVAILABLE

names" and "cue answers." When the "item names" option is checked, the written word also appears on the screen. When the "cue answers" option is checked, the correct item flashes before the student responds to the request. This prompts the student with the correct choice.

With all four activities, the teacher can select which items to target in each scene. Each scene has between 16 and 23 identifiable items. For example, if the teacher wishes to target only transportation items, s/he could select the following items from the city scene: bus, fire trick, police car and taxi. In this example, the student would get responses from only those four items.

This program can be used with individuals with a range of disabilities. The authors of this program indicate that this program can benefit low-functioning children and adults. The authors also indicate it can benefit individuals with autism or physical disabilities as well as those who have had a stroke or traumatic brain injury.

Let's Go Read:
An Island Adventure

Let's Go Read: An Island Adventure by Edmark was designed to assist students with the beginning skills of reading. The program combines both phonics and whole language techniques. This combination also assists students who need practice with their articulation and vocabulary skills.

Students travel through this interactive program with Robbie the Raccoon and Emily the Squirrel in an airplane named Reading Rover. There are ten activities available through this program. Some of the activities feature speech recognition technology, which allows students to interact with the program using their voices. Five of the activities take place on Letter Island and five take place aboard the Rover.

Examples of the five activities featured on Letter Island follow. Throughout these activities the letters are presented several times in uppercase, in lowercase and in a combination of both, as well as in different font styles. For each activity, students can ~~press an~~ orange button to play the activity

again or press the green arrow to go to the next activity.

1. Letter Sound Introduction: Emily directs, "This is my friend T. Can you say 't' into the microphone?"

2. Letter Recognition: Students sort coconuts with the targeted letter on them into the lettered basket and also sort coconuts without the targeted letter on them in the unidentified basket.

3. Letter Form Awareness: Students drag puzzle pieces into the letter shape and hear for example, "We made a capital T. T makes the 't' sound."

4. Letter Sound Recognition: The targeted letter is a lifeguard. Students select shells for crabs to wear that only have the targeted letter on them.

5. Letter Sounds in Words: Students view tee shirts with words on them. They have to select only the tee shirts with the targeted letter on them.

Examples of the five activities aboard the Rover follow.

1. Pilot Training: Students are introduced to speech recognition technology. Rover follows their verbal command by flying "up," "down," "right," "left" or "through" clouds.

2. Sight Words: Students see words in the clouds such as "the," "at" and "end." They repeat the words after Rover.

3. Word Building: Students build three-letter rhyming words from letters they have mastered on Letter Island.

4. Sentence Building: Students help Robbie and Emily select pictures to build silly sentences. Students also select words or pictures to complete sentences.

5. Interactive Books: Books matching the skills of a student appear in the clouds. Students can read the pages of a book and record their voices using a microphone or they can select to have words or sentences read to them.

Students, teachers or parents can access the main menu of the program to see for which letters a student has completed all activities and to see which books the student has read. Teachers can monitor each child using the program by accessing the adult options. A Grow Slide shows student progression through the letters and allows teachers and parents to control which letter is being targeted..

In my experience, I have found that young children with multiple articulation errors often improve their speech sound production as they learn to read. They learn to associate the correct placement of

the tongue, teeth and lips of a sound with the visual representation of the letter. As they continue to read that association becomes stronger. This program provides an entertaining and rewarding way to begin that association.

Susan Kelley-Smith is a speech/language therapist in Bucks County, PA.

IntelliTalk II

IntelliTalk II, the new version of the talking wordprocessing program by IntelliTools, is scheduled for release this spring. The new features of *IntelliTalk II* are designed to help students conquer the sometimes formidable challenges of reading and writing. *Intellitalk II* comes with pre-designed activities, writing templates, toolbars, and hundreds of picture items. Also included is a Teacher's Guide with lesson plans and accompanying computer activities adapted for different age groups. Step-by-step tutorials introduce the program's features.

Features:

* Speech options to reinforce learning letters and word recognition
* Auditory spell check
* On-screen palettes of useful graphics and text prompts
* Expandable library for incorporating meaningful graphics
* Customizable toolbars
* Locked text to prevent teacher-made worksheets from being erased
* Built-in scanning
* Automatic overlay generation
* Student portfolios
* Mac/Win compatible

Cost:

Introductory price through 9/30/00
* Single user - $99.95
  Upgrade - $59.95
* 5-pack - $350
  Upgrade - $200
* Multi-user - $60 each
  Upgrade - $35 each

For more information:
www.intellitools.com
(800)899-6687

SOFTWARE REVIEWS

SARAH'S PAGE WEB BUILDER

By Lauren R. Golden

SUBJECT: Reading, Writing, Art, and Computer Literacy

PUBLISHER: Sarahspage, Inc.
888-669-9494
www.sarahspage.com

COST: $59.75
includes CD-ROM and novel

NOTABLE SYSTEM REQUIREMENTS:
Mac: Power PC, System 7.x or higher 16 MB RAM;
Win: 486 or higher, Windows 95 or higher, 16 MB RAM
Netscape or *Internet Explorer* required for both Mac and Windows versions (3.x or higher).

AGE: Suggested ages 9 and up. 11- 13 year olds primarily are found on the Sarah's Page web site.

DESCRIPTION: This unusual package, containing a novel, an interactive CD-ROM, and a link to the Sarah's Page web site, is designed to encourage girls in upper elementary and middle school to become internet enthusiasts. Sarah begins her web site with a sign that says "Welcome Technogeeks and Technophobes Alike."

The novel is about Sarah, a New York kid who is sent to live with her sister in "the Middle of Nowhere, USA" for the summer. The only thing good about Michigan, she writes, is that it has internet access. She emails her friend Katie about her adventures with Ellie, her dog, and an injured horse she befriends, and these email messages provide the foundation for the Sarah's Page web site.

The CD-ROM enables users to create their own web pages and upload them to www.sarahspage.com so that other users can read them. The program easily walks users through the steps of setting up a page, adding animation, music, backgrounds, texts and links. Clear, helpful technical support is available on the web site (and via telephone), which includes a helpful glossary of common web site terms. The web site also offers entertaining and educational activities such as contests, fictional writing contributions from readers, rainy day activities, and electronic penpals called "e-buds," which provide users with a free email address. One particularly interesting section, called "Tasty Techy Tips," provides information on computer use that is written in language understandable to children. For example, the tip on "cleaning house" tells you "how to organize, simplify, and defragment your life in Windows 95, 98 and NT!"

STRENGTHS: This combination novel and CD-ROM, with accompanying web site, is engaging and entertaining. Together they promote reading and writing, art, computer and internet use, and friendship among girls. This focus on girls and their

interests is significant, since so many computer and video games are geared towards the interests of boys and recent research suggests that girls might be falling behind in technology skills. Easy to use, the software allows young users to be successful at advanced computer activities like building a web page.

The Sarah's Page Website

SUMMARY: *Sarah's Page Web Builder* engages girls in computer technology by enabling them to create and post their own web pages, email other girls, experience the internet, and learn about their own personal computers. The package builds important skills and is very easy to use. It is certainly a unique approach to the challenge of encouraging girls to develop their technological aptitude.

Lauren Golden is a graduate of the M.A.T. program in the Department of Special Education at The College of New Jersey.

Journal Writing Software for Girls

Your Notebook (with help from Amelia) by Mattel

Based on Amelia, the American Girl character, this interactive CD-ROM inspires young writers. The intended audience for this software is ages 9-12. Priced at $29.95 (Win only), this program encourages users to write journal pages and then bring them to life. This is accomplished with sound effects, stamps, colors, and more. The "Ameliarizer" turns key words into Amelia-style letters and drawings. Words can be twirled, pictures can be imported, and sounds can be recorded.

www.americangirl.com contains an interactive website featuring Amelia. Also available, to add to the fun, are the Amelia doll, a journal kit, a book series, a backpack, a bulletin board, and a stationery set.

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TRAVEL THE WORLD WITH TIMMY

by Francine Kartzman

SUBJECT AREA: Social Studies, Multicultural Studies

PUBLISHER: Edmark
(800)362-2890
www.edmark.com

COST: $29.95

INTENDED AUDIENCE: Grades PreK – 2

NOTABLE SYSTEM REQUIREMENTS:
Mac: System 7.0.1 or higher, 68040 or Power PC, 8 MB RAM, 16MB for Power PC, 2X CD-ROM drive
Win: Windows 3.1 or higher, 486 processor or better, 66 MHz or faster, 2X CD-ROM drive

OPTIONAL HARDWARE FOR ALTERNATE ACCESS: Edmark *TouchWindow*; built-in scanning is available for single switch users

EDUCATIONAL GOALS: Expose children to three foreign languages and cultures. Includes some skill building in math, early reading, geography, art, and problem solving.
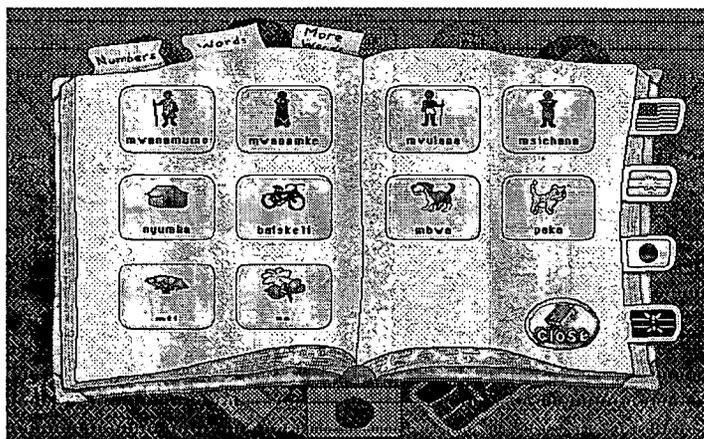
The dictionary page of ten basic Kenyan
vocabulary words in Swahili.

DESCRIPTION: This is an interactive program that can expand children's awareness of the world around them. Three countries and their languages are featured: Argentina and the Spanish language, Japan and the Japanese language, and Kenya a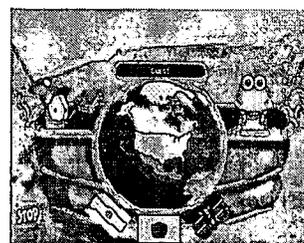nd the Swahili language. The vocabulary includes number words from one to ten, ten basic vocabulary words, and ten words that are indigenous to that culture, such as poncho in Spanish. Six learning activities help young children discover how people from these three countries live, dress, sing, play and eat: building a village, making a story, singing a song, arts and crafts, and games and a dictionary.
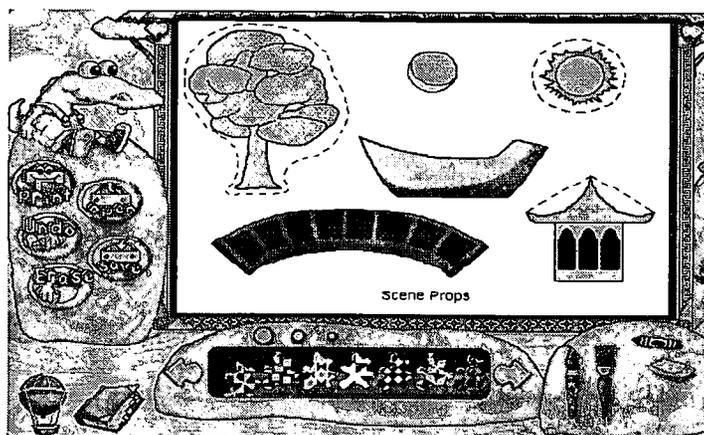
One activity allows children to create a kabuki theater.

STRENGTHS: *Travel the World with Timmy* is a colorful, imaginative, and exciting way to listen to and learn about other cultures. The vocabulary and activities are appropriate for young children. The lesson format is uniform throughout the three countries, minimizing instruction time. Opportunities are presented to repeat new vocabulary. Catchy and repetitive tunes are stimulating. Spoken directions make this program an easy one for young children to play independently. The speech production is very clear and precise.

SUMMARY: This visually appealing program is an intriguing introduction to cultures of the world and diversity. The activities are easy to use, age-appropriate, and engaging for young children. Used in conjunction with other early childhood activities, such as reading stories aloud, this program can serve as an introduction to the idea that there are many other worlds out there besides a child's local community.

Francine Kartzman is a speech/language therapist in the Highland Park school district in New Jersey.

SUNBUDDY WRITER

by David Bailey

SUBJECT AREA: Writing

PUBLISHER: Sunburst Technology
www.sunburst.com

COST: $59 single copy; lab packs and site licenses available

INTENDED AUDIENCE: Grades K-2

NOTABLE SYSTEM REQUIREMENTS:
Mac: 68040 or better processor, System 7.0 or later, 2x CD-ROM or faster, microphone for recording. Win:

DESCRIPTION: *Sunbuddy Writer* is a simplified word processing program designed to encourage writing in children ages 5-7. Using engaging animated characters (the "Sunbuddies" from *A to Zap!*), a picture toolbar, and clear spoken instructions, the program is especially helpful for nonreaders who are learning how to write. Audio prompts are provided for logging in, selecting menu items, accessing help, and making decisions about finished work. If a child cannot read the name of a feature, for example, or forgets what it does, s/he can simply move the mouse over the item and hear its name and function.

Sunbuddy Writer includes several features which are designed to encourage young children to write and get past problems of spelling and vocabulary. Fifty-seven story-starters are provided. A 160 word Word Finder can be searched by letter or theme to find rebus images to add to stories. The rebus images can then be added to stories and transformed into words with a single mouse click. Children can record their stories using their own voices. Lastly, when children print their stories they can add a border for decoration, and the program automatically prints the child's name and date at the top of the page.

If I could get a pet, I would get a 🐱. She would have a 🐶 for a best friend. They would play 🎾 all day long. The 🐶 would teach the 🐱 how to 🏊.

Sample story created with the Story Starter, "My Pet."

STRENGTHS: *Sunbuddy Writer* is clearly designed with the needs of young children and classroom teachers in mind. Its major strengths for young children are the helpful audio prompts, the picture tool bar, the ability to select a rebus image when a child does not know (or know how to spell) a particular word, and the ease of transforming the rebus image into a word. Its strengths for teachers include the flexibility to modify the tool bar by adding or removing features, the automatic filing of documents under students' log-in names, and the ability to complete print jobs at a later time. This last feature is especially practical in classrooms since it eliminates the problem of the classroom computer getting bogged down with printing tasks during class time.

WEAKNESSES: The recording time is limited to 30 seconds. If it takes longer to read the story, additional recorded segments can be added, which can be confusing for young users.

SUMMARY: *Sunbuddy Writer* is an excellent program to encourage writing in young children and to introduce them to wordprocessing. It has several features that make it especially appropriate for early childhood classrooms.

NOTE: There is a real need for a simplified wordprocessing program like *Sunbuddy Writer* for older students who are in the early stages of writing. If the cute animated characters could be replaced with more age-appropriate graphics, many teenagers and adults with disabilities would benefit from the spoken prompts, simplified tool bar, and ability to find words through the use of rebus images which *Sunbuddy Writer* provides.

Other Sunburst Programs featuring the Sunbuddies

A to Zap! (Grades PreK - 1) - Young children can see, hear and explore as they learn about letters, numbers, and words. The program also incorporates the teaching of opposites, shaprs, and colors. There are 26 activities and games that are tied directly to a letter and a word. The funny Sunbuddies, amusing graphics, and entertaining animation should keep children actively engaged.

Sunbuddy Math Playhouse (Grades K-3) - The Sunbuddies perfom a production of Grimm's Bremen Town Musicians on-stage as they present a read-along production with math-related animation. The play offers exercises in counting, numbers, and reading. The original music and humor will captivate young children.

Also included are four interactive math activities which reinforce basic addition and subtraction facts, memory and problem-solving skills, visual discrimination, and map reading abilities. Each activity has three levels of difficulty.

David Bailey is a graduate of the M.A. T. program in Elementary Education at The College of New Jersey.

INSPIRATION

by Orah Raia

SUBJECT AREA: Pre-writing; Graphic Organizer

PUBLISHER: Inspiration Software
(800) 877-4292
www.inspiration.com

COST: Mac/Win CD-ROM (School version) $59.95

INTENDED AUDIENCE: Ages 9 through Adult

NOTABLE HARDWARE REQUIREMENTS:
Mac: System 7.0 or higher, 2MB RAM
Win: Windows, 95, 98 or NT 4.0, 8 MB RAM

EDUCATIONAL GOALS: To develop ideas and organize thinking so that students can create clear, concise essays and reports; to assist with the processes of brainstorming, planning, organizing and prioritizing ideas, and outlining.

DESCRIPTION: *Inspiration* has two main environments: the Diagram view and the Outline view. The Diagram view allows users to create concept maps or flow charts which show how ideas relate to each other. After typing his/her ideas in any order, the user can easily rearrange and prioritize them by simply clicking and dragging and/or color coding. Then with one key stroke, the pictorial view can be converted into an outline form, which can be easily exported to any wordprocessing program to be developed into written works.

Inspiration contains over 1250 colorful, high resolution symbols which are organized into logical subject categories such as flow charting, multimedia, frames, food, animals, holidays, and people. This makes the process of finding a desired symbol very easy. Images can also be imported or drawn. The program comes with 35 templates to help students get started.

The program provides several tools which make it easy to generate ideas and organize them. The Diagram tool bar includes a rapid-fire option which allows the user to type in ideas quickly, as is often needed during brainstorming; a new symbol is automatically created for each individual idea. Another tool lets the user quickly choose the direction in which a new symbol should be connected, with options for right, left, up, down, either in a straight or diagonal direction. Users have an option to add text notes to individual symbols (these notes can be a few sentences or entire paragraphs of information), and a link tool allows the user to show the relationship between symbols.

The Draw tool bar allows the drawing of shapes and free-form lines, adding text boxes, nudging the symbols one pixel at a time, and changing the fill and line colors of the symbols.

STRENGTHS: *Inspiration* is an extremely helpful tool for students with learning disabilities who struggle with organizing their ideas and writing. College students and adults who are strong visual learners find it indispensable for creating quality written work. The software's intuitive interface makes it easy-to-use and frees users to concentrate on their ideas.

Inspiration's 35 templates help students get acquainted with concept mapping and graphic organizers. Specific examples in language arts, social studies, science and planning are included to encourage even more ideas, and the *Inspiration* web site provides additional examples by *Inspiration* users. An interactive step-by-step tutorial called *Exploring Inspiration*, which helps new users get started, is included in the software package. The latest 6.0 version of the program adds two helpful internet features: images from the web can be placed directly into *Inspiration* documents and URL hyperlinks can be integrated into both the Diagram and Outline views.

SUMMARY: *Inspiration* is an outstanding program which introduces users to visual learning methods such as concept mapping, webbing and brainstorming. It is an extremely useful tool which can be used for many different purposes, including story maps, sequencing, adapting worksheets, Individualized Education Plans, lesson plans, and research outlines. It is so easy to use and flexible that it can be appropriate for teaching young students the beginnings of a story map (see example below), involving middle school students in the pre-writing process, and providing college students with an effective tool for planning and organizing research papers. Anyone who hesitates (or freezes) when faced with a blank page or computer screen will find *Inspiration* invaluable.
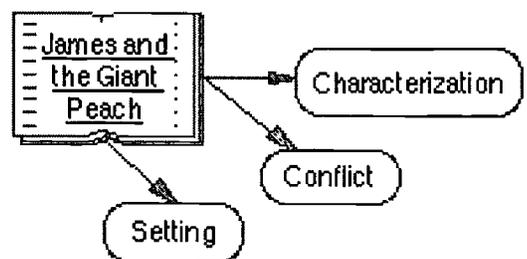
Example 1

Orah Raia is an alumna of the M.A.T. program in Special Education at The College of New Jersey.

If you know a college student whose successful use of adaptive technology in his/her program would make an interesting profile, please fill in below.

Name : _____

Brief Description: _____

_____

_____

_____

_____

Phone Number to Contact Individual: _____

E-Mail Address of Individual: _____

My Name/Phone Number/E-mail Address: _____

PLACE
STAMP
HERE

TECH-NJ
The Department of Special Education
The College of New Jersey
P. O. Box 7718
Ewing, New Jersey 08628-0718

(FOLD HERE)

If you know anyone who would be interested in receiving a copy of TECH-NJ, please fill in below.

Name: _____

Street: _____

City: _____ State: _____ Zip Code: _____

Name: _____

Street: _____

City: _____ State: _____ Zip Code: _____

1st Tri-State Conference
Assistive Technology and Augmentative Communication
March 14-15, 2000
William Paterson University
Wayne, NJ

Keynote Speakers: Arjan Khalsa, President & CEO, Intellitools
Liz Lahm, CEC & University of Kentucky

30 Presenters including: Richard Wanderman, Joy Zabala, Cathy Tamburello, Debbie Newton, Tom Caine, Pat Mervine, Madge Bradley, Amy Goldman, Adam Krass, Amy Dell, Theresa Lupo

Topics include:

Curriculum Integration	IEP/IDEA & Funding Issues
Assessment	Teacher Training
Transition	Augmentative Communication
Access Issues	Internet

For more information contact: Office of Continuing Education, WPU   (973)720-2491
http://www.wpunj.edu/coe/resources/asstech.htm

THE COLLEGE OF NEW JERSEY

Department of Special Education
P. O. Box 7718
Ewing, New Jersey 08628-0718

ADDRESS CORRECTION REQUESTED

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TECH-NJ 2001

Assistive Technology for People with Disabilities

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TECH-NJ:
Assistive Technology
for People with Disabilities

TECH-NJ is an official publication of the School of Education, Department of Special Education at The College of New Jersey. It is written by students and faculty and 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.

ADAPTIVE TECHNOLOGY CENTER FOR NEW JERSEY COLLEGES 2001 UPDATE

by Amy G. Dell, Director

When **TECH-NJ** began twelve years ago, it focused on computer technology which supported school-aged children with disabilities. Now its emphasis shifted slightly to include technology which can support people with disabilities who attend college. This variation came about when the Adaptive Technology Center for New Jersey Colleges was established at The College of New Jersey.

New Staff Positions

In its second year of operation, the Adaptive Technology Center for New Jersey Colleges is actively working towards its mission of increasing opportunities for college students who have disabilities to meet the academic demands of college through access to appropriate technology tools. Through a significant budget increase from the New Jersey Commission on Higher Education, the center has been able to add essential new staff. Ellen Specht is now our coordinator of the Adaptive Technology Lending Program. A student worker has also been hired to provide pick-up and delivery service of oversized equipment. These new positions have enabled Anne Disdier and me to be available for conference presentations and training workshops at college campuses around the state.

Procedures for Borrowing Equipment

The Adaptive Technology Center for New Jersey Colleges maintains an inventory of hardware, software, and assistive devices (see inventory list on page 7) which can be borrowed by college students who have disabilities for a trial period.

The Adaptive Technology Lending Program is designed to provide *a trial period* for students to determine if a particular technology tool is helpful. It is a *short-term* loan program, with most equipment being loaned for a period of one semester. When a technology tool is found that meets a student's needs and is needed for on-going coursework, the expectation is that the student's institution will assume responsibility for providing that reasonable accommodation. If needed, the Adaptive Technology Center will provide technical assistance to colleges regarding the purchasing of new hardware and software.

Equipment loans are arranged with staff in the Disability Support Services Office of each college/university. Each college/university needs to submit a signed College Lending Agreement for the current school year before loans can be arranged. Students who would like to borrow an item from the Lending Program need to sign and submit a Student Lending Agreement. Both of these forms can be downloaded from the web site at www.tcnj.edu/~technj/atcenter/two_forms.htm

Get the Word Out

Recent research conducted at both the state and national levels reveal clearly that the number of students with disabilities who are attending college has ballooned in the past decade. The largest segment of

THE
COLLEGE
OF NEW JERSEY

TECH-NJ 2001

Assistive Technology for People with Disabilities

Volume 12, Number 1

EDITORIAL

When teachers and parents hear the phrase "assistive technology," they often think it refers only to specialized devices for people with physical disabilities or blindness. Many teachers and parents of teenagers with learning disabilities do not realize that assistive technology offers powerful solutions to the problems in school resulting from weak reading, writing and organizing skills. I am continually amazed to see high school and college students struggling to get their thoughts on paper, being terribly disappointed by poor grades, and yet, being completely unaware that software programs exist which could ease the frustrations of reading textbooks, reading web sites, organizing their thoughts, spelling words correctly, and composing written compositions.

Therefore, this issue of **TECH-NJ** focuses on how assistive technology can support people with learning disabilities. The article by Karen Pike provides specific examples of how elementary aged children are benefiting from writing and reading tools. Janet Friedman's program profile highlights the work of an art teacher at the Newgrange School, a private school for children with learning disabilities, who has developed ways of showcasing his students' strengths by integrating computers into art classes. The Update on the Adaptive Technology Center for New Jersey Colleges includes a list of technology tools which can help people with learning disabilities succeed in college, and the Resources page provides web addresses of several informative web sites for those readers who wish to explore the topic more deeply.

But awareness is not enough. Students with learning disabilities need to be taught how to use talking wordprocessing programs, scan/read systems, graphic organizing software, and notetaking devices. They need to develop their skills before they get to college (I would argue even before they get to high school), so that when the academic demands increase, they already have the necessary tools to concentrate on the work itself and not get side-tracked by the more basic tasks of reading and writing. What this means is that transition planning needs to take on new meaning for students with learning disabilities. It must begin at age 14 (as the law requires), and transition plans must include 1) the identification of appropriate technology tools; 2) arrangements for students to have access to the tools; and 3) clear plans for teaching students to use the technology so that they are skilled users by the time they enter college.

Teachers, child study team members, guidance counselors, parents, and anyone else involved in transition planning for New Jersey's students with learning disabilities will have multiple opportunities this spring to develop their assistive technology skills. The Center for Enabling Technology in Whippany is offering hands-on workshops called Writing Tools for Students with Learning Disabilities (973-428-1455). The Educational Technology Training Centers in Bergen, Middlesex and Burlington Counties are scheduling similar workshops (www.state.nj.us/njded/techno/techtran.htm). On March 13-15, 2001 the Second Annual Tri-State Conference on Assistive Technology will take place at William Paterson University in Wayne (www.accessabilities-2001.com). On April 6, 2001 a conference focused on Assistive Technology for Students with Learning Disabilities will be held at The College of New Jersey, co-sponsored by the Adaptive Technology Center for New Jersey Colleges and the Newgrange School Outreach Center (www.thenewgrange.org/outreach/confer.html). Richard Wanderman, the writer and nationally-known expert on technology for people with learning disabilities, will conduct workshops at both conferences and will be the keynote speaker at the April 6th conference. We hope **TECH-NJ** readers will be able to attend one of these conferences and will become advocates for teaching students with learning disabilities the technology applications that will help them become successful adults.

A. G. D.

USING TECHNOLOGY TO FOSTER INDEPENDENT WRITING IN STUDENTS WITH LEARNING DISABILITIES

by Karen Pike

Having read that a multitude of software packages are available to help students with learning disabilities work more productively, I set out during the summer of 2000 to familiarize myself with some of this software, and to try it out with several students. My quest: to find the most appropriate electronic tools which can help students whose writing lacks organization, clarity and correct mechanics, and to learn as much as I could about how this software can be used.

Four Software Programs

In my reading I repeatedly came across the names of four software programs that became the heart of my exploration: *Inspiration* (Inspiration Software, Inc.), *eReader* (CAST), *Write:OutLoud* (Don Johnston Incorporated) and *Co:Writer* (Don Johnston Incorporated).

Inspiration (www.inspiration.com) is a graphic organizer and prewriting tool which enables the user to develop ideas visually through the use of a technique commonly referred to as webbing or mind mapping. In the "Diagram" view one can build and arrange graphical webs. There are 35 templates and examples that guide users through the process of filling in a web, such as the components of a persuasive essay, character study or even a science lab. With one mouse click these webs can then be changed into a text outline, which can then be imported into a word processing document to be expanded into a paper.

eReader by CAST (Center for Applied Special Technology) (www.cast.org) is a talking text reader. Text readers were originally developed to support the needs of people with visual impairments, but they have been adapted and modified for people with learning disabilities. An earlier version of this product was named the *ULTimate Reader*. *eReader* has several features that make it useful to users with reading and writing difficulties. It can read aloud the text in a word processing document, on web pages, and printed text that has been scanned into a computer. *eReader* is one of the very few text readers which is available for both Macintosh and PC computers and is relatively inexpensive.

The literary web template that is included with *Inspiration*.

Write:OutLoud(www.donjohnston.com) is a talking word processor. It operates the same as any word processing program with text manipulation features, a spell check, cut and paste functions, plus it has

one additional benefit: it speaks! Teachers can set the program to read aloud letters, words, sentences, and/or paragraphs, depending on a student's needs. The voice can be changed, as can the speed and volume at which the computer reads the text.

Co:Writer is word prediction software that is used in tandem with a word processing program. It predicts the next word in a sentence at several levels of sophistication and has many features that enable the reader to get to the correct word quickly without laboring over spelling or expending too many keystrokes. To use this program the student must simultaneously open both a word processing document and *Co:Writer*. As the student types each letter, *Co:Writer* produces an evolving, numbered list of suggestions for the word that the student may want. Clicking on the correct word in the list of suggested words, or pressing one of the numeric keys, selects the word, which is then transferred into the user's sentence. A speech option allows the computer to speak the word choices and selected words. Once the student types ending punctuation, the sentence is automatically moved into the word processing document. The text can then be edited as one normally would in the word processing program. *Co:Writer* is the most expensive of these software packages, but it is a complex program and is worth the cost.

Learning the Software
After installing the software onto a Macintosh PowerBook G3, I leapt into my summer project, spending several days familiarizing myself with the features of each program.

The documentation provided with the software was easy to understand, and after working through several examples in the manuals I could not wait to begin showing the programs to students. Borrowing children of friends, and talking with evangelical zeal to people I met at a summer camp in which I was teaching, brought me a steady stream of interested students. In all, twelve students ranging from grade three to a sophomore in college experimented with the software, eight of whom had documented learning disabilities, dyslexia or attention deficit/ hyperactivity disorder.

Writing Problems to Overcome
Before trying the software, most of the students told me that they found it challenging to organize their thoughts and produce coherent text. Faced with a blank sheet of paper, they tended not to know where to begin their school writing assignments. Difficulty editing written work also proved to be a common experience of the students. The older students frequently told me their spelling and grammar "stunk" and their teachers rarely praised their written work.

A Fifth Grader's Reaction to the Writing Tools
This was especially true of Seth, an exceptionally bright student entering the fifth grade who has difficulty with sustained attention, dysgraphia and poor spelling. When given a writing assignment Seth has been known to spend several hours in thought, trying to decide what to write and how to begin. His frustration has lead him to dictate his thoughts to his mother, or rush to produce an unreadable document which did not reflect his very fine thinking. When I first met Seth during his fourth grade year, we spent a few weeks discussing the concept of graphic organizers and practiced using the paper and pencil variety to get his thoughts on paper. Another suggestion for Seth was that he concentrate his effort on

learning to keyboard well. Using the Herzog Keyboarding company's *Hub Key Sensors* (www.herzogkeyboarding.com/) to keep his fingers anchored to the correct keyboarding position, he quickly caught on to the format of Sunburst's *Type to Learn* keyboarding program (www.sunburst.com), and by the summer months was proudly reporting typing speeds exceeding twenty words per minute. Seth was ready to take on the challenge of independently using the computer to organize and edit his written work.

Seth's familiarity with paper based graphic organizers made it easy for him to transfer to using the templates provided in *Inspiration*. He found the "fill in the blank" assistance provided by *Inspiration*'s character study template particularly supportive and was able to generate outlines on which he could expand. While Seth continues to need support to get started and to make a decision about his exact topic, his increased practice with writing and his webs made with *Inspiration* have helped him work more independently and gain better control over the planning stage of the writing process.

Benefits of the Computer Reading Aloud a Student's Work
As a new typist and with his minimal writing experience, Seth's work was riddled with typographical and mechanical errors. While many of these were caught and corrected using a spell check, several errors were left unidentified. Seth tended to start sentences with the same word and used simple sentences that did not reflect the complexities of his spoken language. Experienced writers know that reading their text aloud helps them hear redundancies and find errors. Many students with reading disabilities skip this step, as they cannot easily find errors on their own. When reading aloud, they tend to read what they think they wrote, rather than what is actually on the page. However, using a text reader or talking word processing program when editing helps students hear run-on sentences, misuse of words, lack of pluralization and redundant or awkward language. The computer is impartial when reading a piece of writing, and it does not tend to emphasize one error over another, as a parent or teacher tends to do when editing a child's work.

The feedback from the computer is instant, and a child can stop the speech output at any point, make a correction, and then listen to the text changes to hear if the correction works.

Using a text reader or talking word processing program when editing helps students hear run-on sentences, misuse of words, lack of pluralization and redundant or awkward language.

Seth tried using both *Write:OutLoud* and *eReader* to read his work aloud. His word processing program of choice is *Microsoft Word*, so he used *Word* when initially writing, then copied and pasted his text into *eReader*. *Write:OutLoud* will not open documents saved in *Word*. It will, however, read those saved as a text file. Converting his document to a text file was an extra step that complicated the editing process, so Seth decided to stick with *eReader*.

Watching my students' genuine pleasure while manipulating the *eReader* buttons came to be one of the most rewarding aspects of this project. Eleven of the twelve students were enthralled with listening to the computer read their work, and without help from me, they found many things that they wanted to revise and edit. Seth heard instances in the text where he had made typographical errors that had not been picked up by the spell checker (he had written a real word, but not the word he had intended to use). He experimented with punctuation, seeing whether his text sounded better with the pause the computer made when he inserted a period or a comma. He also changed words he had overused. This lead him to search for alternate words which would not change his meaning, but which would spice up his language.

An Eighth Grader Finds Success
Andy, an eighth grader with dyslexia and weaknesses in organization and spelling, had similar experiences to Seth. Andy and I had been trying to find a way to get him the computer tools he needed to succeed in school. His parents were reluctant to spend the considerable sum necessary to purchase another home computer and additional software. Late one rainy afternoon when Andy's mother came to

collect him after our meeting, we invited her into the classroom to see the writing he had been doing. He had had an epiphany that day, discovering how easy it was to improve his writing if he heard it read aloud. As his mother sat watching him confidently explain how he had edited his work, a look of wonder spread across her face. Andy's school struggles over the years had been a tremendous worry. He spoke so compellingly about how the software had helped him that she understood at that moment that the computer was not a crutch or just a cool toy that would keep him from learning to correct his work the old fashioned way. She began to believe that it was a powerful vehicle that would help him learn the skills he needed to write academic papers.

Word Prediction for a Third Grader

As a third grader, Larry was the youngest child in my summer study and perhaps the most significantly troubled by attention deficit/hyperactivity disorder, motor problems and poor organization. When writing with a pen or pencil he could not get more than a few words on the paper without considerable teacher support. He was just beginning to learn to keyboard.

Determining the correct word from the suggested list presented by a spell check is often a serious obstacle for students with learning disabilities. They might know that a word is spelled wrong, but they do not have the foggiest notion of which word on the list of suggestions is the correct choice. *Write:OutLoud's* speaking spell check helps avoid this problem.

He seemed the perfect candidate for *Co:Writer*, and in fact, Larry took to the word prediction software right away. Almost ninety-five percent of the words Larry wanted to use were predicted by *Co:Writer* within the first three letters of each word he typed. He quickly learned to manipulate the program and move between the word prediction screen and the word processing screen, and gave an endearing shout, "Yes!" every time the software produced the word he wanted to the spelling of the word he wanted

was new to him, he marveled at it, repeating it aloud without prompting. From the first try he produced longer, more detailed pieces of writing which included compound sentences quite unlike those he had been writing by hand.

Teachers who are not skilled in using computers themselves often feel uncomfortable allowing their students to use a computer for written work. Therefore, staff development for both special education and regular education teachers. Teacher training is vital for making teachers aware of the possibilities of using technology to help their students.

Determining the correct word from the suggested list presented by a spell check is often a serious obstacle for students with learning disabilities. They might know that a word is spelled wrong, but they do not have the foggiest notion of which word on the list of suggestions is the correct choice. *Write:OutLoud's* speaking spell check helped Larry avoid this problem. Most of all, Larry loved how his words sounded when he changed the voice in which *Write:Outloud* spoke. Adults who are familiar with the synthesized speech capability of *Write:OutLoud* might groan in sympathy if they knew how many hours I listened to the computer "sing" text in the pipe organ voice. For the first time ever Larry wanted to add extra words into his text and modify his written language in order to make the computer voice sound more rhythmic as it read his work. Unbelievably, all of Larry's changes improved and extended his written work. His positive experience using *Co:Writer* and *Write:OutLoud* made the task of writing less daunting, and I was confident that this experience would transfer to his school writing tasks.

Issues with Technology Implementation

This project has helped me articulate several key issues to the successful implementation of assistive technology. As I found when working with Larry, a school's response to a child's use of a computer for writing may not be enthusiastic. Some teachers feel computer use in younger children who are just developing

their skills as writers is inappropriate, while others insist that they do not want a student's use of a computer to make him/her look different from peers who are not using the computer. Teachers who are not skilled in using computers themselves often feel uncomfortable allowing their students to use a computer for written work. Therefore, my first recommendation is staff development for both special education and regular education teachers. Teacher training is vital for making teachers aware of the possibilities of using technology to help their students.

Secondly, I came to realize that the students in my project who worked most efficiently on the computer were those who could type well. Keyboarding instruction needs to be a priority for students who stand to gain from the use of assistive technology. I have also come to realize that instructional support to help students gain proficiency in specific software programs needs to be ongoing.

My third lesson relates to the need for teachers and administrators to collaborate with parents. I spent a significant amount of time explaining and demonstrating the uses of computers to the parents of my students. In doing so, it became clear that parental understanding and support of the goals and purpose behind an assistive technology intervention is vital for students' future use of the software. Considering the way many schools operate, it often falls to the parents to advocate for their child as s/he progresses from grade to grade, so it is essential that they understand the technology tools and benefits.

Lastly, the high cost of hardware and software for individual families and school systems remains a difficult issue. The digital divide in our society between those who have access to computer technology and those who do not is a deep concern, and it is one that requires creative thinking and careful planning in order to solve.

Karen Pike is coordinator of the Lower School Learning Resource Center at Princeton Day School. She is an alumna of the LDTC graduate program in the Department of Special Education at The College of New Jersey.

L & H™ Kurzweil 3000: Software for Students with Learning Disabilities

The *L&H™ Kurzweil 3000* software reads scanned or electronic text aloud using human sounding synthetic speech. Words are highlighted in a contrasting color as they are spoken. This auditory and visual presentation of information helps increase reading accuracy, speed and comprehension for struggling readers.

L&H™ Kurzweil offers Learning Lab Packs in either 5, 10, 20, or 30-pack configurations. Each lab pack includes a mixture of *L&H™ Kurzweil 3000* Scan/Read and Read-Only Station software. The Scan/Read software is a production tool that lets users scan printed material into a computer for students using the Read-Only Station software.

Sample pricing is as follows:

L&H™ Kurzweil 3000 Scan/Read PC Color: $1,895

L&H™ Kurzweil 3000 PC Scan/Read Black & White only: $1,095

L&H™ Kurzweil 3000 PC Read-Only Station: $249

Learning Lab Pack-5 PC (includes software for 1 Scan/Read and 4 Read-Only stations): $2,695

L&H™ Kurzweil 3000 for Mac Scan/Read: $1,095 (does not offer as many features as the PC version)

L&H™ Kurzweil 3000 for Mac Read-Only Station: $249

Learning Lab Pack-5 for Mac (includes software for 1 Scan/Read and 4 Read-Only stations): $1,895

http://www.lhsl.com
800-894-5374

Adaptive Tech Center

this group are students who have learning disabilities. Consider the characteristics of people with learning disabilities - difficulties with reading, writing, spelling, and/or organizing ones thoughts. Now consider the typical tasks college students must complete regularly - reading, writing, organizing their thoughts, expressing themselves clearly. The Adaptive Technology Center for New Jersey Colleges offers information, training and loans of technology tools which can decrease these students' struggles, anxieties and frustrations associated with reading, writing, and organization. But many colleges' disability support staff, students, and their parents are not yet aware of the value of these technology tools. Please help us reach those students and staff who would benefit most from the Adaptive Technology Center for New Jersey Colleges. Give them a copy of this article, or send them to our web site at www.tcnj.edu/~technj/atcenter.

Honors for Two Educational Technology Leaders

At its Annual Educators' Salute on November 19, 2000 the Center for Enabling Technology honored two teachers, **Karen Pike and Karen Warner**, as CET's Exemplary Educators 2000. The Center for Enabling Technology is a non-profit organization which helps children and adults with disabilities gain access to the powerful world of computer technology. The CET Award is given to individuals from the New Jersey region who have demonstrated exemplary use of Computers and Educational Technology to support children or adults with disabilities.

Karen Pike

Karen Pike, author of the articles on pages 3 and 14, was recognized for her unique efforts to bring technology to students with learning disabilities. In her position of coordinator of the Lower School Learning Resource Center at Princeton Day School, she provides academic support services to students who are weak in reading and writing. In Karen's words, "My passion is to learn all that I can to use technology to enhance the educational experiences of students with learning disabilities." Karen is breaking new ground in her use of computers to help students develop their writing skills, find solutions to their reading problems, and organize themselves for the academic demands of school.

Karen Warner

Karen Warner is director of the Educational Technology Training Center (ETTC) of Middlesex County. The county ETTC's were established four years ago by the New Jersey Department of Education to strengthen teachers' computer skills and enhance their ability to integrate computers into instruction. Karen Warner has made the Middlesex ETTC into one of the finest in the state. Under her leadership, the Middlesex ETTC has reached out to teachers of students with disabilities and has made training in assistive technology a high priority.

Karen Warner's interest in computers goes back many years. She received a masters degree in Computers and Instruction from the Bank Street College of Education, and for 10 years taught a course called Computer Applications for Special Populations at Kean University. Before taking on the directorship of the Middlesex ETTC she served as supervisor of technology for the Roselle Public Schools, and directed an innovative initiative called Project PULSE: Pupils Using Laptops in Science and English. CET recognized Karen Warner for her leadership in including the needs of students with disabilities in her ETTC's training of teachers.

Adaptive Technology Center for New Jersey Colleges
Inventory Available for Loan

For Students with Learning Disabilities

• *AlphaSmart 3000*: inexpensive, portable word processor for taking notes; connects to any computer for file transfer
• *Co:Writer*: word prediction software that assists students who are poor spellers (Mac/Win)
• *Dragon Naturally Speaking Preferred and Professional*: speech recognition software for dictation; requires minimum of 64 mb RAM and 200 MHz Intel processor with MMX technology or equivalent (Win)
• *eReader*: electronic text reading software for reading aloud web pages and computer files (Mac/Win)
• *Inspiration*: graphic organizing software for creating concept maps and outlines (Mac/Win)
• *Kurzweil 3000*: scan/read software that reads aloud any printed or electronic text. It has built-in highlighting and notetaking features to help students with organization (Win)
• *Language Master*: handheld speaking dictionary, thesaurus, grammar handbook and spelling corrector
• *textHELP! Read & Write*: screenreading and talking word processing software that works in conjunction with any word processor, spreadsheet, database, email and the internet (Win)
• *textHELP! Type & Talk*: talking word processing software (Mac/Win)
• *Write:OutLoud*: talking word processing software (Mac/Win)

For Students who are Deaf or Hard of Hearing

• *Comtek SMP Personal Listening System*: portable listening system with a neckloop conductor
• *TeleCaption 4000*: closed caption decoder that connects to any TV, VCR, cable or satellite TV
• *Williams Sound Personal FM System*: portable listening device that creates a wireless FM sound link between the instructor and the student

For Students who are Blind or Visually Impaired

• *Braille Blazer*: braille embosser; can be used with *Graph-it* to create tactile Braille graphs
• *Braille Lite:* portable, talking Braille notetaker with a seven key Braille keypad and a refreshable Braille display
• *Braille' n Speak*: talking notetaker with a seven key Braille keypad for input
• Calculators: talking scientific calculator and large print talking calculator
• CCTVs: portable and full-size, for magnifying printed text
• *CompuLenz*: computer screen enlarger
• *Graph-it:* tactile graphing software compatible with the *Braille' n Speak, Type' n Speak* and *Braille Lite*
• *inLARGE*: screen magnification software (Mac)
• *Jaws for Windows, Windows 95 and NT*: screen reading software (Win)
• *Kurzweil 1000*: scan/read software that reads aloud any printed or electronic text (Win)
• *MAGic for Windows NT*: screen magnification software
• *outSPOKEN*: screen reading software (Mac)
• *Travelmate VI*: 4 track play/record casette player with variable speed control for Library of Congress tapes
• *Type' n Speak*: talking notetaker with keyboard
• Video Microscope: displays slide image on a 13" color monitor
• *Window-Eyes*: screen reading software (Win)
• *ZoomText xtra Level 2*: screen magnification/screen reading software (Win)

COMPUTERS IN ART CLASS BRING SUCCESS TO STUDENTS WITH LEARNING DISABILITIES

by Janet Friedman

Newgrange School, located on the border of Trenton and Hamilton, is a small private school, serving approximately 80 students from about 40 districts throughout New Jersey. Students range in age from 9 to 19 and typically spend at least three years at the school. Newgrange focuses on remediating dyslexia and other learning disabilities, such as central auditory processing disorder and motor-visual discrimination. Since most of the students need a multisensory curriculum, classes are small and emphasize visual and kinesthetic learning styles.

Curriculum Focus

Mike Gerrish, the art teacher at Newgrange, has designed a curriculum that is a creative combination of art and computer technology. Gerrish was motivated to develop this curriculum to address two problems: the need to deliver lessons in alternative ways and the common side effect of low self-esteem among Newgrange's students. In his words, "Art can heal." Art is a medium of communication that does not require sophisticated verbal or writing skills, and it can serve as an alternative means of expression. As he sees it, technology also offers these benefits. Computers are a visual medium in which language can be secondary. It seemed a natural combination for a school focusing on students with learning disabilities, and in 1997 Newgrange set up a state-of-the art desktop publishing and imaging center.

Art is a medium of communication that does not require sophisticated verbal or writing skills, and it can serve as an alternative means of expression. Technology also offers these benefits. Computers are a visual medium in which language can be secondary.

Gerrish believed that placing a computer lab in an environment that is non-threatening, namely the art room, would decrease students' stress and open their minds to using computers creatively, rather than simply for word processing. Gerrish had observed that students enjoy interacting with computers, and in fact, seem to use them intuitively. Computer-based learning is an interactive scenario in which the role of the teacher changes to facilitator and partner, while the role of the student shifts from passive receiver to active decision-maker. Often, students become the experts on computers, and almost always students with learning disabilities are able to exhibit skills on computers that reveal their higher potentials. Computer-centered learning leaves behind the negative associations that students may have formed with traditional classroom methods.

In his art classes Gerrish presents a lesson simultaneously in two modalities: hands-on and through the computer. "Assignments pair art media with parallel tasks carried out on the computer using scanning, digital cameras, and keyboarding." He feels that using the two modalities gives depth to the students' understanding of a lesson's concepts.

Examples of Art/Technology Lessons

A sampling of projects that Gerrish has developed combining traditional art media and technology can be found on his website: www.whyart.com. There he tells about their first project, an invitation from Drumthwacket, the New Jersey governor's mansion, to create original decorations for the children's holiday tree. Newgrange students created nature-based monoprints and designs inspired by the Fauvist work of Matisse. Simultaneously, they learned about patterns, using ClarisWorks' draw and paint functions.

Later, in a unit on sculpture, students assembled images of themselves using found objects to reveal a hidden characteristic or ambition. Then using the digital camera and computer, they altered their

self portraits. Both the art and computer activities were bound together by a descriptive poem, and the total experience concluded with a trip to the nearby Grounds for Sculpture.

A third, and particularly metaphorical lesson, was called "Windows 98." Connected to the release (and free sample) of *Windows 98* (Microsoft), the class explored stained glass windows, Art Nouveau, and Art Deco. Students experimented with hand tracing and colored designs, progressing to computer-generated designs, and onto self portraits altered to produce stained glass-like images (See sample on page 9). A field trip to a local church brought the art lesson to life a second time around.

Class Observation

Last spring I observed Gerrish's students wrapping up a project that was being submitted to a contest, "Multimedia Mania," sponsored by North Carolina State University's College of Education and Psychology, Knowledge Adventure, and other software publishers (www.ncsu.edu/midlinkmmania. how.html). The primary goal of the contest was to garner models of technology integration into a typical curriculum. Using *HyperStudio* (Knowledge Adventure) small groups from Newgrange's upper division had worked out a lesson that explored realism, surrealism, and abstract art. They then defined and used that knowledge to present an art sample, analyzed its components, and decided to which school it belonged. Working in cooperative groups, students researched the topics, chose the art work, and designed the visuals, learning the technology along the way. Their work will be examined by an international team of educators. Because the work had to be executed by the students, with the teacher acting only as facilitator, the students were thoroughly involved. After class I could not help noticing how they left the room, still talking about the project, working out

THE STAINED GLASS WINDOW PROJECT

One of Gerrish's most successful projects was "Introducing Windows 98" in which he connected the release of *Windows 98* to the art of stained glass windows and the styles of Art Nouveau and Art Deco. The next few panels tell that story. Students began with examples of graphic designs relating to images from nature.

Using *ClarisWorks 5.0* drawing program, students began by importing the digital photo of themselves into a new drawing document. They then used line drawing tools to trace the features they wished to copy. They ignored unimportant features, such as the background, which were to be replaced.

Once the photo's main components were traced, the photo was dropped from the background of the document, leaving only the wire frame outlining. A rectangle was then drawn around the image to create a frame border. After dividing up the negative space surrounding the image, the sections of the image were painted to resemble elements of a stained glass window.
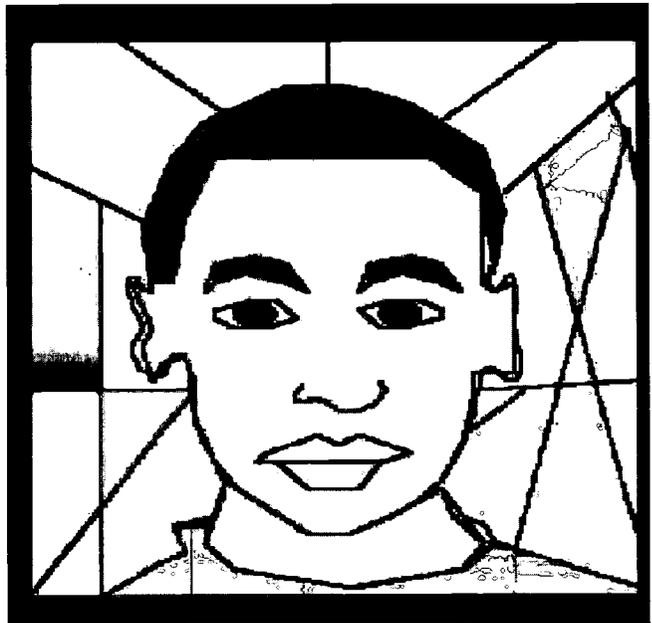
Students began capturing a variety of images with the digital camera attached to their computer, or with one of the digital cameras available in the art room. After selecting one image, students began to create a digital self portrait in the style of a stained glass window.

details, and looking like young Silicon Valleyers on their way to a power lunch.

Technical Details

The Newgrange art-computer lab has several generations of PC's, with one Macintosh, ranging in speeds from a Pentium 200 MHz with 64 MB of RAM to a Pentium III, 450 MHz processor. Students use ClarisWorks (now Appleworks, Apple), HyperStudio (Knowledge Adventure), Art Dabbler (Fractal Design), Internet Explorer (Microsoft), and Windows 98. Touch pads are available as an alternative to the mouse. ClarisWorks provides word processing, drawing, painting, and database functions. Hyperstudio is a multimedia program that allows users to incorporate animation, sound, text, and images in a format that can be used to tell a story.

Art Dabbler is similar to Adobe Illustrator, allowing students to learn design and illustration skills. Students use it to try out a digital version of what they are doing on paper. For example, an illustration is placed on still frames with changes in position to create an animated format, producing a video clip.

Set-up

The computer lab is set up in one half of the art room. A large screen TV that serves as a monitor faces the art tables in the other half. Gerrish likes to take advantage of the many web sites from museums around the world to supplement his lessons. This set up facilitates Gerrish's lesson plans which usually include half of the class doing a lesson in a traditional art mode, while the other half uses the computer to realize the lesson's principles.

Future Plans

In the future, a software controller, Visions (Alterus), will allow Gerrish to display his monitor, or any student's monitor, to every screen in the classroom. He also plans to broaden the use of technology in his art curriculum to develop multi-curricular electronic portfolios for all students which will be displayed on the school's intranet; to develop a website to display student artwork; to introduce a broader spectrum of multimedia components to the junior

high population; and to break up the senior curriculum into marketable skill sets such as printmaking in the traditional mode and mastery of software such as Adobe Illustrator or Shockwave. Gerrish points out that even though the software may change, the goal is to give students an idea of what computers can do and maybe even introduce students to a career path in technology.

Resources

Gerrish gleans ideas from a variety of periodicals: School Arts, Arts Education, Multimedia Schools, Technology and Learning, and Converge: Graphic Art Design. His web site - www.whyart.com (access through princetonol.com/nplink/members/html) provides an ample supply of tested lesson plans and samples of students' work.

www.whyart.com also lists the following links as valuable resources:

LD Online:
www.ldonline.org

Dr. Robert Brooks:
www.drrobertbrooks.com

Arts Dyslexia Trust:
www.rmplc.co.uk/orgs/nellalex

Dyslexia.com:
www.dyslexia.com

Artcyclopedia:
www.artcyclopedia.com

Museum of Modern Art::
www.moma.org

Philadelphia Museum of Art::
www.philamuseum.org

Mark Harden's Artchive:
www.artchive.com

Additional Web Sites of Interest:
Multimedia Mania Contest:
www.ncsu.edu/midlink/mmania.how.html

Newgrange School:
www.thenewgrange.org

Janet Friedman is a graduate student in the Department of Special Education at The College of New Jersey. She is a reading specialist at The Newgrange School.

Definitions of Assistive Technology Devices and Services Under the Law

Assistive Technology Device – any item, piece of equipment, or product, whether acquired commercially off the shelf, modified or customized, that is used to increase, maintain or improve the functional capabilities of a student with a disability.

Assistive Technology Service – any service that directly assists a student with a disability in the selection, acquisition, or use of an assistive technology device, including;

• the evaluation of the needs of a student with a disability, including a functional evaluation of the student in his/her customary environment;

• purchasing, leasing or otherwise providing for the acquisition of assistive technology devices by students with disabilities;

• selecting, designing, fitting, customizing, adapting, applying, maintaining, repairing and replacing assistive devices;

• coordinating and using other therapies, interventions or services with assistive technology devices such as those associated with existing education and rehabilitation plans and programs;

• training or technical assistance for a student with a disability, or if appropriate, that student's family; and

• training or technical assistance for professionals, including individuals providing education or rehabilitation services or other individuals who are substantially involved in the major life functions of students with disabilities.

KNOW YOUR RIGHTS
KNOW THE PROCEDURES TO FOLLOW

by Amy G. Dell

The possibilities of assistive technology are spectacular. With each successive improvement in the technology, *TECH-NJ* readers are among those who immediately see the implications, who envision a world in which people with disabilities have the tools to do whatever it is they wish to do, and who dream of a day when *all* people with disabilities will have access to these tools.

But access to assistive technology is tricky. One of the most humbling lessons of the computer revolution has been the realization that getting assistive technology to the people who need it is often a formidable task. To surmount this very real obstacle, people with disabilities, their advocates, and professionals in a variety of fields need to become aware of the laws which relate to assistive technology and the procedures to follow if ones goal is to gain access to appropriate technology tools.

IDEA for School-Aged Children

For children and youth who are school-age and receive special education services (ages three to 21), the place to start is the 1997 reauthorization of the Individuals with Disabilities Education Act (IDEA). In the section that delineates the requirements for determining an "appropriate education" for a student (Section 614(D)), IDEA notes that assistive technology must be considered. The law does not say that assistive technology must be provided for every student, but it unambiguously states that a team must consider for all students whether assistive technology devices and services are appropriate. If it is included in a student's IEP, then it is the school district's responsibility to provide both assistive technology devices (e.g., hardware, software, augmentative communication devices) *and* assistive technology services (see definition in box on page 10).

The inclusion of assistive technology *services* is extremely important because it reminds everyone involved that simply

purchasing the latest gadget is not enough. For assistive technology to be effective, students must receive training in how to use the technology itself and how to integrate it into their schoolwork; teachers, other school personnel and parents may need to be similarly trained; technical support and repairs must be provided in a timely manner; and the technology may need to be customized and changed over time. IDEA provides the legal basis for acquiring these services.

The inclusion of assistive technology *services* is extremely important because it reminds everyone involved that simply purchasing the latest gadget is not enough.

Parents and advocates need to approach assistive technology needs in the same way they handle their child's other educational needs - namely, they need to get it identified and included in their child's IEP. If specific assistive technology tools need to be determined, then the IEP should specify that the school district will arrange for an evaluation to be conducted by a qualified person. The IEP should list all the assistive technology devices and services that the district will provide. Parents who believe their child's assistive technology needs are not being met may request mediation.

For College Students with Disabilities

College students with disabilities no longer fall under the purview of IDEA. The legal rights which protect them relate to "nondiscrimination" and "equal access." Under the Americans with Disabilities Act (ADA) and Section 504 of the Rehabilitation Act, colleges and universities may not discriminate on the basis of disability. They must have procedures in place which provide people with disabilities with "reasonable accommodations" which provide equal access to

the college's facilities and programs. Assistive technology *may* represent a reasonable accommodation, but since there is no clear definition of the term "reasonable accommodation," different colleges may interpret the term differently.

It is essential that college students with disabilities follow the procedures that are in place at their respective institution. The first step is to contact the designated office on campus; often this is called something like "Disability Support Services," but some colleges assign this responsibility to the dean of student life or to an academic dean. After contact is made, students will usually be asked to provide appropriate documentation of their disability. The specific nature of the documentation is specified by each college, but the required documentation will probably follow guidelines published by the Association on Higher Education and Disability (AHEAD; available on www.HEATH-Resource-Center.org). Any costs incurred in acquiring this documentation are the responsibility of the student.

Once a student's disability is established, the student is considered eligible for support services and can submit a request for accommodations. Typical low-tech accommodations include extended time for taking tests, assistance with note-taking, and scheduling of class meeting rooms. Examples of assistive technology serving as reasonable accommodations include installing screen magnification software on a campus computer for a student who has visual impairments, installing screen reading software for a student who is blind, installing a scan/read system such as the Kurzweil 3000 for a student who has learning disabilities, and providing an assistive listening system in classrooms for a student who is hard of hearing. These applications of assistive technology may also be needed in test-taking settings.

Becoming well-informed is a critical first step for anyone interested in gaining access to assistive technology. The website www.disAbility.gov is a good place to start.

RESOURCES

WEB SITES ON THE INTEGRATION OF TECHNOLOGY FOR USE WTH STUDENTS WITH DISABILITIES

Center for Electronic Studying
http://ces.uoregon.edu/
A research and development group of the University of Oregon College of Education investigating innovative applications of technology for middle school, secondary, and post-secondary students, their teachers and their schools.

Closing the Gap
http://www.closingthegap.com
Among other excellent resources at this site, there is a list of web sites called Essential Bookmarks for Assistive Technology Coordinators which can be viewed at http://www.closingthegap.com/home/bookmarks/index.html.

Computer-Based Study Strategies Outreach Project
http://phaser.npip.com/cbss/index.html
Trains teachers and students on strategies to use computers effectively while studying for content area classes.

IDEA (Individuals with Disabilities Education Act)
www.ideapractices.org
This site answers questions about the Individuals with Disabilities Education Act and supports efforts to help all children learn, progress, and realize their dreams.

Internal Society for Technology in Education
http://www.iste.org/
Promotes teachers helping teachers to use technology in the classroom.

LDOnline
http://www.ldonline.org/ld_indepth/technology/technology.html
The LDOnline site has many resources for the learning disability community and is a very good starting point on the World Wide Web for information about a variety of issues related to students with learning disabilities. Of particular interest is the "Teaching with Technology" bulletin board which is located at this site (http://ldonline.org/cgi-bin/esbbbs/tech).

Richard Wanderman
http://www.ldresources.com/
Richard Wanderman knows what is going on in the world of technology for people with learning disabilities. A dyslexic with a love of all things technical, Wanderman is a frequent speaker at educational conferences. He maintains a web site of helpful resources.

Schwab Foundation
http://schwabfoundation.org
The Schwab Foundation makes available free of charge a useful booklet that provides an overview of technology use for students with learning differences. This can be a helpful resource to distribute to parents and regular education teachers. From the home page, click on Publications.

Special Education Resources on the Internet (SERI)
http://www.hood.edu/seri/serihome.htm
The list that tops all lists. If you need information related to Special Education, chances are the SERI list of web resources can point you in the right direction.

WEB SITE OF NEW JERSEY ADVOCACY GROUP

NJ Protection and Advocacy, Inc.: The New Jersey Technology Assistive Resources Program
http://www.njpanda/org/tarp
NJP&A is a private, non-profit, consumer-directed organization which serves as New Jersey's federally funded protection and advocacy system for persons with disabilities. A program of NJP&A is TARP (Technology Assistive Resources Program), which provides information and referral, outreach and education, technical assistance and legal and non-legal advocacy in the area of assistive technology. Their publications are useful, and one can join a mailing list to receive information free of charge.

The HEATH Resource Center
A Program of the American Council on Education

The HEATH Resource Center of the American Council on Education is the national clearinghouse on postsecondary education for individuals with disabilities. Support from the U.S. Department of Education enables HEATH to serve as an information exchange about educational support services, policies, procedures, adaptations, and opportunities at American campuses, vocational-technical schools, and other postsecondary training entities. HEATH gathers and disseminates this information to help people with disabilities develop to their fullest potential through postsecondary education and training.

Publications available from HEATH at no charge include:

* Creating Options: A Resource on Financial Aid for Students with Disabilities
* Getting Ready for College: Advising High School Students with Learning Disabilities
* How to Choose a College: Guide for the Student with a Disability
* Students Who Are Deaf or Hard of Hearing in Postsecondary Education
* The Americans with Disabilities Act and Section 504: The Law and Its Impact on Postsecondary Education

http://www.heath-resource-center.org/
800-641-7824 (voice)
703-264-9480 (TTY)

Student **A**dvocates for the **M**illennium Network

www.sam.is-here.net

A web site that meets the needs of students with learning disabilities is up and running. Pioneered and developed by student self-advocates at Millburn High School in Millburn, New Jersey, the purpose of the site is to facilitate communication among students with learning disabilities. The web site provides information for students to take charge of their lives through self determination and student empowerment.

Included on the site is information on:
* high school student-run advocacy groups
* learning disabilities
* laws and rights
* advocacy issues
* conferences and informal workshops
* self determination and empowerment concerns
* I.E.P. issues
* transition to work
* scholarship opportunities

To learn more about student advocacy visit www.sam.is-here.net.

EXCITING NEW FEATURES ON THE AlphaSmart 3000

by Karen Pike

The recently released *AlphaSmart 3000* model has several new and promising features sure to excite both teachers and students. The *AlphaSmart*, a portable keyboard weighing only two pounds, is an inexpensive device for notetaking, typing, editing and storing electronic texts. New editing features make the 3000 a more powerful word processing tool, enabling the user to cut, copy and paste text within and between files. The 3000 offers eight files for storing documents and additional memory which allows each file to hold up to twelve pages of text. The spell checker operates faster than that on the 2000 model.

Now Wireless-Enabled

Continuing to be compatible with most computers and printers, the *AlphaSmart* prints typed text to be easily transferred to a computer or printer via the use of an error-free infrared (IR) interface. IR technology makes wireless transfer possible and eliminates the need to connect the *AlphaSmart* to a computer with a cable. To use IR transfer, the user points the *AlphaSmart* at the computer, from a distance of up to three feet, and simply presses the send button. *AlphaSmart 3000's* ordered with IR come with either a Macintosh or PC IR pod. The *AlphaSmart* IR pod cannot yet be connected to an IMac, although this will soon be possible as *AlphaSmart, Inc.* is developing a USB port pod, scheduled to go on the market in the winter of 2001. To print directly from the 3000 using IR technology, the printer must be IR equipped. Inexpensive IR upgrade kits are available for both *AlphaSmart* 2000 and 3000 models.

Those who choose not to use IR transfer can save a few dollars by ordering the 3000 without the IR option, and connecting the *AlphaSmart* to a computer or printer with a cable. A new feature that makes connecting via a cable even easier for the youngest *AlphaSmart* users is a USB port that is compatible with Macintosh, PC and IMac computers. The 3000 model still has a built in serial port which makes it possible to connect it to computers without USB capability.
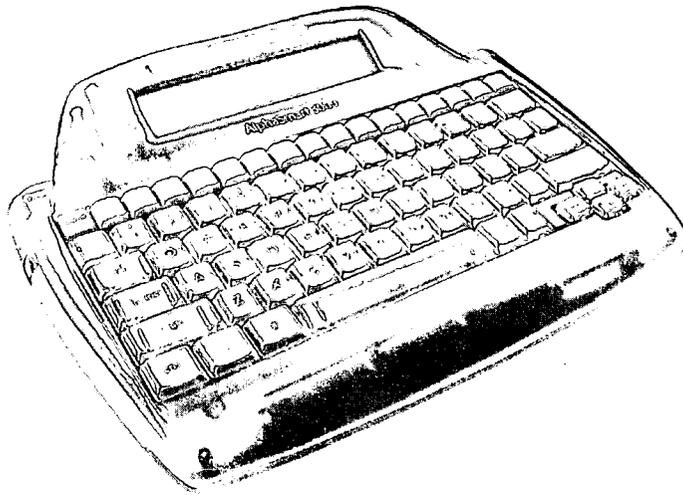
KeyWords SmartApplet for Keyboarding Instructions

Particularly exciting is the promise of new applications, called SmartApplets, which can be easily downloaded directly onto the *AlphaSmart 3000* using the applets button. The 3000 comes preloaded with a four-function calculator, although this feature did not seem user-friendly enough for young children to operate. At present, one can purchase only the *KeyWords* SmartApplet, an instructionally based keyboarding program with fifteen lessons ($39 for a single user). This keyboarding program is quite different from the similarly named *KeyWords* software program downloadable to older *AlphaSmart* models using the "Get

Utility" software.

When using the SmartApplet programs, the text which appears on the *AlphaSmart 3000* display screen, such as the actual keyboarding lesson, is not erasable. This is a vast improvement from the erasable text which was downloaded to the *AlphaSmart 2000* using the "Get Utility" function. This feature should make the applets kid-friendly and very appealing to teachers. *AlphaSmart, Inc.* is developing several additional SmartApplets that will be released in the near future. These applications can be purchased individually, as lab packs, or with school site licenses for unlimited use.

One Disappointment

The now translucent color of *AlphaSmart 3000's* blue plastic shell has plenty of kid appeal, but the lack of an improvement to the four line display is disappointing. The display quality continues to be significantly poorer than that of more expensive portable computers, and some letter shapes are visually similar to the look of old dot matrix printers, which may be confusing to students with learning disabilities.

The cost for a single new *AlphaSmart 3000* is between $199 and $244, depending upon whether one wants the IR option and rechargeable NiMH batteries. When using standard AA batteries, battery life of the *AlphaSmart 3000* is reported to be between 200-500 hours, double that of the 2000 model. School pricing for purchase of multiple units is available.

Visit http://www.alphasmart.com/ for further information.

Karen Pike is coordinator of the Lower School Learning Resource Center at Princeton Day School. She is an alumna of the LDTC graduate program in the Department of Special Education at The College of New Jersey.

If you know a college student whose successful use of assistive technology in his/her program would make an interesting profile, please fill in below.   **Part A**

Name : _____

Brief Description: _____

_____

_____

_____

_____

_____

Phone Number to Contact Individual: _____

E-Mail Address of Individual: _____

My Name/Phone Number/E-mail Address: _____

TECH-NJ
The Department of Special Education
The College of New Jersey
P. O. Box 7718
Ewing, New Jersey 08628-0718

<center>(FOLD HERE)</center>   **Part C**

If you know anyone who would be interested in receiving a copy of TECH-NJ, please fill in below.

Name: _____

Street: _____

City: _____ State:_____ Zip Code: _____

Name:_____

Street:_____

City:_____ State:_____ Zip Code: _____

UPCOMING EVENTS

AccessAbilities 2001
2nd Annual Assistive Technology and
Augmentative Communication Conference
March 13-15, 2001
William Paterson University
Wayne, NJ

Keynote: Norman Kunc, co-founder: Axis Consultation and Training, Inc.; International expert on inclusive education, employment equity, conflict resolution, and disability rights

Topics Include: Curriculum Integration, Assistive Technology Resources, Transition, Augmentative Communication, Vision Technology, Tools for Students with Learning Disabilities

For more information: Center for Continuing Education, WPU (973)720-2354
http://www.accessabilities-2001.com

Assistive Technology for Students
with Learning Disabilities
April 6, 2001
The College of New Jersey
Brower Student Center
Ewing, NJ

Keynote: Richard Wanderman
A successful writer with dyslexia, Richard Wanderman is a nationally-known expert who lectures on how computers change the writing process for people with disabilities

Co-sponsors: Newgrange Educational Outreach Center
and
Adaptive Technology Center for NJ Colleges at The College of New Jersey

For more information: Newgrange Educational Outreach Center (609) 419-1999
www.thenewgrange.org/outreach/confer.html

THE COLLEGE OF NEW JERSEY

Department of Special Education

P. O. Box 7718
Ewing, New Jersey 08628-0718

ADDRESS CORRECTION REQUESTED

TECH-NJ 2002

Assistive Technology for People with Disabilities

SCAN/READ SYSTEMS: POWERFUL TECHNOLOGY TO SUPPORT READING

Being able to read is absolutely critical for success in high school and college. High school and college students are required to complete extensive amounts of reading on a daily basis – textbooks, works of literature, journal articles, reference materials. Slow readers and students with learning disabilities often 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 interferes with students' learning of the subject matter and leads to inferior performance on course assessments. Some students get through high school by having their parents or instructional aides read to them, and they enter college unable to complete their reading assignments on their own.

Therefore, students with reading difficulties stand to benefit significantly from a technology application called scan/read systems. Scan/read systems combine the use of a scanner, optical character recognition software, and speech output to read aloud any printed text while providing a visually-enhanced display on a computer monitor. Users of scan/read systems place the pages to be read on a flatbed scanner and click the "scan" button. 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 (and/or magnifying) the corresponding text. The colorful highlighting helps readers keep their eyes on a line of text, while the speech output provides ongoing auditory feedback.

There are two kinds of scan/read systems on the market today – one for use by people who are blind or visually impaired and another for use by people with learning disabilities. The *Kurzweil 1000* (Kurzweil Educational Systems) and *OPENBook* (Freedom Scientific) are scan/read systems designed to meet the needs of people who cannot see printed text. These are used to read everything from the morning newspaper and monthly bills to medical reports and legal documents. The *Kurzweil 3000* (Kurzweil Educational Systems) and *WYNN* (Freedom Scientific) have features designed to meet the special needs of people who can see but who struggle with comprehending reading material. These features include colorful icons for easy screen navigation, a talking dictionary, a study skills tool bar to assist users in taking notes, and yellow "sticky notes" for inserting hidden prompts and reminders. Both versions offer options to change the appearance of the visual display and to set the reading speed to match the user's preference.

Scan/read systems offer a powerful option for students who have visual impairments or learning disabilities. This technology gives students independence in reading which is so essential to academic success. Many students with learning disabilities report that the technology significantly increases their reading comprehension and speed. One such student, Anthony Mercandetti, a recent TCNJ graduate, is a strong advocate for the use of scan/read systems by students with learning disabilities. (See related article on page 3.) For additional information on the Kurzweil and Freedom Scientific products, please turn to page 7.

THE COLLEGE OF NEW JERSEY

TECH-NJ 2002

Assistive Technology for People with Disabilities

Volume 13, Number 1

EDITORIAL

This issue of **TECH-NJ** focuses on technology tools that support the activity of reading – reading textbooks, literary works, poetry, journal articles, web pages – anything that requires gaining meaning from text. Reading, a task that most of us usually take for granted, is required on most jobs. It offers hours of delightful leisure activity to millions, and it is unquestionably essential for success in high school and college.

Yet, there are countless people who struggle with reading. They find themselves falling behind in classes, unable to keep up with all of the reading demands. They do poorly on exams and papers, and begin to doubt themselves, to think they are incapable. They may fail high school courses or drop out of college, disappointed and demoralized.

This whole cycle of failure can be avoided if students are provided with appropriate reading support in middle school and high school. "Appropriate reading support" means 1) identifying technology tools that will improve reading speed and comprehension; 2) making sure students have ready access to the technology tools; and 3) providing adequate training so that students can smoothly integrate the technology into their daily study routines. For students in middle school or high school who are struggling readers, this three-step process should be a major component of their transition plans. For struggling readers who are already in college, the three-step process may represent a reasonable accommodation under the Americans with Disabilities Act (ADA).

This issue of **TECH-NJ** presents several examples of technology tools that support reading. The cover story begins with a description of scan/read systems, a technology application that reads aloud any printed text through the combined use of a flatbed scanner, special software, and speech output. The User Profile on page 3 provides a specific example of a scan/read system in action. It introduces our readers to Anthony Mercandetti, a recent TCNJ graduate, who credits his success in college to his use of the *Kurzweil 3000*, a scan/read system designed for people with learning disabilities, (and his unwavering determination).

This **TECH-NJ** issue also provides information on Recording for the Blind and Dyslexic, a New Jersey-based organization that loans out books-on-tape and its latest improved format, books-on-CD-ROM. These tapes and C-ROMs are an easy-to-use, portable, and inexpensive method of providing support to struggling readers.

For younger students or individuals who are not college-bound, this issue of **TECH-NJ** provides information on two impressive software packages: Lexia Learning Systems offers a program of age-appropriate exercises to teach reading based on the Orton-Gillingham method. Don Johnston Incorporated offers a unique series called the *Start-to-Finish Books* which opens the world of literature to older students who are barely literate. This series takes the concept of "high interest-low level" reading materials to new heights by adding computer technology to the use of large-print books and books-on-tape.

College level disability support staff, P-12 child study team personnel, teachers, parents, and students with disabilities who are learning to be self-advocates will all find something useful in this issue of **TECH-NJ**. We encourage you to make copies of the articles most relevant to you and share them with your colleagues, or refer them to our web site: www.tcnj.edu/~technj.

A.G.D.

BEST COPY AVAILABLE

COLLEGE STUDENT COMBINES
MOTIVATION AND TECHNOLOGY TO SUCCEED

by Wolf Shipon

His quick stride and tall posture convey confidence and pride. His mannerisms and wit suggest that he has been through it but is ready for more. He's Anthony Mercandetti, a senior marketing major at The College of New Jersey, preparing to enter a larger world and representing a life lesson about making motivation the first priority in life. Anthony has broken away from a childhood of questionable diagnoses, low expectations and inadequate schooling to succeed in college and rise above his past.

Anthony is now getting A's in college and has had internships at large companies. He uses the *Kurzweil 3000* (Kurzweil Educational Systems) scan/read system to read his textbooks, which gives him a self-reported 75 percent reading comprehension rate, compared to his previous 35 to 40 percent. However, while scan/read technology has been instrumental in helping Anthony, he has offered his story about struggling with a learning disability to assert that only those students deeply committed to improving themselves will succeed with technology, no matter how sophisticated the technology becomes.

A Rocky Start

In the primary grades Anthony could not read. Instead of reading along with his parents, he was listening to them read and then reciting the books. "Functionally I did not know how to read until the fourth grade, and even then it was at a first-grade level. One school district attempted to classify me as mentally retarded. Nobody believed that, including my parents. They retested immediately, but it took almost a court battle to get that label off my school records." Eventually he was diagnosed with a perceptual impairment, poor fine motor skills, low mathematical reasoning, and poor spelling ability.

Technology and a positive attitude bring success to Anthony Mercandetti.

"I had a hard time with peers too," Anthony added. "We (the children in special education) had our own line at lunch. Any one of us doing something bad would get the whole group blamed. I lost all my friends when I went into special ed, after floundering in mainstream classes until the third grade."

In the third grade, Anthony entered a self-contained special education class. "You could tell that the teacher did not have high expectations for any of us," he said. "The thought of me going to college was a pipe-dream. My parents would say it, but teachers would never talk about it. Even in fifth grade, teachers treated us like we were first-graders."

Persistence Pays Off

Yet Anthony became determined to break out of it. The social isolation he experienced being one of "those kids," as people would refer to the students in special education classes, was unacceptable.

The nearer Anthony got to high school, the more determined he was not to be treated this way. Between fifth and eighth grade, Anthony struggled to get out of the self-contained special education classes. "For all of my Christmas break in seventh grade, I read two entire reading textbooks and did all the problems in the book to break out of special education. The teacher was upset that I did it and said I was going against the system, and I wasn't ready for normal classes." But he had completed 330 pages of reading and answered the questions correctly to earn all A's.

By the start of high school, Anthony had broken into one third-track class, and by his third marking period freshman year, he was in second-track classes. "I worked with some things like handwriting issues," he said. "I would say work-wise I did very well in the sense that I got A's and B's mostly. I struggled with algebra when I was a sophomore and it had to deal primarily with not having learned the material in earlier grades."

Setbacks to Overcome

By the end of junior year, Anthony was working very hard. However, he had two major setbacks. Family problems interfered with his ability to concentrate. The teachers who had observed his incredible progress knew what he was going through and tried to help. By high school, Anthony had won friends and supporters among his peers and his teachers. He was playing football and had made athletic associations that strengthened his social network.

Adding to the distress caused by his family situation, the day before classes began his senior year of high school, Anthony fractured his hand playing football. "I struggled in all my classes, and passed them all – but some of them, I should not have. The teachers knew who I was, and that I was going through a lot. The fracture would not heal."

After high school Anthony decided to continue his studies in community college and to pay for it himself. "I got a job to get myself through two years of community college," he said. "I worked every day for 38 days straight delivering bread at night with a fractured hand, in a cast, carrying boxes. And that was the *best* part of the day. I was sleeping two to three hours a day, drinking pots of coffee instead of cups. I was tired and had no support network, but I knew if I left school I would not go back. I knew my limitations and knew I had to stay in there no matter what."

College Staff Provide Support

While at Ocean County College, Anthony continued to study hard, and he was fortunate to have good teachers and the help of the disability support office (Project Academic Skills Support at Ocean County College – see sidebar on page 5 for more information about this and other regional centers in New Jersey that support college students with disabilities). There he began using the *Kurzweil 1000* scan/read software (Kurzweil Educational Systems), which OCC had available for nts with visual impairments. Text-

book pages could be scanned into a computer and then read aloud. He found that it did not scan very fast, and sometimes the words were hard to distinguish. Since it did provide some assistance, he used it anyway. Starting in 1998, Anthony began working on his physical problem – the fractured hand that had not healed since September of 1996 – by going to physical therapy in New York City. He was in rehabilitation for one year, three days a week, and continued the exercises at home when his insurance ran out.

Anthony offers practical advice to disability support offices and technology enthusiasts. "The step that most people seem to miss is motivation. No technology tool is going to work for a student who is not willing to put forth a real effort."

Scan/Read System Enhances Comprehension

In May 1999, having graduated from OCC and still in a cast, he came to The College of New Jersey where he was introduced to the Adaptive Technology Center for New Jersey Colleges. Here he tried the *L & H Kurzweil 3000*, the scan/read system designed specifically for students with learning disabilities. The *Kurzweil 3000* provides auditory and visual feedback as it highlights and reads text aloud. A built-in dictionary, which provides definitions, synonyms, spelling and word syllabication, offers additional support to students both auditorially and visually. Study skills tools that are part of the program allow students to highlight main ideas and add annotations within the body of the text. Annotations can be text or voice recordings. Highlights and notes can be exported to a separate document to be used as a study outline. Anthony found using the *Kurzweil 3000* helped him immensely with his 12-credit course load. "It was beyond my expectations," he said.

"I know it has made a big difference using the Kurzweil," Anthony said. I literally had 700 pages of retail management, 980 pages of market research, 650 pages of consumer behavior, and 2000

pages of econ/stats to read. Reading with the *Kurzweil 3000* made it easier for me to digest the information. If I was just normally reading it, I would know just a whole bunch of pieces and it would be difficult. It made a real difference in my comprehension.

"If I were to read a book like Marketing Principles, if I were to persevere through all the reading, it would probably take me 2.5 hours to read one chapter. By the time I finished reading the last page of the chapter I would have forgotten the first part of the chapter and remembered maybe 40 percent of the rest. Using the *Kurzweil 3000*, it would take me half the time to read the chapter, and I'd remember 75 to 80 percent."

Motivation Provides Key to Success

It is important to note that Anthony attributes his success using this software to his level of motivation. He believes his desire to succeed in spite of the odds against him inspired him to use the resources at his disposal in the best way possible. He warns that scanning text can be tedious and a student must be committed to doing it, or find someone else to do it instead. One approach Anthony used was paying a younger cousin to do the scanning for him when he did not have time to do it himself.

Anthony offers practical advice to disability support offices and technology enthusiasts. "You can't just throw technology at someone and expect it to solve their problems. The first step is to make sure accommodations are made for the student. The second step, which most people seem to miss, is motivation. No technology tool is going to work for a student who is not willing to put forth a real effort." Student initiative and persistence are essential for technology tools to fulfill their potential.

Editor's Note: Anthony graduated in December, 2001 with a bachelor's degree in marketing and is now successfully employed in the business world.

Wolf Shipon is a graduate student in the Department of Counselor Education at The College of New Jersey.

LAPTOP SYSTEM PROVIDES A VOICE AND ACCESS TO CURRICULUM FOR 8-YEAR-OLD

by Lisa Howarth

Ilona is an eight-year-old girl who is an enthusiastic student at the Passaic County Elks CP Center in Clifton, New Jersey. She was born with spinal muscular atrophy, a chronic condition which leaves her with only minimal voluntary control over motor movements. As a result, she cannot walk, swallow or speak, and she requires a breathing tube. A wheelchair provides her with a means of mobility, and a feeding tube and on-going suctioning address her swallowing and breathing problems. A specially designed augmentative communication system enables Ilona to be an active participant in academic and social activities.

Laptop Becomes an Augmentative Communication System

Ilona's augmentative communication system uses the EZ Keys and Talking Screen software programs from Words+, which run on a standard Windows operating system on a regular laptop computer (Ilona's is a Dell Inspiron 7000). The laptop is also equipped with Words+ MicroCommPac with DECtalk, a speech output accessory which provides voice quality of high intelligibility.

EZ Keys Provides Options

EZ Keys is a text-based computer access program designed for users who have a third-grade reading level or above. Users with a wide range of disabilities find EZ Keys simple to operate and essential to everyday communication. EZ Keys allows the literate user to do everything from typing a letter, to engaging in conversation with a friend, to turning on the TV

The software comes with a number of time-saving features, including dual word prediction and abbreviation expansion. When the user begins to type a word, EZ Keys displays a table of the six most frequently used words that begin with those letters and scans through the

choices. By activating a switch, the user selects the appropriate word fom the display, and EZ Keys instantly types the entire word. In addition, EZ Keys features next word prediction, where the program actually learns the user's word patterns and displays a list of the last six words used in conjunction with the previous word. The word prediction database can contain up to 5,000 words and can be easily modified to include new vocabulary. EZ Keys also recognizes abbreviations for frequently used words and phrases and for instant speech.

Ilona's curriculum is scanned into the computer so that she can use E-Z Keys to answer the questions.

Alternative Access Method

Since Ilona cannot type on a regular keyboard or manipulate a mouse, she accesses E-Z Keys through the use of a wobble switch (Prentke Romich). She "types" by utilizing single-switch scanning with an on-screen keyboard. She can choose to use a cross hair scanning method or a radar mouse feature. The cross hair scanning that I observed is a horizontal line that moves up and down the computer screen. When the line goes through a portion of the screen that Ilona wishes to use, she activates the wobble switch with a few fingers and then waits until the cross hair cursor scans across the screen to the specific key that she wants. The radar mouse works in a similar fashion except the radar mouse radiates out from the center of the screen.

Using these two scanning methods, Ilona spells, types, and participates in reading and writing tasks in the classroom. She is able to type personal information and can execute simple computer functions like opening and closing programs and changing fonts and colors.

Ilona's curriculum is scanned into the

computer so that she can use *E-Z Keys* to answer the questions. Her instructional aide connects a flatbed scanner to the laptop, and then takes the worksheets that her classmates are using and runs them through the scanner. Once the document is open on the monitor, Ilona enters her answers using one of the scanning methods. Her aide moves the cursor from question to question to expedite the process. This arrangement enables Ilona to complete the same written work as her peers.

Participation in the Classroom

While Ilona uses *EZ Keys* to complete her schoolwork, she uses *Talking Screen for Windows* when she wants to communicate. *Talking Screen* is a pictographic communication software package that uses Mayer-Johnson symbols and pictures to create a series of communication boards on a computer monitor. When a picture is selected, the computer speaks aloud the stored message. Page layouts can be customized using real photos and video of family and friends. DECtalk or recorded speech plus various access methods are available, including single switch scanning . The software includes a word processing page for writing documents and a magnification feature for users who are visually impaired.

Ilona has several communication boards in *Talking Screen* which she accesses through single switch scanning - theme boards which she uses during the day to participate in circle time, math and reading, and a page which is entitled "My Special Page." This page contains
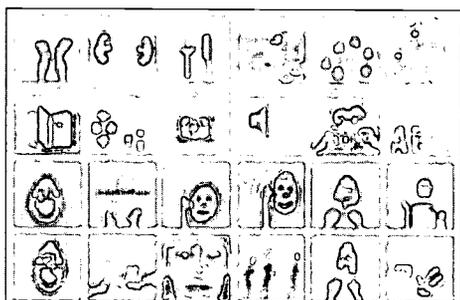
A sample screen from the
***Talking Screen* program.**

messages related to her physical needs and personal preferences, such as "I need to be suctioned," "I need to be changed," "I want to play a game," and "I want to watch TV." The messages "yes," "no," and a link to "My Special Page" appear on every board so that she can access those messages quickly.

Social Interactions

Ilona has social pages that enable her to play card games such as Uno. She was able to play Candyland with her speech therapist while I was visiting. She also has stored in the system stories she can read to her siblings. The communication page that impressed me the most was Ilona's synagogue page which contained religious symbols and prayers in Hebrew. Ilona's father had created the Hebrew page for her.

Unlike most communication boards, Ilona's picture symbols do not include any food vocabulary. Her speech therapist explained that since Ilona is fed with a feeding tube and does not make food selections, there was no point in taking up valuable communication board space with irrelevant words.

Through the use of her augcomm system, Ilona can experience typical life activities. She can have play dates and help her sister with her homework, as well as have fights with her sibling. Ilona's mother feels that the communication system has changed their lives. In fact,

Ilona

Drip
Grin
Grade
Truck
Trim
Drive
Tree
Grow
Try
Grass
Drum
Drove
Trip
Grand
Dress
Globe

A sample spelling test typed by Ilona
using *Microsoft Word* and *EZ Keys*.

she says, "There are MAJOR ISSUES if there is no computer for Ilona to use." This prompted me to ask what they do if her system breaks down. Her family has solved this problem by installing a back-up copy of *EZ Keys* and *Talking Screen* on her father's laptop computer.

On-going Training and Updating a Necessity

Ilona has been a student at the Passaic County Elks CP Center since she was four years old and has had the support of speech therapist Laura Hoag since that time. Laura's careful attention to Ilona's specific vocabulary needs and her provision of on-going training has clearly paid off. Ilona has learned to use this system for writing and communication, in school and at home. Her mother reports that she "uses her computer all the time. The only time she does not use her computer is when she is sleeping."

Ilona was simply amazing to watch. She constantly interacted with her teachers, her speech therapist, her nurse, her mother, and the other children during my visit. A current goal for Ilona is to move beyond responding to others' questions to initiating conversations spontaneously. Another goal is improve her reading skills so she can learn to use the internet. As she continues to progress, she will be able to expand her communication skills through the use of the READER feature in *EZ Keys*. This will allow Ilona to prepare reports or longer communiqués such as word processing files that can be read out loud with the click of a single switch. This will expand her world even more by enabling her to participate more extensively in

social conversations and to make presentations to her class like other third graders.

Product Information:
EZ Keys
Talking Screen
www.words-plus.com

wobble switch
www.prentrom.com

Lisa Howarth is a graduate of the M.Ed. Program of the Department of Special Education at The College of New Jersey.

THE NEW WAY THINGS WORK

WEAKNESSES: A speech output feature for all text within the program would be a benefit for weak readers. Depending on the age of the user, the tests can be difficult. Researching the answers can provide a learning experience for test-takers, but it can frustrate some users. Test questions are fill-in-the-blank, and the answer field is sensitive to correct spelling. Therefore, a student who know the correct answer but does not spell it correctly would be marked as incorrect. A spell check feature would be helpful.

SUMMARY: This is an outstanding educational program that is easy and fun to use. It answers the question "how does it work?" without being pedantic. Young children will enjoy watching the animations and listening to the explanations; older children will discover that it is a great starting point for science projects and reports. Teachers will appreciate the fluidity and preciseness with which abstract principles are explained. *The New Way Things Work* is an affordable and useful addition to both home and school software collections.

Ellen Farr is a graduate student in the Educational Technology Program at The College of New Jersey.

Scan/Read Systems
Product Information

OPENBook (Freedom Scientific - www.freedomscientific.com)

Read, edit and manage scanned images from books, magazines, manuals, mail and other printed documents. *OPENBook* turns a computer system into a scanning and reading machine, offering blind and vision-impaired individuals access to printed materials. Once scanned, *OPENBook* converts the material into electronic information to be read aloud by the speech synthesizer and displayed on the screen. *OPENBook* works with standard Windows® menus, dialogs and commands and comes with a full-function email program.

Cost: *OPENBook 5.0* 95/98/NT/2000: $995.00

WYNN Wizard/WYNN Reader (Freedom Scientific)

WYNN Wizard provides optical character recognition (OCR), the ability to scan a printed page and convert it into electronic text. Speech synthesis enables this scanned text to be read aloud. *WYNN Wizard* can scan and read word processing, text files, and the Internet. *WYNN Reader* is a read-only station without the OCR scanning software.

Cost: *WYNN Wizard* with Scanning: $995, *WYNN Reader*: $425 - single user.
      Educational and site license pricing is available.

Kurzweil 1000 (Kurzweil Educational Systems - www.kurzweiledu.com)

Kurzweil 1000 is a scanning, reading and writing software program for use by people who are blind or visually impaired. This software works on a personal computer in conjunction with a flatbed scanner and synthetic speech. Scanned text is converted into speech.

Cost: *Kurzweil 1000* with L&H™ RealSpeak - $995
      Kurzweil 1000 with L&H™ RealSpeak and DECtalk™ - $1,195
      Site licenses available.

Kurzweil 3000 (Kurzweil Educational Systems)

Kurzweil 3000 is software that helps people with reading or learning difficulties increase their reading speed and comprehension. *Kurzweil 3000* can read virtually any scanned document or other electronic file on a computer or the Internet, using high quality synthetic speech. With *Kurzweil 3000*, words are highlighted in a contrasting color to the reading unit making tracking easier. New or unfamiliar words can be defined using *Kurzweil 3000*'s electronic dictionary, or broken down into syllables using the syllabification tool.

Cost: *Kurzweil 3000* Single Unit Pricing (Windows version)
      Kurzweil 3000 Scan/Read - Color version - $1,895
      Kurzweil 3000 Scan/Read - Black & White version - $1,095
      Kurzweil 3000 Read-only Station - $249
      Lab packs and site licenses are available.

      Kurzweil 3000 Single Unit Pricing (Macintosh version)
      Kurzweil 3000 Scan/Read - $1,095.00
      Kurzweil 3000 Read Station - $249.00
      Lab packs and site licenses are available.

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Web Site for Speech/Language Pathologists:
SpeakingofSpeech.com

www.speakingofspeech.com

Speaking of Speech.com is an interactive forum for speech/language pathologists and teachers to improve communication skills in our schools by:

* exchanging ideas, techniques, and lessons that work,
* finding out about materials before purchasing,
* seeking and giving advice on therapy and caseload management issues, and
* exploring a myriad of helpful resource links.

A highlight of the site is the Materials Exchange page. All school-based speech/language pathologists are encouraged to contribute to the site's growing knowledge base. In addition, SLPs in research and clinical settings, regular and special education teachers, parents, and students who have special needs are invited to take ideas from this site as well as share their vn insights and perspectives.

ELECTRONIC TEXT INTERNET SITES

Bookshare.org   http://www.bookshare.org
Bookshare.org is a new online community that enables people with visual and other print disabilities to legally share scanned books. Bookshare.org takes advantage of a special exemption in the U.S. copyright law that permits the reproduction of publications into specialized formats for people with disabilities. Bookshare.org is expected to be fully functional in the Spring of 2002.

The Electronic Text Center at the University of Virginia   http://etext.lib.virginia.edu
The Electronic Text Center's holdings include approximately 51,000 on-and off-line humanities texts in 12 languages, with over 350,000 related images. 1600 of these are available for the Microsoft Reader and Palm devices, including British and American fiction, major authors, children's literature, American history, Shakespeare, African-American documents, the Bible, and more.

The English Server   http://eserver.org
The EServer, formerly at Carnegie Mellon, is now based at the University of Washington. It contains over 31,589 works in 42 collections on such diverse topics as contemporary art, race, Internet studies, sexuality, drama, design, gender studies, accessible publishing and current political and social issues.

The Internet Public Library   http://www.ipl.org
The IPL Online Texts Collection contains over 19,000 titles including various online books, stories, essays, poems, articles, dramas, letters and speeches that are available over the internet. They can be browsed by author, by title, or by Dewey Decimal Classification.

The Online Book Initiative   http://ftp.std.com/obi
The Online Book Initiative's (OBI) Online Book Repository (OBR), is a large collection of text and related materials ranging from Shakespeare and The Bible to novels, poetry, standards documents, etc.

The On-line Books Page   http://digital.library.upenn.edu/books
The On-line Books Page contains an index of thousands of online books freely readable on the internet, pointers to significant directories and archives of online texts, special exhibits of particularly interesting classes of online books, and information on how readers can help support the growth of online books

Project Bartleby   http://bartleby.com
A comprehensive, searchable database of reference, verse, fiction, nonfiction and classic literature, all available on the internet. Visitors can access informative summaries of each book, as well as concise biographies, complete with pictures of each author featured in the online library. Enhanced navigational tools and extensive cross-referencing between works make it easy for users to locate specific passages and references.

Project Gutenberg   http://www.Gutenberg.net
Finds public domain copies of books and publishes them on the internet. Project Gutenberg e-texts are made available in "Plain Vanilla ASCII" format.

The Tech Classics Archive   http://classics.mit.edu
Select from a list of 441 works of classical literature by 59 different authors, including user-driven commentary and "reader's choice" Web sites. Mainly Greco-Roman works (some Chinese and Persian), all in English translation.

Texas Text Exchange   http://tte.tamu.edu
The Texas Text Exchange (TTE) is a consortium of disability service providers who share electronic texts (e-texts) with each other. This library of e-text is used exclusively to accommodate qualified students with disabilities. The library is administered by Adaptive Technology Services at Texas A&M University. Holdings are accessible only by TTE consortium members (nonprofit, governmental, or educational institutions whose purpose is to provide alternate text forms for people with disabilities). Consortium member agreement forms are available from this site. Students cannot directly access the TTE holdings. There is no cost to participate in the TTE.

SOFTWARE REVIEWS

START-TO-FINISH BOOKS

by Melissa Olszyk

SUBJECT AREA: Reading and Language Arts/Literature

PUBLISHER: Don Johnston Incorporated
www.donjohnston.com

COST: Individual Title - $65. Each title contains a CD-ROM, paperback book and audiocassette.
Complete Series Pack - $174. Titles are sold as a series of similar books, for example, *The Classic Adventure Set 1G* includes *Treasure Island*, *The Red Badge of Courage*, and *The Adventures of Huckleberry Finn*.
Reading group pack - $399. Reading group packs contain 2 CD-ROMs, 2 audiocassettes, and 5 paperback books for each title in a series.
Additional pricing packages are available.

INTENDED AUDIENCE: Struggling Readers - Grades 4 through 12

EDUCATIONAL GOAL: To provide students with age-appropriate, high-interest literature in a format for readers who are two or more grades behind in reading or who are not successful readers.

DESCRIPTION: More than 60 *Start-to-Finish Books* are available in the following categories: literature, history through people, science and nature, mystery, and sports.
The titles are divided into two reading levels, gold and blue. Gold level books are based on a 2/3 grade readability with a book length of 5,000 – 7,000 words. There are 100 – 150 words per page, and 10 – 12 chapters in each book. The 18-point font is clear and large, and there are full page illustrations. Blue level books are based on a 4/5 grade readability level with 10,000 – 12,000 words per book. There are 150 – 200 words per page and 10 – 12 chapters per book. The font size is 14-point, and the illustration size and placements vary. Text wrapping is introduced at this level.

Each *Start-to-Finish Book* package presents the book in three formats: 1) paperback book 2) book on tape, and 3) CD-ROM. A Teacher Guide is included.

Students follow spoken instructions to sign in on the opening screen of the computer book and choose the appropriate chapter. They see and hear each section read aloud while the words are highlighted on the monitor. This provides a correct reading model and it links the written and spoken word. The students can click on any word to practice fluency. At the end of each chapter is a cloze passage that students can complete as a tool for evaluating and assessing progress. When students click on the blank to be answered, they are given a word bank of choices. The completed quiz can be printed to be used as a summary of the chapter. Electronic progress reports are available.

The paperback book is divided into short, manageable chapters. The text is all bold faced and double spaced, making it easier to read. Illustrations provide a link to the storyline. The audiocassette is narrated by a professional who models correct intonation. The portability of the cassette provides a way to reinforce the audio portion of the story at home and in the classroom as students follow along in the book.
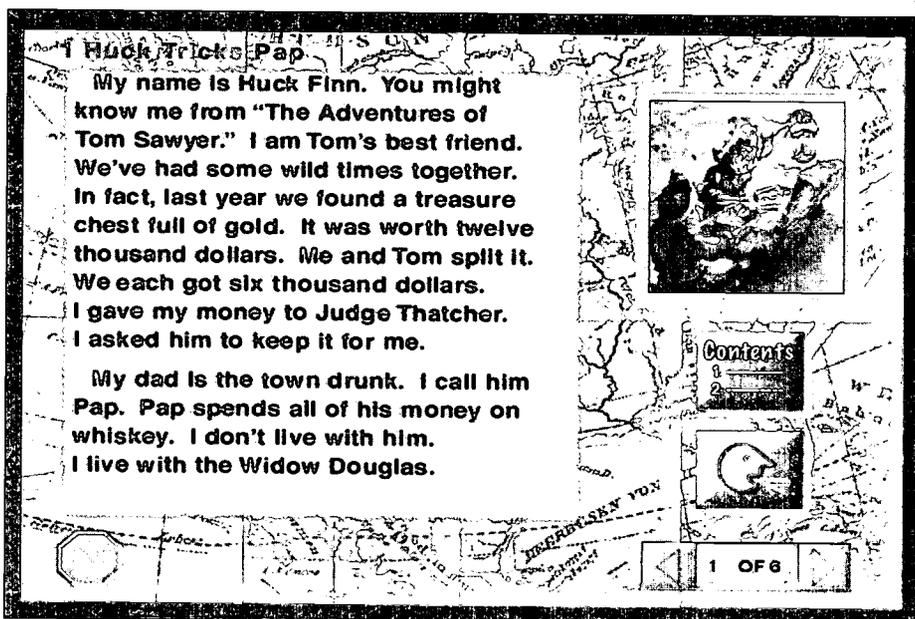
A Teacher's Guide offers suggestions for related activities, both on the computer and in the classroom. It provides details for evaluation and assessment of student progress.

STRENGTHS: There are several notable features of this software package that meet the needs of a variety of students with disabilities. Nonreaders, as well as poor readers, can benefit from the speech output. The "Read All" feature allows students to hear each page read fluently and see each word highlighted as it is read. The voice of the narrator is professional, engaging and very funny (as stated by my students). Struggling readers can click on an unfamiliar word to hear that word pronounced. My students also enjoyed hearing the pages "flip," just as if someone was flipping a page in the book.

The uncluttered yet engaging and interactive screen assists students with attention difficulties, cognitive disabilities, and perceptual impairments. The print copy of the book has large, bold

> 1 Huck Tricks Pap
> My name is Huck Finn. You might know me from "The Adventures of Tom Sawyer." I am Tom's best friend. We've had some wild times together. In fact, last year we found a treasure chest full of gold. It was worth twelve thousand dollars. Me and Tom split it. We each got six thousand dollars.
> I gave my money to Judge Thatcher.
> I asked him to keep it for me.
>
> My dad is the town drunk. I call him Pap. Pap spends all of his money on whiskey. I don't live with him. I live with the Widow Douglas.
>
> Contents 1 2
> 1 OF 6

The first page of Chapter One of The Adventures of Huckleberry Finn.

print that is spaced advantageously to provide easy-to-read pages.

Students with physical and/or cognitive disabilities need programs in which speed is not essential. This software does not require a response from the student in a set amount of time. Students control when they want to move on to the next page and can choose to hear the page read again.

Teacher options provide a means for teachers to customize the software for individual students. Teachers can turn the speech on or off, select single switch scanning for students with physical disabilities, and turn quizzes on or off. Teacher materials found on the CD-ROM's include writing activities, pre-reading vocabulary lists, and multiple-choice questions. The review/vocabulary words are syllabicated, accented syllables are indicated in bold, and the words are transcribed phonetically, as well as used in a sentence.

WEAKNESSES: The strengths certainly outweigh the weaknesses in this package, but there are some improvements that would make it even better. Being able to adjust the rate of

speech would be helpful. A built-in dictionary would give students immediate access to definitions of unfamiliar words. In the quiz section, clicking on a word does not make the narrator speak that word. The "?" icon on the "help" button confused some of my students. They thought that by clicking that button the program would ask them a question related to the story rather than answer questions they had about operating the program.

SUMMARY: The *Start-to-Finish Book Series* provides excellent access to literature for students whose reading skills are limited. Finding "high interest, low level" reading material is a problem faced by many teachers. This software package not only solves this problem, but it goes one step further by utilizing computers to assist struggling readers. The series offers a terrific opportunity to provide students with disabilities access to the regular curriculum.

Melissa Olszyk is a graduate student in the Department of Special Education at The College of New Jersey.

Start-to-Finish Books
Available Titles

Classic Literature:

Treasure Island	Kidnapped
The Red Badge of Courage	Little Women
The Prince and the Pauper	Black Beauty
Anne of Green Gables	Lord Jim
Call of the Wild	Romeo and Juliet
King Lear	Macbeth
The Adventures of Huckleberry Finn	Frankenstein
20,000 Leagues Under the Sea	A Christmas Carol
Mutiny on the Bounty	

History:
Border Crossing
I Am Vallejo!
Rosa Parks: Freedom Fighter
The Story of Anne Frank
The Tuskegee Airmen
Frederick Douglass: A Hero for All Times
Harriet Tubman: The Moses of Her People
On Strike: The Story of Cesar Chavez
The Japanese Americans: Prisoners at Home
After the Buffalo Jump: A Story of the Blackfoot Nation
Sacagawea: The Trip to the West
When Horses Are Gone: A Story of the Nez Perce Indian Tribe
For Liberty: A Story of the American Revolution
Death at Jamestown
Against All Odds: George Washington and
            the Fight for American Independence

Science and Nature:
Earthquake!
Hurricane!
    and the Volcanoes

Short Stories:
Edgar Allan Poe Collection
Jack London Collection
Mark Twain Collection

Mysteries:
Nick Ford Series:
The Graveyard Mystery
Alcatraz, The Rock
The Crossbow Mystery at Yellowstone Park
The Night of the Loch Ness Monster
The Secret of Old Mexico
Big Ben is Dead
Sherlock Holmes Series:
The Adventure of the Speckled Band
Silver Blaze
A Scandal in Bohemia

Sports:
Home Run Heroes
Flo Jo: The Story of Florence Griffith-Joyner
Ali: The Greatest
Wilt Chamberlain: NBA Giant
Jackie Robinson & the American Dream
Jim Thorpe: Athlete of the 20th Century
Fight for Your Life: The Story of Ruben Hurricane Carter
Remembering Sweetness: Walter and the Bears
Men in Motion: Rick Hansen and Terry Fox

Myths and Legends:
Tales from Homer: Stories from The Illiad and The Odyssey
Greek Myths I: Zeus and the Mighty Gods of Olympus
Greek Myths II: Heroes, Lovers and Mortal Man

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THE NEW WAY THINGS WORK

by Ellen Farr

SUBJECT AREA: Science and technology reference – simple machines to digital technologies

PUBLISHER: Dorling Kindersley Interactive
www.dk.com

COST: $29.95 consumer version; $59.95 school version

INTENDED AUDIENCE: Ages 8 –108

DESCRIPTION: *The New Way Things Work* is an interactive reference source designed to investigate the nuts and bolts of everyday machines and mechanisms. With the assistance of an animated woolly mammoth, the user can explore how machines work, learn applicable scientific principles, discover the historical context of inventions, and become acquainted with inventors. Detailed illustration, audio/video clips, humor and animation add interest to the informative scientific explanations.

The program is organized in a very logical manner, making navigation easy. To learn about a specific machine, users visit the **Machines A-Z** picture index. Sub-categories within this index include: **Principles, History**, and **Inventors**. The **Warehouse** stores an assortment of machines and mechanisms. Clicking on any object opens a short movie in which the author explains how the object works. When the clip concludes, the user can choose to learn more about the object by selecting Machine, Principle, History or Inventor (fig. 1).
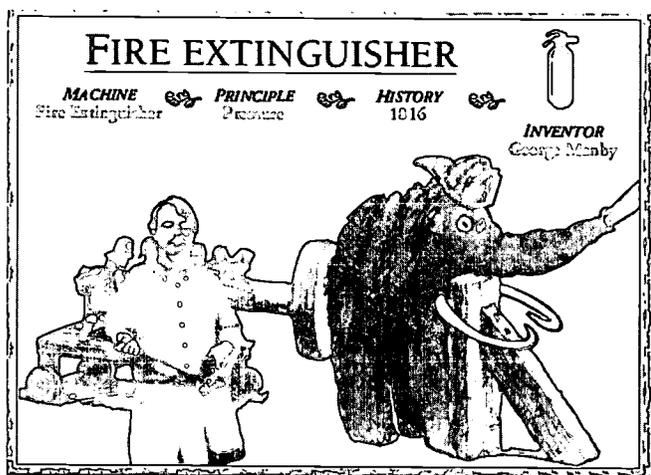

Figure 1

One of the key features of *The New Way Things Work* is that each screen has active links to other categories. Researching a submarine, for example, from the **Machine** index (fig. 2) not
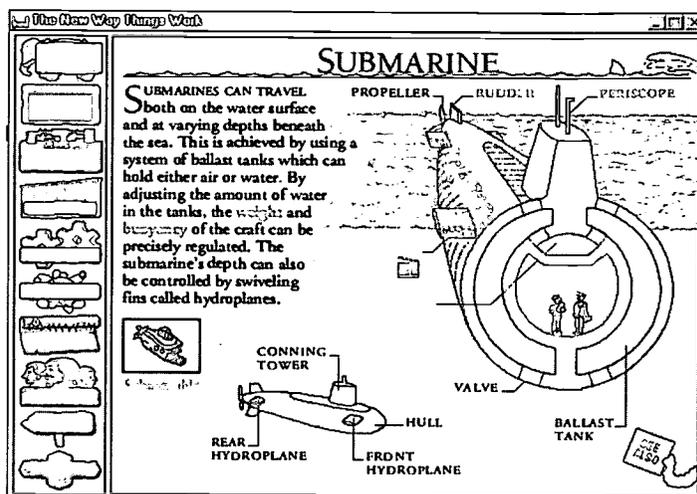

Figure 2

only gives the user a detailed, labeled, cut-away drawing that illustrates how a submarine works, but it also leads the user directly to the principles of floating and its inventor Cornelius Drebble. Clicking on the **History** button directs the user to a timeline. By selecting **See Also**, the user is given a list of related machines. Clicking on a choice leads the user to that machine's explanation.

Animated demonstrations are another attractive feature. In the case of the submarine, clicking "dive" activates a demonstration of the written explanation. Also, highlighted words are active vocabulary links; selecting one provides a definition.

Explorers can test their knowledge at the Mammoth School. Certificates at the Master, Expert and Genius level are earned by correctly answering questions on scientific principles. Help on difficult questions is available by choosing **Research Answers**. This activates a screen on which answers can be found without closing the test. Program users can also keep track of their progress by visiting the **Log Book**.

STRENGTHS: *The New Way Things Work* is an extensive resource and provides information on hundreds of scientific principles, materials and properties. The multi-sensory approach appeals to visual, audiory and literal learners. Fun graphics, animation, sound bytes and movie clips substantiate written explanations but are not so overwhelming that they are a distraction.

The program also has excellent record-keeping capabilities. By visiting the **Log Book** a teacher can find out how many and which screens a student has visited and determine test scores. The program provides information on the latest technologies. In the **Digital Domain**, users can learn how cell phones, global positioning systems and automatic teller machines work, to name a few. Students can make comparisons between cutting-edge and historical inventions by visiting this category.

In the **Options** category, students can print specific screens, stationery or postcards, download screen savers, or watch entertaining Mammoth movies.

ZOOMTEXT XTRA LEVEL 2

by Lisa Howarth

SUBJECT AREA: Screen magnification and screen reading

PUBLISHER: Ai Squared
                    www.aisquared.com

COST: $595

INTENDED AUDIENCE: Individuals with low vision

NOTABLE HARDWARE REQUIREMENTS:
Pentium or higher processor, minimum of 32MB memory, Windows 95/98 or later, sound card, accelerated display card recommended.

EDUCATIONAL GOALS: *ZoomText XTRA Level 2* is intended to make computers accessible to users who have visual impairments, particularly low vision. The screen magnification and screen reading features allow users to access word processing, database and spreadsheet programs, complete homework assignments, participate in class activities, and use the Internet.

DESCRIPTION: *ZoomText XTRA Level 2* is a fully integrated screen magnification and screen reading program. Windows programs can be enlarged and/or spoken through speech synthesis. A control panel or tool bar provides a convenient user interface. When the mouse pointer is stationary over any icon found on the user interface, a description of the tool and its function is spoken. The following features can be found on the user interface:

- Screen magnification from 2X to 16X;
- Zoom-in tools for magnifying specific areas of the computer screen;
- Zoom window box that allow for horizontal and vertical split screens and moving windows to be viewed simultaneously at a chosen magnification level;
- Color, text and cursor icons to allow flexibility in choosing colors and sizes;
- DocReader, a speech program for reading windows, lines, or words. Text can be captured, reformatted and displayed according to the user's preferences for layout, magnification, font and color;.
- Echo feature allowing letters of words to be spoken as the user types in a word processing document;.
- Targets, which are bull's eye shapes, to help user locate items on the screen.

STRENGTHS: *ZoomText XTRALevel 2* provides speech output during installation so that users who are visually impaired can independently install the program. The program can boot automatically at start-up. The tracking feature works with all Windows applications, as well as on the Internet. Split screens allow the user to see a thumbnail of the entire page while zooming in on selected areas to read. The program's flexibility for customizing features is a real plus. Users may choose to use Hotkeys or keyboard commands instead of "point and click" to reduce eye fatigue.
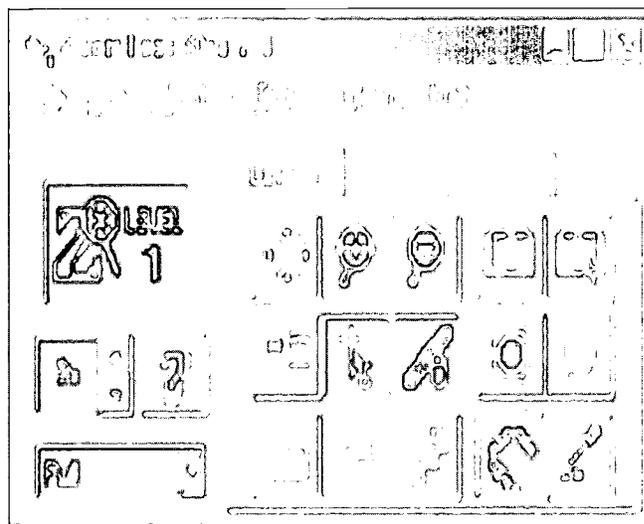
The screen magnification menu from ZoomText XTRA.

WEAKNESSES: Provisions are not made for obtaining an owner's manual in any adapted format other than large print. Braille and audio tapes are not available. *ZoomText XTRA Level 2* is not compatible with many multimedia programs. While it does not interfere with their operation, it does not provide magnification for many games and activities.

SUMMARY: Combining screen magnification and screen reading in one program makes *ZoomText XTRA Level 2* a powerful solution for individuals with low vision. The built-in DocReader™, is an innovative tool for reading text from any Windows application. With a few clicks the user can have DocReader automatically read through complete documents, including web pages and email. It supports all versions of Windows operating systems. The customization features in *ZoomText XTRA Level 2* make it a useful tool for a population of users who have visual impairments.

Lisa Howarth is a graduate of the M.Ed. Program of the Department of Special Education at The College of New Jersey.

LEXIA

by Christina Schindler

SUBJECT AREA: Reading diagnostic and strategy tool

PUBLISHER: Lexia Learning Systems, Inc.
www.lexialearning.com

COST: $120 for school versions of individual programs. $600 for a school version of all five programs. Multi-user packages are available. Family editions of some programs are available.

INTENDED AUDIENCE: Ages 4 through Adult

NOTABLE HARDWARE REQUIREMENTS:
Mac: System 7.5.3 or higher, 12 MB RAM
Win: Windows 95 or higher, SoundBlaster (16 or 32 bit best), 12 MB RAM

EDUCATIONAL GOALS: To identify students' reading strengths and weaknesses; to develop skills through interactive activities; to provide assessment reports for teachers and parents; to track student progress and automatically provide the appropriate level of material needed for growth.

DESCRIPTION: *Lexia* software addresses the first elements of an effective reading program: phonemic awareness, sound symbol correspondence, and basic decoding skills. To meet various needs, the software is divided into five distinct programs: *Lexia Quick Reading Test, Lexia Comprehensive Reading Test, Lexia Early Reading, Lexia Phonics Based Reading,* and *Lexia Reading S.O.S.* (Strategies for Older Students).

The *Lexia Quick Learning Test* provides a thorough assessment of students' decoding skills by covering reading skills taught from grades 1 - 7. The five to eight minute test determines a student's ability to use word-attack strategies and tests for sight words. The software scores and interprets the test by highlighting specific areas for instruction or practice.

The *Lexia Comprehensive Reading Test* helps teachers evaluate students' reading abilities and skills through the eighth grade level. The reports enable teachers to monitor student progress, so they can tailor the instruction to appropriate levels.

Lexia Early Reading addresses core phonological awareness skills: rhyming, first and last sound identification, segmentation, and blending. Each activity is designed with increasing levels of difficulty that allow the student to analyze, practice and manipulate sounds. Students who need more practice are routed to additional activities led by Lexie the Lion.

Lexia Phonics Based Reading provides practice with reading skills generally taught in grades 1 - 3. The program gives either positive or neutral feedback to maintain motivation. After successfully completing the five activities in each level, the child is rewarded with a fun, instructional game.

A red bag sat on a jet.
A hot dog sat in a pot.
A wet lad sat on a box.

This activity in the Phonics Based Reading Program has students match the sentence to the picture.

When an older student has not yet learned to read, the last thing they want is to be treated like a child. *Reading S.O.S.* (Strategies for Older Students) respects the age and experience of older students, while providing them with the support they need to master basic reading skills. Levels 1 - 3 provide support for 1st through 3rd grade reading skills acquisition. Levels 4 and 5 center on skills needed to master high school vocabulary.

STRENGTHS: *Lexia* software can help a wide variety of students learn to read. A major benefit of the software program is its flexibility in helping students of all levels. English as a Second Language (ESL) students can use sound-symbol correspondence and word structures to develop their reading skills in English. Beginning readers and struggling students can develop reading skills at their own pace.

SUMMARY: *Lexia System* software provides an effective supplemental reading tool for school or home by addressing common reading difficulties in an effective age-appropriate manner. Teachers can utilize this program to support their reading curriculum in numerous ways. Most importantly, students can work independently on the computer while practicing their skills and receiving immediate feedback. All programs then generate progress reports for the teacher that detail the status of each student, as well as comparative class results. Record keeping is automated so teachers can concentrate their valuable time on classroom instruction.

Lexia System software can also be used at home to provide reinforcement of the school reading curriculum. Students who are just beginning to read, those who are having difficulty acquiring certain reading skills and poor spellers can benefit from using *Lexia*. This software is also instrumental in helping ESL students develop their knowledge of the English language. *Lexia* is an easy-to-use program which can reinforce and extend basic reading skills in an engaging and age-appropriate manner.

Christina Schindler is a graduate student in the Educational Technology Program at The College of New Jersey.

If you know a college student whose successful use of adaptive technology in his/her program would make an interesting profile, please fill in below.

<div style="text-align: right">Part A</div>

Name : _____

Brief Description: _____

_____

_____

_____

_____

_____

Phone Number to Contact Individual: _____

E-Mail Address of Individual: _____

My Name/Phone Number/E-mail Address: _____

<div style="border: 1px solid black; width: 120px; text-align: center">PLACE
STAMP
HERE</div>

TECH-NJ
The Department of Special Education
The College of New Jersey
P. O. Box 7718
Ewing, New Jersey 08628-0718

(FOLD HERE)   Part C

If you know anyone who would be interested in receiving a copy of TECH-NJ, please fill in below.

Name: _____

Street: _____

City: _____ State: _____ Zip Code: _____

Name: _____

Street: _____

City: _____ State: _____ Zip Code: _____

ADAPTIVE TECHNOLOGY CENTER FOR NEW JERSEY COLLEGES
at The College of New Jersey

What is the mission of the Adaptive Technology Center for NJ Colleges?

The mission of the ATCNJC is to increase the opportunities for college students who have disabilities to meet the academic demands of college through access to appropriate technology tools.

How can technology help college students who have disabilities?

Technology can assist college students with the tasks of:
* notetaking;
* writing papers;
* accessing information on the internet;
* communicating with faculty and other students;
* reading textbooks.

What does the Adaptive Technology Center for NJ Colleges do?

* Disseminates information through a website and printed newsletter, TECH-NJ, which highlights state-of-the-art software, hardware, and assistive devices;

* Operates an adaptive technology lending program for NJ colleges and post-secondary institutions;

* Provides outreach and training to faculty, staff, and students at colleges and universities around the state.

The Adaptive Technology Center for New Jersey Colleges is funded by the Special Needs Grant Program of the New Jersey Commission on Higher Education.

THE COLLEGE OF NEW JERSEY

Department of Special Education
P. O. Box 7718
Ewing, New Jersey 08628-0718

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