



DREAMMS
for kids

DIRECTIONS

Technology in Special Education

For Parents & Professionals

Vol. 2, No. 1

August 1995

Hearing & Vision Aids

Selecting Laptop Computers for Students with Low Vision

by John Lodge, Technology Training Officer
RNIB Education Centre: London

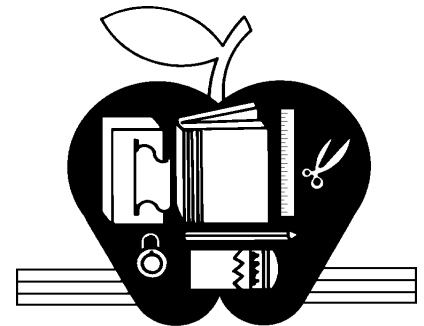
Background

Computers have gained wide acceptance in education generally and with visually impaired pupils in particular. For partially sighted students, who are unable to read back their own writing, and for blind students who can make no practical use of a pen, the computer has become a near indispensable writing tool. Many students - often those of secondary school age - need to use portable technology. Perhaps because they need to carry it from lesson to lesson or perhaps they need to take a computer home to do their coursework. In any event, there is a strong interest from both parents and professionals in purchasing laptop computers for visually impaired students.

The market in portable computing has exploded in recent years and there is currently a wide - and potentially confusing - number of models to choose from. So which models are best? Which one is right for a particular student?

The answer is not always obvious. However as a starting point we can mention two important considerations to bear in mind when making a decision, i.e. the access needs of the individual student, and the educational objectives desired for that person. Because eye conditions vary so much, the choice of portable computer will require careful thought so that it matches the needs of the student. For some students, the quality and size of the screen, for example, will be crucially important. This contrasts with the needs of totally blind students for whom the screen is of little significance, but for

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Back to School

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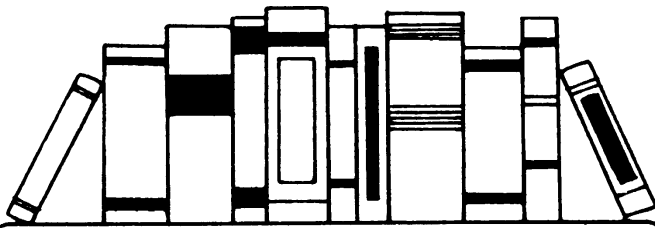
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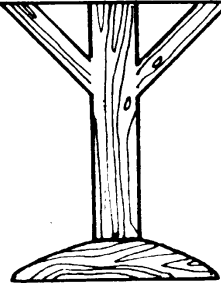


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Vendors - We welcome product news. Please include pricing and contact name with press releases.

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It's a good idea to unplug your computer and its modem phone plug during a bad thunderstorm! Or.. be sure that your surge supressor has a phone jack for your modem line. Better to be safe than fried!

Part 1

A CASE STUDY...CRISTIN ELIZABETH**“Creating a Home Personal Computer Learning Center for Young Children with Developmental Disabilities”**

A parent of a child with developmental disabilities constantly seeks answers and new information. Answers are not often readily available, and information regarding medical or educational opportunities is complex and confusing. Parents seeking keys to unlock the pathways of learning for their young children, many times turn to technology as an instructional tool. Computer technology offers something very special to the child with developmental disabilities. Parents and professionals who work with children with disabilities are finding the personal computer plays an important role in realizing their full potential.

Beginning the Journey

Cristin Elizabeth...a beautiful loving, caring child. A five year old dealing with most of life's challenges, not too different from any other five year old. “Pervasive Developmental Delay” rang through my head, half dazed by the professional's words several years ago. Professionals like to use words like “pervasive”, “profound”, and “severe”. There is nothing pervasive or severe about our daughter, I thought to myself while I heard the diagnosis. She's different from many of her

peers, but I have learned that like her^{beth} peers, she has many gifts and special needs.

Like any parent I began to search for answers, how can I help, what else can I do to help my child reach her full potential. Cristin was attending a mainstream preschool early intervention program, and at age three, spoke in one or two word sentences. Her fine and gross motor skills had improved since she began the integrated preschool therapeutic program a year earlier. Her teachers reported how much Cristin enjoyed the computer time with her friends in the classroom. I watched her respond to the cause and effect software with interest and true delight. She liked the interaction and audio/visual feedback. I had to find out more.

I began to search for technology solutions to Cristin's communication and learning difficulties. I read all the literature the preschool could find, making numerous phone calls to many references. Our local school district and C.I.T.E., an Alliance for Technology Access Center, helped educate us a great deal as we developed a successful personal computer learning center in our home.

After many hours of research, we set up our new Macintosh LCII next to

By Chuck Palmer, Father of Cristin Elizabeth

Mom's desk in the spare bedroom. Cristin said, “new computer”, as we began our first learning session. As we “played” on the computer in our first sessions, I realized how much Dad was going to learn about his daughter while we played together. We began to observe Cristin's cognitive and fine motor skills that were not obvious before. Cristin began to verbalize what she was seeing on the monitor, and within the first few sessions surprised us with her eye-to-hand coordination while using the mouse interface to the software programs. Cristin's parents began to see a new perspective of her world. The new computer enabled us to share her world in a different light, giving us tremendous hope and determination to unlock this little girl's full potential!

Part II - Next Month

Editor's Note: Chuck Palmer, Cristin's Dad, presented concepts from this paper at the 4th Annual Symposium on Literacy and Developmental Disabilities, sponsored by the Carolina Literacy Center, and the Talformaga Foundation, June 18-19, 1994.

Look for its continuation in next month's issue of *DIRECTIONS: Technology in Special Education*.

JPH...

Continued from Page 1

whom the quality of speech output is a priority.

Again, the educational objectives of students differ widely. A ten-year-old may require a computer principally as a writing tool with a word processor fulfilling most communication needs. On the other hand, the same might not be said of a 16 year-old who needs to use several additional software applications such as a spreadsheet or a database to carry out the work required by the school curriculum.

Laptop / Palmtop ?

Several terms are used to describe portable computers.

The notebook, for example, is the most common kind of laptop. Typically, its about letter size, a couple of inches deep, weighs in at a little over 6 pounds and has an integral floppy disc drive as standard. After the notebook comes the sub-notebook. Again its letter-sized, but only about half an inch thick, it weighs around 4 pounds. Most sub-notebooks offer an external disc drive thereby reducing weight. Lastly, comes the smallest of the portables - the palmtop. As its name suggests, this is designed to fit comfortably in the hand. It is designed to be carried in a handbag or on the person, and no floppy disc drive is usually supplied.



Each kind of portable computer has its benefits! The notebook is the workhorse of the laptop world. It's robust, and well endowed with features, and is designed to run all the software you'd find on a desktop computer. The sub-notebook caters to the person who needs to use standard commercial software but who wants a lighter machine and who is prepared to sacrifice some features, e.g. an integral floppy disc drive, in favor of increased portability. Finally, the palmtop is

for those who need to carry a computer in their pocket . A consequence of this level of portability is that standard commercial software is not always supported.

So there's the range. What then should a parent or professional look for in choosing a portable computer?

Keys/Keyboards/Mice

The first point to make is that visually impaired students depend heavily on their computer for writing. In choosing a computer then, it is essential to avoid keyboards that would in any way restrict touch typing. The laptop computer offers (usually) a cut-down version of the standard desktop keyboard. There is wide variation in keyboard size so be sure to select one that suits the hands of your student. Bring a ruler with you and measure across 10 keys of the keyboard. The distance on a standard keyboard is 7 and a half inches. If the student has adult-sized hands be wary about settling for less. For a younger child it's not as important, but remember that the computer has to last for at least 3 years - that's about as long as you can expect a portable to survive in a bustling school environment.

If your student is partially sighted, be aware that some enlargement software uses the numeric keyboard to navigate around the screen. Navigation can be difficult with a laptop, since no numeric keyboard is supplied; you have to hold down an extra function key to get numeric keypad facilities. Given that the student is already holding down two keys to navigate around the screen, a third one can prove awkward to operate.

Many enlargement programs also support mouse control. Check the pointer provided with the laptop. Can the child use it effectively? Does it accommodate a left-hander? Lots of them don't.

You Want Me to Carry What??

The size of the computer you choose can be significant

since it will add to the student's 'payload'. This is where the smaller laptops score over the standard notebook. They are more compact and can fit easier into a school bag if they need to. Equally, don't overlook the power supply unit that comes with the computer; its size and weight can vary considerably from model to model. The weight of the laptop is also an important issue. If the child is to travel from class to class during the school day, you'll need to consider how much weight it is practical to carry about. Again the lighter portables score here.

What Kind of Battery ?

Cheaper laptops using nickel cadmium batteries can operate independently of electricity for around two and a half hours, so the machine can't operate for a full school day (the palmtop is the exception here). It's important to avoid any potential social isolation of visually impaired students; the need to sit in the corner by the electrical plug certainly doesn't promote integration! So battery choice can be significant. Nickel cadmium batteries have memory effects which reduce their effectiveness over time. Go for nickel metal hydride or lithium ion batteries if you can. You'll get better performance from them. Also check the rate of battery charge; faster rates will reduce the time the student needs to remain connected for charging.



Screen Size & Quality

The quality of the screen is crucially important for the partially sighted user. Monochrome screens are cheaper to purchase, but color screens are dropping in price and usually make a better choice. Have your student try out several screens before you decide which model to buy. Color screens come in two kinds - TFT (thin film transfer) and passive matrix screens. TFT screens are brighter and clearer but expect to pay more for them. You should also consider the size of the screen. For some students who use enlargement software, a large screen is often desirable.

Laptops vary in screen size. You can expect around 9 and a half inches for a notebook. Sub-notebooks are usually a little smaller, although actual size depends on the particular model. Palmtop screens are tiny. Be aware that some notebooks offering larger than average screens, e.g. 10 and a half inches, may reduce their back lighting to save on battery usage - so you lose on visibility!

Lastly, many pupils like to connect their laptop to a standard color monitor when they're working at home. This makes it more comfortable to see the screen. If you wish to be able to do this, check that a suitable video socket is available on your proposed laptop.

I/O Software and Hardware

Check that the portable you have your sights on, will run the access software and hardware your student needs. This is important! Note that speech synthesizers are now available as PCMCIA cards. These credit card-sized devices plug into a socket on a laptop and are very portable, although they do tend to be more expensive than external synthesizer boxes. If you wish to use this technology, be sure your laptop has the correct PCMCIA socket.

The Future

Laptop technology continues to develop at great speed. Here's three things to be looking out for in the near future - when prices will have fallen, of course! Go for a machine with an in-built sound system. SoundBlaster cards now offer DecTalk and this can provide a low cost alternative to a dedicated speech synthesizer. Also look for portables with an integral CD-ROM drive. This feature can provide both blind and partially sighted users with access to very large quantities of information in electronic form - a real boon. Lastly, look to purchase a computer with a modem - this will allow the visually impaired student to widen horizons by access to the world community through the Internet.



DREAMMS online

by... Chester D. Hosmer, Jr.
DREAMMS' Technical Editor

In order to better assist parents and educators of children with special needs we have provided several convenient ways to reach us anytime day or night. The purpose of providing this service is to allow our trained technical staff the ability to directly answer your questions, and assist you when you need it. We know all too well that working with assistive and adaptive technologies and computers in general can sometimes be a trying experience!

Q: So how can I reach DREAMMS?

A: If you are a subscriber to America Online you can access the Assistive Technology Message Board and post a message in the DREAMMS for Kids folder. To do this simply GOTO disABILITIES, select Assistive Technology Forum, then select the Assistive Technology Message Board. Choose Browse folders and scroll down to the DREAMMS for Kids folder and select it by double clicking. Once there, you

can post or read messages. When you post a question you can expect an answer within 24 hours (usually less). The response to your message will be posted directly in the folder for you to pick up at your leisure.

If you have e-mail capabilities, you can send your questions directly to us by e-mailing to DREAMMS@aol.com or DREAMMS@ix.netcom.com, and we will e-mail back.

This Month's Top Questions

Q: Can you advise on an access method for an 8 year old girl who uses a head activated scan method in order to operate her Mac Power-book? Her head control at this point is not real steady and she doesn't like anything on her head but big bows.

A: The best option seems to be *Head-Mouse* (from Origin Instruments). This product is very light and easy to operate. The *HeadMouse* is a wireless

optical sensor which tracks a tiny and disposable target that is placed on the user's forehead or glasses. The *Head-Mouse* tracks the user's head, provided that the user is positioned in any comfortable viewing position relative to the computer display. The sensor is 1/4 inch in diameter and is paper thin. It seems like it will solve the comfort and bulkiness problem that the little girl is having. You can contact an Origin Instruments Rep. at 407-639-7116.

Q: Do you know of a program that is a talking word processor and has a talking spell checker included?

A: Don Johnston has a talking word processor, *Write:Outload* that includes a talking spell checker. There may be others available, but we know this one is very high quality. The spell checker reads the misspelled word in its sentence, speaks the misspelled word, spells it as its written, speaks suggested words and spells the corrected word. You can call them at 1-800-999-4660.

Vendors of Low Vision Aids

Henter-Joyce, Inc.
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6245 King Road
Loomis, CA 95650

Arkenstone
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Sunnyvale, CA 94089
800.444.4443

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Stuart, FL 34997
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408 South Baldwin Street
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800.347.9594

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800.227.8418

Hexagon Products
P.O. Box 1295
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708.692.3355

CONFERENCE NEWS

Reprinted from various sources...

Date: 8/31 - 9/1

Event: North Carolina Assistive Tech. Expo

Location: Research Triangle Park, NC

Contact: NC AT Project, 919.850.2787

Date: 9/14 - 9/15

Event: Assistive Technology: Building Bridges
Toward System Change

Location: Sioux City, IA

Contact: Cindy Munn, 712.274.6040

Date: 9/20


Event: 3rd Annual Assistive Technology Expo

Location: White Plains, NY

Contact: Beth Heyd, 914.285.7364

My Dear Friends,

8/95



Welcome to the new school year and our 1st Anniversary!! It's hard to believe that we're into our 2nd year of publishing *DIRECTIONS*... and what a 2nd year its going to be!! You'll notice that we are very lucky to have very talented contributors again this month! This trend is continuing, and we expect to bring you exciting and useful information from all domains within the assistive technology realm, from experts around the world! And... we've gotten our new desktop publishing system... I can't believe I'm going to say this.... but I'm using a Mac and loving it!! (The PC gods are NOT going to be happy!)

DREAMMS has also joined the UCPA Assistive Technology Funding for Systems Change Project as an information dissemination point! We receive packets from Washington every month containing funding strategies, legal precedents, medicaid, insurance, and education funding tips, legislative updates, and much more. Be sure and call for a free DREAMMS *Tech Pak* if you are in need of assistive technology funding information.

I am very excited about the release of our comprehensive electronic *Year in Review* collection. This collection of assistive technology related files, combined with all of last year's *DIRECTIONS* newsletters, offers quite a complete resource! Please be sure to call us for the different ordering options!

Be sure to stick around for what promises to be our best year yet!

As always... My Kindest Personal Regards,

Janet

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High Tech Hearing

We don't normally think of hearing aids as assistive technology devices do we? Technology truly plays a part in helping those with hearing impairments to filter, amplify, lower, and modify the sounds around us, though. Newer hearing aids are able to amplify certain frequencies, lower some frequencies, eliminate background noise, all in real-time! The settings change as the surroundings change. A child going from a quiet classroom, to the noisy playground needs a device that can adapt to the surroundings. And, imagine how the settings need to change during a Pearl Jam concert!! The output of the device, which is the frequency or pitch, and intensity, or loudness are being monitored and adjusted continually! All to modify the sound reaching the ear in order to facilitate communication. These tiny little assistive technology devices are working wonders! Yet, they are often left out of an assistive technology list!



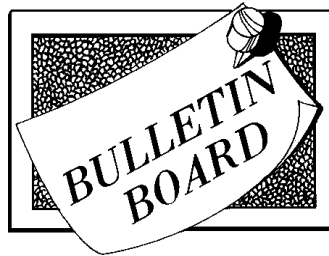
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Closing the Gap Conference

The 1995 Closing The Gap Conference, "Microcomputer Technology in Special Education and Rehabilitation," builds on a tradition of providing a comprehensive examination of the most current uses of technology by persons with disabilities and the professionals who work with them. Topics will cover a broad spectrum of technology as it is being applied to all disabilities and age groups in education, rehabilitation, vocation, and independent living. People with disabilities, special educators, rehabilitation professionals, administrators, service/care providers, personnel managers, government officials, and hardware/software developers will share their experiences and insights at what has become known as the most significant networking experience of the year -- the annual Closing the Gap Conference.

All day pre-conference workshops are scheduled for October 17th and 18th; mainstream presentations and exhibits are scheduled for October 19th, 20th, and 21st at the Radisson South Hotel and Hotel Sofitel in Minneapolis, MN.

For registration information, contact Closing the Gap, P.O. Box 68, Henderson, MN 56044. Phone: (612) 248-3294; FAX: 612-248-3810.



Let's Go to The Circus

Winooski, VT -- May 18, 1995, Laureate Learning Systems, a premier publisher of talking software for special education, recently released a new exploratory language program called *Let's Go to the Circus: An Adventure in Opposites*. This program uses high quality speech, full-screen graphics, and lively animation to help children with language and cognitive delays develop early vocabulary and the concept of opposites.

A *Special Circus Package* includes *Let's Go to the Circus*, *My Paint*, and the *Talking Circus Coloring Book*. *My Paint* is an easy-to-use drawing program that enables children to create their own artwork. The *Talking Circus Coloring Book* contains 20 pictures of pairs of opposites and says them aloud. These programs not only encourage creativity, but reinforce opposites as well. The *Special Circus Package* is available for Apple IIGS and IBM computers for \$150. Contact Laureate, 110 East Spring Street, Winooski, VT 05404, 800-562-6801 for more information.

The "DREAMMS Library"

We at DREAMMS are working very hard building our library of Assistive and Adaptive Technology related articles and reprints. The *DREAMMS Library* contains articles from ERIC (Educational Resources Information Center), the UCPA Assistive Technology Funding and Systems Change Project, the Internet, universities, special education and technology professionals, and numerous sources from the public domain. Topics include: Assistive Technology in Special Education, Funding Assistive Technology, Augmentative Communication, Adaptive Software Titles, Auditory Training in Autism, Multimedia, Online Services, and many more. Look for more information in the coming months, or give us a call at 813.781.7711.

5th Symposium on Literacy and Developmental Disabilities

The Center for Literacy and Disability Studies, University of North Carolina at Chapel Hill, will host this symposium on January 25-26, 1996 in Research Triangle Park, NC. Sessions will address literacy instruction and learning for children and adults with developmental disabilities. For further information, contact: Stephanie Whitmore, Center for Literacy & Disability Studies, CB #8135, UNC-Chapel Hill, 919-966-7486.