



# DIRECTIONS

## *Technology in Special Education*

Vol. 7 , No. 1

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## Assistive Technology Resources in Your School

Part 1

Barbara J. Webb

*Source: Teaching Exceptional Children, Vol. 32, No. 4, Mar/Apr 2000*

Hassan uses the library listening station to do his “reading” assignment from the sixth-grade social studies book-on-tape. How can the librarian accommodate Hassan and several other students during the same hour? How can the computer specialist make sure that all teachers who need it have copies of Microsoft Word and a typing tutor program—and that they know how to use these programs? Lydia needs a computer screen magnifier; where should the team place it to benefit all the students who need it? Where can teachers find resources—both the technology and the funds to obtain it—that fit their students’ changing needs?

Technology is a means of empowerment to people with disabilities; denying them the access exacerbates the effect of the disability. Schools must plan for and respond quickly to the changing assistive technology (AT) needs of their students; therefore, educators must have access to information and devices to meet these needs.

The organization of site-based AT packages would expand, encourage, and facilitate the use of AT. The first step is to look at the needs of your individual students. This article describes how to get organized, determine students’ needs, and obtain and use the appropriate technology.

### Individual Applications

The goal of AT for students with disabilities is to meet their individual needs. Schools cannot assume that every student will need to learn or benefit from the same range of technology applications. Teachers and planning teams need to understand the benefits and limitations of each application before they make decisions.



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Depending on the severity of the student's disability, the individualized education program (IEP) team must first address the least intrusive use of AT for that student. The fundamental purpose is to assist the student to function in the general education environment to the maximum extent possible. An AT Environmental Use Assessment is necessary to determine the areas of need for the individual student. The IEP team can designate a team member to gather the data from the student's teachers.

### Assistive Technology Environmental Use Assessment

\*List times/subjects student needs assistance to satisfactorily complete assignments.

\*List times student needs assistance to satisfactorily function in his or her school environment.

\*List adaptations currently in use (shortened assignment, note-takers, etc.).

\*List any AT devices currently used by student, what setting, and time used.

Once the IEP team determines these areas of need, the team will complete an AT Functional Use Assessment to determine the student's needs. Matching the environmental needs with their functional use and instructional services available will offer the student maximum benefit from AT.

### Assistive Technology Functional Use Assessment

\*Describe student's present level of functioning.

\*List characteristics of student.

\*What are the student's academic skills?

\*Does student have keyboarding skills and at what level?

\*What are the student's preferences for types of assistive technology?

\*What technology courses are available in the current curriculum?

\*What technology instructional services are available at the school site?

Current practice usually responds to an individual student's needs, which often takes many weeks to successfully facilitate. A proactive stance in serving students by developing a school plan will result in determining students' needs and accessing the AT necessary in a timely manner.

### Schoolwide Applications of Assistive Technology

Instructional applications for AT in the public school setting vary widely but can have common ground. The following example illustrates the variety of AT needs that can be found on a school campus and demonstrates the process of determining an efficient use of resources.

A planning team selected three middle school students to determine their needs and assist in designing a school technology package. Student 1 is recovering from surgery for removal of a brain tumor. The tumor has

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# DIRECTIONS

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# A Framework for Aligning Technology With Transition Competencies

## Part 4

A. Edward Blackhurst, Elizabeth A. Lahm, Elizabeth M. Harrison,  
and Wanda G. Chandler, *University of Kentucky*

*Source: Career Development for Exceptional Individuals, The Council for Exceptional Children  
Volume 22, Number 2, Fall 1999*

To continue with the example illustrating the functional model, in the area of personal perceptions, Ann realizes that she has a problem with reading, composition, spelling, and handwriting. She also has a fierce desire to do things for herself and “fit in” with her fellow students. In the area of personal resources, Ann and her teachers know that, although she has several learning problems, she is bright enough to master course content. She is particularly adept at learning and remembering information that is presented orally.

As Ann further explores her options, she decides against using the scanner and speech synthesizer due to the complexity and cost of the equipment and the time involved in scanning text and converting it to computer files. Although this might be an option for later, the decision is made to start with more realistic options.

The *functional response* is the result of the assessment, experimentation, and decision-making that was just described. In Ann’s case, this will be instruction about how to efficiently use a tape recorder to play back and learn from audio tapes of recorded texts. [This option was selected because Ann could qualify for the federal “Talking Book” program sponsored by the National Library

Service for the Blind and Physically Handicapped at the Library of Congress (<http://lcweb.loc.gov/nls/nls.html>) that would enable her to obtain audio recordings of books she would be using in college.] It also is decided that Ann should receive instruction on how to use a word processing computer program that is equipped with a spelling checker, text-to-speech converter, and grammar checker. Her resource teacher will also teach her how to use learning strategies to facilitate studying. These provisions are written into the transition plan that is incorporated into her IEP.

As a result of the functional response to the environmental demand, *personal changes* occur. Such changes may be dramatic or subtle, depending upon the nature of the environmental demand, the decision-making that was done, and the nature of the resources that were expended and the supports provided.

Following evaluation after the implementation of the transition goals within her IEP, it was found that our student, Ann, improved her ability to function in her current academic environment by using audiotapes and computer software productivity tools to participate in her classes.

Feedback (as represented by the arrows emanating from the *evaluation and feedback* element of the model) also may lead to the selection of additional technologies. For example, word prediction software and the use of macro programs that automatically type frequently used words and phrases may be added to her repertoire. As Ann matures and gains confidence in her abilities, she may eventually elect to experiment with scanning devices that will enable her to convert printed text to audio formats. In addition, as she demonstrates success to her family, their perceptions may change, resulting in their provision of additional external support for her use of technology.

Thus, the process represented in the functional model becomes a dynamic one, in which demands constantly change, as do personal perceptions, personal resources, external supports, and examination of alternative solutions. The result is new functional responses to the environmental demands that lead to personal changes which, in turn, have the potential for modifying all of the other factors illustrated in the model.

Note that the model, as presented in this two-dimensional format, represents a “snapshot” of a person’s situation at a single moment in time. As

such, it does not reflect the fact that changes are constantly occurring in each component and that those changes have the potential for impacting on the other components and, subsequently, on the functional responses made by the individual.

The final feature to note in the model is the shaded areas in Figure 1. These represent personal variables. As was just noted, the model, as presented, is two-dimensional. However, the central focus is the individual and the decisions that are involved in assisting that individual in responding to environmental demands. That process is certainly complex and more than a two-dimensional one. Additional examples of how the model can be applied to people with different disabilities, different degrees of severity, and different ages are provided by Blackhurst and Berdine (1993) and Blackhurst and Lahm (in press).

### Transition Competencies

The legislative mandates described earlier emphasize that the education of secondary students with disabilities should focus on the competencies that these students will need to enable them to function in a variety of post-school environments. Obviously, space limitations preclude the presentation of a comprehensive list of such competencies. Consequently, information in this section will address general considerations related to the identification of transition competencies. Information about specific competencies and related concepts associated with transition can be obtained from other sources (e.g., Brodin, 1985, 1987; Bucher &

Brodin, 1987; Clark & Kolstoe, 1995; Fisher, 1999; White, 1990).

Although some of the transition goals developed for a student may be related to the acquisition of very specific skills (e.g., how to use a piece of equipment essential to a particular occupation), many of the goals and objectives should represent basic skills that cut across the different environments of adult life. The National Information Center for Children and Youth with Disabilities (1993) describes four basic transition skills relevant to all students with disabilities: (a) the ability to assess themselves, including their skills and abilities, and the needs associated with their disability; (b) awareness of the accommodations they need because of their disability; (c) knowledge of their civil rights to these accommodations through legislation such as the 1990 Americans with Disabilities Act and Section 504 of the Rehabilitation Act of 1973; and (d) the self-advocacy skills necessary to express their needs in the workplace, in educational institutions, and in community settings.

In terms of specific competencies that facilitate successful transition from high school to adulthood for students with disabilities, it is helpful to think of the competencies in terms of the different environments or domains to which students will be transitioning. A comprehensive school curriculum for secondary-level students with disabilities should include direct instruction and active participation leading to skill acquisition in each of the following domains: (a) domestic, (b) recreation and leisure, (c) community/mobility,

(d) community / consumer, and (e) vocational (Wilcox & Bellamy, 1982, as cited in Bishop and Falvey, 1989).

It is important to observe that the term *function* has been used several times in the preceding paragraphs. When making decisions about transition competencies and subsequent services, consideration should be given to the types of functions that individuals with disabilities must be able to perform in their various post-school environments. Interventions need to be provided to ensure that such individuals can perform those functions as independently as possible. Melichar (1978) developed a system for organizing human functions into seven categories: Existence; Communication; Body support, alignment, and positioning; Travel and mobility; Environmental adaptation; Learning, education, and rehabilitation; and Sports, leisure, and recreation. These categories of human functions help anchor technology applications and transition competencies. §

*Look for Part 5 next month*

***“Conquering any difficulty  
always gives one a secret  
joy, for it means pushing  
back a boundary-line and  
adding to one’s liberty.”***

***-Henri Frédéric Amiel***

# Family Center on Technology and Disability Update

First, we want to welcome the following new members to the Network:

\*ProjectNeeds, CA.

\*San Diego Public Schools, CA.

\*The Capper Foundation, KS

\*Consortium for Children and Youth with Disabilities and Special Health Care Needs, D.C.

## RESOURCES

### *NEW ON THE FAMILY CENTER WEB SITE*

You can now find basic information about the use of technology by people with disabilities. "Introduction to Technology," a new link on the Family Center web site, includes articles, definitions, and overviews of federal laws relating to technology and people with disabilities under the following headings:

#### *Tech Terms*

This list contains terms and definitions relating to assistive technology, technology, learning, devices, and associated services.

#### *Technology 101*

This brief article explains what technology is, how technology can help in challenging situations, and where to go to find help paying for it.

#### *Tech Laws*

Read quick overviews of the federal laws relating to technology use by

people with disabilities. You will find links to the full text of each law.

Check out the Americans with Disabilities Act of 1990, which is celebrating its 10th Anniversary!

### **Family Center Model Programs**

One of the goals of the Family Center on Technology and Disability is to select model programs that use "state of the art" practices. In 1999 an expert panel made up of members of the Family Center advisory committee selected six programs that met the criteria developed by the subcommittee. We will highlight these programs in the Family Center weekly updates throughout the next few months.

#### **United Cerebral Palsy Associations of New Jersey (UCPA-NJ).**

UCPA-NJ's multiple technology-related projects share the common goal of helping individuals and families to identify the technology solutions that best meets their needs and to enable them to obtain and use the technology. The agency utilizes its extensive in-house technological expertise to assist individuals and families throughout the state by conducting evaluations and training, providing custom fabrication of devices, as well as other services. To find out more about UCPA-NJ's efforts, visit: <http://ucpa.ucp.org/fctd/site4.htm>.

#### **United Cerebral Palsy Associations of Kansas (UCPA-K).**

The overarching goal of this project is to assist families who have assistive technology needs to secure the necessary equipment. Its primary activities include

collaborating with state, civic and charitable organizations to develop innovative funding packages that will enable residents who have disabilities to obtain assistive technology. Annually, it strives to secure assistive technology and related services valued in excess of \$300,000 for at least 200 families from across the state. To find out more about UCPA-K's efforts, visit: <http://ucpa.ucp.org/fctd/site2.htm>.

### **Parents Helping Parents iTECH Center**

The goal of the iTECH Center is to ensure that children and adults with special needs, their families and the professionals who serve them are aware of and utilize technology to enhance potential and to broaden the quality and enjoyment of their lives. Underlying this goal is the belief that with the help of assistive technology, individuals with special needs will be able to enter the mainstream of all aspects of society and be fully contributing, visible members of society. The iTECH Center is a resource center of the Alliance for Technology Access and also a program of Parents Helping Parents (PHP), Inc. in Santa Clara, CA. PHP, a nonprofit family resource center, is a Parent Training and Information Center and for 23 years has served children with physical, mental, emotional, or learning disabilities. The program is supported by a California Assistive Technology System (CATS) grant to provide information and referral services. For more information on

iTECH and the services it provides, go to <http://fctd.ucp.org/fctd/site3.htm>.

## NEWS

**Save the Date — October 3, 2000.** “If Transition is Such a Great Idea, Then Why Is It So Difficult to Implement” A two hour satellite conference exploring how partners working together can implement IDEA. For more information, call the FAPE project at 1-888-248-0822.

## SOFTWARE FOR PRE-SCHOOLERS

Are you interested in software programs that would help pre-schoolers? There are a number of fun software programs for young children that are engaging and educational. One program that teaches numbers, shapes, colors, as well as beginning computer skills and has a lot of activities, games, and songs that appeal to young children (Mac/Windows) is called: Jumpstart Preschool, Knowledge Adventure, 1-800-545-7677, [www.knowledgeadventure.com](http://www.knowledgeadventure.com). For additional information on other software programs for pre-schoolers, go to <http://fctd.ucp.org/fctd/bbt.htm> and follow the instructions for log in.

**Let Us Know** if you have recommendations for organizations to join the FCTD Network! Additionally, if you have events you would like posted, send an e-mail with the details to [Sgoodman@ucp.org](mailto:Sgoodman@ucp.org). As always, we continue to look for good organizations that are interested in assistive technology and families with members with disabilities. Brochures can be obtained by sending an e-mail to Susan Goodman (see URL above).§

# HalfthePlanet Highlights

## THE DEAF COMMUNITY TAKES A STAND IN TEXAS

Can you imagine being arrested or jailed because there wasn't an interpreter to bridge the gap? <http://www.halftheplanet.com/departments/news/>

## AUTISM AND VACCINATIONS: DEBUNKING THE MYTH

Is there a connection? <http://www.halftheplanet.com/departments/education/>

## THE MARRIAGE PENALTY: WHAT YOU NEED TO KNOW

For a person with a disability, getting married could mean the reduction or total elimination of Social Security benefits. <http://www.halftheplanet.com/departments/health/>

## WILL NEW SECURITY MEASURES LOCK OUT PEOPLE WITH DISABILITIES?

Companies researching high-tech security safeguards such as voice authentication and iris recognition seek to reduce fraud. But are these methods accessible? <http://www.halftheplanet.com/departments/technology/>

## NEW - LETTERS TO THE EDITOR

This week's focus: Social Security and the Marriage-Go-Round. <http://www.halftheplanet.com/departments/health/>.

## TEENS WITH DISABILITIES

<http://www.halftheplanet.com/>.

## LOOKING FOR AN OPEN-CAPTIONED, FIRST RUN MOVIE IN YOUR AREA?

Coming soon, Tripod Films and HalfthePlanet.com will offer a database you can search by zip code, town, or movie title. Exclusively available through HalfthePlanet.com. Watch for it!

## YOU ENTERED, AND YOU'LL SOON MEET THE WINNERS

Read about the grand prize winner of the Dodge Grand Caravan Sport from our “Explore and Win with HalfthePlanet.com Sweepstakes.” Coming next week!

## SHOP FROM HOME WITH HALFTHEPLANET.COM

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## DEAF AND HARD OF HEARING: CULTURES IN TRANSITION

### Articles this week:

“Top 10 Myths”

“Parents of Deaf Children Speak Out”

“Are Implants the Answer?”

“Getting the Workplace to Listen”

“The New Voice of Deaf Theater”

...and more!

<http://www.halftheplanet.com/000814/departments/health/article0.html>

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<mailto:listserv@ls01.halftheplanet.com>, write “subscribe newsletter” in the body of your e-mail. §

*Resources continued from page 2*

damaged her optic nerve and she is now visually impaired. She is an "A" student currently included in all general education classes. Student 2 has a learning disability in the areas of reading and written language. He is currently included in three general education classes and three resource classes. Student 3 has traumatic brain injury due to a near drowning incident. He is currently included in two general education classes and four resource classes; and the IEP team has recommended placement in three general education classes next year.

Individual learners have different instructional needs, and these needs may vary over time. At what point does AT move from being an occasional accommodation to a daily necessity for a student? The

accommodations for Student 1 include textbooks on tape and enlarged printed materials in the classrooms; further, she is allowed to write on test paper rather than scantron sheets. NCR paper is available in her classrooms for a friend to use in taking class notes from overheads.

She needs a monitor screen magnifier for computer class. Is this item solely for Student 1 or will others benefit from using it? Student 2 has access to his textbooks on tape in the school library for his social studies class. His two elective classes do not require individual reading, and he is given reduced written assignments. His classes in the resource room are taught at his instructional level. Student 3 has access to a computer for two periods of the day but does not always use it. His accommodations

vary from class to class dependent on the teacher's planning.

At this school, the IEP team identified each student's needs and services using the AT Environmental Use and AT Functional Use Assessments. The team noted that a duplication of services was occurring, with two sets of the same social studies book on tape and two peer helpers taking notes in the same English class. Because the books on tape are available in the school library at a listening station, up to six students can listen to the same tape. Identifying two peer helpers in one class can be useful on the occasions when one is absent—or they can be used on a rotating basis. The need for a schoolwide plan was obvious to avoid the cost of duplication of items and to expand the available resources of the individual students. §

*Look for part 2 next month*

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# Conferences

**Date: October 5-7, 2000**  
**21st Annual SouthEast**  
**Augmentative Communication**  
**Conference**

Birmingham, AL . For more information, contact: SEACC-2000, 2430 11th Ave. N., Birmingham, AL 35234  
 Phone 205-251-0165  
 Fax 205-226-9107  
 E-mail <seac@ucpbham.com>

**Date: October 17, 2000**  
**Total Technology - CT's Premier**  
**Assistive Technology Trade Fair**

Hartford, CT  
[www.techact.uconn.edu](http://www.techact.uconn.edu)

**Date: October 19 - 21, 2000**  
**Closing the Gap. 18th Annual**  
**Conference - Computer**  
**Technology in Special**  
**Education and Rehabilitation**

Minneapolis, MN.  
 For a registration form, write: Closing the Gap, PO Box 68, Henderson, MN 56044.

This annual conference has earned a reputation internationally as a leading

source for information on innovative applications of computer technology for persons with disabilities. Workshops 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. Closing the Gap will offer over 150 sessions that describe and/or demonstrate successful applications of computer technology for persons with disabilities.

**Date: November 9 - 11, 2000**  
**Achieving New Heights with**  
**Assistive Technology. A Rocky**  
**Mountain Celebration.**

Aurora (Denver), Colorado  
 For more information, contact:  
 Colorado Assistive Technology Project,  
 (800) 255-3477  
[www.uchsc.edu/catp](http://www.uchsc.edu/catp)

**Date: November 16-19, 2000**  
**ASHA Annual Convention**

Washington, DC. American Speech-Language-Hearing Association, 10801 Rockville, MD 20852-3279  
 Phone 301-571-0454  
 E-mail <convention@asha.org>  
[www.asha.org](http://www.asha.org)

**Date: January 11 - 13, 2001**  
**Florida Educational Technology**  
**Conference**

Orlando, FL  
 Phone: 850-219-9600  
 Fax: 850-219-9610  
 E-Mail: [fetc@nettally.com](mailto:fetc@nettally.com)

**Date: January 11-13, 2001**  
**TAM 2001 - A Technology**  
**Odyssey**  
**Call or Papers**

Albuquerque, New Mexico  
<http://www.tamcec.org/tam2001/>

**Date: June 25 - 27, 2001**  
**NECC 2001**  
**Call for Participation**

Chicago, IL  
<http://confreg.uoregon.edu/necc2001/call/>



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