



Technology and Employment

The Exceptional Parent

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Abstract:

From electric paper folders to talking wristwatches to computers controlled by head movements, there is a full spectrum of technological offerings that can help a person with a disability hold a job. If a device can help do the job, it does not matter whether it is state-of-the-art or not.

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In today's workplace, assistive devices can enable people with disabilities to do the job!

Can technology help a person with a disability get and keep a job? Chances are, there is a technological innovation out there that can. Technology is no longer just the domain of the elite. These days, assistive technology finds its way into a great many jobs for people with special needs. From electric paper folders to talking wristwatches to computers controlled by head movements, there is a full spectrum of technological offerings that can help a person with a disability hold a job. Across the country, in every state, there are transition specialists, vocational rehabilitation agencies, and prevocational counselors who work with students who have disabilities, the school team, and potential employers to make employment happen. There are rehabilitation agencies and rehabilitation engineers who identify abilities in a potential job candidate and who then figure out strategies with employers to help each client with a disability find work.

Opening the door-

In order to understand how people with disabilities can find employment using technology, one must also understand the obstacles to employment that may exist and how to overcome them. Dr. Ellie Emanuel, associate director of the National Transition Network at the University of Minnesota, says that there are some "69 to 71 percent [of people with disabilities] not being hired in this country..which has to do with attitude and not understanding disability." Part of the misunderstanding feeding these attitudes among employers is the unfounded fear that hiring a person with a disability will result in a substantial cost to their business. The reality is, according to the Job Accommodation Network (JAN), a service of the President's Commission on the Employment of Adults

with Disabilities, "two-thirds of all accommodations cost less than \$500 and that more than half of employers surveyed report benefits in excess of \$5,000."

In fact, costs for technical accommodations for employment of people with disabilities can be offset by funding supports in the community. Costsharing of technical accommodations and job training is often a possibility, particularly if a school system is involved with the job search. Other incentives to employers exist as well. For example, JAN reports, "employers who hire individuals with mental retardation may be eligible to receive on-the-job training reimbursement from The Arc. Other possible sources of support for employers are their state's rehabilitation agency, or a local Job Training Partnership Act (JTPA) program. Employers may also receive tax credits under the Targeted Jobs Tax Credit provisions of the IRS."

Technology on the job-

[Photograph]

Caption: Assistive computer devices, such as the switch interfaces at right, allow users to access the computer using a switch like the one below. For Macintosh (top) and PC (bottom). Both by Don Johnston, Inc. (<http://www.donjohnston.com>. Phone: 800-999-4660). Below: the Big Red switch by AbleNet (<http://www.ablenetinc.com>. Phone: 800-322-0956).

[Photograph]

Caption: Technology as simple as a digital watch may be very useful. VibraLate 3TM provides a vibrating alarm that automatically resets when it reaches a preset countdown. By Global Assistive Devices, Inc. (<http://www.globalassistive.com>. Phone: 954-784-0035).

Once barriers to employment are broken down, how can technology help a person with a disability do a job? The answer lies in matching the right technology to the person's abilities and the job's demands. "It boils down to the one-to-one situation, whether it be the teacher, or the rehab counselor, or the work experience coordinator; who can see what it takes [to get this person a job], and [then] designs something." says Chris Shoeller, training coordinator for the Social Security Insurance Project in Minnesota, and parent of a successfully employed son with a disability. One man with whom Ms. Shoeller worked started his own business in his home since his fragile health made it difficult for him to work anywhere else. He uses a computer, which he controls by head movements.

[Photograph]

Caption: Adaptations for computers. (Left): EP staffer Dennis Dusevic finds that a trackball makes it easier for him to do his job on the computer. For people who have difficulty moving their upper extremities, alternative devices enable them to control the computer with head movements. Shown (inset) is the The HeadMaster 20000 by Prentke Romich (<http://www.prentrom.com>. Phone: (800) 262-1984).

Often the technology that makes things happen for employees with disabilities is as simple as one switch. As a rehabilitation engineer, Dianne Goodwin, ME, of Blue Sky Designs, Inc., often works with students with disabilities, their teachers, employers, and vocational rehabilitation counselors to identify jobs and make them accessible, usually by finding or designing the right adaptive equipment. She recently helped identify a home-based job for a young man who is medically fragile and who has significant cognitive and motor impairment. "We looked at tasks within jobs that he could do with the use of a switch. We met with his occupational therapist, his primary care attendant, his vocational rehab counselor, and his aunt. We identified four tasks he could do with a switch. We then improved access to the switch via a powerlink from AbleNet... and hooked up a paper shredder,

electric paper folder, and stapler to that." With this adaptation, his. Goodwin's client could activate all the devices that he needed to do his job with his switch.

High-tech and low-tech solutions that work If a device can help do the job, it does not matter whether it is state-of-the-art or not. In order to accommodate someone with a visual disability, for example, there are many ways to adapt a work environment, ranging from the more dazzling new inventions to innovative uses of commonly used technical devices. Among the high-tech tools out there for individuals who have visual impairments who are in need of computer access, there are screen readers and screen magnifiers (see sidebar for more information). On the lower-tech side, Ms. Goodwin points to the experience of one client who was blind, deaf, had cerebral palsy, and used a wheelchair. He was able to get a job stamping boxes with a label designating what was inside. She explains, "The unfolded box was positioned by a jig. The stamper came down in the same place every time; the stamper was on a spring-loaded arm."

Another fairly simple, inexpensive, but very clever technical accommodation is described by Mandy J. Gamble, a human factors consultant with JAN: "An individual with no vision was placed in a switchboard operator position for a large service complex building. The individual needed to be aware of which telephone lines were on hold, in use, or ringing. She was provided with a light probe to assist in determining which console buttons were lit up, blinking and/or steady." The light probe is a sensor that makes a sound whenever it detects a light and the operator passes over the switchboard, listening for any sounds. Ms. Gamble also points out that, "The telephone console was modified to provide the employee audible differentiation for incoming versus internal calls."

Attila Kutashy, employment coordinator for the Parents' Alliance Project in Chicago, attests that often the simplest innovations can help the most. Mr. Kutashy remarks that a simple bungee cord has aided at least six of his clients with disabilities who work for supermarkets, collecting carts. He instructs clients telling them, "Hook up the first cart, then two to five more using the bungee cord to control the carts and group them together." He points out that this method prevents shopping cart accidents and the employers are happy with it. Mr. Kutashy also recommends that clients try wearing digital wristwatches or talking wristwatches if they need help telling time or to remind them to get a job done in a certain amount of time. He says, "This enables them to maintain independence and meet deadlines."

Technology helping the work experience

Problems on the job can always arise, but for an individual who has a disability in which behavior is an issue, stressful situations can be exacerbated. There is a solution, however. For someone who faces that difficulty, a technological device as simple as a pager can be very reassuring. Ms. Goodwin explains that a pager or cell phone can allow an individual to reach out to job support team members. She says, "If they are able to have something in front of them that they can use to call the supervisor or job coach, that can reduce behavior issues."

Technology can also help an individual whose disability may make interpersonal communication difficult James Stinespring says that an augmentative communication device helps his son, Patrick who has autism, at his job at a Chicago-area food store. The egg-shaped device clips onto a belt and is capable of sending out eight different messages. By using the communication device, Patrick 30, does not have to focus too much on social interaction while he does his job bagging groceries. Aft Stinespring explains, "The important thing is when he works with the public, he needs something for the communication.. [because] when he does try to talk, he goes so fast" The augmentative device is a useful innovation that helps keep things smooth for Patrick while he is interacting with his coworkers and the customers.

Something for everyone

Technical accommodations are finally catching up to human abilities and are being harnessed to facilitate employment. The key is hooking up with a vocational rehabilitation counselor who can identify a person's abilities and work with that person's goals. By using the Web (see Web sites below), it is now possible to find out about the latest innovations within seconds and some of the organizations that link up people, accommodations, and employers with funding information. People with disabilities and their families should remember that the law (ADA) is on their side and feel empowered by the significant progress that has taken place in the last ten years. The healthy economy has also created a need for workers. Parents can encourage their children, long before transition to employment is upon them, that they have a place in the workforce. It may not be a perfect world, and may be even less so for our children with special needs; yet there is more within their grasp these days than ever before. We just have to give them the tools to help them do what they can.

[Sidebar]

JAN: Coming up with technology solutions for employment

[Sidebar]

As a service of the President's Committee on the Employment of People with Disabilities, the Job Accommodation

Network (JAN) is in business, according to its mission, "to assist in the hiring, retraining, retention or advancement of persons with disabilities by providing accommodation information." Whether on their toll-free information line or on their Web site, JAN's services are free of charge and open to anyone. Information seekers can contact JAN to help them find practical strategies for particular situations. JAN's Web site is a gold mine of information for anyone who needs information: people with disabilities, employers, job coaches, etc. Users can search for listings of technology devices, their description, and manufacturer information as well as detailed descriptions of accommodation ideas JAN has come up with for clients with specific disabilities. Among other useful information on the site are: Employment Resources, Disability Legislation, and the new Small Business and Self-Employment Service, which provides information, counseling, and referrals about self-employment and small business ownership opportunities for people with disabilities. If users do not find what they want on the Web site, they can call and ask JAN consultants specific questions (in English or Spanish). JAN consultants who have knowledge of the functional limitations associated with disabilities and have instant access to JAN's comprehensive, current information about accommodation methods, manufactured devices, and strategies. Callers can also request free information from JAN's extensive library in English, French, and Spanish, as well as in Braille and large print, on tape or disk. All calls are kept confidential.

[Sidebar]

Job Accommodation Network
West Virginia University
PO Box 6080, Morgantown, WV 26506-6080
(800) 526-7234 (Voice/TTY), Web site: <http://www.jan.wvu.edu>
There is also a Canadian version of JAN, called JANCANA, a service of Human Resources Development Canada/Canadian Council on Rehabilitation and Work. For more information, try their Web site:
<http://www.ccrw.org>.

[Sidebar]

Here are some of the solutions that JAN has created to enable employees with disabilities to perform their jobs. These and more can be found on their Web site under SOAR, the Searchable Online Accommodation Resource, designed to let users explore various accommodation options for persons with disabilities in the work setting:

[Sidebar]

*** Computer access**

With more and more computer-centered jobs springing up, the ability to access the computer is critical for would-be employees. Devices to provide access abound. JAN describes a "mouse interface [that] can be activated with a head-mounted device and head movement to steer the cursor, [with] simple switches that can be used for mouse functions," as being excellent options for people with cerebral palsy and limited upper- and lower-body movement. For individuals who can use their feet but have upper-body problems, there is the STEP-ON-IT! Keyboard Control Panel.

Described on the JAN Web site, this tool consists of "three programmable foot switches [that] emulate Ctrl, Alt, and Shift, or any other keystrokes, sequences, or even mouse clicks... The pedals supplement the computer keyboard with three electronic foot switches that take over the operation of selected keystrokes and mouse clicks."

*** Accommodations for visual impairments**

For those with low vision, there are computer screen magnification devices, some of which come with sound cards for supplemental speech, if needed. The JAN Web site includes similar assistive technology devices: "A user can activate keyboard functions with an on-screen keyboard displayed on the computer screen; voice recognition software [that] simply speaks commands to the computer via a special microphone." There are also Braille output devices and

[Sidebar]

speech-output synthesizers so that people with visual impairments can read or hear what is on the screen.

Accommodations for hearing impairments

The assistive technology JAN suggests for those who are deaf or have hearing impairments may be as simple as a telephone amplifier for an individual who needs to use the phone as part of his job. For another client, a bank, the issue was how to help a teller who is deaf communicate with a customer. JAN helped the bank figure out exactly which form of assistive technology would be best: "[We] suggested that teller and customer could communicate using telecommunication devices for the deaf (TDDs)." Though TDDs are most often used on phone lines, JAN knew of another device to connect two units without using a phone line. "With the TDDs, a customer and the teller could communicate by typing on the TDD keyboard."

Accommodation ideas for cognitive impairments

JAN discovered this practical idea to help employees in completing specific tasks in their job: "Self-operated audio (or written) prompt systems can be used by people with cognitive impairments to cue themselves. "The tasks involved in completing a job process can be recorded as step-by-step instructions. The employee can play the tape in a battery-operated personal cassette player with headphones. As an additional support to the employee, JAN recommended demarking the recording to indicate where to stop: "The tape recording contains a bell tone which signals when the machine should be turned off in order to allow time to complete each task per the tape recorded direction. At the end of each related group of steps, self-evaluation questions can be inserted. These require the employee to stop the activity and survey what was accomplished, and to ensure that all the steps up to that point had been successfully completed."

[Reference]

RESOURCES

[Reference]

JAN (See sidebar): (800) 526-7234
Parents'Alliance Employment Project:
Phone: (630) 495-4345
The President's Committee on the Employment of People with Disabilities Web site:
<http://www.pcepd.gov>
Project EMPLOY, a project of the PCEPD
Web site: <http://www.dol.gov/pcepd/projects/projecte.htm>

[Reference]

Community Options, Inc.
A nationally based nonprofit organization providing employment services and appropriate housing for people with disabilities throughout 11 states.
Web site: <http://www.comop.org>

[Reference]

Just One Break, Inc.
A not-for-profit, no-fee employment and advocacy service for people with disabilities.
Web site: <http://www.justonebreak.com>

[Reference]

PACER: (612) 827-2966
Web site: <http://www.pacer.org/employ>
Part of the extensive information on the PACER Web site is the channel called "Employment strategies for youth and adults with disabilities."

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