

Disability Resources for Practitioners on the World Wide Web:

A Practitioners Guide

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Abstract

In this age of technology, practitioners are facing increased demands to be both knowledgeable of computer technology and learn ways to manage the wealth of information traveling across the World Wide Web (WWW). Advances in computer technology seem to occur on a weekly basis and new inventions are developed overnight. Staying abreast of this technological information explosion is a challenge that all practitioners will soon find to be of paramount concern. Prioritizing what is important and what resources yield the best information can be invaluable timesavers for the future.

Introduction

In 1998, the America Online/Roper Starch Cyberstudy (Roper Starch Worldwide, 1998) noted that of a sample of 1001 Americans who subscribe to online and Internet services, more than 77% indicated that being online made their lives better and over 50% said the Internet had become a necessity in their lives. What the online world has become in the life of most Americans is phenomenal when we look back at the state of technology just 10 years ago. In fact, America Online was founded in 1985, just 14 years ago. Since then, online computer use has grown into a daily occurrence for most individuals as they seek information, buy and sell goods, interact with friends and family and even seek companionship. According to the America Online/Roper Starch Cyberstudy, several key findings were noted in support of how significant the Internet has become in our lives. In particular this report noted,

- 71% of the online consumer population said they regularly or occasionally go online to get information,
- 94% said that the online medium makes communication with friends and family much or somewhat easier than the methods they used before,
- 51% prefer using email to communicate with business associates to using the phone or regular mail
- users noted that the interactive medium is poised to most greatly impact education and the workplace and,
- when asked to imagine being stranded alone on a deserted island for an extended period of time with access to only one of three technologies, 67% would prefer to have a computer connected to the Internet.

The impact of the Internet and the tools available for its use are phenomenal. Through email we can contact friends and family in seconds and save hundreds of dollars in phone bills. We can attach and send files to colleagues, enhancing the speed and productivity in collaborative project development. Electronic conferencing enabled through online chat rooms, listservs and discussion areas keeps us connected to cutting edge developments in our professional fields. And yet, we have much more in store with the daily advances in technology that provide opportunities for real time conferencing, video streaming and distance education online.

The Impact of Technology

During the 1980's, technology was beginning to make its debut in the homes of most individuals as the computer desktop became easier to use and more affordable. Technology demands were much smaller in relation to those we require today as computer users relied only on floppy disks and minimal hard drives for storage. Now users can store information on hard drives, floppy drives, zip drives, compact disks, network servers and internet web sites. In the 1980's computer operating systems were primarily disk operating (DOS) based and required little random access memory (RAM) to open and access information. Electronic mail by the layperson was still in its infancy and most users communicated in very cryptic methods and accessed bulletin boards for shared information.

Today, computers are found in most jobs and homes and have become as critical as a briefcase for the typical business traveler. They run faster, include multiple storage devices, run in glitzy graphical user interface (GUI) operating systems and allow easy access to the World Wide Web of communication. We can talk to computers, listen to the text spoken back, watch movies and even listen to radio stations through our Internet connections. Computers come in many shapes and sizes but continue to offer the multitude of features that enable individuals to "stay connected" to the virtual society we are fast becoming. In particular, electronic connection enables us to browse the billions of web sites that are established every day. Businesses, professional associations, sole proprietors and institutions have quickly recognized that to have an online presence is the way to remain competitive in our global economy.

Electronic access to information covers a wide array of tools and resources including use of the Internet, electronic conferencing, subscriptions to newsgroups, listservs and use of electronic mail exchange. Keeping abreast of the latest trends and developments can be enhanced by this "instant" access to ground breaking research and information. Electronic mail is fast becoming the primary medium by which we communicate with others. Full utilization of this tool can provide access to electronic discussion groups, offering invaluable insights into successful strategies used by other professionals and consumers. Subscribing to a specific newsgroup or listserv can offer a wealth of information and often find a solution to a unique problem. Certainly sharing resources in this manner will change the way practitioners have conducted business over the years.

Locating Information and Resources

Vocational evaluation practitioners and rehabilitation service providers by nature of their jobs are often required to sift through a proliferation of information to find answers to questions and solve problems. Matching individuals to appropriate employment opportunities, especially

those who may have a disability, require a keen awareness of both employment and disability resources. Fortunately, many of the printed resources that have been utilized in these practices are now found online. For example, the Occupational Outlook Handbook can be accessed online through the Bureau of Labor Statistics, <http://www.bls.gov>. Recently, the much awaited ONET, <http://doleta.gov/programs/onet> is now online and offers the wealth of occupational information gleaned from the old Dictionary of Occupational Titles.

For years, practitioners have located resources and kept abreast of the latest practices through annual subscription services, publications and attending conferences. During the mid-1980's, the National Association of Rehabilitation Information Clearinghouse (NARIC) was a significant resource for practitioners and offered a toll free telephone support service. Through that phone call, a practitioner could speak with a clearinghouse operator, state their need and within a week receive a computer printout of numerous resources and contacts. Those serving students with special needs could find similar support through the National Information Clearinghouse for Handicapped Youth (NICHCY). Both of these sources are now online and can provide instant access to an extensive online database, fact sheets and archived resource publications. (NARIC, <http://www.cals.com/naric> and NICHCY, <http://www.nichcy.org/index.html>).

Technology Solutions and Disability

There are certainly many examples of ways in which technology has and continues to transform the lives of individuals with disabilities. The special education and rehabilitation fields have witnessed many gains over the past 15 years as a result of such advances in technology.

Regular educators, public service providers and business managers generally know very little about the tools and legal mandates for accommodating individuals with special needs. This is especially poignant for those who concern themselves professionally with educational and information technology; for they are likely to be called upon to recommend technological solutions. The wealth of disability resources that are populating the web provide a wonderful means of keeping these professionals informed and aware of best practices in providing appropriate accommodations.

The recognition of adaptive technology as an enabling tool for those with disabilities has also experienced a rapid growth in product development. Many of these tools are beginning to populate the mainstream and provide options that also expedite the work process or provide "kinder and gentler" approaches. Many commercial companies also provide a variety of free resources that range from templates, instructional guides, demonstration copies and fact sheets that can be downloaded to a computer. These can be invaluable tools for the practitioner working on a shoestring budget or geographically isolated from vendor demonstrations.

The Distance Education Revolution

The direction that training is taking in the education field is towards the creation of web-based materials. Barnett (1999) highlights the impact distance education opportunities can have on rural schools. As Barnett points out, "E-mail has become the universal leveler, allowing rural schools to connect to the outside world. In fact, the reason why rural schools are so ahead in

distance communication is that they recognize that isolation is an issue". Jones International, which features courses designed by professors from schools like Columbia and Stanford, offers online bachelor's and master's degrees in business communications. "In the U.S. there are 100 million people who need some kind of additional education, and there are only 15 million seats in universities," says founder Glenn Jones. (Wall Street Journal ,1999)

In 1997, I was fortunate to co-develop a piloted distance education course entitled "Technology and Disabilities" for The Educational Technology Leadership (ETL) program at The George Washington University (GWU), Washington, D.C.. This began a virtual journey of introducing the world of assistive technology to thirty students across the world. While these students brought strong backgrounds in technology skills and preparation, they had little awareness of special education, disability policy or rehabilitation technology. The course posed several challenges, most importantly how to capture a hands-on methodology through an online course. We never met the students in person, never saw their faces, observed their gestures or listened to their conversations.

Ours was a quest to understand the student through purely virtual means: electronic mail, attached files and written communication. To complement this online instruction, videotapes of the instructors and live footage of assistive technology tool utilization were incorporated. Through the interactive powers of the Internet, we were also able to utilize hundreds of World Wide Web sites to enrich weekly lectures. Many of these sites included descriptive literature, photographs and video to enhance and clarify the provided lecture materials.

Disability Resources on the World Wide Web

Practitioners can now pinpoint solutions to problems by bookmarking their Internet browser software to a favorite web site representing a professional resource, commercial vendor or specific interactive discussion group. Staying on top of this information is the challenge. Sifting through the millions of World Wide Web sites can take countless hours and often result in research time that compromises services to others. For most practitioners, this is valuable time that cannot be lost to a business or company. Knowing which resources provide the most useful information can reduce this research time and offer quick solutions when providing services to individuals with disabilities. In particular, several national web sites have been recognized as good choices when locating technology solutions for special needs.

Resources for the Deaf and Hard of Hearing

"Of all the disability groups that can be identified in the United States today, individuals who have a partial or total hearing loss are one of the most diverse. Hearing loss is considered to be one of the most common forms of chronic physical disability." (J.Nunnally, personal communication,1997).

Providing accommodations to this population can be found in many applications one of these is most notably the computer. Informing through a visual means is certainly a strong suit of the computer. The deaf and hard of hearing culture have certainly maximized this tool and the continued power of the Internet. Many of the inherent tools of the web such as email, interactive multimedia and chat rooms have opened many doors for these consumers. The following are several web sites for locating invaluable resources for the deaf and hard or hearing:

National Information on Deafness (<http://www.gallaudet.edu/~nicd/index.html>)

A centralized source of accurate, up-to-date, objective information on topics dealing with deafness and hearing loss

American Sign Language Browser (<http://commtechlab.msu.edu/sites/aslweb>)

Michigan State University's ASL Browser Web site allows you to look up thousands of ASL signs. Each sign includes a Quick Time video clip and interesting explanation.

American Sign Language (<http://www.bconnex.net/~randys/index1.html>)

Designed to help you and me learn more about ASL and the Deaf community. Digital videos of ASL signs are not the best but better than drawing and written descriptions.

Registry of Interpreters (<http://www.rid.org>)

DeafWorldWeb (<http://dww.deafworldweb.org>)

The largest and leading multi-purpose deaf web site, providing deaf-related information on all subjects from Socio-Cultural Resources to References around the world.

National Captioning Institute (<http://www.ncicap.org>)

Resources for Those with Mobility Challenges

Mobility impairments can result from a variety of disabilities including spinal cord injury, cerebral palsy, post-polio, multiple sclerosis, severe arthritis, quadriplegia, paraplegia, muscular dystrophy, and so on. The individual with spina bifida may have short stature and require a wheelchair, braces or crutches. A number of individuals with conditions such as cerebral palsy may walk without assistance but may not be able to negotiate steps or barriers. Mobility impairments can range in magnitude but each situation results in some type of reduction in physical functioning. As a result that reduction in physical functioning can have profound effects on the individual's daily living skills, communication and interaction with others, independence and overall quality of life.

Individuals with mobility impairments often rely heavily on computer access technology. This assistive technology alone provides greater options for providing function in a non-functioning area. Following are some of the web sites frequently accessed for resources in assisting these individuals:

Intellitools, Inc (<http://www.intellitools.com>)

A leading commercial producer of the membrane sensitive keyboard Intellikeys© and related software programs such as Overlay Maker©, Intellitalk©, Intellipics© and Click It© which allow for the creation and customizing of interactive tools that improve keyboard access and communication.

Don Johnston, Inc. (<http://www.donjohnston.com>)

A company that specializes in providing commercial software solutions for individuals struggling with reading and writing challenges. Don Johnston is well known for their products Co-Writer (a word prediction program) and Write Outloud (an auditory word-processor)

United Cerebral Palsy (<http://www.ucpa.com/>)

The second largest national charity and organization offering information on programs and services for those with mobility challenges. UCP provides a discussion area online.

Dragon Systems, Inc. (<http://www.dragonsystems.com>)

A leading company in voice activation technology and the heralded Dragon Dictate© software program. Dragon Systems offers quick access to information on all of their products, downloadable files to update products and a discussion area on the pros and cons of voice/speech recognition.

Resources for the Blind and Visually Challenged

"It is estimated that about 750,000 people in the U.S. are blind and each year 50,000 more will become blind. Blindness occurs most often with advancing age, with half of all blind people generally considered to be over sixty-five." (B.Rochford, personal communication, 1997). There are a host of assistive technology devices and online services available to the blind that offer tools that empower and "level the playing field".

The On-Line Books Page (<http://www.cs.cmu.edu/book.html>)

This site offers over 8000 listings of books online in addition to informational news briefs, archives and links to other online resources.

American Council for the Blind (<http://www.lgc.Apc.Org/afb>)

A national organization for the blind that provides general information, a Braille online forum, pre-recorded speeches and reports enabled through RealAudio and links to speech friendly software.

Blind Links (<http://www.Seidata.Com/~marriage/rblind.html>)

A speech friendly web site providing links to an array of resources in adaptive technology, advocacy, commercial programs, employment, medicine, mobility and Braille (to mention a few!).

Resources for Those with Learning Challenges

Neurological in origin, learning disabilities impede a person's ability to store, process, and/or produce information. Learning disabilities can affect one's ability to read, write, speak or compute math, and can further impair socialization skills. Loss of memory, limited concentration, difficulty in following sequential tasks, difficulty in understanding verbal and/or written instructions and loss of organizational and reasoning skills are all cognitive functions which can be affected by a learning disability. Technology resources can often help to provide compensatory strategies. Following are some of the more notable web sites:

LD Resources (<http://www.ldresources.org>)

A well known resource containing numerous materials for those with learning disabilities. Richard Wanderman, creator of the site and a consumer, provides wonderful insights into successful strategies and techniques. There are links to national organizations, k-12 schools, organizations outside the U.S. and colleges and universities all providing services for the learning disabled.

LD Online (<http://www.ldonline.com>)

A site offering "an interactive guide to learning disability for parents, teachers, and children". LD Online provides information on the basics of learning disabilities and attention deficit disorder, special monthly features, personal essays on first-hand experiences, an online bulletin board and audio clips from leading experts and consumers.

Intelligent Peripherals, Inc. (<http://www.alphasmart.com/>)

The commercial producer of the AlphaSmart®, a portable electronic writing tool that has proven to be an invaluable tool for those with writing difficulties. Information on the product downloads of useful templates and testimonials from consumers and users are provided.

Discover Technology (<http://discovertechnology.com/idea14b.htm>)

This site offers a wealth of resources including links to other sites, a custom clip art library, a catalog of adaptive software and hardware, research and demo packets of products, an ASL directory, a pen pal section and a Banner Exchange Program. This is also a place to find a new assistive writing software known as TextHELP®, providing speech output through most Windows based software programs.

Adaptive Learning, Inc. (<http://www.Ticklebox.com>)

A new software that markets the Tickle Box®, a prompting/reminder system providing new assistive technology solutions for those with attention deficit disorder.

Resources For Those With Mental Health Challenges

Changes in brain functioning can result from a host of problems. Resulting changes in behavior and emotional stability can play havoc on the individual's ability to perform satisfactorily at work, home or school. Individuals who deal with disabilities such as Attention Deficit Disorder, Autism and Mental Illness face the daily challenges brought about by changes in functioning. Practitioners working with these individuals can find information to access and share regarding what changes to expect and accommodations that can be provided from the links noted below.

Mental Health Net (<http://www.cmhc.com>)

Described as home of the oldest and largest online mental health communities and resource guides. There are information links to all mental health areas, free online books, online chat and support forums, clinicians yellow pages and audioPsych offering online continuing education.

Internet Mental Health (<http://www.mentalhealth.com/p30-note.html>)

An extensive listing to medications: their origin, use and application.

Global Links for Shared Resources

Browsing through the WWW can be very time consuming if the user does not have a specific purpose in mind. Fortunately, a number of web sites have provided an array of resources and other links to additional locations. In particular, The National Center to Improve Practice (NCIP) is a web site that offers an extensive collection of information descriptions, topical discussion areas, guest lecturers and archives of related articles.

The National Center to Improve Practice (NCIP) (<http://www.edc.org/FSC/NCIP>)

A nationally recognized web site offering resources to improve practice in special education and technology. NCIP offers an extensive collection of informational descriptions, topical discussion areas, web links and archives of related articles.

The Empowerment Zone (<http://www.Empowermentzone.com>)

A "one place has all" web site offering literally hundreds of articles, links and downloadable files on topics ranging from employment, technology, independent living, social security, rehabilitation and adaptive technology.

Tetra Society (<http://www.reachdisability.org/tetra>)

A fairly new site providing assistive technology and job accommodation solutions to the practitioner. Tetra volunteers custom-build assistive devices that are not available commercially for people with physical disabilities.

The Boulevard (<http://www.boulevard.com>)

A pouporri of resources and commercial products.

The Face of Technology's Future

With technology paving the way for new ways of delivering information and providing instruction, it is critical for practitioners to prepare for a similar change. Web based tools offer a variety of means in which practitioners can stay in touch with cutting edge technology and state of the art practices. Videoconferencing has stormed to the educational forefront as one of the most cutting-edge tools an educator can hold in their teaching arsenal. Coupled with discussion forums, pre-recorded audio files, electronic mail and the WWW, a multitude of virtual possibilities are yet to be tapped. Practitioners should prepare themselves with these tools, their utilization throughout the WWW and how they will impact the future face of overall service delivery.

No longer is geographical distance a barrier to keeping abreast of change, acquiring new information or obtaining needed continuing education credits. To prepare for this coming change in the new millennium, practitioners should be cognizant of the impact the World Wide Web will play in their lives. Upgrading skills and technology will only sharpen the edge for the competition.

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