

The Developmentally Disabled and the Use of Technologies

An Annotated Bibliography Preface

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The topic of the developmentally disabled (DD) population using technology is of great interest to me, but written materials are extremely limited. The majority of books and articles are geared toward research and development of assistance technologies. This does pose a gray area as assistive technologies rely heavily upon technology. The most innovation in this area is happening in the Scandinavia countries. I have searched for articles, books and researched Websites that discuss the actual use of technologies by DD people; including computers, the Internet; video; and music devices. The annotated bibliography contains the information I have found.



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An Annotated Bibliography

Website

Jönsson, Bodil and Svensk, Arne. "Technology and Differently Abled People."

CERTEC, the Centre of Rehabilitation Engineering at Lund's Institute of
Technology. 28 Feb. 1994 <http://

www.certec.lth.se/doc/technologyand/00_preface.html>

The manuscript for this book was a result of work done at CERTEC, the Centre of Rehabilitation Engineering at Lund's Institute of Technology in Sweden. The entire book and Website cover a broad range of topics, one of which is Developmentally Disabled (DD) people and how technology can improve their lives. Jönsson and Svensk discuss natural and artificial intelligence among other topics. Especially poignant is the development of Isaac (named after Isaac Newton). Isaac is a project developed in 1994 to assist the (DD) person navigate the world and achieve maximum independence. In addition, caregivers and educators are also assisted. A DD Isaac user is provided a personal digital assistant, which is individually programmed, and equipped with a digital camera and global positioning system (GPS). What this technology will do for DD people is compared to what the electric wheelchair has done for the physically handicapped. Bodil and Svensk discuss legal and social changes that have affected the DD population in Sweden over the last 50 years with the conclusion that Isaac will provide the DD person more sophisticated technology than that of the business community; the philosophy being that those most in need of the technology shall receive it first. Isaac will allow DD people to come and go freely in their community using public transportation, working, shopping and socializing.



Website

Clark, Joe. "Learning to Build Accessible Websites: A New Book on Web Accessibility."

(ISBN 0-7357-1150-X). Copyright © [Joe Clark](#), 2002. All rights reserved
<[http://](#)

<http://joeclark.org/book/>

Joe Clark explores and provides philosophy and instruction on building Websites accessible to people with various types of disabilities including the Developmentally Disabled (DD) population. The book contains an access manifesto that is a declaration of what accessibility should be, which clearly states, ". . .the true reason to design for accessibility is greed." This is not exactly what the reader expects. Clark discusses reasons for making Websites accessible to everyone including the disabled, providing information and instruction on screen readers and adaptive terminology; media access; the structure of accessible pages; image problems; text and links; navigation; type and color; tables and frames; style sheets; forms and interaction; multimedia; certification and testing; accessibility and the law; language codes; colophon; and future dreams. Clark provides a complete "nuts & bolts" guide to designing a Website that the disabled can use effectively.

Website

Alakoskela, [Mirva](#) (Project Manager), Kokko, Leena (Director), Sinervuo, Veli-Pekka (Project Director). "Tikas and Papunet Projects."

Finnish Association on Mental Retardation. 2003. <[http://](#)

www.kehitysvammaliitto.fi/eng-projects

Opened in September 2001, the plain language Papunet pages project is geared toward communication specifically for those with speech impairments. The project has been implemented at the Communication and Technology Centre Tikoteekki of the Finnish Association on Mental Retardation. Professional support groups make recommendations on and oversee content and technical development. The goal of the project is to assist special groups in living lives equal to the mainstream population in today's information society. The project focuses on providing information via the Internet to those with speech impairments, caregivers (users of plain language), DD teachers and professionals in the field. The pages are published in Finnish and Swedish and contain symbols to enhance the written word, incorporating daily life information, book reviews, stories, etc.

Website

Trigg, Shelley. "Harnessing The Power Of Computers To Better The Lives Of People With Developmental Disabilities."

Rehabilitation Review Volume 8, No. 1, January 1997. <<http://>

www.vrri.org/rhb0197.htm

Initially educators attempted to use computers in teaching developmentally disabled (DD) people traditional drill-and-practice activities. The idea was that with repetition, DD students would gain enough experience to grasp basic concepts such as counting money, telling time, word recognition, etc. This concept has since been re-thought and computers are being used more to foster collaboration and social interactions, which has proven to increase self-confidence, interpersonal and communication skills. This has occurred by pairing students in groups of two or three to work on computers. Computer tasks that encourage social interaction are used such as organizing tasks that allow the individuals to take an active part in problem solving and controlling the equipment; motivation of each person for one-on-one tasks; and looking for ways to encourage those working alone to interact and communicate with others. When a DD user is perceived by his or her peers as having "mastered" a task, s/he becomes a revered "expert" within the group. As a result, individuals have shown they feel a great sense of accomplishment and self-esteem is enhanced, promoting and encouraging greater independence in daily life.

Website

Elger, Gerhard. "SmartBo - A Smart House For People With Disabilities"

Deaf Blind International, 2003. <<http://>

www.deafblindinternational.org/review/smartbo.htm

The word “Bo” in Swedish means a nest. SmartBo is designed for people with visual; mobility; hearing and /or cognitive (DD) disabilities. A main goal of the project is to ensure that SmartBo is a warm, cozy, inviting home complete with hobbies and entertainment. It is a two-room ground floor apartment in a five-story building in a Stockholm suburb. Seven others exist which are dedicated to the elderly. SmartBo is not designed toward a specific disability, but contains elements for individuals with the disabilities listed above. Various Information communication technologies (ICT) are used to provide greater living independence. Although equipment is geared for individuals’ needs, standard equipment is used whenever possible. Functions and problems of daily life are addressed by sensors, which communicate with the European Installation Bus (EIB) system. EIB controls, regulates, measures, and switches on and off items in the house such as lights, electrical outlets, door locks, blinds / curtains, etc. It includes a speech synthesizer and visual and tactile signaling devices. There are three ways to control the system; the bus system with a serial interface; ECUs and wall mounted four-function switches. There is a range of alert levels to choose from. Beside the bed and entrance door are small boxes with buttons, a red and green lamp and two holes. These are called goodnight and goodbye boxes. Pressing the buttons upon leaving the house or going to bed, the user receives a message of either “everything is okay” or alerts the user of what s/he forgot to do. While the technology offers greater independence to these populations, there is concern that it could be used to control and supervise people in unethical manners.

Website

Peck, Rachel J. “Music Therapy and People with Developmental Disabilities”
Article.

West Music, 2003. <<http://>

www.westmusic.com/pages/library/mt_developmental.htm>

It is impossible to discuss the DD population and technology without including the use of music – stereos, Walkman’s, CD players, etc. Music therapy is especially successful. In that vein, the West Music Company provides music software for therapy for DD people. The importance of music to the DD person is intense. The West Music Company was founded in 1914 as a partnership that began as the Peterson-West Music Company, a one-room retail and repair shop in Iowa City. As a result of the onset of WW II, the partnership was dissolved. Today the West Music Company provides catalogs and services not only for DD people, but those with autism and dementia. In this article the point is made that music helps DD people learn, is calming, acts as a behavior modification re-enforcement, and assists these individuals lengthen their attention spans. However, of special importance is that with music, DD people are able to effectively convey their taste – likes and dislikes.