



ELSEVIER

Technology and Disability 8 (1998) 105–106

Technology
and Disability

Introduction

Assistive Technology enables persons with disabilities to perform many types of activities, many of them related to Activities of Daily Living, such as bathing, eating and dressing, or Instrumental Activities of Daily Living, such as shopping, food preparation, house cleaning and money management. However necessary these may be, life consists of more than just performing chores. The higher end of the human needs hierarchy includes activities which are meaningful, pleasurable, satisfying and which provide the feeling of achievement and success.

Assistive computer technology and the Internet provide persons with disabilities many opportunities for fulfilling higher order needs related to communication, education, employment and leisure. In this issue of *Technology and Disability* we consider the Internet as an assistive device. The Internet was not invented as an assistive device. Like the microwave, electric garage openers and remote controls, the Internet was invented for persons with a wide range of abilities. However, the Internet has features which make it especially useful to persons with disabilities, such as the ability to work, study and collaborate without the time and effort needed to physically move from one place to another. The Internet also creates an environment in which disability discrimination is minimized: all participants interact in basically the same way. Indeed persons with disabilities are not identified as such, unless they choose to make their disability known.

Strange as it may seem, as Internet technology has advanced, it has become more difficult for persons with disabilities to use. Newer multimedia features of the Internet pose difficulties for

blind and deaf persons who were quite comfortable using the earlier text-based forms of the Internet. In response to these recent challenges, the accessibility of the Internet has become the subject of a great deal of research and development.

The first few articles in this issue present the potential of the Internet for persons with disabilities, barriers to its use, and emerging solutions to accessibility problems. The second section includes articles on educational applications of the Internet for persons with disabilities, especially distance learning.

The first article, *The Internet and Information Technologies and Consumer Empowerment*, by Dagmar Amtmann and Kurt Johnson provides an overview of the benefits of the Internet and information technologies for persons with disabilities. The article also contains six case studies to illustrate how this technology can empower the consumer.

In *Cross-Modal Access to Current and Next-Generation Internet — Fundamental and Advanced Topics in Internet Accessibility*, Gregg Vanderheiden points out the increasing importance of the Internet for persons with disabilities, and clearly explains how recent multi-media features make it inaccessible to persons who are blind, deaf or who have fine motor impairments. He then presents strategies through which text and multi-media can be integrated in such a way that the information becomes accessible to all users. He also argues that sites designed to be accessible to persons with disabilities will have features which will be useful for all users.

In *Making Multimedia Accessible on the World Wide Web*, Larry Goldman and Geoff Freed describe in detail the technologies being developed in the Web Access Project of the National Center for Accessible Media, including methods for adding captions and audio descriptions to movie clips. The article also describes accessibility issues in future multimedia technology on the web.

The next group of articles address educational applications of the Internet. In *Increasing Access to Higher Education Through the Use of the Internet*, Amtmann and Johnson, after noting the technical and economic barriers which still exist, describe five benefits to students with disabilities using online resources for education, and provide case illustrations of students with disabilities who use these resources.

Lawrence Scadden's article *The Internet and the Education of Students with Disabilities* describes several distinct educational uses of the Internet by students with disabilities. He also provides many URL references for outstanding examples of educational sites, especially for science education.

The final article in the education section is by Norman Coombs, *Bridging the Disability Gap with Distance Learning*. Coombs provides us with personnel perspectives gleaned from his experience teaching university courses through distance learning to classes which include students with and without disabilities.

The Internet and Disability theme concludes with a 'Resources' section. *Individuals with Disabilities Using the Internet: A Tool for Information and Communication* by Marka Hayes provides a sample of disability-related web sites, including comprehensive sites, assistive technology resources, policy and legislation and leisure.

This issue includes an article on another theme: technology evaluation. The article by Vathsala Stone and colleagues, *Wheelchair Tie-Downs: Ideal Features and Existing Products*, shows how the various stakeholders in the field can collaborate to identify opportunities to improve existing assistive devices. The article describes in detail the process and outcomes of having consumers identify ideal characteristics of wheelchair tie-down systems. It then shows how existing systems compare to the ideal, using benchmark metrics developed by combining consumer input with technical research and business marketing parameters.

John H. Stone
Center for Assistive Technology,
University at Buffalo,
515 Kimball Tower,
Buffalo,
NY 14214, USA