Chapter III

Strategies to Increase Web Accessibility and Usability in Higher Education

Barbara A. Frey, Ashli Molinero and Ellen R. Cohn
University of Pittsburgh, PA, USA

ABSTRACT

This chapter addresses the current status of Web accessibility and usability in higher education. As post secondary institutions strive to expand their online services and still maintain inclusive classrooms, attention must be given to the design of Web resources. Over 20 percent of Internet users have disabilities including vision, hearing, motor, and cognitive impairments that affect their use of the Internet. In addition, many users have inefficient operating systems and/or slow connections. The World Wide Web Consortium’s Accessibility Initiative guidelines for accessibility are reviewed for the following areas: (1) page organization, (2) images, (3) image maps, (4) graphs and charts, (5) tables, (6) multi-media components, (7) scripts, applets, and plug-ins, (8) frames, (9) use of color, and (10) default font settings. Examples and strategies are presented for creating dynamic Web pages that are accessible and usable without jeopardizing the goals and creativity of the designer. Developing accessible Web resources will benefit all users, as well as comply with federal accessibility regulations for electronic and information technology.
INTRODUCTION

Just as wheelchair ramps and elevators provide access to wheelchair users, good Web design provides “electronic curb ramps” to the Internet for individuals with visual or other disabilities (Waddell, 1997). Research shows it is easier and less expensive initially to construct accessible Web pages than to later retrofit the pages with corrections. Most of the technical requirements for accessible Web design can be met if Web designers adhere to the straightforward principles suggested by the World Wide Web Consortium’s Web Accessibility Initiative Guidelines (2002).

Accessible Web site design benefits all users, not just persons with disabilities. This is because users with slow Internet connections, users who access the Internet via personal Web devices, and users who are speakers of foreign languages may also experience accessibility challenges (Rose and Meyer, 1996). In short, accessible Web sites increase usability. Accessibility, a component of usability, suggests “information systems flexible enough to accommodate the needs of the broadest range of users…regardless of age or disability” (Waddell, 1997). Usability is achieved by designing with the end-user in mind, to ensure that a user has access to any Web site, no matter when or how the access is sought (Pearrow, 2000).

This chapter addresses the current status of Web accessibility and usability in higher education. Specifically, it answers three questions: (1) Why are the concepts of accessibility and usability important? (2) Who are affected? and (3) What are some basic strategies to design accessible and usable Web sites?

CURRENT NEEDS

Access to the World Wide Web is expanding on a daily basis. Over 513 million persons worldwide use the Web for news and other current information, email, entertainment, consumer goods, and educational materials. With more than eight million Web sites, the Internet has evolved into a relatively inexpensive and valuable teaching and learning tool. It enables students to participate in online courses, research their term papers, conduct online “chats,” and engage in entertainment, often in the same sitting.

Virtually every postsecondary institution offers “application-to-graduation”-based services via the World Wide Web. Students access the Internet to read course descriptions, register for classes, pay tuition, purchase books, submit assignments, take quizzes and check grades. Students appreciate the ability to retrieve information at any time and from any place.

Faculty members seek to enhance student learning via online PowerPoint lecture notes, graphics and Web site links, and both faculty and students routinely access printed, audio and visual resources from around the world. Many faculty
Related Content

Out of Isolation: Building Online Higher Education Engagement
Katia Nyysti and Kelley Walters (2018). Fostering Effective Student Communication in Online Graduate Courses (pp. 179-192).
www.irma-international.org/chapter/out-of-isolation/187820/

An Online Virtual Laboratory of Electricity
www.irma-international.org/chapter/online-virtual-laboratory-electricity/41389/

Building Relationship Through Learning Communities and Participation in Online Learning Environments: Building Interactions in Online Learning
www.irma-international.org/chapter/building-relationship-through-learning-communities-and-participation-in-online-learning-environments/140657/

Teaching Dimension in Web-Based Learning Communities
www.irma-international.org/article/teaching-dimension-web-based-learning/3011/

Teaching and Learning Online: An Examination of Effective Techniques, Practices, and Processes
www.irma-international.org/chapter/teaching-and-learning-online/140654/