

## Chapter 4

# Accessibility Issues of Educational Web Sites

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### ABSTRACT

*The World Wide Web (Web) has become an essential part of our daily life. Web accessibility remains an important issue because many people have limited access to the Web. It is essential to make this content accessible to all people. This chapter provides an overview of the importance of web accessibility. It explains the current status of the issue, accessibility guidelines and techniques to evaluate and achieve web accessibility. Useful resources and practical recommendations to increase accessibility are also included.*

### INTRODUCTION

The World Wide Web (Web) has been a platform for a variety of services. Google software engineers announced that Google System discovered one trillion unique web pages (Google, 2008). This immense source of information has become a major part of our daily life. Today, via the Web, people can send and receive messages, buy books, reserve airline tickets, pay bills, look for jobs, interact with their peers, read/watch news in front of a computer with an Internet connection. These are just a few examples of the use of the Web in our daily lives. Many people enjoy what the Web offers them.

This use provides new opportunities for some, whereas for others there are barriers that can prevent them from benefiting from the offered services. Making a web content accessible to all people is necessity in order to provide equal access and equal opportunity to all people. When Tim Berners-Lee invented the World Wide Web, he wanted it to become a community for all people. He stated that “the power of the Web is in its universality. Access by everyone regardless of disability is an essential aspect” (W3C, 2010). By accessibility, it is meant that the web content should be understood, navigated and interacted with to the fullest degree as intended by the creator of the web content. One group of people that are

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especially affected by the lack of accessibility are people with disabilities including: visual, auditory, physical, speech, cognitive, or neurological. It has been estimated that there are as many as 650 million people with disabilities in the world (WHO, 2010). Likewise, Lenhart (2002) reported that 12% of all online users have disabilities. People with disabilities may use assistive technologies to enable them to use the Web. For instance, blind users can use text-to-speech software and/or text-to-Braille hardware to browse the Web. However, in order for these technologies function effectively, the content of the Web must adhere with certain design principles to make them accessible.

It is important to point out that a common misunderstanding is that accessibility is only for people with disabilities. Web accessibility is a broader concept including all people. Beddow et al. (2008) defined accessibility as “the extent to which an environment, product, or service eliminates barriers and permits equal access to all components and services for all individuals” (p. 1). Likewise, According to Mankoff et al (2005), “Web accessibility involves making web content available to all individuals, regardless of any disabilities or environmental constraints they experience” (p. 41). Web accessibility is about making web sites accessible and useable by all people. One of the main tenets of accessibility is to create web sites “that are flexible to meet different user needs, preferences, and situations... such as people using a slow Internet connection, people accessing via mobile phones or PDAs, people with ‘temporary disabilities’ such as a broken arm, and people with changing abilities due to aging” (WC3, 2009a, para. 4). Simply put, a web site “should provide equal or equivalent access to all users, and it should work compatibly with assistive technologies” (Jaeger, 2006, p. 170).

The web has created new possibilities for teaching and learning by increasing the options and opportunities for educational practices. In many countries, teachers are expected to utilize the web for accomplishing diverse goals including

academic and administrative (Gibson & Oberg, 2004; Kurt, 2010). From web-based instruction to online libraries to school and class web sites, the Web is being used to facilitate many educational processes and experiences. According to Pew Internet’s survey in 2002, 48 percent of university students had participated in courses that required use of the Web. It can easily be assumed that this percentage is higher today. Therefore, when utilizing the web for educational purposes, special attention should be given to accessibility. Web based educational material should be accessible to all people, including people with disabilities, regardless of age, computing experience level, and the technology and systems being used to browse; thus providing equal access and opportunity to all. This issue is important because the Web has a unique ability to create convenient environments for all people including people with disabilities if they are designed to be accessible (Kurt, in press).

## **CURRENT STATUS OF ACCESSIBILITY**

Since this is an important issue, there is an increasing awareness about the importance of accessibility (Lazar et al., 2003). In fact, aside from being an ethical goal, accessibility is a legal requirement in many places around the Globe. Many countries regulate web accessibility as a requirement for websites. Section 508 of the US Rehabilitation Act, the Disability Discrimination Act 1992 in Australia, the Disability Discrimination Act 1995 in the UK, the Disability Act 2005 in Ireland are just some of them. Despite these, however, research studies still find that many existing web sites are inaccessible (Lazar & Greenidge, 2006; Hackett et al., 2005; Lazar et al., 2003).

Regarding educational web sites’ accessibility, most of the studies focused on the accessibility of university web sites and library web sites. These studies confirm that university and library web sites still have accessibility problems (Kurt,

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