Chapter XIV
Accessible E-Learning: Equal Pedagogical Opportunities for Students with Sensory Limitations

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ABSTRACT

The transformation of the world into a highly technological place has led to the evolution of learning from the traditional classroom to e-learning, using tools such as course management systems (CMS). By its very nature, e-learning offers a range of advantages over traditional pedagogical methods, including issues of physical access. It is particularly useful for people with sensory limitations as it offers a level playing field for them in learning. This study examines the accessibility, usability, and richness of CMS used for e-Learning in institutions of higher education. A model is proposed that underscores the influence of accessibility, usability, and richness of the CMS, coupled with learning motivation on the learning success as perceived by students with sensory limitations. The model is tested by surveying university students with sensory limitations about their views on the course management system used. The results suggested that accessibility and usability of a CMS have a positive influence on the learning success as perceived by students with sensory limitations.
INTRODUCTION

The transformation of the world into a highly technological place has led to the evolution of learning from traditional classroom method to e-learning, where students learn in “invisible classrooms” (Phillips, 1998). E-learning is the acquisition and use of knowledge primarily distributed and facilitated electronically, using networks and computers. It can take the form of courses as well as modules and smaller learning objects delivered through course management systems (CMS). A large number of colleges and universities have implemented CMSs for online education, be it for hybrid learning (employing both e-learning and classroom learning) or virtual classroom learning (Alavi, Wheeler, & Valacich, 1995). CMSs like Blackboard, Moodle, WebCT, and others enable instructors without Web design skills or the time to build entire sites from scratch can quickly and easily place materials online.

E-learning, by its very nature, offers a range of advantages over traditional methods. Unlike traditional learning, it doesn’t involve physical access issues. It has opened the doors for many individuals who are restricted in their pursuit of higher education due to constraints of access, time, distance, and so forth. It is particularly applicable for people with sensory limitations.

Sensory limitations, involving vision, hearing, mobility, or cognitive impairments, can pose significant impediments for affected individuals in carrying out day-to-day activities. It can hamper the use of computers in the traditional mode. For this purpose, hardware and software, called assistive technologies, have been designed that enable such individuals to use computers and related application programs in an alternative mode (Brunet, et al., 2005; Englefield, Paddison, Tibbits, & Damani, 2005; Weir, 2005).

By the year 2000, 55 million Americans had some form of sensory limitations that hindered their use of the Web (Waldrop, 2000). At the global level, 750 million people suffer from physical/sensory limitations (WHO, 2002). A number of Web resources contain features restricting these people from accessing their content partially or completely. These resources should be accessible to all, irrespective of sensory abilities. It is even more important in an educational setting. How can students learn from course contents presented in inaccessible formats? Accessible e-learning takes into account the special needs of learners with disabilities, and provides an equivalent learning experience to that of non-disabled learners.

Two U.S. federal laws deal with issues related to individuals with physical/sensory limitations, including online education. The first, The Americans with Disabilities Act (ADA) emphasizes on equal learning access to all, including learning materials on the Web (ADA Accessibility Guidelines, 2000). Section 508 of the Rehabilitation Act requires federal agencies to make IT accessible to persons with disabilities (Rehabilitation Act, 1998). Besides, the W3C (World Wide Web Consortium) sets technical specifications and standards for the Web (W3C/WAI 1997). These guidelines apply to all Web-based applications, including CMS.

CMSs create complex environments that present numerous accessibility issues. Utilizing accessible tools for content creation does not automatically imply the accessibility of the content itself. Both the infrastructure and the content must be accessible for e-learning courses to be accessible, a responsibility equally shared by instructors and software developers. A concerted effort by the academia is necessary to highlight the issue of accessibility of CMS to developers, instructors and institutions in general.

Traditional methods of education have often failed people with sensory limitations. Providing these members of the society with the facility to learn new skills during their working lives is therefore imperative. One way to do this is via e-learning in higher education. The e-learning experience of such individuals can be facilitated through the use of CMSs that are accessible. The