Chapter VI

Inclusion in an Electronic Classroom: Courseware Accessibility Design and Implementation

Robert Luke and Laurie Harrison
University of Toronto, Canada

ABSTRACT

Providing educational opportunities within online environments, while beneficial, also has the potential to exclude a significant portion of the population. Those who are learning and physically disabled may be prevented from accessing online learning environments due to problems in the design of the technology, as well as with the pedagogy directing the use of this technology. Inclusion in an Electronic Classroom was funded by the Office of Learning Technologies (OLT) and examined accessibility within various courseware platforms in order to better assess both the technological and pedagogical issues associated with the general educational shift toward providing learning opportunities within online learning networks. This paper presents a summary of the results of this study alongside recommendations for ensuring equitable access within online, courseware-enabled, networked learning. The study data are placed within a framework that examines the technical and pedagogical ramifications of accessibility issues and online learning environments, specifically, courseware environments currently used in today's online educational market. The findings are compared with the associated guidelines and checkpoints in the Web Content Accessibility Guidelines published by the Web Accessibility Initiative (WAI) of the World Wide Web Consortium (W3C) and provide a useful framework for consideration of the
current challenges and the opportunities at hand for courseware authoring tool developers.³

INTRODUCTION

In recent years, the education sector has witnessed an exponential growth in the area of courseware authoring tools to assist in creation of Web-based curriculum and in performing class management tasks. A preliminary study conducted at the Centre for Academic Technology at the University of Toronto (1998) revealed that none of the Web-based courseware tools available at that time addressed accessibility issues in a comprehensive manner. Our subsequent study, Inclusion in an Electronic Classroom (2000), ⁴ showed improvement, as courseware developers are becoming more aware of accessibility issues. However, further significant gains can be made if courseware authoring tool developers take steps to eliminate barriers to access in the Web pages generated automatically by their programs, as well as those uploaded from an external source. Fortunately, courseware tools or applications used to teach at a distance are still in the relatively early stages of development, and new versions are released on a frequent basis.

Within the context of the research outlined below, the term “courseware” refers to a server-based course management system that allows integration of a complete course site, including password protection, uploaded course materials, interactive activities, tracking of student progress, etc. Typically, the design occurs via a browser interface catering to the nonprogrammer, using templates and wizards extensively to assist in course content creation. Step-by-step guides support the creation of a range of components, including course home pages, bulletin boards, quizzes and marking systems. Core course content and multimedia components, such as images or audio files, are generally created externally in a specialized software program and imported into the courseware environment.

INCLUSION IN AN ELECTRONIC CLASSROOM

The Canadian government has recently implemented policy to ensure that legislation providing access to persons with disabilities is applied to digital media, following the WAI guidelines.⁵ Recent legislation in the United States has also ensured that all online information is accessible to people who rely on adaptive and assistive technologies.⁶ It is necessary to encourage the design of accessible Web materials from their first iteration using universal design principles.⁷ “Improving accessibility begins with increased awareness of the potential barriers” (Harrison, 2000), and as we increase our use of courseware to host online components of education, it is necessary to examine
New Constructions for Understanding using Virtual Learning- Towards Transdisciplinarity
Barbara Truman (2017). Integrating an Awareness of Selfhood and Society into Virtual Learning (pp. 298-316).
www.igi-global.com/chapter/new-constructions-for-understanding-using-virtual-learning--towards-transdisciplinarity/174823?camid=4v1a