Chapter 12

Systematic Approach for Improving Accessibility and Usability in Online Courses

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ABSTRACT

The purpose of this chapter is to provide a systematic approach for improving accessibility and usability in online courses. Accessibility and usability are of particular importance to provide equal human development opportunities to those who have various disabilities in the digital age. The authors developed a systematic approach as a result of a comprehensive accessibility and usability review process of an actual online course. The review involved a team-based collaborative approach. The team consisted of an accessibility professional, an instructional design coordinator, and a course instructor who collaborated to perform the thorough examination process. The presented model is of particular importance to improve accessibility and usability of online courses, which in turn enhances the quality of human development for disabled learners.

INTRODUCTION

Online education promises to bring people levels of independence unparalleled in history. In Fall of 2014, around 5.8 million higher education students in the United States took one or more online education courses (Allen, Seaman, Poulin, & Straut, 2016). People no longer need to feel limited by geography or even physical ability to meet their requirements for intellectual development. Online education can have potential opportunities that traditional education systems fail to provide, but people with disabilities can-
not benefit when online education is not completely accessible. Disabilities impacting online learning include visual, hearing, motor, and cognitive impairments (Crow, 2008).

Specific guidelines, laws, regulations and recommended best practices for accessibility are abundant. For example, the World Wide Web Consortium (W3C) developed comprehensive standards for making web content accessible to people with disabilities. The current version is the Web Content Accessibility Guidelines 2.0 (WCAG) (W3C, 2008). WCAG 2.0 provides principle-centered guidelines to help web designers verify their sites meet the standard (“WebAIM: Quick Reference - Web Accessibility Principles,” n. d.). Even with these resources available, the literature on accessibility in online education paints a grim picture for the future.

Accessibility initiatives often lose momentum and lack systematic design. In many other cases, taking proper measures to improve accessibility in online courses still does not make these courses usable for the students. Iwarsson and Stahl (2003) stated “accessibility is a necessary precondition for usability” but is not sufficient to ensure usability, which is a subjective measure (p. 62). Usable online courses must not only comply with official accessibility technical standards but also they must provide a satisfactory experience for the student interacting with the environment. Online course designers accomplish this by using expert reviews (Lewis, Yoder, Riley, So, & Yusufali, 2007), end-user tests (Fichten, Asuncion, Barile, Ferraro, & Wolfirth, 2009), and automated technologies (Schmetzke, 2001).

This chapter demonstrates a systematic approach to improving accessibility and usability in online courses based on the authors’ preliminary analysis on a selected online course. The approach proposes a systematic process which will assure that every individual online course is accessible and usable for all students. This approach may guide other stakeholders who directly or indirectly involved in accessibility and usability within online education. Compliance officers, learning management system (LMS) administrators, faculty development personnel, course instructors, multimedia development specialists, instructional designers, and program administrators may benefit from the proposed approach because improving accessibility and usability of online education requires a team effort.

The proposed systematic approach can benefit a broad range of online courses because it is independent of the instructional technologies, the content domain, and the learner characteristics. This chapter provides online education stakeholders a proactive and sustainable process to make online courses accessible and usable for those who have disabilities.

Background

Equal access to online education opportunities is critical for human development. Persons with disabilities require accessible and usable digital experiences to participate fully in our digital society. Unless we provide accessible and usable online environments, we leave significant portions of our population at a disadvantage. The inaccessibility impacts each of us personally because anyone, at any time, can develop disabilities through aging, disease or trauma.

Higher education institutions encounter three major challenges when providing accessible and usable online learning opportunities. First, institutions may not recognize the magnitude of the problem because the documented disabilities under-represent the actual number of students with disabilities in our classes. Many disabled students in higher education prefer not to disclose their disability for various reasons. According to Brault (2012), “approximately 56.7 million (18.7 percent) of the civilian non-institutionalized population had a disability in 2010” (p. 4) in the United States. Sixty percent of the young adults with disabilities continued to postsecondary education within eight years of leaving high school (Newman et