Chapter 6
Mobile Learning for All:
Accessibility Considerations for Mobile Pedagogy

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ABSTRACT

Educators have a legal responsibility to ensure access to learning for all students under legislation such as Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act. However, many educators are not aware of the variety of tools already available to help them meet these legal requirements. In this chapter the authors provide an overview of the built-in accessibility features of mobile devices that can help educators meet their legal obligations for providing access to the curriculum for all learners. These accessibility features, along with complimentary apps for mobile devices, are discussed as supports that can be provided within a Universal Design for Learning approach that calls for flexible curricula that meet the individual needs of all students, including those with disabilities and diverse learning styles.

INTRODUCTION

In response to the increasing use of E-readers and other emerging technologies in education, the U.S. Department of Education issued a Dear Colleague Letter (DCL) to college and university presidents in 2010. The purpose of the Dear Colleague Letter (U.S. Department of Education, 2010) was to clarify how regulations such as the Americans with Disabilities Act (ADA) and Section 504 of the Rehabilitation Act of 1973 apply to emerging technologies such as the iPad and other E-readers. The ADA and Section 504 are U.S. laws that prohibit discrimination on the basis of disability. According to the Department of Education's DCL, the application of the non-discrimination requirements of Section 504 and the ADA means that schools must ensure that emerging technologies such as E-readers are fully accessible to students who are blind or have low vision. However, it is not just students with visual disabilities who are protected under these laws. In the DCL, the Department of Education added that students with specific learning disabilities that make it difficult for them to get information from printed sources (those students who have

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"print disabilities") are also protected under U.S. disability laws. While the DCL was addressed to college and university presidents, it contained a section that clearly stated that elementary and secondary schools have the same legal obligations toward students with disabilities.

The Dear Colleague Letter and a follow-up clarification issued in June 2011 (U.S. Department of Education, 2011) make it clear that educators should take care to select technologies for the classroom that are accessible to all students in order to avoid lawsuits and discrimination complaints. Apple has been an industry leader in this regard because the company has a long history of incorporating accessibility into the design of its products. With the exception of the original iPod, which is still available for sale on the Apple website, every other mobile device the company sells now includes accessibility features out of the box. This includes the iPad and other devices that run the company's iOS software for touchscreen devices. While Apple has taken the lead in developing its devices to provide all users with the best possible experience from an accessibility perspective, other companies are beginning to add accessibility options to their devices and software as well. Thus, Google's Android operating system for phones and tablets (starting with 4.0 and 4.1, known as Ice Cream Sandwich and Jelly Bean, respectively) now includes support for accessibility as well. Even Amazon, whose Kindle E-readers were at the center of several lawsuits that prompted the DCL, announced in late 2012 that it was going to add accessibility features to its Kindle Fire tablets.

Unfortunately, many educators are not only unaware of their legal responsibilities to provide accessibility, but they may also not know that many of the technologies that will help them meet the requirements of the law are already available for free or at a very low cost. This book chapter aims to make educators and other education professionals more aware of the range of tools that are already available on mobile devices to accommodate all students, including those with special needs. After reading this chapter, these educational professionals will be more familiar with the range of accessibility features on mobile devices that will help them successfully implement supports based on the Universal Design for Learning (UDL) approach. This is an approach that seeks to eliminate barriers to learning through the application of universal design principles in the field of education.

DEFINING UNIVERSAL DESIGN

The term Universal Design traces its origin to the field of architecture. Ronald L. Mace, who is credited with coining the term, defined it as the design of all products and the built environment to be aesthetic and usable to the greatest extent possible by everyone, regardless of their age, ability, or status in life (Center for Universal Design, 2010). A good example of universal design is the addition of ramps to buildings in order to allow people in wheelchairs to access them independently. While these ramps were intended for people with disabilities, they can also benefit other groups, such as mothers with children in strollers and delivery staff. The use of closed captions, available on most TV sets when the sound is muted, is yet another example. These captions were originally developed to benefit people with hearing disabilities, but a wide range of users benefit from their availability when viewing the video in an environment where it is not possible to hear the sound (such as in a busy airport terminal or at a restaurant).

The Center for Universal Design has developed a set of seven principles for the universal design of products and environments (Center for Universal Design, 1997). Mobile devices from Apple and Google follow many of these design principles:

1. **Equitable use:** The design is useful and marketable to people with diverse abilities, and it is not stigmatizing to any users. One of the appeals of the iPad for working with individuals with disabilities is that as a con-