

Creating a Level Learning Space

The emergence of information technology has changed the education process for everyone, and it has transformed most people's personal lives as well. This truth is even more important for people with what, for the purposes of this book, I will call print and audio disabilities. Those with print disabilities need special help to surmount the obstacle posed by books and other printed materials. Lectures and other audio content present a similar barrier for those with hearing impairments.

Digitized information has been a major breakthrough for these people. Because it is display independent, it can be rendered in different modes for various purposes. In the past, traditional textbooks froze information in a single format: it was stored as print and a human intermediary or translator was needed to output it into any other form. Digitized information, however, is stored as numbers and this allows it to be printed out, displayed on a computer monitor, or even projected onto a screen so that it can be seen from the rear of a lecture hall. Specialized assistive software can render the same information in even more formats, thus providing students who have disabilities with timely and effective access to the information and creating the potential for a more level learning space for all.

This chapter has three main topics: assistive technologies, universal design, and laws and guidelines relevant to online instruction. People with disabilities often use special software—generally called assistive technology or adaptive

technology—in conjunction with computers. These technologies assist the user and at the same time adapt the computer’s input and output systems to accommodate a wider spectrum of people’s needs. The universal design movement takes a different approach. Instead of focusing on making accommodations for people with special needs, it urges designers to create devices and content to include the broadest segment of the population possible. Finally, the chapter gives an overview of the laws and official guidelines in effect mandating that products and content be created in ways that will not discriminate against people with special learning needs or unique working styles or both.

HOW PEOPLE WITH DISABILITIES USE COMPUTERS

As a provider of online course content, you may not really need to know how people access your content. It may not matter, for example, whether an individual is using a smart phone, a laptop computer, or a desktop computer in a college computer lab. But if you found out that a significant proportion of your students were accessing your lessons from a phone, you might design some content differently based on that knowledge.

Similarly, although it’s not absolutely essential that you know about the assistive computer software used by students with various disabilities, that awareness can help you design your online content in ways that won’t create needless barriers to their learning. And the good news is that you can employ universal design features while still using the standard content authoring tools you already use. Let’s look at the assistive technologies most commonly used by students in accessing online course content. These technologies are available for a variety of computer platforms: Mac, Windows, and Unix-based operating systems. You’ll also “meet” some typical users to get an idea of how some of your students are experiencing your course material.

Voice Recognition Technology

Voice recognition software allows the user to control the computer by speaking commands aloud and to dictate to input text into documents. Users of this type of technology are those who cannot—or cannot easily—use a standard keyboard because of motor function, visual, or certain types of learning disabilities. People with dyslexia, for example, can use a keyboard, but because they frequently

jumble the sequence of letters both in reading and writing, dictating permits them to bypass this hurdle.



Penny, an auto mechanic, was in her twenties when an accident left her a quadriplegic. Thanks in part to voice recognition software, she now holds a staff position in a Pennsylvania community college, where, among other tasks, she trains faculty on how to better serve students with disabilities.

On-Screen Keyboards

People with motor impairments that prevent them from using a standard keyboard frequently use an onscreen equivalent. The computer cursor moves across an image of a keyboard at the bottom of the monitor. When it reaches the desired letter or symbol, the user triggers a single switch to input that letter into the computer. For people with little or no use of their hands and arms, the computer can track the user's eye movement so no muscle movement is required to trigger the switch. To speed this process, the onscreen keyboard can be combined with software that predicts the desired word based on the first few letters.



As a daring teenager, Grant dove off a cliff into too-shallow water. His neck was broken, but Grant did not let that end his active life. He used an on-screen keyboard to attend college in California, earn his bachelor's degree, and move on to productive employment.

Screen Magnification Software

Although most software applications permit the user to enlarge the screen interface and content on the monitor, the amount of enlargement allowed is limited, and often the image is degraded. Commercial screen magnification software, however, will maintain the integrity of the image while permitting enlargement

from two to sixteen times normal. Obviously, this benefits people with visual impairments. Advanced screen magnification software also has the ability to use a synthetic voice to speak text, although this capability is not robust enough to meet the needs of someone who has very little or no sight.

Screen magnification software combined with speech output can also benefit people with visual and cognitive processing disabilities. Although they don't need the larger image, a by-product of enlargement is that less information appears on the screen at one time. For some students with learning and cognitive disabilities, a computer display packed with information can be overwhelming, so simplifying it increases their ability to read and learn the content. The software will also highlight the word being spoken by the synthesized voice. This provides dual sensory input for the user, reinforcing learning and helping the user to focus on the content.



At a university in Wisconsin, Dick was a student whose poor sight required him to wear strong glasses to read. But as his sight further degraded, the glasses no longer worked well enough. With the aid of screen magnification software Dick was able to do his assignments through the computer, which enabled him to finish his college degree.

Dick had a work study job training students with disabilities on assistive technology. Lora, one of his students, had dyslexia and struggled to keep up with all the reading required for her courses. Screen magnification helped her to better decode the text and understand the lessons. Having the text that was being spoken highlighted made it easier for her to concentrate.

Screen Readers

Screen reading software uses synthetic speech to tell the user (usually someone who is blind) what is on the monitor and to confirm that the key is being pressed when writing. This enables the student to both write and proofread class assignments. Universities are now providing books in electronic format, which is accessible to this software, thus enabling the student to work independently whenever it is convenient.

Screen reader software essentially looks at the document displayed on the computer monitor, hunting for anything that is coded as text. In simple terms, when it locates text, it uses a complex logarithm to come up with the sounds for each letter. Next it looks for any further language rules that modify what sound it should make. For example, it has rules telling how to pronounce the letters “ough” in different ways for the words *bough*, *cough*, *dough*, *rough*, and others.



John was a successful science professor at a major university when, due to a rare condition, he lost vision in both eyes in a very short time. Instead of surrendering his dreams and hopes, he learned about the assistive technologies that could enable him to continue functioning as a professional. The computer was already a basic tool he used in his work, and he quickly became a proficient screen reader user. Not only did he continue university teaching, but John also became the principal investigator on several grants from the National Science Foundation.

Audio Transcriptions and Video Captioning

Transcriptions of audio content such as subtitles and closed captioning for video existed long before these media became digitized. The change to digital media has made creating both audio and video easier and less expensive. A production team and studio are no longer required, so captions are becoming more common while the need is increasing. Recorded audio of class lectures is common, and it is necessary to have transcriptions available for any students who cannot hear that recording. Captioning and audio transcriptions are required by various pieces of legislation that mandate equal education for students with disabilities. A video, even if it is of high quality and very informative, is almost useless for anyone who is deaf and therefore misses all of the verbal content. The same is true of an audio recording. It has no value for someone who is deaf. When there are captions and transcriptions, these students can acquire the information and can learn the content as do other students.



After losing her hearing as a young adult, Mary attended the National Technical Institute for the Deaf at the Rochester Institute of Technology. Because her ability to read American Sign Language was still poor, Mary struggled to follow class lectures. However, she registered for an online course that used captioned videos and an asynchronous, online text discussion. Mary says that the mix of captioned videos and a text discussion for class participation made this her most meaningful college course.



When information is digitized, people with the difficulties like those described above are able to access information independently. Although people with such disabilities have long succeeded in schools and universities without the benefit of these leveling tools, they also had to spend time and energy overcoming cumbersome hurdles to obtain their education. Many have gone on to succeed in professional careers while still facing these barriers every day. Now their world is opening with fresh opportunities and exciting new independence.

UNIVERSAL DESIGN AND ONLINE LEARNING

On October 28, 2009, the U.S. Government Accountability Office submitted a report to the Committee on Education and Labor of the House of Representatives entitled “Higher Education and Disability: Education Needs a Coordinated Approach to Improve Its Assistance to Schools in Supporting Students” (U.S. GAO report GAO-10–3, 2009). The report noted that schools are increasingly using the universal design model in curriculum development and delivery. In this context, online learning is one of the many delivery platforms benefiting from the inclusion of universal design.

What Is Universal Design?

Universal design is the design of products and environments to be usable by all people, to the greatest extent possible, without the need for adaptation or specialized design.

—Ronald Mace (Center for Universal Design, 2008)

Mace earned a degree in architecture from North Carolina State University in 1966, where, as a wheelchair user, he encountered many barriers. He believed that instead of modifying specific facilities to meet the needs of certain users, all facilities should be designed to accommodate as broad a population as possible (Center for Universal Design, 2008). The goal of universal design when applied to education is to make learning inclusive for all students, not just those with disabilities. It is an approach to designing all products and services to be usable by students with the widest possible range of both functional (physical) capabilities and different learning styles.

Seven Principles of Universal Design

The following general principles were developed by the Center for Universal Design and have become widely recognized as a summary of the vision of the universal design movement. The list below is based on version 1.0 of the principles, dated April 1997. The Center's Web site has a wealth of universal design resources and can be found at www.design.ncsu.edu/cud.

1. *Equitable use*—The design should be appealing, useful, and marketable to people with diverse abilities rather than being targeted at a specific segment of the population.
2. *Flexibility in use*—The design accommodates a wide range of individual preferences and abilities. It should accommodate right- and left-handed people and let the user work at his or her own pace.
3. *Simple and intuitive*—Use of the design is easy to understand, regardless of the user's experience, knowledge, language skills, or current concentration level. It should also provide effective prompting and feedback during and after task completion.
4. *Perceptible information*—The design should communicate necessary information effectively to the user, regardless of ambient conditions or the user's sensory abilities. One way to do this is to use different modes (pictorial, verbal, tactile) for redundant presentation of essential information and provide adequate contrast between essential information and its surroundings.
5. *Tolerance for error*—The design should minimize the adverse consequences of accidental or unintended actions. The design should provide warnings of possible errors and provide fail-safe features.

6. *Low physical effort*—The design should allow the user to use the item efficiently and comfortably with a minimum of fatigue.
7. *Size and space for approach and use*—The design should allow everyone access and use of all components regardless of body size, posture, or degree of mobility. It should also accommodate assistive devices or personal assistance.

I will look at how these principles apply to designing online content shortly. In later chapters that deal with content creation, I show how, with little effort or learning, you can use these universal design principles to make your course content inclusive.

Universal Design for Learning

The seven principles of universal design are generic and were originally conceived in the context of physical architecture. The question of how to apply them to education is outlined by the movement known as Universal Design for Learning (UDL; National Center on Universal Design for Learning, 2010). The movement was developed at the Center for Applied Special Technology (CAST), a nonprofit research and development organization founded in 1984. This initiative deals with general education issues and, as a result, its principles can be more readily applied to the classroom than to online learning. However, its experience in working toward universal design in classroom education is a good foundation on which to develop concepts relevant for online learning.

CAST describes UDL as a flexible approach to curriculum design that offers all learners full and equal opportunities to learn. Based on research into the diverse ways people learn, UDL offers practical steps for giving everyone the chance to succeed. CAST believes that some people are visual learners, some learn by doing, and some by hearing and has developed a set of guidelines that can include all these learners.

Online learning, by its basic nature, limits the availability of some of the learning modalities discussed by CAST. For example, a math problem can only be solved online by manipulating numbers on the computer, not by manipulating physical objects, as can be done in a live elementary school classroom. As a result some of the CAST universal design for learning principles may have limited

applicability for online learning. Nevertheless, the concept of looking for ways to accommodate the unique skills of online learners is worth considering.

Based on recent research in neuroscience, CAST has identified three primary brain networks and has used these to establish three primary principles that guide its UDL guidelines.

Provide Multiple Means of Representation Because students have different learning styles and needs, it is important to ensure that key information is equally perceptible to all students by

- Providing the same information through different sensory modalities (e.g., through vision, hearing, or touch)
- Providing information in a format that will allow for adjustments by the user (e.g., text that can be enlarged, sounds that can be amplified)

Information should be displayed in a flexible format so that the following perceptual features can be varied:

- The size of text or images
- The amplitude of speech or sound
- The contrast between background and text or image
- The color used for information or emphasis
- The speed or timing of video, animation, sound, simulations, and so forth
- The layout of visual or other elements

This principle applies as much to online as to classroom learning.

Provide Multiple Means of Action and Expression Students differ in the ways that they can navigate a learning environment and express what they know. For example, individuals with significant motor disabilities may have problems navigating electronic text on a computer or in handling a book. They may also have trouble using a pen or using the computer keyboard. Both learning and cognitive disabilities may cause problems related to reading and writing.

In reality, there is no one means of expression that will be optimal for all. The item that will be most relevant for designing online content is ensuring that there is a keyboard alternative for any mouse action so that students can use common assistive technologies that depend on those commands.

Provide Multiple Means of Engagement Teachers devote considerable time and effort to designing content that will grab their students' attention and engagement. But students differ significantly in this respect—what engages one person will bore another. Therefore, it is important to incorporate alternative means of attracting and maintaining interest. One of the most successful ways to get any student's attention is to give him or her choices and opportunities for personal control. Offering students choices can develop self-determination and pride in accomplishment and increase the degree to which students feel connected to their learning. Online delivery provides a rich array of ways to add interest and attractiveness to content, including graphics, audio, video, and more. However, as I discuss later, be sure that such items are not just distractions that draw students' focus away from the main topic of the presentation (Center for Applied Special Technology, 2010).

LEGISLATION, DECISIONS, AND GUIDELINES GOVERNING ONLINE LEARNING

Legislation and guidelines on any subject are usually designed to be broad and generic. Instead of having specifics related to online learning, they will set forth general principles related to education or access to information technology. In this discussion I briefly describe relevant laws and guidelines and point to how they relate to online learning.

From the faculty perspective, the concerns are both how to fulfill them and how much doing so will influence teaching. In most cases, these requirements will affect how content is delivered much more than the content itself. Although there is a mandate to make courses accessible to students with disabilities, a legal exemption exists for situations in which an adaptation would fundamentally alter the nature of the program. For example, making a music appreciation course accessible to someone who is totally deaf would make fundamental changes to the course. However, this exemption very seldom applies.

Relevant U.S. Federal Legislation

In the United States, two pieces of federal legislation contain statements about education and students with disabilities that have come to bear on college and university online learning: the Rehabilitation Act, both Sections 504 and 508, and the

Americans with Disabilities Act, Title II. In the following section I briefly describe the parts that have been interpreted as having relevance for online learning. In a later section I discuss those same portions of the laws in the context of cases that have come before the Department of Education's Office for Civil Rights (OCR).

Section 504 of the 1973 Rehabilitation Act In 1973, the Web and online learning as we know them had yet to come about, so the Rehabilitation Act contains no language specifically addressing online learning. Section 504 has been amended a couple of times in the intervening years, but it still is framed in broad terms. Nevertheless, it is regularly cited by OCR as bearing on its decisions.

The Web site of the Department of Justice (DOJ) says that "The Rehabilitation Act prohibits discrimination on the basis of disability in programs conducted by Federal agencies, in programs receiving Federal financial assistance, in Federal employment, and in the employment practices of Federal contractors." In referring more specifically to Section 504, the page further says that "no qualified individual with a disability in the United States shall be excluded from, denied the benefits of, or be subjected to discrimination under" a program or activity that receives federal financial assistance (U.S. Dept. of Justice, 2005).

The relevance of this legislation for online learning is that any educational program must be made accessible to students with disabilities. Because this is an institutional requirement, you should remind the school of its obligation at budget time.

Section 508 of the 1973 Rehabilitation Act Section 508 was amended in 1998 to specifically cover electronic information and the information technologies used to display it. The legislation plus training resources and constantly updated information are available on the Web (<http://section508.gov>). Section 508 is primarily a federal procurement law: it mandates the federal government to purchase only information technologies and equipment that meet its requirements and to produce only information that meets these standards. The standards cover the operability of equipment and the accessibility of information, including Web pages.

Section 508 has already produced four results:

- More government information on and off the Web is becoming available in accessible formats.

- Because the government comprises such a large market, vendors are beginning to pay more attention to accessibility issues.
- Several state governments have adopted Section 508 or similar standards for their state, and these standards are affecting educational institutions.
- Although Section 508 may not technically apply to education, courts are relying on its standards to assist them in measuring Web accessibility. As a result, these standards are finding their way into legal practice.

Title II of the Americans with Disabilities Act The Americans with Disabilities Act, Title II (28 CFR PART 35), says that the act “prohibits discrimination on the basis of disability in employment, State and local government, public accommodations, commercial facilities, transportation, and telecommunications” (Americans with Disabilities Act, 1990). Frequently cited by the Department of Education’s Office for Civil Rights in its investigations, Title II requires that state and local governments give people with disabilities “an equal opportunity to benefit from all of their programs, services, and activities (e.g., public education, employment, transportation, recreation, health care, social services, courts, voting, and town meetings).” Title II does provide some qualifications. The act says that “Public entities are not required to take actions that would result in undue financial and administrative burdens.” They are required to make reasonable modifications to policies, practices, and procedures, except when doing so would “fundamentally alter the nature of the service, program, or activity being provided.”

DECISIONS OF THE DEPARTMENT OF EDUCATION’S OFFICE FOR CIVIL RIGHTS

OCR is the entity legally responsible for receiving and investigating complaints of discrimination against colleges and universities.

In every official response to a complaint, OCR asserts its legal authority by citing Title II and Section 504 of the Rehabilitation Act of 1973, including the regulations implementing these acts, specifically 34 Code of Federal Regulations, Part 104, which prohibits recipients of federal financial assistance from discriminating on the basis of disability in programs and activities (see, for example, U.S. Dept. of Education OCR, 1997). When OCR investigates a complaint, its function

is not to assign guilt and administer punishment. Its goal is to guarantee that the student receives the rights enshrined in Section 504 and in Title II, and it wants to help the college in fulfilling these responsibilities. The implied threat—the withdrawal of federal funds—has never happened because all parties prefer to work for a resolution. Although an OCR visit may be something between embarrassing and unpleasant, the office can also bring its expertise to help the college with its responsibilities, thereby making the visit a benefit.

Each of OCR’s decisions is based on a specific complaint, so much of the documentation is specific to that narrow instance.

Effective Communication

In a 1997 letter to California State University, Los Angeles, OCR said that Title II of the Americans with Disabilities Act requires that “communications with persons with disabilities [must be] as effective as communications with others.” This covers “any transfer of information including ... the verbal presentation of a lecturer, the printed text of a book, and the resources of the Internet” (U.S. Dept. of Education Office for Civil Rights, 1997). In the previous year, in a letter to San Jose State University, OCR noted the rapidly growing importance of the “information superhighway” and the importance of computer technology in fostering independence for students with disabilities. However, OCR also noted that graphic images commonly used on the Web are not accessible for people using screen reader software (U.S. Dept. of Education Office for Civil Rights, 1996).

These OCR letters do not yet refer to online learning, which was still in its infancy. However, this awareness of the importance of providing effective communication on the Web can readily be translated to an online learning environment.

The meaning of this decision for online learning is that accessibility issues can result in communication that is not equally effective for all students. To avoid being in violation of this provision, online content providers need to design for accessibility.

Timeliness of Delivery

In 2003, OCR responded to a complaint it had received against California State University, Fullerton. The letter said,

In construing the conditions under which communication is “as effective as” that provided to non-disabled persons, on several occasions OCR has regarded the three basic components of effectiveness as *timeliness of delivery* [emphasis added], accuracy of the translation, provision [of the content] in a manner and medium appropriate to the significance of the message and the abilities of the individual with the disability.” (U.S. Dept. of Education Office for Civil Rights, 2003)

In responding to other complaints, OCR again insisted that a service including a communication must be timely. (In terms of providing alternative versions of print material, it previously recognized that the length of the print document made a difference in what would be reasonable to consider as timely.) In the resolution, CSU Fullerton agreed to “provide alternate media to students with disabilities at the same time educational materials are provided to non-disabled students in the same class.” This includes course texts. The resolution set forth dates for faculty to select books and for students to register for the class so that the college would know what book was required for what course and by which student (U.S. Dept. of Education OCR, 2003).

The first way this impacts online learning is that when a print text is required, the college is obliged to obtain an alternative version for students with disabilities. Undoubtedly, the college will already have a system in place to handle this for its on-campus students. This system should also be available to meet the needs of online students as well.

Second, accessible versions of online course content must be provided in a timely manner as well. This means posting content in an accessible format rather than retrofitting it later. One place where this may be relevant is in providing transcriptions for audio and captions for video. The other place it may be relevant is if in some course, accessibility required making and delivering hard-copy Braille or tactile graphics for a student with a disability. These materials should be created and sent to the student ready for use when that online lesson is due.

Undue Burden

In the 1997 letter to CSU Los Angeles mentioned previously, OCR set the bar for qualifying for an “undue burden” exemption so high as to be almost unattainable. OCR stated that “When a public institution selects software programs and/or

hardware equipment that are not adaptable for access by persons with disabilities, the subsequent substantial expense of providing access is not generally regarded as an undue burden when such cost could have been significantly reduced by considering the issue of accessibility at the time of the initial selection.”

This can be compared to the process of creating sidewalk ramps for people who use a wheelchair. If that access was not included in the original design, the curb would have to be broken up and replaced with a new cement ramp—at some cost. But forming the ramp when a sidewalk is poured requires little extra work and is thus much cheaper. The same is true for other design projects: it’s more efficient and less costly to build in access than to add it later.

REVIEW OF OCR DECISIONS AND ONLINE LEARNING

To sum up, the key concepts that OCR uses in its decisions that relate most directly to information technology and online learning are these:

- Communication for people with disabilities must be as effective as that provided to others
- Effective communication for people with disabilities must be delivered in a timely manner

Obviously, online learning is communication and consequently is covered by these concepts.

International Web Accessibility Laws and Standards

The International World Wide Web Consortium (W3C) formulates standards for Web design. One of the W3C’s initiatives is the Web Accessibility Initiative (WAI), which has set forth technical guidelines to make Web pages accessible to people with disabilities and to the adaptive technologies they commonly use. As of this writing, the WAI Web site lists the policies or legislation or both of the following political entities dealing with Web accessibility: Australia, Canada, Denmark, European Union, Finland, France, Germany, Hong Kong, India, Ireland, Israel, Italy, Japan, New Zealand, Portugal, Spain, Switzerland, the United Kingdom, and the United States. It also list similar policies of Canada’s provinces and those of individual states in Australia and the United States (see www.w3.org/WAI/Policy).

Web Content Accessibility Guidelines

In late 2008, WAI issued version 2 of the Web Content Accessibility Guidelines (WCAG 2.0). While the guidelines are highly technical and complex and fill more pages than this book, WAI summarizes them as follows (W3C, 2008; emphasis in original):

Perceivable

- Provide **text alternatives** for nontext content.
- Provide **captions and alternatives** for audio and video content.
- Make content **adaptable**; and make it **available** to assistive technologies.
- Use **sufficient contrast** to make things easy to see and hear.

Operable

- Make all functionality **keyboard accessible**.
- Give users **enough time** to read and use content.
- Do not use content that causes **seizures**.
- Help users **navigate and find** content.

Understandable

- Make text readable and understandable.
- Make content appear and operate in predictable ways.
- Help users avoid and correct mistakes.

Robust

- Maximize **compatibility** with current and future technologies.

Let's look at how these four principles relate to both the universal design and universal design for learning principles described earlier in this chapter:

- *Perceivable*—The fourth of the seven universal design principles states that information should be perceptible, and all three of the UDL principles deal with both perception and comprehension.
- *Operable*—The second of the seven principles urges that design include flexibility in use to accommodate a wide range of individual preferences and

abilities. Likewise, the second UDL principle states that learning design should provide “multiple means of action and expression.” In this context, “operable” refers to the design of a Web page permitting users to interact with it in several different modes to suit their individual needs.

- *Understandable*—The first WCAG principle is limited to perception, which is not the same as comprehension. This principle deals with the ability of users with different learning styles and needs to understand the content. Both the universal design principles and the UDL principles combine perceivable and understandable into a single criteria.
- *Robust*—This WCAG principle does not have an equivalent in the universal design or UDL principles, but it’s not a bad idea. You would definitely want your online materials to be compatible with current Web standards and able to function for as long as necessary.

The Web Content Accessibility Guidelines are not legal mandates, but they are internationally recognized as technical standards and they influence legislation in many countries. In the United States, the Section 508 Web standards *are* requirements and they are similar to many of the basic principles of WCAG.

TAKE-AWAYS FROM THIS CHAPTER

Because digitized information is display independent, schools and universities now have the opportunity to create a learning space that puts students with disabilities on a more level playing field than ever before. This is particularly true for online learning, which is entirely digital. Whether this potential is realized depends in part on whether the systems are based on principles of universal design and conform with information technology standards and with relevant legislation.

Online learning specifically is made or broken by the institution’s Web infrastructure, including the learning management system it selects, and faculty and staff normally have little input into such decisions and selections. However, an awareness of the issues discussed in this chapter will help faculty and staff provide intelligent input when and as they can.

An instructor’s responsibility is primarily to author course content that will facilitate access for students with disabilities, rather than causing needless barriers.

The legislation cited in this chapter makes it clear that providing accessible content is a legal requirement for the institution, its staff, and its faculty—but providing a quality education to all students should be a more useful motivator than is the threat of the law.

The Department of Education’s Office for Civil Rights, instead of trying to punish those who fall short of the target, seeks to assist schools needing help to live up to these responsibilities. This book seeks to show that it is possible to achieve a significant degree of accessibility by continuing to use authoring tools that faculty already know and use.