

# ADA Compliance Wins for Digital Library Spaces

An Infopeople Webinar

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## What Does Disability Mean? How Does It Relate to the Online Space?

There are many different definitions of disability, from medical to social and beyond. As disability covers the entire spectrum of human experience, for the purposes of this webinar we will be using an intentionally broad definition. The following definition of disability comes from [Disabled World's definitions page](#), which states that disability is:

*“an umbrella term, covering impairments, activity limitations, and participation restrictions. An impairment is a problem in body function or structure; an activity limitation is a difficulty encountered by an individual in executing a task or action; while a participation restriction is a problem experienced by an individual in involvement in life situations. Disability is thus not just a health problem. It is a complex phenomenon, reflecting the interaction between features of a person's body and features of the society in which he or she lives.”*

Disability may be temporary or permanent, acquired or inherited, and the World Health Organization estimates on their [disability and health](#) page that over one billion people worldwide, or about an average of 15% of the world's population, currently have some form of disability. The likelihood of disability increases as poverty increases, and there is a [significant link between disability and poverty](#), as discussed by the Governance and Social Development Resource Centre (GSDRC). We should strive to keep this in mind when dealing with our most vulnerable library patrons.

There are myriad types of disability, and all may affect online programming, including assistive technology commonly used to access content. Assistive technology, [according to the Assistive Technology Industry Association](#) (ATIA), is “any item, piece of equipment, software program, or product system that is used to increase, maintain, or improve the functional capabilities of persons with disabilities.”

This may be ‘low tech,’ such as corrective lenses for people with slight visual impairment. How many people do you know that wear glasses and/or contacts? Assistive technology may also be more in-depth, such as screen readers to translate web pages into speech for the visually impaired. The internet has enabled an incredible amount of freedom for people with disabilities to navigate, and it is key that we keep this in mind as we design our programming and documentation. A few types of disability are discussed below, though this list is not exhaustive.

### Visual Disability

Visual disabilities include blindness, low vision, color blindness, and deafblindness.

- **Blindness:** While the term “blindness” is often used to define a total loss of vision, it may also refer to partial blindness, where sight may be extremely limited. Assistive technology for blindness includes **screen readers**. Screen readers convert the text on the web page into spoken words. Blind people listen to web pages. Screen readers enable people with blindness the freedom to independently experience their online world.

- **Low Vision:** Low vision isn't a single condition. It is a broad category encompassing many different conditions, with varying degrees of vision impairment. Types of low vision may include blurriness, blurriness with low contrast perception, cataracts, diabetic retinopathy, glaucoma, hemianopia, macular degeneration, and/or retinal detachment. Assistive technology for people with low vision does include screen readers, but also screen magnifying and altering software, such as ZoomText. For more about screen magnifier technology, Paul Bohman has created [an overview video of features and functionality utilizing ZoomText](#). The video does include closed captions.
- **Color blindness:** By far one of the most common visual disabilities, color blindness affects approximately one in twelve (1 in 12) men in the world and one out of every two hundred (1 in 200) women. The most prevalent form of color-blindness is red-green color-blindness. Deuteranopia and Protanopia are two common sub-types of red-green color-blindness. Some people may also have what is known as Tritanopia, or blue-yellow color-blindness. Though very rare, there are those who inherit an insensitivity to all colors. People who have Achromatopsia see colors in grayscale. Assistive technologies for color blindness are still developing, though companies like EnChroma work to make glasses that can correct for color. Screen magnifiers like ZoomText do have options for color and contrast. However, the most important consideration when considering accommodation for color blindness is to convey information in ways that do not only rely on color. Alternative methods of communicating visual information that is not color-reliant will help us to improve user experience for all users.
- **Deafblindness:** If a person is both deaf and blind, a popular option is to use a refreshable Braille display in combination with a screen reader. Rather than have the screen reader read out loud in an audio format, people who are both deaf and blind have the screen reader output the text to the Braille display, which they can then feel with their hands. In 2019 Elsa Sjunneson-Henry became the first deafblind person to win a Hugo Award. [Her story about becoming a writer](#) may be found on Tor.

### Auditory Disability

Auditory disabilities involve hearing impairment, hearing loss, and deafness. The concern with deafness when transitioning to online programming is the accessibility of audio, in either audio-only formats or audio combined with video. For pre-recorded audio-only files, the best solution is usually a transcript of the audio. The transcript should include all the narration, dialog, *and other important sounds, such as applause, crashes, music*, etc. Video files usually contain audio synchronized with video itself. Time-dependent audio and video require captions. A transcript is not enough, because without synchronized captions, viewers can't know exactly where the transcript lines up with the video. The transcript should be descriptive of all relevant sounds and imagery, including any graphics shown onscreen but not described by the speaker during the video's dialogue. The Deaf community also deserves sign language interpretation whenever possible.

### Motor Disability

A motor disability is a condition that impairs a person's physical movements. Because the spectrum of motor disability is so broad, it is better to focus on accommodations we provide for people dealing with any form of physical impairment. All content should be navigable entirely by keyboard, with no use of the mouse at all. Keyboard navigation is important, as many people with motor disabilities use altered

keyboards, including one-handed and mouth stick keyboards. They may also use speech recognition software to record their thoughts, such as Dragon.

### Cognitive Disability

By far the most common category of disability around the world, this category includes such conditions as dyslexia and dyscalculia, ADHD, speech disabilities, seizure disorders, and psychological disabilities. Because the spectrum of human cognition is so broad, we attempt to cover the spectrum of human learning as best we can. Universal Design for Learning principles, along with [Usability](#) and [User Experience](#) principles, may inform some best practice when designing programming to accommodate the broadest scope of audience members. DO-IT gives a fantastic [overview of the difference between accessible, usable, and universal design](#).

### What's the Difference Between Accessibility and Universal Design?

As educators and librarians, you may be familiar with the principles of UDL. As introduced above, [CAST defines UDL](#) as “a framework to improve and optimize teaching and learning for all people based on scientific insights into how humans learn.” UDL attempts to improve learning for as many people as possible.

Universal design is a broader concept that is defined as “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.”

Usable design serves to create products that are easy and efficient to use. Usability has been defined as the “effectiveness, efficiency, and satisfaction with which a specified set of users can achieve a specified set of tasks in a particular environment.” Usability engineers test the ease at which users can learn to operate a product and remember how to do so when they return to the product at a later time.

Accessible design is a design process in which the needs of people with disabilities are specifically considered.

All of the above strategies, though different, are related when it comes to overall user experience. Librarians are constantly trying to consider the variety of experience of their audience. Accessible design, i.e., ADA-compliant practice, is therefore one aspect of making more products and services which benefit everyone. Improving learning with UDL principles goes hand-in-hand with making sure that that learning is available to as many people as possible.

### Remember, It's the Law

So, what is the ADA, anyway? And how does it affect your programming?

The Americans with Disabilities Act as defined by the [U.S. Department of Labor](#) “prohibits discrimination against people with disabilities in several areas, including employment, transportation, public accommodations, communications and access to state and local government’ programs and services.” The ADA became law in 1990, and recently celebrated its thirtieth birthday. Web accessibility, and therefore online library programming, are mostly concerned with Titles II and III of the ADA, which deal with local government services and public accommodations, respectively. The Department of Justice enforces Titles II and III, and the Department of Education and Department of Health and Human Services (HHS) also enforce Title II.

The Section 508 amendment to the [Rehabilitation Act](#) also expanded the coverage of the requirements of accessible information to electronic information and information technology. If you receive government funding, or work for or with federal agencies in any way, the ADA and Section 508 likely apply to you.

### How is ADA Compliance Measured?

Compliance to ADA and Section 508 standards in the United States, and many laws and regulations around the world, is based upon a set of guidelines known as the [Web Content Accessibility Guidelines](#) (WCAG), recommended by the World Wide Web Consortium (W3C). The guidelines are not the beginning and end of accessible practice but are an important legal and social standard of accessibility across the web.

Though they are complex, the essence of these guidelines can be distilled into a helpful acronym when thinking of accessible content: Perceivable, Operable, Understandable, and Robust (POUR). By breaking down accessibility into these four aspects, we can keep as many people in mind as possible. Information should be **perceivable** to users. This may include text-based alternatives for things like images. Content should be **operable** by all users, meaning that they can successfully navigate it with enough time and keyboard functionality. Information should be **understandable** to all users. The text should have high readability, and not be needlessly complex. And finally, content should be **robust**. A technically accessible experience is not always an equitable experience, and we should maximize the compatibility of our content with assistive technologies as possible.

Sound familiar? Many of the WCAG principles affect the quality of overall content when considering UDL principles, too! Our aim is always to reach as many people as seamlessly as possible.

It is helpful to understand how all these pieces move and fit together and evolve over time. The ADA is inexhaustive, but it is a critical starting point as programming goes increasingly digital.

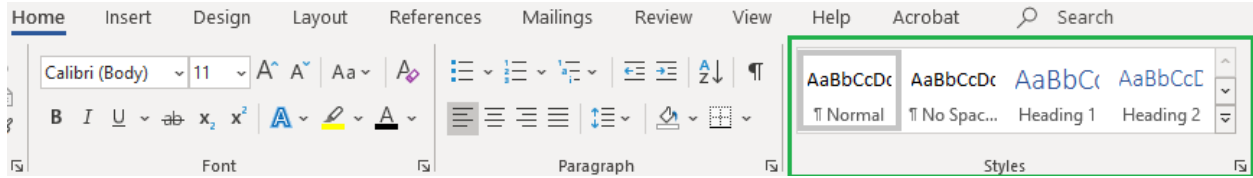
### How Do We Approach Our Documentation with This in Mind?

It's important to start with compliance from the beginning. Making your documents, presentations, and PDFs accessible online will set you up for further success, and it's easier than you think! Remediating a document later can be cumbersome and time-consuming.

### Accessibility in Word

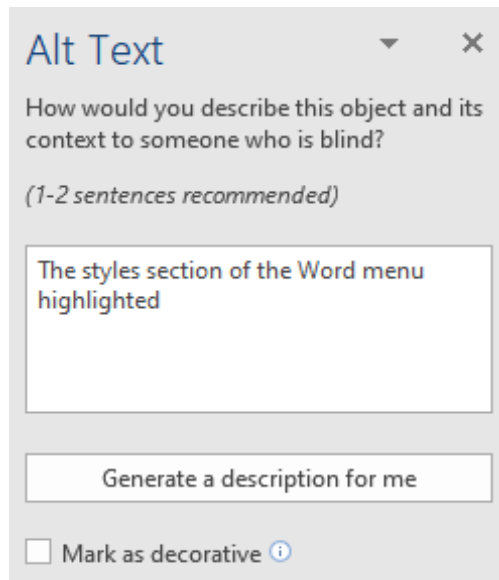
There are several considerations to keep in mind when making Word documents. First, you should make sure that your document contains headings, and that they occur in a logical order. In the Styles section of Word, you can choose and customize what kind of text you are writing, including headings. This helps keep the navigation of your document organized and predictable.

Documents should begin with a Heading 1, and gradually move down between heading levels depending on topic importance. Note that in general Heading 1 should only be used once. Throughout this document you will notice I am organizing content with headings and keeping a consistent and logical order.



Next, we should ensure any images have alternative text (or are marked as decorative, if they are purely aesthetic). You may right-click any image in Word and an option to “Edit Alt Text” should be selectable.

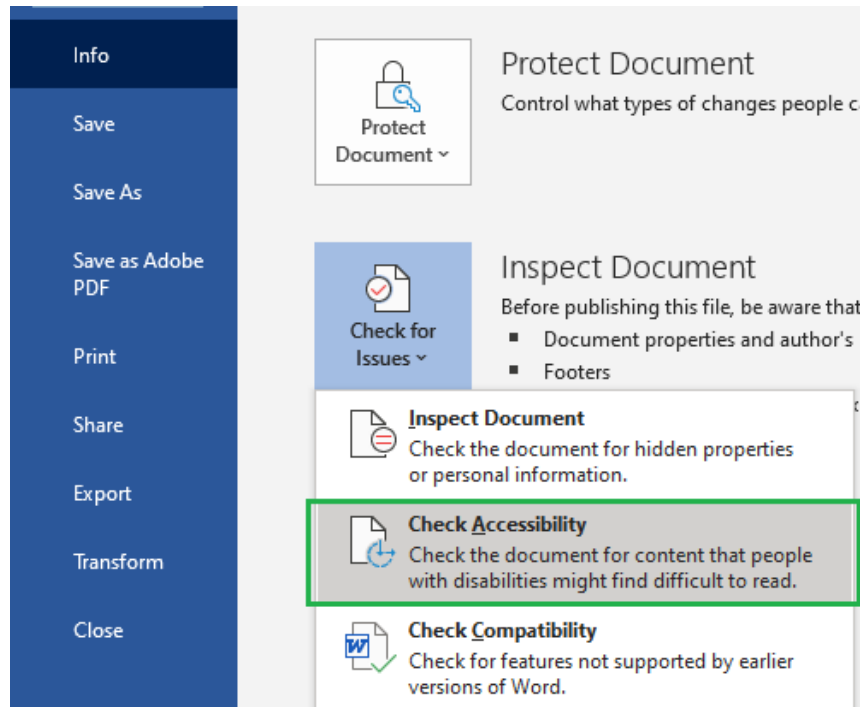
Alternative text should concisely describe the content and purpose of images. In Word 2019 and newer, there is a check box to mark an image as decorative if it is non-essential.



One more easy win for compliance is to ensure that text in your document has a high contrast level. Color contrast is essential to ensure readability in documents, especially for visually impaired or colorblind users. WCAG recommends a ratio of at least 3:1 for very large text, and at least 4.5:1 for all other text. An explanation of color contrast and a contrast calculator can both be found on WebAIM’s [contrast checker](#).

Microsoft has a wonderful landing page for [accessibility support in Word](#). Did you know you can automatically check a number of accessibility features with the built-in [Accessibility Checker](#)?

By selecting “File,” then “Info,” then the “Check for Issues” dropdown menu, we are able to open the accessibility checker in Word. You can even keep it on while you work on a document! Word will automatically scan your document for any possible issues.



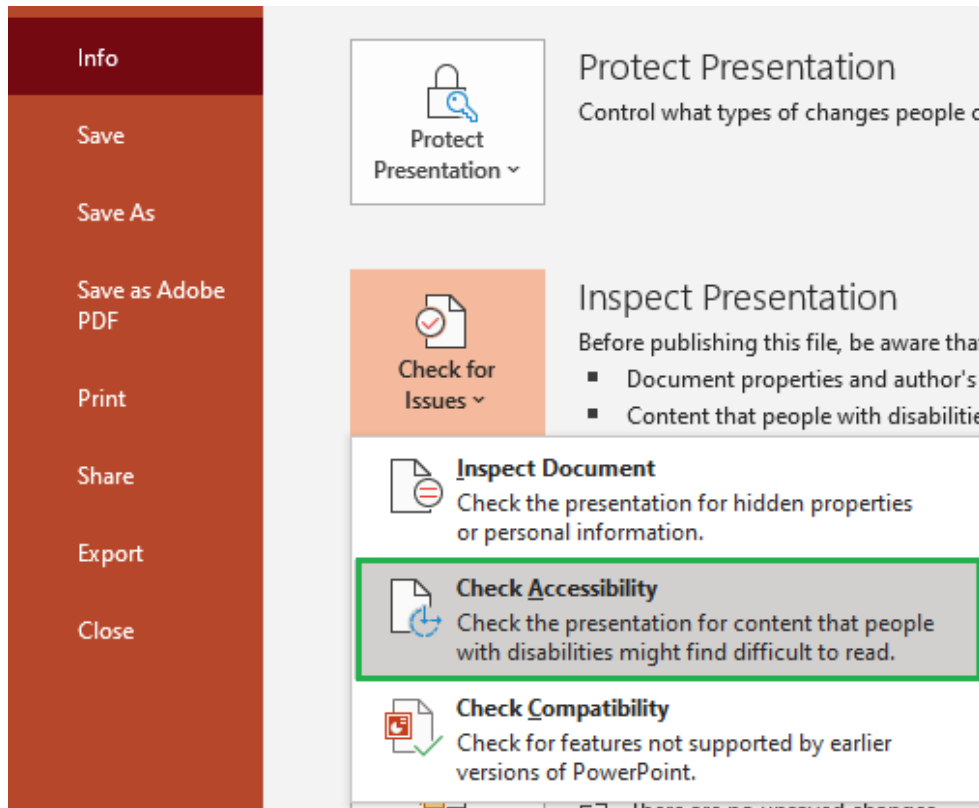
Just be cautious, as there are some things Microsoft cannot check for you. It cannot check whether alternative image text is correct, for example. It also will not check color contrast for you.

### Accessibility in PowerPoint

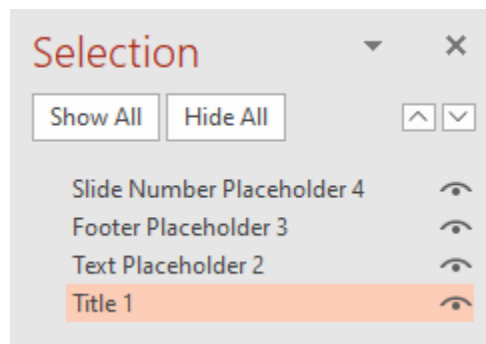
Did you know that PowerPoint has built-in functionality for people with disabilities to allow screen readers to navigate slides? There is even a [sample page of accessible PowerPoint templates](#) that can be easily customized to your needs!

Often, we may be tempted to start from scratch and heavily customize our PowerPoint presentations to make them as spiffy as possible. However, this can run the risk of altering the *read order* of assistive technology within the slides. Starting from an accessible template is a simple way to avoid this. But what if that's not possible?

PowerPoint also has a built-in accessibility checker like Word and is found using the same method. Additionally, PowerPoint contains the ability to customize read order on slides that have been customized.



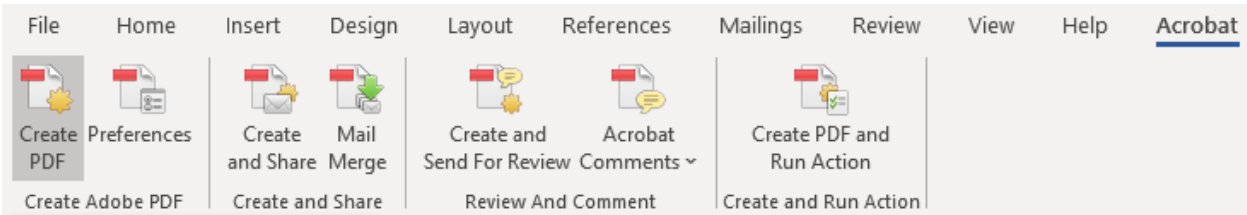
The PowerPoint accessibility checker will let you know if there are issues with the read order of your slides and allow you to change them to be in a logical order. If you'd like to open this open manually, Go to "Home" > "Arrange" > "Selection Pane" to bring up the read order of each slide. It's important to **note** that each slide will be read from the bottom to the top. That is, if you see your slide title at the bottom, it will be read first! The selection pane will help you ensure your slides are being read in the order you need them to be.



### Accessibility in Acrobat

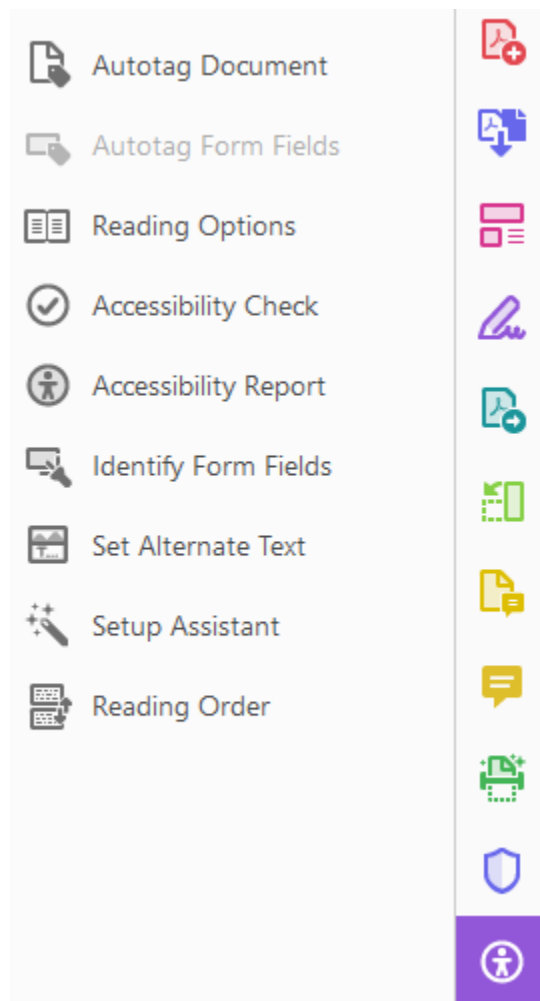
PDF accessibility can be a bit trickier than Word and PowerPoint documents. Accessibility features in Adobe Acrobat require Acrobat Pro, which is what this webinar will refer to.

The first step is to ensure we are exporting documents to PDF format properly. In Word and PowerPoint, there is an Acrobat tab at the top of the menu bar. It is from **here** that we should select "Create PDF" in order to preserve as much as possible.



Exporting documents correctly can save a lot of trouble down the line.

In the Tools menu of Acrobat Pro will be a tool called “Accessibility,” with the ability to pin it to the right-hand toolbar of your program window. The accessibility tool in Acrobat is robust, including both Accessibility Check and Accessibility Report features, as well as the ability to automatically tag a document with necessary information for assistive technologies. Setting alternative text and read order may also be accessed from this menu.



Adobe has an article on [accessibility features](#) that explains what each function does, and WebAIM has a series of [articles on PDF accessibility](#) that is exhaustive and helpful when remediation is the only option. Tagging things by hand is extremely time-consuming, and an accessible base document is a great start to avoid headaches later.



## Accommodating Everyone Online

How do we take accommodations from our physical library space to an online space? How does this change our thinking about disability, and impact our audience reach? How can we tie digital accessibility and ADA compliance in with other principles of design (UDL) to create the best and most seamless programming experience possible, even during the COVID-19 pandemic? Live programming wins include:

- Live closed captions: Many people prefer or require closed captions for presentations, including the Deaf community. Captioning presentations live is a huge leap toward real-time reach for as many audience members as possible.
- Live ASL translation is a basic accommodation need and should be included.
- Full transcripts and closed captions once videos are published help people seamlessly access content at their own pace.
- Avoid color as the only way to convey meaning. Consider other ways to convey the meaning of your content in addition to color changes.
- Spell out acronyms and abbreviations the first time you use them. Especially in fields with plenty of jargon, audience members appreciate having things spelled out the first time they are used.
- Describe any imagery that is content-relevant on-screen. This ensures you don't leave anything out for anyone.

How do we carry this beyond live programming? By restructure our thinking moving forward to broaden our reach, we can make sure we are adding to the freedom of online programming for every person. With increased compliance, our potential audience increases as well. Everyone deserves access to story times.

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