



Bridging the Digital Divide:

Embracing Accessibility in the Future of Technology

Accessibility in 2023

How we are moving towards an accessible technology future for all ?



Adopting accessibility compliance represents an ethical approach to shaping your digital presence. By ensuring your website is accessible to a wider range of users, you open opportunities for a larger audience to engage with your content. As a result, your site's potential audience size expands, potentially leading to an increase in the number of prospective students and, ultimately, higher enrollment rates.

Accessibility explained

Accessibility, in broad terms, refers to the design of products, services, devices, and environments to accommodate people with disabilities. With around 20% of the US population having some form of disability, ensuring accessibility is crucial for promoting inclusion in society. We often encounter accessible designs without realizing it, such as buildings with ramps and elevators for wheelchair users or audio prompts at pedestrian crossings for the visually impaired.

In addition to overcoming physical barriers, accessibility also extends to the digital realm, where approximately 8.5% of the population faces challenges in using the internet and computers due to disabilities. With the increasing reliance on digital technology for communication and information, it becomes essential to incorporate accessibility tools that overcome digital access barriers.

For example, closed captioning in videos benefits deaf users by providing text for them to read, while visually impaired users can utilize screen readers to have digital content read aloud to them. These tools ensure that digital technology is accessible to all, especially those with disabilities.

This article focuses on digital accessibility in relation to PDF files. PDFs are widely used and distributed due to their consistent appearance across different operating systems and devices. Therefore, it is crucial to make PDF files accessible to individuals with disabilities, enabling them to read and navigate through the content seamlessly.

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A brief history about accessibility laws

In 1998, an amendment to The Rehabilitation Act of 1973 introduced Section 508, which aimed to ensure that organizations receiving federal funds would make their digital technology accessible to individuals with disabilities. This requirement is enforced by the U.S. Department of Education's Office for Civil Rights, and numerous colleges and universities have faced legal actions and significant penalties for failing to comply.

Meanwhile, in the year 1996, the World Wide Web Consortium (W3C) recognized web accessibility as a crucial aspect of its mission. To address this, W3C developed the Web Content Accessibility Guidelines (WCAG) as a technical standard, offering guidelines for creating web content that is accessible to people with disabilities.

Unlike Section 508, which is a U.S. law governed by the government, WCAG is a set of best practices that is periodically updated (most recently to WCAG 2.1 in June 2018). The W3C emphasizes a three-pronged approach to ensure the web caters to everyone

These are:



Accessibility



Usability



Inclusion

Some elements of these considerations overlap too. Let's understand them in detail, comparing differences.

Accessibility:

Focusing on providing access to the web for individuals with diverse disabilities, enabling them to interact, learn, and contribute without encountering barriers. Among the three components, accessibility stands as the most urgent concern for digital technologists.

Inclusion:

Ensuring the availability of the web to everyone, regardless of economic status, culture, age, language, geographical location, computer literacy, access to connectivity, or disabilities.

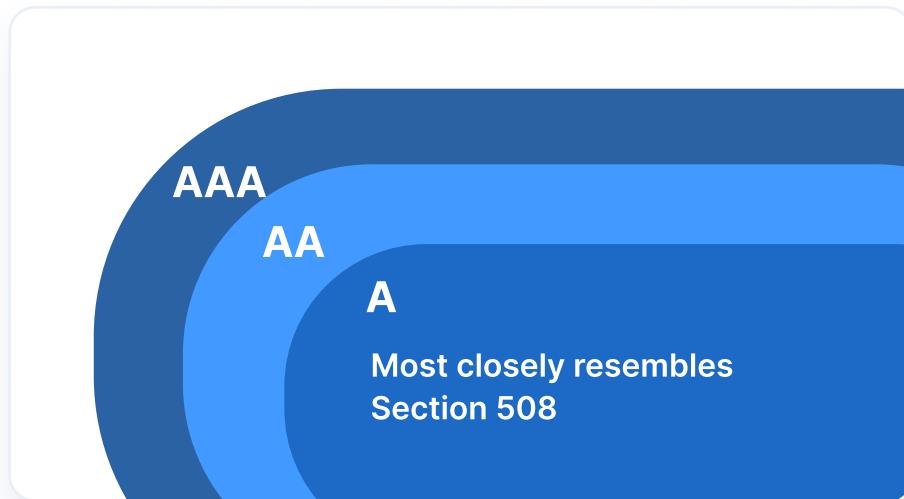
Usability:

Enhancing web use for all users through effective, efficient, and functional design, which can also include features benefiting people with disabilities.

WCAG 2.1 and latest developments

The Web Content Accessibility Guidelines (WCAG) are continuously evolving, with regular updates introducing new guidelines. The current standard, WCAG 2.1, prioritizes three significant areas: cognitive or learning disabilities, low vision, and mobile accessibility.

There are three levels of conformance to accessibility standards, each having varying degrees of design constraints:



Level-A:

This represents the minimum suggested accessibility standards for websites, closely resembling Section 508 compliance. All information on a page adheres to the guidelines or has an alternative version that meets the standards.

To achieve Level A conformance, the following measures can be implemented:

- Character key shortcuts to allow users to disable keyboard shortcuts.
- Pointer gestures that avoid complex actions like two-finger pinch/zoom.
- Pointer cancellation to prevent accidental triggering of touch or mouse events.
- "Label in name" technique, where visual text is contained within labels.
- Motion actuation, ensuring that functionalities using device or user motion are available in the user interface to accommodate disabled users.

Level-AA:

Conformance to this means that the entire page meets accessibility standards, ensuring a higher level of inclusivity.

Some key features of AA conformance include:

Adaptability:	The functionality and content are available in both portrait and landscape orientations, accommodating users' preferences.
Input Clarity:	Forms clearly identify the purpose of different input fields, making it easier for users to understand and interact with them.
Responsive Design:	The content reflows to prevent the need for excessive scrolling, enhancing the user experience on various devices.
Non-text Contrast:	Images have a contrast ratio of at least 3:1 against adjacent colors, making them more distinguishable for individuals with low vision or color blindness.
Text Customization:	Users can override text spacing and line height, allowing them to personalize the reading experience according to their needs.
Content Visibility:	Content appearing on hover or focus ensures that new information appears only when users interact with specific elements, preventing unnecessary distractions.
Error Indication:	Status messages promptly indicate errors, providing users with feedback and guidance when they encounter issues while using the website.

Level-AAA:

This represents the highest level of web accessibility, encompassing adherence to all guidelines from levels A, AA, and AAA. To achieve AAA conformance, web pages and those within a larger process or series of pages must fulfill the following criteria:

Purpose Identification:	The purpose of content is programmatically determined, enabling assistive technologies to convey meaningful information to users.
Timeout Warnings:	Users are warned of inactivity timeouts, reducing the risk of data loss and providing ample time for interaction before any timeout occurs.
Disable Animations:	Users have the option to disable animations resulting from interactions, except in cases where animations are vital for functionality.
Target Size:	Pointer inputs have a target size of at least 44 by 44 CSS pixels, making it easier for users to interact with elements, especially on touch devices.
Concurrent Input Mechanisms:	Web content allows for the use of multiple input modalities simultaneously, ensuring that users are not restricted to a specific input method while interacting with the website.

Benefactors of Accessibility explained

Accessibility is designed to benefit everyone, regardless of their abilities. When properly implemented, it ensures that information and communications can be accessed and understood by a diverse range of individuals, leaving no one excluded.

While accessibility benefits all, there are specific groups for whom it is essential:

People with Disabilities:

Individuals with disabilities benefit significantly from accessible technology. A disability is a condition that hinders a person's ability to engage in certain tasks or participate in typical daily activities and interactions. Disabilities can be classified into various types, including:

Visual Disabilities:

This includes individuals who are blind, color-blind, or have low vision.

Auditory Disabilities:

These are individuals who are deaf or hard of hearing.

Motor Disabilities:

People with physical deficits that make operating a computer challenging fall into this category.

Cognitive Disabilities:

This group comprises individuals with learning deficits that hinder learning and comprehension.

People with disabilities may have their conditions from birth and experience them throughout their lives. These conditions substantially affect their lives, limiting opportunities. Accessibility tools are primarily developed to cater to the needs of this group, helping them overcome barriers and participate more fully in various activities.

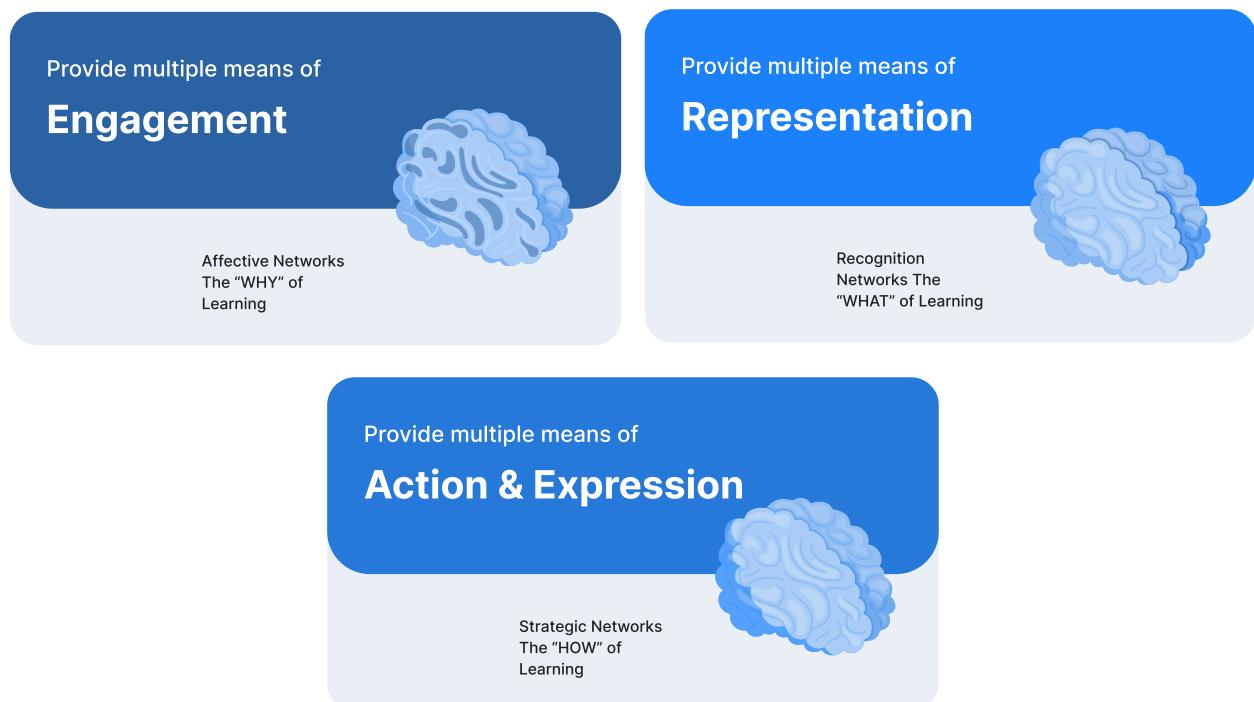
In summary, accessibility benefits everyone, but it is especially crucial for individuals with disabilities, as it empowers them to access and engage with information and technology on an equal basis with others. By considering diverse needs, accessible designs create a more inclusive and equitable society for all.

Understanding UDL

Universal Design for Learning (UDL) is a set of principles aimed at promoting accessibility for all students and eliminating barriers that hinder learning. It focuses on creating an inclusive educational environment that caters to the diverse needs of learners. By implementing UDL, educational settings can enhance equity and ensure that all students can access and engage with the learning material effectively.

UDL recognizes that the primary purpose of a website, for example, is to provide information. Therefore, any barriers that impede communication and information access should be minimized or removed to ensure that differently abled individuals and those with different processing styles can equally benefit from the content. By making digital technology and learning materials more accessible, UDL benefits all individuals, not just those with disabilities.

The goal of UDL is to eliminate the necessity for individual accommodation, as all technology and educational resources will already be designed with accessibility in mind. This approach not only improves learning experiences but also reduces the costs associated with implementing separate accessibility measures for specific students.



In essence, Universal Design for Learning aims to create an inclusive and accessible educational environment, empowering all students to learn effectively without facing unnecessary barriers or obstacles.

To enhance and optimize your website and promote the principles of Universal Design for Learning (UDL), it is essential to apply the UDL Guidelines framework. Additionally, educating your campus about the benefits and implementation of UDL principles is crucial.

Here are the three UDL guidelines that can be applied:

1. Provide Multiple Means of Engagement

- **Minimize Distractions:** Create a website design that is clean and uncluttered, reducing distractions that may hinder students' focus on the content.
- **Optimize Individual Choice:** Offer different ways for students to engage with the material, allowing them to choose activities or paths that align with their preferences and learning styles.
- **Foster Collaboration and Community:** Encourage interaction and cooperation among students through discussion forums, group projects, or online communities, promoting a sense of belonging and shared learning experiences.

2. Provide Multiple Means of Representation

- **Present Information in Different Formats:** Offer content in various formats, such as text, images, videos, and audio, accommodating diverse learning preferences.
- **Highlight Critical Features:** Emphasize important concepts or key points within a topic to guide students' focus and understanding.

3. Provide Multiple Means of Action and Expression

- **Help Students with Goal setting, Planning, and Strategy Development:** Provide resources and tools to assist students in setting learning goals, planning their studies, and developing effective learning strategies.
- **Vary Methods of Response and Navigation:** Allow students to demonstrate their understanding and knowledge through different means, such as written assignments, multimedia presentations, or verbal discussions. Ensure website navigation is intuitive and accessible to accommodate various learning preferences.

By incorporating these UDL guidelines into your website design and educational approach, you can create a more inclusive learning environment that caters to the diverse needs of all students, promoting engagement, understanding, and academic success. Additionally, by educating your campus about UDL principles, you can encourage widespread adoption and ensure that everyone benefits from an inclusive and accessible learning experience.

- **ALT Text:** Use alternative text (ALT text) for images and charts, providing descriptions to aid screen readers in conveying the visual information to visually impaired users.
- **Document Structure:** Organizing information with a well-thought-out and straightforward structure facilitates website navigation and comprehension for users. Instead of using symbols like ">" and "-", using numbers and bullets to indicate lists is more compliant with accessibility guidelines.
- **Easy-to-Follow:** Forms on the website should include clearly labeled boxes with explicit instructions, such as specifying the required character length for passwords.
- **Table Headers:** Tables must have properly labeled headers and fields to ensure that screen readers can interpret the data structure effectively.
- **Links:** Avoid using non-descriptive link text like "click here" or "learn more." Instead, incorporate links into descriptive text that explains where the link leads.
- **Captions:** Videos and audios should be accompanied by captions, and whenever possible, provide transcripts to complement the media.
- **PDFs and PowerPoints:** All non-HTML content, including presentations and PDFs, should be made accessible to ensure equal access for all users.
- **Color Usage:** Avoid using color for navigational or structural purposes, as some users may have difficulty distinguishing between various shades. For blind users, color cannot guide them through the website.
- **Content Clarity:** Ensure clear and concise writing and use properly nested headings and subheadings to organize content for better comprehension.
- **Jumps:** Incorporate jumps within web pages to enable users to move seamlessly through the website. For example, including a "skip to main content" link allows users to bypass navigation and access the main content directly.

- **Design Standards:** Adhere to HTML-compliant and Cascading Style Sheets (CSS) guidelines to create accessible pages that separate content from design, providing flexibility and improved accessibility. Also, enable keyboard navigation to ensure all pages can be accessed without relying solely on a mouse. Content: Create clear and well-structured content using properly nested headings and subheadings. This organization makes it easier for all users to comprehend the information.
- **JavaScript:** When using JavaScript on your website, ensure that event handlers are device independent. This means the functionality should be accessible through multiple input methods, including keyboard navigation.

By adhering to these accessibility principles, you can create a website that is inclusive and usable for all visitors, regardless of their abilities or disabilities.

By following these accessibility guidelines, you can create a more inclusive and user-friendly website that accommodates the diverse needs of all visitors.

Conclusion

Ensuring web accessibility compliance is a multifaceted process with significant benefits for all website users. Given the legal implications, it has become imperative to prioritize accessibility, and delaying action is no longer an option. The sooner an accessibility plan is implemented, the better it is for the organization.

Moreover, improving accessibility not only meets legal requirements but also opens the website to a broader audience. With a more accessible website, the potential size of the audience increases, leading to more opportunities to engage with and attract potential students. Ultimately, this can have a positive impact on enrollment numbers.

The good news is that there are technologies available that can assist in achieving full web accessibility. Additionally, higher education organizations, along with peer colleges and universities, offer abundant resources and guidelines to support the accessibility journey.

By following the tips, guidelines, and utilizing the tools provided in this white paper, the college or university can effectively transform its website into a fully accessible site. Embracing web accessibility not only fulfills legal obligations but also demonstrates a commitment to inclusivity and ensures a better experience for all users.

InfoStride.Inc. provides end-to-end accessibility testing solutions besides a host of other technology services. We are well equipped to ensure that your website adheres to the latest accessibility guidelines and legal compliances. If you have a project in mind, feel free to reach out at <https://infostride.com/contact-us/> today!