eBook

Digital Learning Accessibility For All

Creating a brave new world where digital equality is practiced and preserved.

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Web Accessibility – Why Is It Important?

About 15% of the world's population lives with some form of disability, of which 2 to 4% experience significant difficulties in functioning. The global disability prevalence is higher than the previous WHO estimates, which date back to 1970 suggesting the disability figure to be around 10%.

This global estimate on disability is on the rise due to population ageing and the rapid spread of chronic diseases, as well as improvements in the methodologies used to measure disability.

With incredible medical and technological development comes a serious need to increase accessibility measures to accommodate the rising population of individuals with disabilities.

10%
DISABILITY FIGURE
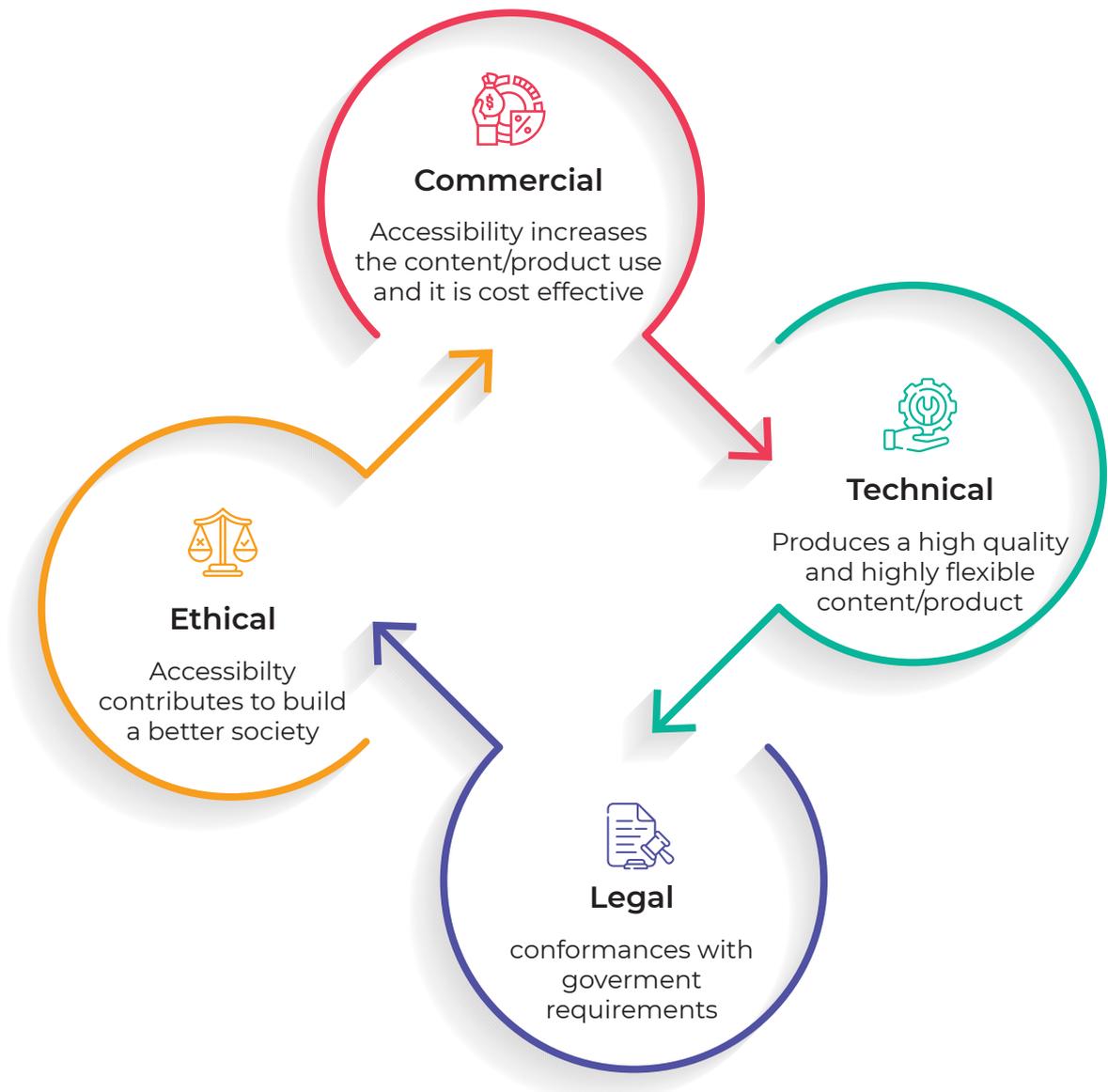
This whitepaper will help in gaining a deeper understanding on web accessibility and covers the following topics:

– The benefits of digital learning accessibility

– Understanding disabilities

– Assistive technologies

– The legal landscape of accessibility

– Complying to WCAG 2.1

The Benefits of Digital Learning Accessibility

While the aim of Digital Learning Accessibility is to provide access to individuals living with considerable disabilities, there are other benefits to making digital learning content accessible. When done well, digital learning accessibility results in a better experience for all users without compromising on the general user's experience. As a matter of fact, it can even reduce costs while improving the market reach.

Commercial

Accessibility increases the content/product use and it is cost effective

Technical

Produces a high quality and highly flexible content/product

Ethical

Accessibilty contributes to build a better society

Legal

conformances with goverment requirements

Are you missing out 15% of your user base?

With nearly 15% of the world's population identified as individuals with disabilities, not making digital content accessible simply means you are potentially missing out on a sixth of the audience. Worldwide, you are missing out more people who, depending on their abilities, may not be able to buy your product, enjoy your video, navigate your digital content, or read your documents. By making your digital learning content accessible and opening up your content to this huge percentage of the population, you get to improve your company's reach dramatically.

Accesibility

Assistive Listening

Text Telephone

Sign Language

Closed Captioning

Braille

Blind

Phone Volume

Legal Compliances – A Global Snapshot

There are several web accessibility standards and legal requirements that may impact your organization, such as Section 508 and Section 504 of the Rehabilitation Act, and the ADA Act followed in the US, the Australia Disability Discrimination Act of 1992 and the UK Disability Discrimination Act 1995 (DDA).

The Accessibility for Ontarians with Disabilities Act (AODA) is the most progressive accessibility law in the world. Even if you are not currently implicated by web accessibility laws, it is better to be proactive in your approach to digital learning accessibility. Recent legal decisions have expanded the scope of these laws to impact.

For instance, the case of the National Association of the Deaf vs. Netflix, extended the rules of Title III of the ADA to the internet, which had previously been applied only to physical structures. The court ruled that Netflix was still a place of public accommodation, and therefore was required to add closed captions to all of its video content. This set a profound precedent for ADA's application to other online places of public accommodation, including colleges and universities. While it is not a law, WCAG 2.1 is the international standard on web accessibility, and is a good standard to aim for institutions that are not directly written into the law.

Disability Discrimination Act (DDA) 1995

– Ensure legal rights for disabled people

– Focuses on employment, access to goods, services and facilities and education

Creating Better Experiences

Parents are always going to be our children's first teacher
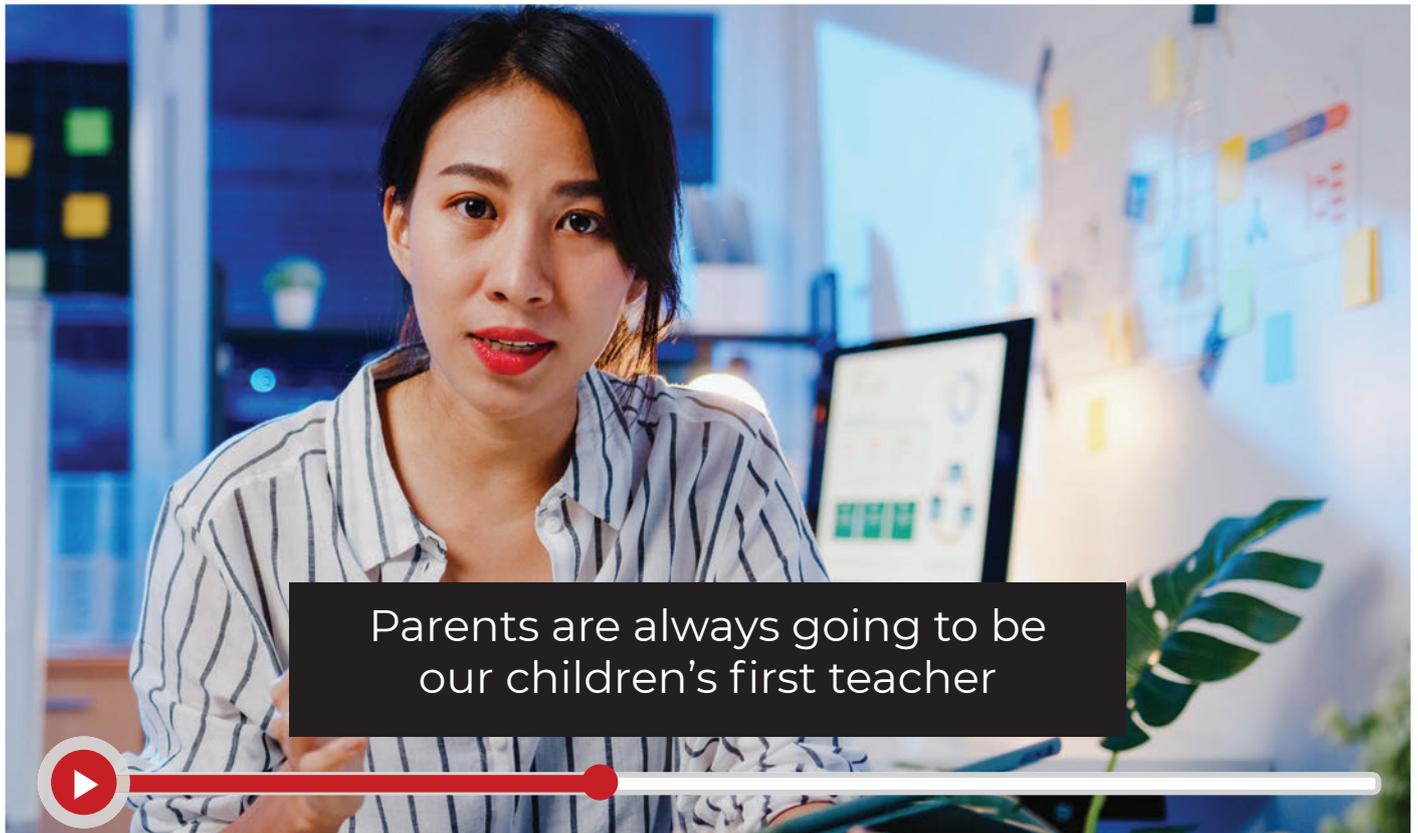
Making your content accessible means you are offering equal access to all of your digital learning content. In many cases, the accessibility measures you take can offer better involvement and understanding for all audiences.

As an example, a study by the Office of Communications in the UK found that 80% of people using closed captions were not deaf or hard of hearing. Closed captions provide increased comprehension and retention for videos where the speaker has an accent or where the content is difficult to understand.

Viewers who know English as a second language benefit from captions or transcripts because they can follow the written text more easily than spoken words. Captions also allow viewers to fully comprehend a video in a sound sensitive environment such as a library or an office.

Why adding Alt Text is important?

Adding Alt text to images is an essential part of creating your digital learning content accessible to users who are visually impaired and use assistive technologies such as screen readers, and to users who use non-graphical web browsers. In both cases, the user will not be able to view the image. Instead their assistive technology will read or display the ALT text that is associated with the image.
This is especially important if the image conveys information that is required for the user to fully understand the information on the web page.

A guide dog looks attentively, saying "This is me pretending to listen" and then stretches its body, saying "and this is me tired and exhausted"

Understanding disabilities
– The foreword to becoming inclusive

Before leaping into different web accessibility practices and assistive technologies, it is essential to understand disabilities and their challenges. Disability is basically the permanent or temporary lack of a given sense. When considering disabilities, we may tend to think about permanent, severe disabilities (e.g., a person who has been blind since birth).

But in reality, many disabilities are measured to be temporary or sporadic. For example, if you broke your arm and had to wear a cast for a month, you would experience a temporary disability. There are also progressive disabilities, which are often related to ageing (hearing loss, memory loss, vision loss, arthritis, etc.).

The following are some of the common types of disabilities people live with:

Visual Impairment

Visual impairment, also known as vision impairment or vision loss, is a decreased ability to see to a degree, that causes problems that cannot be fixed through common means, such as wearing eye glasses. This also includes those who do not have access to glasses or contact lenses.

Mobility / Dexterity

Mobility impairment is generally defined as any disability that restricts the person's gross motor functioning and which may require the use of specially constructed equipment to enable access. The effect of manual dexterity impairment on a student's functioning depends upon the degree of the impairment.

Hearing Impairment

Hearing loss, also known as hearing impairment, is a partial or total inability to hear. A person considered deaf has little to no hearing. Hearing loss may occur in one or both ears and can be categorized as mild, moderate, moderate-severe, severe, or profound.

Cognitive Impairment

Clinical diagnoses of cognitive disabilities include autism, Down syndrome, traumatic brain injury (TBI), and even dementia. Less severe cognitive conditions include attention deficit disorder (ADD), dyslexia (difficulty reading), dyscalculia (difficulty with math), and learning disabilities in general.

Speech / Language Impairments

The Individuals with Disabilities Education Act (IDEA) officially defines speech and language impairments as "a communication disorder such as stuttering, impaired articulation, language impairment, or a voice impairment that adversely affects a child's educational performance."

The Impact of Inaccessible Digital Learning Content

In numerous ways individuals with disabilities get affected due to inaccessible digital learning content. If you have audio or video on your website, individuals with hearing challenges won't be able to access that content, unless you add alternatives.

If headers, tables, lists, and image alt tags are absent or incorrect on the page, screen readers will not work correctly. Users with color deficiency may not be able to navigate important elements on your website that are differentiated solely by color.

Some important questions to verify inaccessible digital content include:

Does your form highlight 'incomplete fields' in red? Do you rely on color symbols to define product offerings or graphical elements? If yes, someone who is color-blind won't be able to access these elements.

Assistive Technologies

In a world that accepts the existence of all capabilities, exchanging and extending senses is the innovative response for making digital learning content and technologies accessible. We are privileged to live in an inventive era where assistive technologies are rapidly emerging to improve accessibility for the differently-abled community. So designing for the extremes, means everyone can benefit.

The following are some of the assistive technologies that enable accessible digital learning:

Magnification software
– For better readability

Many individuals struggle to read small text on digital devices. To help them read better, all major operating systems now come with built-in magnification software. The ability to swipe, pinch, and zoom-in /out, on devices such as mobile, tablet or desktop (touch) allows users to quickly tailor content to their specific needs.

Other technologies such as Zoom Text provide magnification with preventive logic and screen reading software. Big screens and text size controls further enhance the web experience for users struggling to read small text on a digital screen.
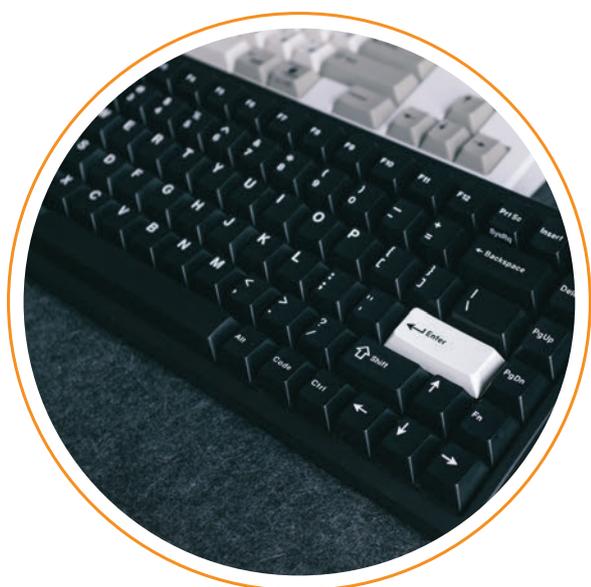
Modified keyboard
– For easy digital navigation

Users with certain motor disabilities have no choice but to use the keyboard, while users who are visually challenged typically tend to use the keyboard for all digital navigation.

The availability of modified keyboards and other hardware that mimic the functionality of a keyboard is a popular option for users with limited ability to use their hands. Such users include those who suffer from tremors and lack fine muscle control, while some others have less to no ability to use their hands, such as users with birth defects or an amputation.

Voice commands
– The user-friendly alternative to typing

Speech recognition is another popular technology that allows people to speak commands rather than typing. We are increasingly enjoying the use of Siri, Google Now, and Windows 10's Cortana to command devices, whether due to episodic disability (driving, arms full of groceries, etc.) or a lack of touch-typing skill.

Speech recognition software not only helps people who don't have mobility in their fingers, but also helps people who are in situations where they cannot type (like driving). This is a perfect example of how designing for the extremes (speech recognition software was designed in the '90s as an accessibility measure) can prove beneficial to everyone.

Touch Screen
– The enabler for digital reading

Braille has been popular method used by visually challenged individuals to comprehend written content. To help them read digital content, dynamic braille displays raise or lower dot patterns on command, and present onscreen text accordingly.
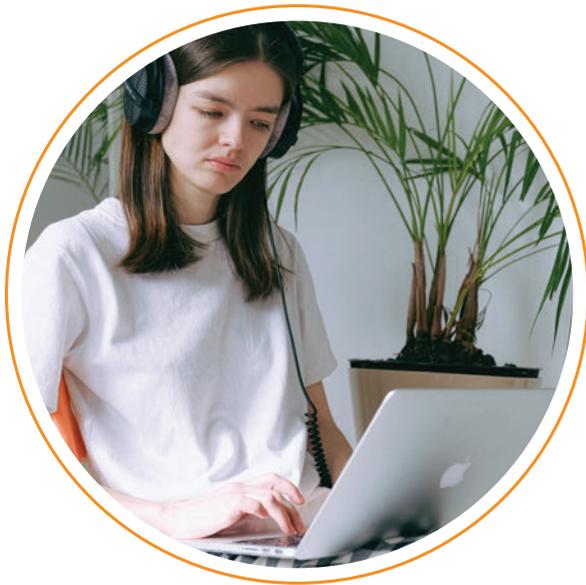
Screen readers
– The digital content voice-over

To ease user experience digital content can also be accessed using a screen reader. Some screen readers (VoiceOver, TalkBack) come as an in-built feature with few operating systems, while more advanced versions such as JAWS or NVDA need to be installed as third party applications on desktop or laptop.

Screen readers can effectively navigate content in the website only when the web page or document is structured using accessible programming and styling.
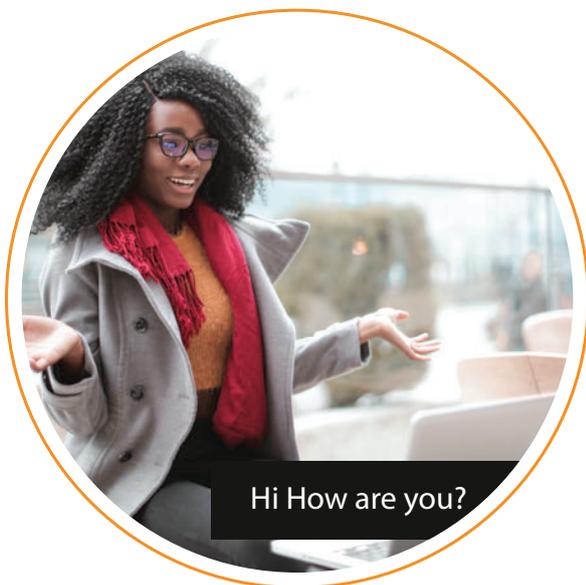
Transcripts and Captions
– For better comprehension

For users with listening difficulties, audio and video content will remain inaccessible if they are not captioned. For such users, the availability of transcripts helps in learning from the audio content, while captions help in understanding videos.

Since captions are time synchronized with the spoken word, it allows users to follow through the visuals along with its context.

International Accessibility Standard WCAG 2.1 and the Legal Landscape of Accessibility
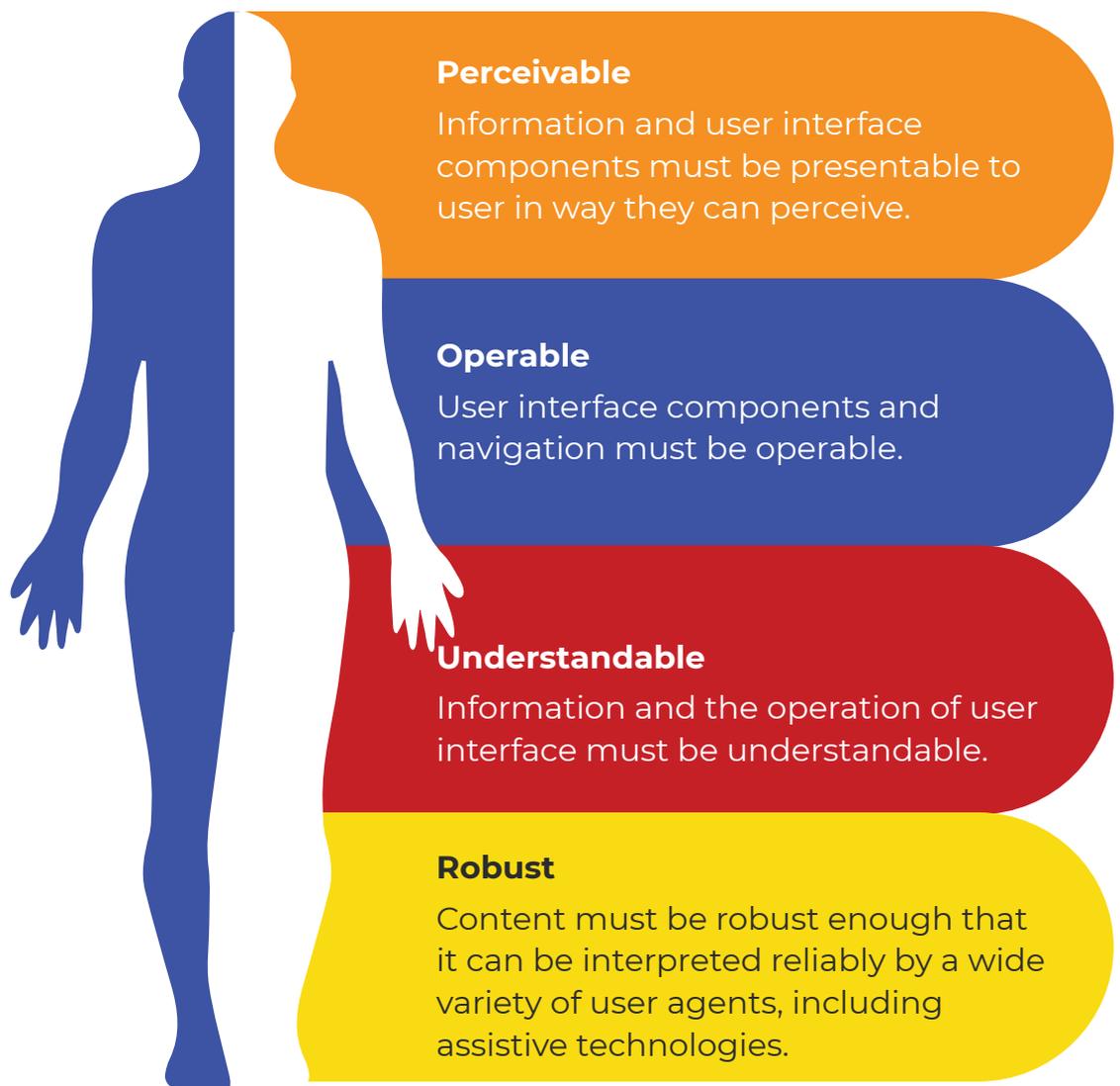

When it comes to accessibility, there are precise legal necessities for individual jurisdictions, but there is one internationally recognized standard of legislation known as WCAG 2.1. However, there are some document standards which also point to PDF/UA - the ISO standard for accessible PDF, that follows similar principles.

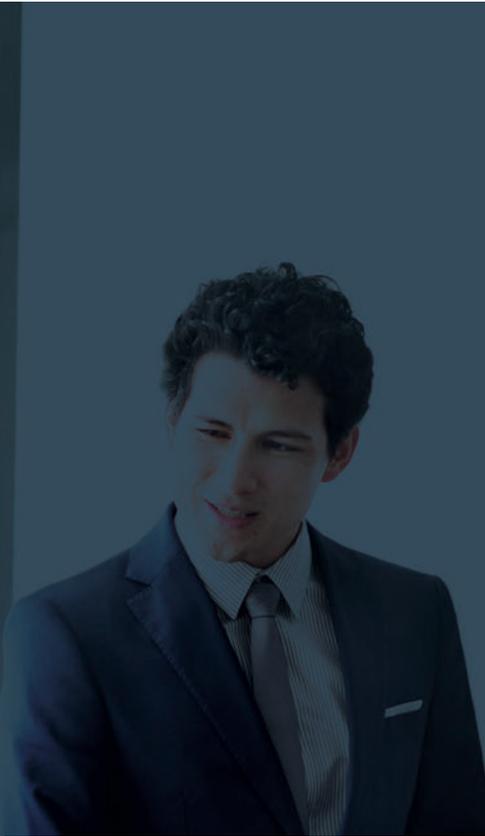If you follow WCAG version 2.1 Level AA, you will comply (or exceed compliance) with most legal requirements prescribed for digital content. Therefore, familiarizing yourself with WCAG 2.1 guidelines is critical for making your digital content accessible. However, accessibility laws cover more than just digital content, demanding other measures as well, in order to comply with all aspects of accessibility.

What is WCAG 2.1?

The Web Content Accessibility Guidelines (WCAG) were created by the non-profit World Wide Web Consortium (W3C). WCAG comprises of a series of guidelines for making web content accessible, and these WCAG 2.1 guidelines were published in the year 2018. WCAG 2.1 is based on four universal design principles and consists of three levels of compliance.

The four universal design principles are:

Perceivable
Information and user interface components must be presentable to user in way they can perceive.

Operable
User interface components and navigation must be operable.

Understandable
Information and the operation of user interface must be understandable.

Robust
Content must be robust enough that it can be interpreted reliably by a wide variety of user agents, including assistive technologies.

WCAG 2.1 success criteria are organized into three levels of compliance

Principles	Guidelines	Level A	Level AA	Level AAA
1. Perceivable	1.1 Text Alternatives	1.1.1		
	1.2 Time-based Media	1.2.1 - 1.2.3	1.2.4 - 1.2.5	1.2.6 - 1.2.9
	1.3 Adaptable	1.3.1 - 1.3.3	1.3.4 - 1.3.5	1.3.6
	1.4 Distinguishable	1.4.1 - 1.4.2	1.4.3 - 1.4.5,1.4.10-1.4.13	1.4.6 - 1.4.9
2. Operable	2.1 Keyboard Accessible	2.1.1 - 2.1.4		2.1.3
	2.2 Enough Time	2.2.1 - 2.2.2		2.2.3 - 2.2.6
	2.3 Seizures	2.3.1		2.3.2 - 2.3.3
	2.4 Navigable	2.4.1 - 2.4.4	2.4.5 - 2.4.7	2.4.8 - 2.4.10
	2.5 Pointer Gestures	2.5.1 - 2.5.4		2.5.5 - 2.5.6
3. Understandable	3.1 Readable	3.1.1	3.1.2	3.1.3 -3.1.6
	3.2 Predictable	3.2.1 - 3.2.2	3.2.3 -3.2.4	3.2.5
	3.3 Input Assistance	3.3.1 -3.3.2	3.3.3 - 3.3.4	3.3.5 -3.3.6
4. Robust	4.1 Compatible	4.1.1-4.1.2	4.1.3	

About Section 508 Refresh (USA only)

On January 18th 2017, the US Access Board published a final rule that jointly updates the requirements for Information and Communication Technology (ICT), covered by Section 508 of the Rehabilitation Act, and Section 255 of the Communication Act, known as Section 508 Refresh.

Section 508 standards apply to electronic and information technology procured by the federal government, including computer hardware and software, websites, and multimedia such as video, phone systems, and copiers.

Section 255 guidelines address access to telecommunications products and services, and apply to manufacturers of telecommunication equipment.

The final rule jointly updates and reorganizes Section 508 standards and Section 255 guidelines in response to market trends and innovations such as the convergence of technologies.

Section 508 Refresh also harmonizes these requirements with other guidelines and standards both in the United States and in other countries, including the standards issued by the European Commission and the Web Content Accessibility Guidelines (WCAG) - a globally recognized voluntary consensus standard for web content and ICT.

(Source: United States Access Board website)

ADA – The civil rights law for inclusivity

The Americans with Disabilities Act (ADA) became a law in the year 1990. ADA is a civil rights law that prohibits discrimination against individuals with disabilities in all areas of public life, including jobs, schools, transportation, and all public and private places that are open to the general public.

The purpose of ADA is to make sure that people with disabilities have the same rights and opportunities as everyone else. This law gives civil rights protection to individuals with disabilities similar to the protection provided to individuals based on race, color, sex, national origin, age, and religion.

ADA law guarantees equal opportunity for individuals with disabilities in public accommodations, employment, transportation, state and local government services, and telecommunications.

This law is divided into five titles (or sections) that relate to different areas of public life namely:

- Employment (Title I)
- Public Services (Title II)
- Public Accommodations (Title III)
- Telecommunications (Title IV)
- Miscellaneous (Title V)

Accessibility Auditing
– Your responsibility as a service provider

Accessibility Auditing is a crucial step to ensure your digital learning content is WCAG 2.1 compliant. With 50 success criteria's dictating WCAG 2.1 Level AA conformance, it is critical to audit your content or products, and identify what works and what needs consideration.

Remember, *Auditing, Testing*, and *Reporting* can also be valuable in proving to regulators and users that your product or website is meeting the accessibility requirements.

With emerging technologies such as Virtual Reality (VR), Augmented Reality (AR), Mixed Reality (MR) and Extended Reality (XR) making ways into the digital world of learning, the mandate for accessibility holds for all. As a proactive learning service provider, it is vital to include accessibility compliance to your future learning service roadmaps as well.

Digital Learning Accessibility is for everyone

Inclusion comprises of creating true accessibility, rather than providing accommodations. A way to achieve this is through universal design, which includes designing products and environments to be usable to the greatest extent possible by everyone, regardless of age, ability, or status in life.

Are you being proactive about inclusion?

Accessibility inclusion means people with disabilities have the chance to participate in every aspect of life to the fullest extent possible. These opportunities include participation in education, employment, public health programming, community living, and service learning. Including people with disabilities in normal activities and encouraging them to have roles similar to their peers who do not have a disability is significant in building the capacity of youth, especially youth with disabilities, and making our society more inclusive for all individuals.

Why choose Integra for Digital Accessibility Services?

Accessible digital learning content not only makes a huge difference to those with impairments, but also helps service providers to meet the relevant legal obligations.

Integra's accessibility experts understand the challenges faced by people with different disabilities and design digital content with an educated approach. Our team is adept in handling legacy content and the usage of operating systems, browsers or assistive technologies, while implementing accessibility at optimized costs. We are also familiar with the laws (Section 508 of the US Rehabilitation Act), ADA & standards (WCAG 2.1) we need to adhere to, to ensure our customers stay compliant.

Our service delivery models are designed with our global customers in mind. Our offshore, on-site and hybrid software development models offer real customer flexibility ensuring engagements that are trusted, transparent and effective. With our extensive expertise in digital content services, we help our customers identify the best approach that suits their individual delivery needs.

Ready to become an inclusive Digital Learning Service Provider?

Talk to Integra's accessibility experts and make your content accessible, adaptable and actionable.