Web Accessibility and E-Learning

Design and development considerations when developing accessible e-learning in order to meet WCAG 2.0 requirements
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Overview

The issue of accessibility is crucial to a growing number of Canadians. This importance is reflected in the growing discussions about accessibility on the web in general, and within e-learning circles in particular.

Canadian governments therefore need to thoroughly grasp the issue of accessibility when providing e-learning, both as an employer providing workplace training, and as the public service disseminator of information to a wide number of stakeholders.

This white paper outlines four aspects of accessibility that government officials who develop or commission e-learning initiatives (for staff or the public) must understand:

Key Discussion Points

- The increasing need for accessibility due to demographic changes
- The legal requirements regarding accessibility in e-learning
- The WCAG 2.0 web accessibility standards that must be met
- The design guidelines and suggestions for achieving accessibility within e-learning
Demographics, disabilities and accessibility

The spread of computers and apps has made dummy text better known. In the 1960s, the text suddenly became known beyond the professional circle of typesetters and layout designers when it was used for adhesive letters on transparent film, popular until the 1980s. Versions of the text were subsequently included in software applications.

Due to demographic changes, accessibility in e-learning is increasingly necessary. It is well known that the Canadian population is getting older on average, and many seniors are working past what was once retirement age.

In 2011 (the last national census), the median age in Canada was 39.9 years, substantially increased from 26.2 years in 1971. Let’s take a closer look at our aging population by using this government table of historical and projected percentages of citizens 65 years and older.

% of population 65 old + in Canada, Historical (1971-2011) and Projected (2012-2061)
Seniors make up the fastest-growing age group (5.0 million Canadians over 65 in 2011), according to Employment and Social Development Canada. This trend is “expected to continue for the next several decades due mainly to a below replacement fertility rate (i.e. average number of children per woman), an increase in life expectancy, and the aging of the baby boom generation.” By 2036 it is estimated that the number of seniors will double in the next 25 years to reach 10.4 million seniors by 2036. By 2051, about one in four Canadians is expected to be 65 or over.

As a consequence of this trend, the number of Canadians with disabilities is on the rise. Increased awareness and fewer stigmas has also meant that more disabilities are being identified. According to an article published by Statistics Canada, 4.4 million Canadians, or 1 in 7 of the population, reported having a disability, up significantly from a previous survey in 2001. It is therefore easy to see the need for universal accessibility in order to provide an even playing field in the workplace for older Canadians as well as others with disabilities.

While it makes sense (and, as discussed later, is required by law) to provide accessible materials to these groups, all groups can be addressed and serviced through accessible e-learning. Near-universal access to the Internet has resulted in significant changes our daily lives, not the least of which is how we learn. With e-learning, people can learn at their own pace and overcome barriers caused by distance, age and physical or learning disabilities. Similar to the general concept of universal design, which aims to design products and spaces that everyone regardless of age or ability can use, e-learning should strive to be accessible and engaging to all. Everyone benefits when a fully-inclusive workforce is able to train, learn and improve skills creates better products, services and communities.

The question people must ask is whether the e-learning is inclusive and accessible enough for our aging population? Can it be easily available in other languages to service new Canadians? And are the accommodations for disabilities sufficient to meet legal requirements?

Legal requirements for accessibility: The duty to accommodate

Providing accessible e-learning clearly makes sense when addressing the needs of workers and the ageing general population. However, it is also a legal obligation. The Canadian Human Right Act declares it is an employer’s duty and obligation to provide equal opportunity and accommodation to all employees without discrimination based on disability.

The Human Rights Act states: “all individuals should have an opportunity equal with other individuals to make for themselves the lives that they are able and wish to have and to have their needs accommodated, consistent with their duties and obligations as members of society, without being hindered in or prevented from doing so by discriminatory practices”.
Further, the Treasury Board Policy on Duty to Accommodate (DTA) Policy says: “It is the policy of the Treasury Board and the Public Service Commission to create and maintain an inclusive, barrier-free environment in the federal Public Service to ensure the full participation of persons with disabilities. This policy is to be implemented by:

- identifying and removing barriers to employment, career development and promotion of persons with disabilities unless doing so would result in undue hardship
- designing all employment systems, processes and facilities to be accessible by building accommodation into workplace standards, systems, processes and facilities and
- accommodating individuals when such barriers cannot be removed. Such accommodation must be made to the point of undue hardship taking into consideration issues of health, safety and cost”.

The Employment Equity Act is a federal law that requires the employer to provide equal employment opportunities within the organization. Providing equal access to internal training is an obligation.

In Ontario, the laws are similar and, taken together, paint a clear path for accessibility. Under the Ontario Human Rights Code, everyone has the right to be free from discrimination because of disability or perceived disability in the social areas of employment, services, goods, facilities, housing, contracts and membership in trade and vocational associations. This right means that persons with disabilities have the right to equal treatment, which includes the right to accessible workplaces, public transit, health services, restaurants, shops and housing.

However, it is clear that all websites, and all e-learning programs, do not measure up to these standards. Let’s examine the existing web standards and guidelines for accessibility.
The application and enforcement of WCAG 2.0 web accessibility standards by and within the Government of Canada

The World Wide Web Consortium (W3C) is an international community in which member organizations, a full-time staff, and the public work together to develop Web standards. In cooperation with individuals and organizations around the world, W3C has developed Web Content Accessibility Guidelines (WCAG). Their intent is to provide a shared standard for Web content accessibility that meets the needs of governments as well as individuals, and organizations.

W3.org makes clear why they created the WCAG standards and why they are essential to inclusive learning:

“Web Content Accessibility Guidelines (WCAG) 2.0 defines how to make Web content more accessible to people with disabilities. Accessibility involves a wide range of disabilities, including visual, auditory, physical, speech, cognitive, language, learning, and neurological disabilities. These guidelines also make Web content more usable by older individuals with changing abilities due to aging and often improve usability for users in general.”

Building on WCAG 1.0, the updated WCAG 2.0 standards are designed to be testable by automated processes and human assessment. The standards are intended to apply to current and future web technologies.

The Government of Canada’s Treasury Board Secretariat adopted the WCAG 2.0 standard on August 1, 2011 and was updated March 31, 2013. It replaces Part 2 of the Common Look and Feel 2.0 Standards for the Internet. The standard applies to web pages (which include e-learning) that are public-facing and for which the department is accountable, and that are provided through Government of Canada websites and web applications. This means that e-learning and web pages made available to individuals and businesses outside of the Government of Canada must meet the WCAG 2.0 standards.

This Government standard was implemented in phases. Within each phase, each of the categories mentioned were required to follow the WCAG guidelines.
August 1, 2011 – February 29, 2012

- All home pages and pages referenced from website and Web application home pages
- Significant number of Web pages that provide the most important information and services for individuals and businesses including rights and benefits
- Significant number of Web pages that are the most frequently used

March 1, 2012 – July 31, 2012

- Additional Web pages that provide the most important information and services for individuals and businesses including rights and benefits
- Additional Web pages that are the most frequently used

August 1, 2012 - July 31, 2013

- Remaining Web pages

*Although no official announcements have been made public, it is expected that WCAG 2.0 standards will apply to internal “web applications” within the federal public service by September 2015.

Significantly, all new Web pages published post October 1, 2011 must immediately conform to the guidelines.

The Treasury Board Secretariat plays a role in monitoring compliance and directing consequences for non-compliance. This does not apply with respect to the Office of the Auditor General, the Office of the Privacy Commissioner, the Office of the Information Commissioner, the Office of the Chief Electoral Officer, the Office of the Commissioner of Lobbying, the Office of the Commissioner of Official Languages and the Office of the Public Sector Integrity Commissioner. The deputy heads of these organizations are solely responsible for monitoring and ensuring compliance with the standard within their organizations.

Consequences of non-compliance with this standard can include any measure allowed by the Financial Administration Act that the Treasury Board would determine as appropriate and acceptable in the circumstances.

Although we are lacking a clear consensus on exactly when and how governments will be obligated to make internal or inward-facing web pages and websites WCAG 2.0 compatible, the inevitability of this requirement means government officials have been considering their strategy for compliance.

Between the Acts and the Government of Canada’s adoption of the WCAG 2.0 web accessibility standards, it is clear that government-created e-learning for employees, partners and the general public must adhere to high standards of accessibility. It is crucial that e-learning in these
contexts are designed by those who thoroughly understand the legal requirements and WCAG 2.0 guidelines, as well as the role of authoring tools in building accessible content and formats.

How to design for accessibility

We know that e-learning and web pages must meet accessibility standards to best serve the most people, as well as to meet legal requirements. But how is this done? Instructional designers, programmers and graphic artists play a key role in ensuring that web design and e-learning course design is done with care and attention to those who require accessible content. This section contains some of the common guidelines that these professionals follow in order to achieve e-learning accessibility.

The eLearning Industry website features a simple Top 10 list by Alan Bourne that is a good starting point:

**Top 10 tips for creating accessible e-learning**

1. Complex **interactions** should be avoided where possible as they require the user to heavily engage with the course visually.

2. Think about **colour contrasts** for users that are colour-blind or have difficulty determining colours.

3. Make sure **font sizes** are large enough for those with poorer vision to see.

4. Create **ALT tags** to describe each image or diagram.

5. Provide **captioning** or transcription for audio and video.

6. **Avoid drop-down** menus as screen readers will interpret them as one object.

7. Make sure information is available through the **keyboard**. Functions requiring use of the mouse create barriers to accessibility.

8. Use HTML **heading tags** as screen readers can identify them and use them as navigational aids.

9. Make sure that **navigation** is clear. Avoid using ‘click here’ for hyperlink text, be descriptive and provide as much detail as possible.

10. Use a development checklist to make sure you have covered everything you need to in order to make the course accessible.
Skilled e-learning designers and programmers are also experienced in more detailed aspects of ensuring accessibility through appropriate font choices, the use of colour contrast, the ways text readers handle abbreviation, formatting and punctuation, and code that permits easy text enlargement. They also must be proficient at comprehensive testing, validating and reporting of accessibility within web pages, applications and PDF documents. Accessibility concerns are always addressed to ensure at least “double A” WCAG 2.0 standards.

CONCLUSIONS

For appropriate levels of accessibility that best serve government employees, partners and the public, government e-learning products must demonstrate thorough understanding of and compliance with the relevant Acts, web standards, and principles.

This white paper outlined the following four main areas of knowledge essential to governments that provide e-learning both as an employer and as public service disseminator of information to the public:

• Due to demographic changes and growing disabilities, accessibility is more important than ever, and accessible ‘Universal Design' benefits everyone.

• Accessibility is required by law as well as common sense or design principles.

• Clearly defined standards of accessibility already exist and must be met.

• E-learning designers should carefully follow design guidelines for achieving accessibility. They should test their products extensively.
ABOUT INSTRUX MEDIA

Instrux Media delivers cutting edge accessible (WCAG 2.0 AA) e---learning solutions and who has also developed and implemented the most accessible Learning Management System currently available on the market within private and public sector organizations. Instrux Media provides rich, platform---independent, cost effective e---learning for both private and public sector organizations.