Introduction to Web Accessibility Recap
By Rich Freese

I had the opportunity in April 2019 to complete a course from Ryerson University: Introduction to Web Accessibility. More information about the course can be found here: https://de.ryerson.ca/wa/introduction/

People often think of accessibility in terms of helping people with disabilities, or something that's done as a legal obligation or for good business practices, but it's worth noting that increasing accessibility benefits everyone. For example, curb cuts – those ramps leading from streets to sidewalks – make it possible for people in wheelchairs to safely cross the street, but everyone benefits from those. It's now easier to ride my bike, pull my kids in a wagon, etc.

The course focused on Web Content Accessibility Guidelines (WCAG) and it's four main principles:

Perceivable: Can users perceive or sense what is being presented?
Operable: Is this usable?
Understandable: Can users comprehend how this works?
Robust: Will this work for a wide variety of users and assistive technologies?
Guidelines and techniques for each of the above principles can be found here: https://www.w3.org/WAI/WCAG21/quickref/

The are three different levels associated with each guideline: A, AA, and AAA.
Level A guidelines focus on preventing barriers that will make content inaccessible to some people. These must be addressed.
Level AA guidelines focus on preventing barriers that will make content more difficult to access. These should be addressed to prevent unnecessary, additional effort.
Level AAA guidelines focus on usability. These could be addressed to increase usability. Generally, Level AA is the recommended level to strive for when developing online environments.

Perceivable relates to how users can sense or grasp the material that is being presented. For web content to be accessible, it must be able to be perceived through more than one sense; if it's only perceptible by one sense (for example, sight), it's inaccessible to someone with disabilities in that sense.

Vision impairments present probably the greatest challenge for web accessibility, and screen readers can help blind and low-vision users access the internet. To experience internet browsing with a screen reader, you can try out a free Chrome browser screen reader here: https://chrome.google.com/webstore/detail/chromevox/kgejglhpjiefppelpmljglcjbhoiplfn

You can help make online materials more perceivable by avoiding small font sizes, making sure there is sufficient visual contrast between text and background imagery, including alternate text with images (the screen reader reads the alternate text to the user to convey the picture), including captions for videos, and presenting material in a clear, easy to navigate order.

You can test color contrasts at this link:
https://webaim.org/resources/contrastchecker/

You can use this site to create captions for videos:
https://amara.org/en/videos/create/

Operable focuses on usability. Some users are physically unable to use both a keyboard and a mouse, but they might be proficient with one or the other. As instructors, we might not have the capabilities or access to design an online environment that isn't dependent upon a mouse or keyboard, but we can certainly provide input during the course creation process to ensure that it's usable for as many people as possible.

It's worth noting that time limits can make the online environment less operable. Some people with disabilities might need more time to perceive, process, or comprehend material; this can also apply to people as they age. Do any of your courses use timed quizzes? As you design your courses, think about time limits. Why might your course need them? Why might your course not need them? Some assessments by their very nature require time limits (for example, tests that measure typing speed), but removing time limits will make your course more operable, and therefore more accessible.

When incorporating visuals or media, avoid flashes, flickers, or other visuals that can trigger seizures or physical reactions; a website isn't operable if it's causing physical harm.

Understandable can sometimes be thought of in terms of readability. Acronyms, abbreviations, complex terms – words that aren't immediately recognized – can be more difficult for general audiences, so making sure there's an easy way to find definition helps users.

For ideal accessibility, aim for a 9th grade reading level. If readers are more advanced, it's especially easy for them to read through material, and the material will still be accessible for less advanced readers.

This goal does present a difficulty while working in academia, and a reminder that there's no one-size-fits-all approach for accessibility. After all, we're teaching material at a 13-16th grade level. As an idea: while we will likely use terms that are beyond a 9th grade reading level, we can work on making sure students can easily find definitions for such vocabulary.

You can use these two tools to test how understandable your writing it:
https://www.online-utility.org/english/readability_test_and_improve.jsp
https://datayze.com/passive-voice-detector.php

The last section, **Robust**, was admittedly geared more towards the technical, designed for programmers, IT personnel, etc. Robust web design will work for a wide variety of users on a wide variety of platforms. As instructors, we might not be able to design a web page that's robust, but we can certainly advocate for it when we design online courses.

You can review the robustness/validity of a website with the following tool:
https://validator.w3.org/

Any thoughts on accessibility with your courses, perhaps as it relates to perceivable, operable, understandable or robust, or in more general terms? How might we incorporate these ideas into our Independent Learning courses?