

Evaluating the Accessibility of Auburn University's

English Department Website

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OVERVIEW

This article presents current web accessibility guidelines and standards and presents the findings from a brief analysis of Auburn University's Department of English Website (AUDOEW) to determine if those standards are being adequately met. This article details the importance of web accessibility, a brief history regarding the rules and regulations of web accessibility, and describes the current laws set in place regarding web accessibility specifically in regard to higher education, mainly covering Section 508 of the Rehabilitation Act. This analysis is based on the current guidelines established by Web Content Accessibility Guidelines (Web Content Accessibility), version 2.0, focusing specifically on the 12 characteristics that WCAG 2.0 has produced for a website to be considered accessible. The AUDOEW will be examined against the list of WCAG 2.0 accessibility characteristics and recommendations will be given to the Department of English Webmaster to improve the accessibility of the website.

BACKGROUND

According to the World Health Organization, "Worldwide, there are 300 million people with a disability, including an estimated 180 million visually-impaired and 250 million hearing-impaired individuals" (Deafness and Hearing). In the United States, the Census Bureau stated in 2012 that "56.7 million Americans (18.7% of the U.S. population) have some type of disability and out of this number, an estimated 38.3 million (12.6%) have a severe disability" (Accessibility, Interactive). According to the Pew Internet Project, a 2011 survey conducted by Princeton Survey Research Associates International states that 54% of adults living with a disability have an active online presence (Duggan, 2014). The United Nations Convention on the Rights of Persons with Disabilities states that having complete access to information and communications technologies and

systems is one element that will “enable persons with disabilities to participate more fully in all aspects of life” (UN.org). To successfully meet the needs of any visitors to their website, and to recruit to potential students of all abilities, it is vital that higher education establishments ensure their website is fully accessible, as failure to do so can lead to significant legal liability (IT Accessibility).

As of January 2017, the federal government officially adopted WCAG 2.0 standards, meaning that higher education establishments must follow WCAG 2.0 criteria to both ensure that students with disabilities have equal access and that the university does not violate the federal law, as outlined in Title II of the ADA Guidelines.

BRIEF HISTORY OF WEB ACCESSIBILITY

WCAG 2.0

The history of the Web Accessibility Movement began in 1996 with the creation of the Web Accessibility Initiative (also known as W3C), an organization that has pioneered accessibility efforts for the last 20 years (Same Origin Policy). W3C began as a group of like-minded individuals that were passionate about "starting a movement to make the web more accessible to people who would otherwise be unable to use the internet" (Illyism, 2016). While W3C took a few years to gain momentum (and the attention of the public) by 1997, the organization was able to present a briefing package to the U.S. Government proposing support from U.S. funding agencies to develop research and guidelines to make the web as a whole more accessible. Today, W3C has the support of The U.S. Department of Health and Human Services, as well as major technical leaders, such as Adobe, HP, IBM, among others (Illyism, 2016).

In 1999, W3C's initiative led to notable advancements in the world of web accessibility,

with the creation of The Web Content Accessibility Guidelines, also known as WCAG 1.0. WCAG 1.0 focused on ensuring websites were created with accessible HTML coding (W3.org). However, as technology continued to advance, W3C soon realized that web accessibility entailed more than just HTML, as individuals with disabilities also needed access to varying forms of digital web assets, including items such as PDFs, texted documents, spreadsheets, tables, presentations, eBooks, mobile applications, etc. (Sims, 2018). To expand their guidelines to cover these items, WCAG 2.0 was created in 2008 to "broaden the technical footprint of what was covered" (Sims, 2018).

ADA

The ADA (Americans with Disabilities Act), signed into law in 1990, makes it illegal "for any U.S. government or business to provide goods and services to the public that are not also accessible to people who have disabilities" (ADA Compliance Guidelines).

The ADA is broken down into two major sections, which include Title II and Title III. Title II of the ADA prohibits disability discrimination in services, programs, and activities provided by State and local government entities (ADA Compliance Guidelines). These entities include publicly-funded universities, community colleges, and vocational schools. Title III of the ADA prohibits disability discrimination in the "full and equal enjoyment of the goods, services, facilities, privileges, advantages, and accommodations of any place of public accommodation" (Title II). This includes private universities and vocational schools. In order to successfully fulfill the requirements of Title II and III of the ADA, institutions of higher education in the U.S. must make "online lectures, courses, materials, websites, LMS, MOOCs, and any other technology accessible to students with disabilities as well as the public if made freely available" (Flynn, 2018).

To establish the accessibility level of a website, "The U.S. Department of Justice (DOJ),

which enforces the ADA, issued a Supplemental Advanced Notice of Proposed Rulemaking (SANPRM) to incorporate web accessibility into the standards (ADA Compliance Guidelines). It is highly advised that organizations use the accessibility guidelines as set forth by WCAG 2.0 as a guide for digital accessibility.

REHABILITATION ACT

Section 508 of the Rehabilitation Act of 1973 is a law, mandated by Congress in 1998, that requires all "Federal agencies to make their electronic and information technology (EIT) accessible to people with disabilities" (IT Accessibility). Section 508 applies to all Federal agencies when they "develop, procure, maintain, or use electronic and information technology" (Section508.Gov). According to Section 508, "private websites are not required to comply unless they are receiving federal funds or under contract with a federal agency" (IT Accessibility). However, there are four main instances in which a university would be subject to Section 508 standards:

- The university is given funding through the Assistive Technology Act
- The university is located in a state that has adopted Section 508 into educational State laws
- The university requires Section 508 compliance for its accessibility policy
- The university is part of a larger university system that requires 508 compliance (IT Accessibility).

Similar to the ADA, Section 508 standards are fully met when a website follows WCAG 2.0's Accessibility guidelines.

WCAG 2.0 12 GUIDELINES

The WCAG 2.0 standard consists of 12 guidelines organized under four overarching

principles. The four major principles are to ensure that a website is 1. Perceivable, 2. Operable, 3. Understandable, and 4. Robust (Web Content Accessibility). Each of the four overarching principles are detailed in the tables below.

The following, Table #1, describes Overarching Principle #1: Perceivable, and its four overarching guidelines.

Overarching Principle #1: Perceivable	
Guideline #1	Provide text alternatives for non-text content
Guideline #2	Provide text alternatives for non-text content
Guideline #3	Create content that can be presented in different ways, including by assistive technologies, without losing meaning
Guideline #4	Make it easier for users to see and hear content

Table 1: Overarching Principle #1: Perceivable, & Four Overarching Guidelines

According to WCAG 2.0 standards, a website is considered to be perceivable if the overall information and user interface components are presented to users in ways they can perceive. This standard means that users of the website must be able to understand the information being given to them openly and that it isn't "invisible to all of their senses" (Web Content Accessibility).

The following, Table #2, describes Overarching Principle #2: Operable, and its four overarching guidelines.

Overarching Principle #2: Operable	
Guideline #5	Make all functionality available from a keyboard
Guideline #6	Give users enough time to read and use content
Guideline #7	Do not use content that causes seizures
Guideline #8	Help users navigate and find content

Table 2: Overarching Principle #2: Operable, & Four Overarching Guidelines.

According to WCAG 2.0 standards, a website is considered to be operable if the entire user interface components and navigation are successfully able to be used and are operable.

This standard means that users can operate the interface and that the interface does not require interaction that a user is not able to perform (Web Content Accessibility).

The following, Table #3, describes Overarching Principle #3: Understandable, and its four overarching guidelines.

Overarching Principle #3: Understandable	
Guideline #9	Make text readable and understandable.
Guideline #10	Make content appear and operate in predictable ways
Guideline #11	Help users avoid and correct mistakes.

Table 3: Overarching Principle #3: Understandable, & Four Overarching Guidelines.

According to WCAG 2.0 standards, a website is considered to be understandable if the user can understand the information being displayed and the overall operation of the user interface. This standard means that users must be able to completely understand the information being displayed, as well as the operation of the user interface (Web Content Accessibility).

The following, Table #4, describes Overarching Principle #4: Robust, and its four overarching guidelines.

Overarching Principle #4: Robust	
Guideline #12	Maximize compatibility with current and future user tools.

Table 4: Overarching Principle #4: Robust, & Four Overarching Guidelines.

According to WCAG 2.0 standards, a website is considered to be robust if a user can interpret the information reliably by assistive technologies.

This standard means that users of the website must be able to access the content as technologies advance successfully (Web Content Accessibility).

AUDOEW PAGES EXAMINED

With the AUDOEW containing over 600 individual pages, I decided to review the accessibility of just the five major tracks located on the AUDOEW home-page.

These English major tracks include the following pages presented below in Table 5.

AUDOEW Pages Examined		
Website #	Page Title	Page Location
Website #1	Undergraduate Studies Home Page	https://cla.auburn.edu/english/undergraduate-studies/major/
Website #2	Graduate Studies Home Page	https://cla.auburn.edu/english/graduate-studies/ma/
Website #3	MTPC Home Page	https://cla.auburn.edu/english/graduate-studies/mtpc/
Website #4	Graduate Certificate in Technical Communications Home Page	https://cla.auburn.edu/english/graduate-studies/graduate-certificate-in-technical-communication/
Website #5	PhD Graduate Studies Home Page	https://cla.auburn.edu/english/graduate-studies/phd/

Table 5: AUDOEW Pages Examined

TESTING METHOD

To test the acceptability of each website, I ran each webpage through a certified WCAG 2.0 digital scanner. The particular scanner I used for this project is the Web Accessibility Evaluation Tool (WAVE). WAVE can be located online at: <http://wave.webaim.org/>. WAVE is developed and administered by WebAIM (Web Accessibility In Mind) and can scan web pages for all instances of WCAG 2.0 compliance issues. WAVE scans the HTML of the website and determines if any compliance issues need to be addressed. If so, the problem is "flagged," and an alert is processed. The alert will detail the exact issue that needs to be solved for the website to be WCAG 2.0 compliant.

An example of an accessibility issue can be seen below, in Figure 1, which presents a problem that was found on Website #1, the Undergraduate Studies Home Page.

The image shows a WAVE accessibility report. On the left, there is a list of page elements with their corresponding ARIA labels highlighted in green. On the right, there is a list of detected issues. One issue, 'Skipped heading level', is highlighted with a red dashed box and a callout box. The callout box contains the text 'A heading level is skipped.' and a link to 'More Information'. The issue is associated with the heading 'The English Core (9 hours)'.

Page elements (left):

- Master of Technical and Professional Communication ***aria-label="master of technical and professional communication section"**
- Graduate Certificate in Technical Communication
- PhD
- h2** Core Courses
- Composition ***aria-label="core composition"**
- Literature ***aria-label="core"**

Issues (right):

- Skipped heading level**
A heading level is skipped.
[More Information](#)
- h4** The English Core (9 hours)
- h4** Why Be an English Major at Auburn University
- h4** Future Plans for English Majors
- h4** Internships

Figure 1: WAVE Report of Website #1, the Undergraduate Studies Home Page

Figure 1 displays how WAVE caught an instance of a heading level is skipped. A heading level being skipped means that an individual using a screen-reader would not be able to understand where the body text ends, and a header begins, therefore making this page inaccessible to individuals that are vision-impaired. This instance violates WCAG 2.0's Overarching Principle #1: Perceivable, precisely because it does not follow Guideline #3, which states that a website should "create content that can be presented in different ways, including by assistive technologies, without losing meaning" (Web Content Accessibility).

RESULTS

The results of the five scanned main pages show that AUDOEW does not currently meet the compliance guidelines as set forth by WCAG 2.0.

All of the five pages had at least one instance of inaccessibility, which can be seen below in

Table 6.

Results of WAVE Scan on AUDOEW's 5 Main Pages				
Website #	# of WCAG 2.0 Violations for Overarching Principle #1: Perceivable	# of WCAG 2.0 Violations for Overarching Principle #2: Operable	# of WCAG 2.0 Violations for Overarching Principle #3: Understandable	# of WCAG 2.0 Violations for Overarching Principle #4: Robust
Website #1	1 (A heading level is skipped)	1 (Adjacent links go to the same URL)	0	0
Website #2	2 (A heading level is skipped) (No alt-text on an image)	1 (Adjacent links go to the same URL)	0	0
Website #3	2 (A heading level is skipped) (No alt-text on an image)	1 (Adjacent links go to the same URL)	0	0
Website #4	0	2 (Adjacent links go to the same URL) (A <main> element or main landmark is present)	0	0
Website #5	2 (A heading level is skipped) (No alt-text on an image)	0	0	0

Table 6: Results of WAVE Scan on AUDOEW's 5 Main Pages

As seen in Table 6, each of the five main websites tested had many compliance issues with both Principle #1: Perceivable and Principle #2: Operable. There appeared to be no instances of compliance violation with Principle #3: Understandable and Principle #4: Robust.

Issues with AUDOEW: Principle #1: Perceivable

When breaking down the issues found with Principle #1: Perceivable, it can be seen that nearly every website had problems with a heading level being skipped, and instances of there being no alt-text on an image.

According to WCAG 2.0 standards, "headings provide document structure and facilitate keyboard navigation by users of assistive technology. Users may be confused or experience difficulty navigating when heading levels are skipped" (WCAG 2.0). By the AUDOEW not having correct headings, the webpage is not accessible to individuals using screen readers.

In regard to instances of there being no alt-text on an image, WCAG 2.0 states that alternative text is necessary because "it will be presented multiple times to screen readers when images are unavailable" (WCAG 2.0). By not displaying appropriate alt-text, the visually-impaired visitor to the website is not able to understand what the image is presenting.

Issues with AUDOEW: Principle #2: Operable

When breaking down the issues found with Principle #2: Operable, it can be seen that nearly every website has problems with adjacent links going to the same URLs and instances of a <main> element or main landmark being present.

Adjacent links going to the same URL can be an issue because it results in additional navigation and repetition for keyboard and screen reader users. Additionally, having a <main>

element or main landmark being present is an issue because the <main> element or attribute is what identifies the main content for the page. By having the element present, page semantics and navigation use can be negatively affected.

RECOMMENDATIONS

With there being 12 instances of WCAG 2.0 violations on just five of the main pages of the AUDOEW, it is safe to assume that there are hundreds, if not thousands, of violations throughout AUDOEW's 600+ total pages.

To adequately ensure that both students with disabilities have equal access to the information on the AUDOEW and that the university does not violate the federal law, I highly encourage the Auburn University English Department to complete a redesign overhaul of the AUDOEW.

I recommend that the department focus on improving instances of violations by starting with complying with the standards of Principle #1: Perceivable and Principle #2: Operable. Fixing skipped heading levels, images without alt-text, adjacent links going to the same URLs, and instances of a <main> element or main landmark being present should be prioritized.

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