Accessibility Teaching Resources

By Virginia DeBolt

http://webteacher.ws

Introduction

I commented to a friend the other day that when I teach Accessibility, I have to prepare a lot of handouts because there isn’t a book that’s perfect for a short class in web accessibility. I thought it might be useful to other web educators to have the material I put in some of those handouts.

This is not “the book” on the topic. It is a spare outline of what I think needs to be mentioned in a class on web accessibility. It contains examples of what I teach as well as a few resources for helpful material found on the web. I did not include here the hands-on exercises that I use on topics like writing good alt text, creating accessible tables, and creating accessible forms.

To summarize, use the material as a guideline for your own teaching. It is not to be altered or used for commercial gain.

If you find incorrect information, typos, or other problems with this material, please let me know so I can update it.

Accessibility Defined

Accessible websites are

- Barrier Free
- Inclusive
- Platform and ability independent
- Provide equal access

> Web accessibility refers to the practice of making websites usable by people of all abilities and disabilities. When sites are correctly designed, developed, and edited, we provide the opportunity for all users to have equal access to information and functionality.
>
> The foundation of web accessibility is in human rights and moral obligation. The Web should not discriminate based on the user's abilities.
>
> - Derek Featherstone
>
> *InterACT with Web Standards: A Holistic Approach to Web Design* New Riders 2010.

The **four key areas** of disability are:

1. Visual impairment
2. Mobility or dexterity impairment
3. Auditory impairment
4. Cognitive impairment

How do we achieve accessibility?

Create web sites that

- Use web standards
- Use semantic HTML: POSH
- Integrate accessibility from the start of a project
- Are POUR

What is POSH?

POSH = Plain Old Semantic HTML.

The Hypertext Markup Language is meant to format text into semantic elements. Most HTML tags are self-describing, that is, the tag itself describes the semantic meaning of the text it is meant to format.

Make sure the HTML elements that content is placed in are really describing the content. Use heading tags (<h1>, <h2>, etc.) for headings. Use list tags for lists. Use table elements properly.

Make sure the tag used to format something really describes the semantic purpose of the content.

There are only a couple of exceptions to the semantic nature of HTML: the generic container elements <div> and <span> do not have semantic underpinnings.

What is POUR (or the WCAG 2.0 guidelines)

Perceivable

1. Provide text alternatives for any non-text content so that it can be changed into other forms people need, such as large print, Braille, speech, symbols, or simpler language.
2. Provide alternatives for time-based media
3. Create content that can be presented in different ways (for example, simpler layout) without losing information or structure.

4. Make it easier for users to see and hear content, including separating foreground and background.

Operable

1. Make all functionality available from a keyboard.
2. Provide users enough time to read and use content.
3. Do not design content in a way that is known to cause seizures.
4. Provide ways to help users navigate, find content, and determine where they are.

Understandable

1. Make text content readable and understandable
2. Make web pages appear and operate in predictable ways
3. Help users avoid and correct mistakes

Robust

1. Maximize compatibility with current and future user agents, including assistive technologies.

Accessible Images

The main element in making images accessible is the alternative text or alt text that is used in the image tag. However, there are many nuances involved in writing good alt text and in knowing when to leave alt text out completely.

Alt text for functional graphics

For functional graphics, the alt text should explain the **purpose** of the image. What can the use expect when they click the image?

```
<img src="arrow.jpg" alt="next page">
```

Alt text for a logo

Logos typically lead the user to the Home page. Use alt text that explains that.

BlogHer
Life well said

```
<img src="blogherlogo.jpg" alt="Home">
```

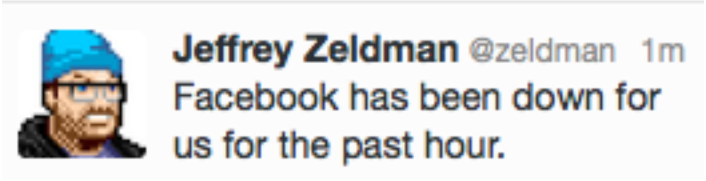
Alt text for decorative images – if not in CSS

It's best to put decorative images that don't have a contextual meaning into the CSS, rather than the HTML.

However, if decorative images are in the HTML, then leave the alt text empty or null. Null alt text is a signal to a screen reader that the image is not part of the content or that it explained by the content surrounding it.

```
<img src="decoration.jpg" alt="">
```

Some images, if given alt text, would be a repetition of text immediately next to it. For example, the Twitter avatar image pictured would use Jeffrey Zeldman as alt text. That alt text would be announced by a screen reader, as would the visible text Jeffrey Zeldman immediately following it. There’s no need to hear the name twice, so Twitter uses null alt text for avatar images.



Jeffrey Zeldman @zeldman 1m
Facebook has been down for us for the past hour.

Alt text in context

A trick I learned from [Glenda Watson Hyatt] is to think about alt text by imagining you are reading a web page to someone over the phone. When you come to an image that adds meaning to the content, what words do you use to describe the image to the person you were talking to? The image should be meaningful in the context of the content of the page, and the alt text should explain that meaning.

A Great Resource

Go to http://webaim.org/techniques/alttext/ and work through the questions and answers on alt text. This is a wonderful lesson/review on using alt text.

Accessible Navigation

The following principles apply to navigation. If you consider only what you see on a screen visually, you miss a number of ways that people with disabilities may navigate a page.

- Screen readers can navigate using headings. Therefore, proper use of heading tags <h1> <h2> etc is very important in organizing and identifying major sections of a page
- Text links coded in a list are more accessible than other forms of formatting
- Alt text on image links
- Meaningful link text needs to be clear about where the link will take the user and not repeat the same text over and over such as “read more” or “click here.”
- Underlining of links when used inline or not in an obvious navigation area.
- Navigation using ARIA Landmark roles.

WAI-ARIA landmark roles

Watch this video: http://youtu.be/IhWMou12_Vk

An ARIA role is added as an attribute to the relevant element. The landmark ARIA roles are helpful with the new HTML5 semantic elements but can be used with any appropriate element.

- banner
- complementary
- contentinfo
- form
- main
- navigation
- search

Here are a few examples of how to add the landmark role information to various elements:

```
<header role="banner">
<nav role="navigation">
<aside  role="complementary">
<div id=”mainContent” role="main">
<footer role="contentinfo">
<main role=”main”>
```

Accessible Color Choices

- WAVE tool http://wave.webaim.org/ will give you information on color contrast
- There are many color resources at http://accessibility.umn.edu/color-and-contrast-414.html

Accessible Multimedia

- Adding Captions in YouTube: http://www.google.com/support/youtube/bin/answer.py?hl=en&answer=100077

Accessible Forms

The key HTML element in making a form accessible is the <label> element.

- Proper use of <label> element with <id> and <for> matchup
- Placement of <label> element
  - Before text, edit, menu, and combo boxes
  - After radio buttons and checkboxes
- Required form fields – content in the label works: the word required or an asterisk **in the label**. You cannot depend on color alone.
  - `<label for="firstname">First Name *</label> <input type="text" id="firstname" required>`
  - `<label for="lastname">Last Name *</label> <input type="text" id="lastname" required>`

Grouping controls with <fieldset> and <legend> is an organizational aid that helps define groups of form elements and give them context.

Accessible Tables

Use the appropriate <caption> and <summary> elements when needed.

The <th> tag indicates a table heading. Headings are useful in associating the column and row heads with the contents of the data cells.

```
<table>
<tr>
<th scope="col">blah</th>
<th scope="col"> blah </th>
</tr>
 <tr>
<th scope="row"> blah </th>
<td> blah </td>
</tr>
 <tr>
<th scope="row"> blah </th>
<td> blah </td>
</tr>
</table>
```

ID and header coding for complex tables

The objective of this technique is to associate each data cell (in a data table) with the appropriate headers. This technique adds a `headers` attribute to each data cell (`td` element). It also adds an `id` attribute to any cell used as a header for other cells. The `headers` attribute of a cell contains a list of the `id` attributes of the associated header cells. If there is more than one `id`, they are separated by spaces.

Testing Tools

- The Web Developer's Toolbar http://chrispederick.com/work/web-developer is very handy
- WAVE tool http://wave.webaim.org/ tests for WCAG2.0 standards
- A good tool for testing readability is https://readability-score.com