

Copyright Notice

- **Copyright Cortney Wanca, Gregory Fierro, Feng Hou 2006. This work is the intellectual property of the authors. Permission is granted for this material to be shared for non-commercial, educational purposes, provided that this copyright statement appears on the reproduced materials and notice is given that the copying is by permission of the authors. To disseminate otherwise or to republish requires written permission from the authors.**



More Than Just an Internet Connection: **What You Need to Know About Making Web Sites Accessible**

EDUCAUSE 2006

Dallas, Texas

Wednesday, October 11, 2006

8:10 a.m. – 9:00 a.m.

Room C147/154

Presenters:

Cortney Wanca, Web Master, Manatee Community College (MCC)

Gregory Fierro, Coordinator - Disability Resource Center, MCC

Feng Hou, Chief Information Officer, MCC

EDUCAUSE
2006



DALLAS
OCTOBER 9-12



Spurring Innovation & Marshalling Resources

Presentation Overview

- **Part I**
 - What is web accessibility?
 - Why is it important?
 - Why should it matter?
 - Legal background
 - What are the Issues, barriers, challenges?
- **Part II**
 - Accessibility standards & guidelines
 - 10 techniques for compliance
 - Additional resources



Manatee Community College

- An accredited, public two-year college
- 9,000 credited students, plus several thousand non-credited students
- Founded in 1957, 1st higher education institution in Manatee and Sarasota areas
- Over 450 students with disabilities have been served over the past year; close to 10% increase each year over the past 5 years.



What is Web Accessibility?

- **An accessible web site is one in which content (information, services, purpose) can be NAVIGATED and READ (understood) by**
 - the broadest range of individuals
 - the broadest range of devices/technology
 - in the broadest range of environments
- **Everyone can USE it regardless of location, experience or the type of technology.**

Everyone includes People with Disabilities

www.w3.org/wai/ed/drafts/pwd.use-web



Why is it important?

- **The Web is becoming an increasingly important resource in our lives**
 - Education
 - Employment
 - Government
 - Commerce
 - Health Care
 - Recreation and more.....

www.w3.org/wai/info/accessibility.php



Why should we make Web accessible?

- **Philosophical/Pedagogical**
 - Pedagogy - multimodality Teaching most effective
 - Moral Ethical – Inclusive Right thing to do allows disabled to participate
- **Technological Trends**
 - Mobile Devices (text Messenger, PDA)
 - Speech as I/O
- **Market Forces**
 - Consumer Behavior
 - Aging, Multi-lingual population (12-20%) does not include marginal/language
 - Financial
- **Government/Law**
 - ADA – Requires Communication with people with disabilities be as effective as communication with others
 - Section 508 of Rehabilitation Act of 1973



Legal Background

- **Section 504 of the Rehabilitation Act of 1973**
 - All institutions receiving federal funding, must make programs and services, and activities accessible to individuals with disabilities.
 - OCR has ruled issue is the extent that communication is actually as effective as that provided to others.
- **Section 508 of the Rehabilitation Act**
 - All Federal departments must:
 - Design accessible websites
 - Only Procure or Contract for accessible information technology.
 - www.section508.gov
- **Americans with Disabilities Act of 1990**
 - Passed 1990 before Internet.
 - Title II “Effective communication” applies to Internet per Department of Justice.
 - www.adabasics.org



Web Accessibility Issues

- **What are the potential barriers to the efficient/rapid use of the web by different categories of users, technologies, and environments?**
- **What are the characteristics of the user ?
(Functional limitations of different user groups)**
- **What web convention could potentially limit use for different groups?**
- **What access technologies do different groups use?**



Visual Disabilities

- **Blindness**

- **Characteristic** - Do not use their eyes to access the web.
- **Web Content** - Images, photos and graphics; Visual layout; Data tables; *mouseover* events
- **Assistive Technology** - Screen readers (JAWS, Window Eyes and Home Page Reader), Keyboard navigation verses mouse

- **Low Vision**

- **Characteristic** - Cannot see content that is small
- **Web Content** -Low contrast; Graphics; Busy Backgrounds, Usable window size
- **Assistive Technology** - Screen Magnifiers (ZoomText, MAGic)

- **Color-blindness**

- **Characteristic** - No perception of the difference between color combinations
- **Web Content** -Important Information/Instruction conveyed by color only
- Don't use color or rely on color alone to convey important information



Motor Disabilities

- **Examples:**
 - Traumatic Injuries
 - Cerebral Palsy
 - Muscular dystrophy
 - ALS
 - Parkinson's
- **Characteristic** - Cannot use mouse or operate dynamic elements effectively
- **Web Content** - Small or moving Links; Long lists; Lengthy content
- **Assistive Technology** -Mouth Stick, Head wand, Single-switch access, Sip and puff switch, Oversized Trackball mouse, Adaptive Keyboard, Eye tracking, Voice Recognition Software



Auditory Disabilities

- **Examples:**
 - Deaf
 - Hard of Hearing
- **Characteristic** - Cannot perceive auditory content
- **Web Content** - Video, Audio and Multimedia content
- **Assistive Technology** - Voice Recognition Software, Captioning



Cognitive Disabilities

- **Examples:**
 - Traumatic Brain Injury
 - ADD
 - ADHD
 - Dyslexia
 - Autism
 - Down Syndrome
- **Characteristic** - Memory, Problem-Solving, Attention, Reading, Linguistic, Math, Visual and Verbal Comprehension
- **Web Content** - Complicated design, Error messages, scrolling text, Blinking icons, Complicated Phrases and expressions
 - Use Headings, Bulleted lists, Numbered lists indented quotes, White Space, Clear and Simple writing, intuitive logical consistent navigation



Web Accessibility Standards & Guidelines

- **Section 508 Standards**

- Web-based Intranet and Internet Information and Applications (1194.22)
 - 16 Standards
 - <http://www.access-board.gov/sec508/guide/1194.22.htm>



Web Accessibility Standards & Guidelines

- **World Wide Web Consortium (W3C)**
 - Web Accessibility Initiative (WAI)
 - <http://www.w3.org/WAI/>
 - Web Content Accessibility Guidelines 1.0
 - Organized into Priorities
 - » Priority 1 – Web Content Developer Must Satisfy
 - » Priority 2 - Should Satisfy
 - » Priority 3 – May Address
 - <http://www.w3.org/TR/WCAG10/full-checklist.html>



Techniques for Compliance

1. Provide text equivalent for all non-text elements

- Includes images, graphics, audio clips, etc.
- e.g., “alt”, “longdesc”, or in element content

Example:

```

```

```

```

```

```



Techniques for Compliance

2. Provide equivalent alternatives for multimedia

- Captions or transcripts for audio
- Audio descriptions of visual information



Techniques for Compliance

3. Do not rely on color alone

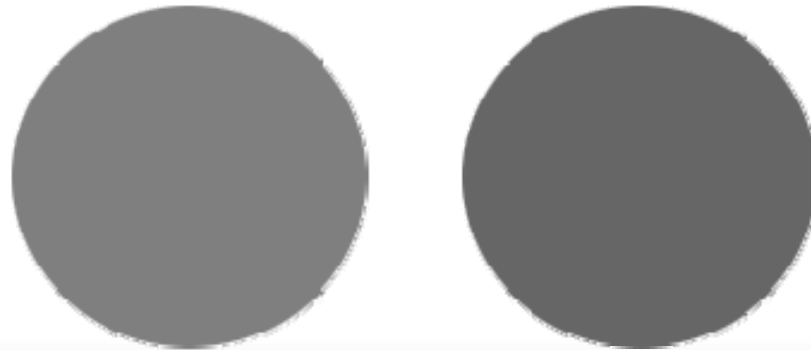
- Use a second identifier such as:
Click on the **Green Go Circle** or **Red Stop Circle**
- Test by printing on black and white printer



Techniques for Compliance

3. Do not rely on color alone

- Use a second identifier such as:
Click on the **Green Go Circle** or **Red Stop Circle**
- Test by printing on black and white printer



Techniques for Compliance

3. Do not rely on color alone

- Use a second identifier such as:
Click on the **Green Go Circle** or **Red Stop Circle**
- Test by printing on black and white printer



Techniques for Compliance

3. Do not rely on color alone

- Use a second identifier such as:
Click on the **Green Go Circle** or **Red Stop Circle**
- Test by printing on black and white printer



Techniques for Compliance

4. Do not require associated style sheet for documents to be readable

- Generally, it is safest to use a linked external style sheet, so user viewing preferences are not overridden
- User defined style sheets are often used to set their own viewing preferences

Example:

```
<link rel="stylesheet" type="text/css" href="style.css">
```



Techniques for Compliance

5. Use client-side image maps rather than server-side image maps whenever possible

- If a server-side image map must be used, redundant text links should also be provided

Client-side image map example:

```

<map name="Map">
<area shape="rect" coords="0,2,64,19" href="general.html" alt="info about
us" >
<area shape="rect" coords="65,2,166,20" href="jobs.html" alt="job
opportunities" >
</map>
```



Techniques for Compliance

6. Use table headers and the scope attribute for labeling data tables

- Large data tables can be difficult to interpret if the user is accessing data non-visually

Example:

```
<table>
  <tr>
    <th>&nbsp;</th><th scope="col">Start</th><th scope="col">End</th>
  </tr>
  <tr>
    <td scope="row">ENC 1101</td>1:00<td></td><td>2:00</td>
  </tr>
  <tr>
    <td scope="row">ENC 1102</td>3:00<td></td><td>4:00</td>
  </tr>
</table>
```



Techniques for Compliance

7. Avoid the use of frames when possible

- **When using frames, use text to facilitate in frame navigation and identification**
 - Use Text at the top of the navigation page to identify the content
 - Title frames with logical titles such as “Navigation Frame” and “Contents Frame”

Title Attribute Example:

```
<frameset cols="30%,60%">  
  <frame src="navigation.htm" name="nav" title="Navigation Frame">  
  <frame src="about.htm" name="content" title="Contents Frame">  
</frameset>
```



Techniques for Compliance

8. **Avoid causing the screen to flicker or flash between 2 – 55 Hz (cycles per sec)**
 - This is necessary because some individuals with photosensitive epilepsy can have seizures caused by flickering or flashing displays, particularly if it is high contrast and intensity



Techniques for Compliance

9. When a timed response is required, the user shall be alerted and given sufficient time to respond that more time is needed.



Techniques for Compliance

10. Provide a text only alternative when compliance cannot be achieved in any other way



MCC's Experience with Web Accessibility

- **It is the right thing to do**
- **Focus on the end-user experience**
- **Establish a governance structure and a process**
 - A College wide task force to proactively enforce the web accessibility laws, standards and guidelines
 - A process to review the web accessibility needs.
 - Minimum one ADA compliant workstation in every computer lab
- **Promote awareness for web accessibility**
 - Standard web page development training to include web accessibility training for all faculty
- **Provide training for web accessibility**
 - Distance learning certificate program to include web accessibility requirement
- **Build grassroots effort to proactively develop barrier free web sites and applications**
- **Develop easy to follow guidelines and common sense techniques**
 - Utilize 10 effective techniques to improve web accessibility



Questions & Answers



EDUCAUSE
2006



DALLAS
OCTOBER 9-12



Spurring Innovation & Marshalling Resources

Additional Resources

- **Information on Web Accessibility**
 - <http://www.w3.org/WAI/>
 - <http://www.w3.org/WAI/References/QuickTips/>
 - <http://www.access-board.gov/sec508/guide/1194.22.htm>
 - <http://www.adata.org/>
 - <http://www.section508.gov>
 - <http://www.webaim.org/>
 - <http://www.microsoft.com/enable/>
- **Testing your website for compliance**
 - <http://webxact.watchfire.com/>
 - <http://www.usablenet.com/>



References

1. <http://www.w3.org/WAI/EO/Drafts/PWD-Use-Web/>
2. <http://www.w3.org/WAI/intro/accessibility.php>
3. <http://www.access-board.gov/sec508/guide/1194.22.htm>
4. <http://www.adabasics.org>
5. <http://www.w3.org/WAI/>
6. <http://www.w3.org/TR/WAI-WEBCONTENT/>
7. <http://www.ada.gov>
8. <http://www.section508.gov>

