

# Web Accessibility Testing

Part 1: Strategies for Accessibility Testing

*By Hiram Kuykendall, CTO MicroAssist*

[www.microassist.com](http://www.microassist.com)

*March, 2013*

# Presentation Goal



- Output Drives Testing
- Bucket Load of Tools
- Not Tool Covers 100%
- No “One Size Fits All”
- **YOU CAN UNDERSTAND ACCESSIBILITY**

I believe the future of accessibility is in training.  
We have all the mice and mousetraps we need.

# Four Accessibility Categories

- Vision
  - Vision (Blind)
  - Vision (Low Vision)
- Hearing
- Mobility
- Cognitive
- **EVERYONE BENEFITS**

x  
**ONE!**

# Challenges of Testing

## Vision – Blind

Perceivable Controls  
(Play, Pause...)  
Audio Description

## Cognitive

Spelling

## Low Vision

Color Contrast  
Caption Size



## Hearing

Closed  
Captioning

## Mobility

Controls Get Focus

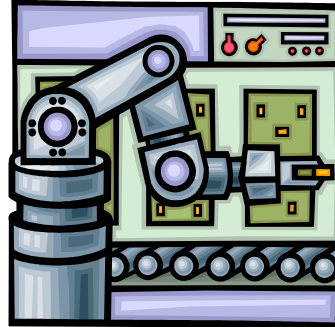
## Everyone

HTML5  
FLASH

**Issues related to vision (blind) is only ONE testing challenge!**

# Syntax Check VS. Accessibility Review

Syntax Check – Automated Review



Accessibility Review – Manual Hands-on Review



# Syntax Check VS. Accessibility Review

## Syntax Check

### Characteristics

- Automated Check
- Looking for Coding Standards

### Tool Examples

- WAVE toolbar – [wave.webaim.org](http://wave.webaim.org)
- Juicy Studios – [addons.mozilla.org](http://addons.mozilla.org)
- FireEyes – [deque.com](http://deque.com)

### Syntax Check Will Catch

- Missing Alt Text
- Missing Form Labels
- Some Color / Contrast Errors

### Syntax Check Will it NOT Catch

- Inappropriate Alt Text
- Incorrectly Associated Labels
- Some Color / Contrast Errors in Graphics

Automated Syntax Checks catch 80% of accessibility error types.

80% of the errors makeup the majority of errors found on the web.

90% of all statistics are made up.

*- Urban Legend with a Valid Point*

### Target Audience

- Anyone who creates content.
  - Web Entry
  - PDF Creation
  - Word Documents
- Developers
- Quality Assurance Testers

# Syntax Check VS. Accessibility Review

## Accessibility Review

### Characteristics

- Manual Review
- As Much Technique as Tool – Requires Knowledgeable Testers
- Can Include \*AT (JAWS, Magnifier...) Review
- Assisted by Syntax Check Tools

### Tool Examples

- JAWS – Freedom Scientific
- Color Contrast Analyser – Paciello Group
- MicroAssist Accessibility Checklist
- HHS Accessibility Checklist

### Manual Check *should* Catch

- Missing Focus Decorations
- Tab Order
- Inappropriate / Missing Alt
- Incorrect Interactions (JavaScript...)
- Bad User Interface Design (Right Mouse)
- Spelling / Grammar

\*AT – Assistive Technology – Screen Readers, Magnifiers, Brail Devices

**KEY:** Errors that cannot be caught by automated tools.

### Target Audience

- Quality Assurance - Testers
- Developers

# Should everyone know how to do a full Accessibility Review?

Sounds great, but **NO**.

## Why?

Target Audience:  
(Job Scope)

- Admin Updates a Web Form
- Secretary Creates Word Documents
- Developer Creates Web Applications
- Quality Assurance Test it All
- Theme Developer
- Application Developer

**Every organization is Unique!**



# Building Your Toolset - Output

## 1. What output do you need to test?

- | Tools        | Output |
|--------------|--------|
| • .NET, C#   | HTML   |
| • PHP        | HTML   |
| • Drupal     | HTML   |
| • WordPress  | HTML   |
| • FLASH      | FLASH  |
| • Captivate  | FLASH  |
| • Articulate | FLASH  |
| • Word       | Native |
| • Excel      | Native |
| • PowerPoint | Native |

# Building Your Toolset - Matrix

Testing Tools Per Output		Syntax / Review	Complexity	Vision Blind	Vision Low	Mobility	Hearing	Cognitive	Everyone
HTML	Wave	Syntax	Easy	X	X	X			
	FireEyes	Syntax	Hard	X	X	X			
	Juicy Studio Toolbar Firefox	Syntax	Hard	X	X				
	W3C Validation Service	Syntax	Easy						X
	Contrast Analyser (Paciello Group)	Review	Easy		X				
	Firefox Accessibility Toolbar	Review	Hard	X					X
	Firefox Web Developer Toolbar	Review	Hard	X					X
	Microsoft Word - Spellcheck	Review	Easy					X	
	NoSquint	Review	Hard			X			
	Screen Reader: JAWS, NVDA...	Review	Hard	X					
	Subtitle Workshop	Tool :)	Easy (ish)					X	
	FLASH	Screen Reader: JAWS, NVDA...	Review	Hard	X				
Contrast Analyser (Paciello Group)		Review	Easy		X				
PowerPoint	NA - Syntax	Syntax							
	Contrast Analyser (Paciello Group)	Review	Easy		X				
	Manual Review	Review	Easy	X	X				X
PDF	Internal Accessibility Checker	Syntax	Easy	X					
	PDF Remediation aka Fix it (TouchUp)	Review	Hard	X					
	Contrast Analyser (Paciello Group)	Review	Easy		X				

# Building Your Toolset - By Role

Theme Developer / CMS Integration Developer	Application Developer / CMS Component Developer	Content Manager	Quality Assurance
SC - WAVE	SC - FireEyes	SC - WAVE	SC - WAVE
SC - Juicy Studio	SC - Juicy Studio		SC - FireEyes
SC - Contrast Analyser (PG)	SC - W3C Validation Service		SC - Juicy Studio
SC - W3C Validation Service	MR - JAWS, NVDA		SC - Contrast Analyser (PG)
MR - JAWS, NVDA			SC - W3C Validation Service
			MR - JAWS, NVDA

# Building Your Toolset - Checklists

## HHS Accessibility Center

ELearning:	<a href="http://architecture.hhsc.state.tx.us/myweb/Accessibility/trainer_eLearn.asp">http://architecture.hhsc.state.tx.us/myweb/Accessibility/trainer_eLearn.asp</a>
Documents (Word... PDF)	<a href="http://architecture.hhsc.state.tx.us/myweb/Accessibility/doc_creator.asp">http://architecture.hhsc.state.tx.us/myweb/Accessibility/doc_creator.asp</a>
Software, Websites and App	<a href="http://architecture.hhsc.state.tx.us/myweb/Accessibility/testing.asp#accessibility_checklist">http://architecture.hhsc.state.tx.us/myweb/Accessibility/testing.asp#accessibility_checklist</a>

# Training

## Formal Training:

- Knowbility / MicroAssist Instructor Led Classes
- HHS Accessibility Center (Developers, Content Mangers, Elearning, Procurement, Managers)  
<http://architecture.hhsc.state.tx.us/myweb/Accessibility/index.asp>

## Accessibility Events:

- Knowbility AccessU - <http://www.knowbility.org/v/john-slatin-accessu/>
- Knowbility Open AIR (Accessible Internet Rally): <http://www.knowbility.org/v/open-air/>

## Community:

- PESO (Public Electronic Services On-the-Internet Working Group):  
<http://www2.dir.state.tx.us/management/accessibility/community/peso/Pages/PESO.aspx>
- TechLunch - 1<sup>st</sup> Wednesday Month - <http://governor.state.tx.us/disabilities>
- Knowbility AccessU Podcast: Itunes – AccessU - <http://stage.knowbility.org/podcastgen/>
- Developers: WebAIM - <http://webaim.org>

# Assets:

## FireFox

- [Firefox Accessibility Extension](#)
- [Firebug](#)
- [WAVE Toolbar](#)
- [Complex Table Toolbar](#)
- [Worldspace FireEyes](#)
- [Colour Contrast Analyser](#)
- [Table Inspector](#)
- [Web Developer extension](#) (Firefox and Chrome)
- [Juicy Studio Accessibility Toolbar](#)

## Video Captioning

- <http://www.urusoft.net/>