



E-learning Accessibility

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Session outline

- **What is web accessibility?**
- **Who is affected and how?**
- **BREAK: 12.15**
- **Creating accessible e-learning**

What is web accessibility?

“The power of the Web is in its universality. Access by everyone regardless of disability is an essential aspect”

Tim Berners-Lee (W3C, 1997)

Who is affected and how?

At least 10% of the population in most countries has a disability (W3C, 2003):

- **Visually impaired**
- **Hearing impaired**
- **Mobility impaired**
- **Learning/cognitive difficulties**

Assistive technologies



Screen readers

Braille displays and printers

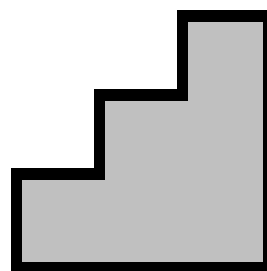
Screen magnifiers

Voice recognition devices

Control devices other than the mouse/keyboard



Assistive technologies



Who is affected and how?

- **Not just those with a “disability”**
 - **Users of mobile devices: phones, Personal digital assistants (PDAs)**
 - **Users on dialup connections**
 - **Users whose first language is not English**
 - **Aging population**

Activity: Blind

- **Go to your favourite website**
- **Turn off the monitor**
- **Unplug the mouse**
- **Try to click a link on the page**

Blind users

- Access the web via a screen reader or braille display
- Don't use the mouse – keyboard controls only
- Screen Readers and the Web: Neal Ewers, Trace Research Centre

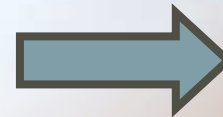
Visually impaired

- **Low Vision**
- **Macular degeneration**
- **Cataract**
- **Glaucoma**
- **Colour blind**

Activity: Low vision

How does a webpage look when via a screen magnifier?

- Open the Firefox browser
- Open your favourite webpage.
- Increase the size of text on the webpage by clicking **Ctrl** and **++** together repeatedly (*Call me over if this does not work for you*)
- Try reading the content of your chosen webpage by using the scrollbars to move up and down, and left and right, across the screen



Activity: Specific visual impairments

**How does a web page look to someone with:
Macular degeneration? A Cataract? Glaucoma?**

- **<http://www.webaim.org/simulations/lowvis.html> (Click the Low vision simulation link in Moodle)**

- **Take a look at your favourite website via:**
<http://colorfilter.wickline.org/> (Click the Colour Blind simulation link in Moodle)

Hearing impaired

Require text equivalents (captions, transcripts) of any audio:

- MP3 clips
- Animations
- Video

Activity: Hearing impaired.

- **Were you able to follow the video without sound?**
- **Was the captioned version helpful?**
- **Captions need to be appropriately synchronised to be meaningful**

Mobility impaired users

- **May find it difficult/impossible to use a keyboard or mouse**
- **May use specialist devices to manipulate web pages**

Activity: Mobility impaired

- Explore one of your favourite websites using the keyboard alone and note any problems you run into (if any):
 - Use the **TAB** key on the keyboard to navigate through the links on the webpage. *The TAB key is usually labelled with two arrows (one pointing left and another to the right).*
 - Use the **SHIFT+TAB** keys to tab to a previous link. The **SHIFT** key is labelled with an arrow pointing upwards.
 - Press the **ENTER** key to open an link.
 - Use the **BACKSPACE** key to return to the previous page. The **BACKSPACE** key is generally located above the **ENTER** key and is labelled with a large left-pointing arrow.

Cognitive/learning/literacy difficulties

- **Flashing/moving text**
- **Clear, intuitive navigation**
- **Clear concise writing**

BREAK



Creating accessible e-learning

- **General guidelines**

Accessibility guidelines

- **W3C Web Content Accessibility guidelines**
- **Irish National Disability Authority IT Accessibility Guidelines**

Some general guidelines

- **Provide clear, consistent navigation/page layout**
- **Provide text equivalent alternatives to auditory/visual content**
- **Allow user-control of presentation**
- **Use colour and contrast appropriately**
- **Structure content**
- **Test for accessibility**

Navigation/page layout

- Be consistent
- Allow users to skip navigation
- Consider incorporating a search facility
- Hypertext links should indicate their destination:
 - Click [here](#) to learn about Situated learning theory
 - [Situated learning theory](#)
- Warn about pop-up links:
 - [Module specification](#) (opens in a new window)


Equivalent alternatives

- **Provide meaningful and equivalent text-based alternatives to auditory/visual content:**
 - **Pictures, diagrams and charts**
 - **Navigational buttons**
 - **Animations**
 - **Video clips**
- **ALT-Text: “Alternative text”**
- **Captions**

Allow presentation control

- **Allow user customisation of:**
 - **Font style, colour, and size**
 - **Cursor size, style,**
 - **Screen layout, colours, and backgrounds**
 - **Image/multimedia display size**
- **Cascading Style Sheets (CSS)**
- **Examples**
 - <http://www.csszengarden.com/>

Colour and contrast

- Adhere to general usability principles: contrast background and text etc 
- Don't use colour to convey information
 - “Press the green button to start”
- Avoid blinking/moving text

Content/presentation

- **Use headings and subheadings**
- **“Chunk” content**

Test for accessibility

- Aprompt: <http://www.aprompt.ca/>
- W3C validator: <http://validator.w3.org/>
- Web WebXACT:
<http://webxact.watchfire.com/>
- Hermish: <http://www.hermish.com/>
- Screen reading software: e.g JAWS:
http://www.freedomscientific.com/fs_downloads/jaws.asp
- Text based browser:
http://www.yellowpipe.com/yis/tools/lynx/lynx_viewer.php

Homework

Evaluate at least two e-learning resources for accessibility. You can either:

- **Evaluate e-learning resources you are familiar with**
- **Pick resources from the list provided**

Post your findings to Moodle by Saturday 10 November. Give details of:

- **Any accessibility problems with the resources that you evaluated**
- **Any suggestions you have for how the accessibility of the resources that you evaluated might be improved**