



# Accessibility Demonstration Experiences (ADEs)

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Slides available at <http://userlab.usask.ca/CSUN2011/>

# There's a difference...

... between being told something and experiencing it for yourself.

# Course on Accessible Computing

- **CMPT 480 / 840**
  - <http://userlab.usask.ca/CMPT%20480/480Ahome.html>
- **At University of Saskatchewan**
- **ADEs as part of the course since 2007**
  - Started with 5 ADEs
  - Currently have 12 ADEs

# What are ADEs?

- Collection of simulations, demonstrations, and tools for people to get a feel for accessibility issues and options
- Created by past and present teaching assistants and students
  - As a result of taking the course and completing the ADEs.

# What are ADEs?

- Introduce the issues and options in accessible computing
  - Web accessibility
  - Testing for accessibility
  - Existing assistive technologies
- Accessible ADEs
  - Versions for different abilities and different operating systems

# Who should use ADEs?

- High school and college students
- Developers
- Technology experts
- General public

# Structure of ADEs

- 4 sections (1 hour)
  1. **Video** introducing the topic
  2. **Interactive Activities** exploring the topic
  3. **Reflection Activity** reflecting on the experience
  4. **Feedback** improving the quality of ADE

# Two Categories of ADEs

- **Accessibility Issues**
  - General topics regarding accessible computing
  - Focus on accessibility concepts / challenges
- **Accessibility Options**
  - Focus on specific technologies that provide accessibility opportunities

# Website

- ADEs can be found at:

<http://userlab.usask.ca/ade/>

# Accessibility Issues

- Before and After Considering Accessibility
- Automatic Accessibility Evaluations
- Cognitive Issues
- Cultural and Linguistic Issues
- Secondary Encodings

# Before and After Considering Accessibility

- Purpose
  - Demonstrate differences between an inaccessible website and an accessible website
- Activities
  - View websites with images turned off
  - Difference between web browsers
  - View websites using a text browser

# Before and After Considering Accessibility

- Results
  - Frustrating to use inaccessible website
  - Text browser:
    - difficult to use inaccessible website without visual cues
    - Links didn't make sense, not properly described
  - Solution suggested by students:
    - Design with accessibility in mind, with the broadest range of users

# Automatic Accessibility Evaluations

- Purpose
  - Expose to automatic tools and compare
- Activities
  - Use 2 different tools to evaluate a single webpage
  - Look at the results of the evaluation
  - Compare the tools

# Automatic Accessibility Evaluations

- Results
  - Automatic tools don't check for accessibility issues that require human judgment.
  - There are many warnings that have to be manually checked.
  - Some problems easier to fix than others.

# Cognitive Issues

- Purpose
  - Exposure to cognitive issues people have and its effects on computing
- Activities
  - Simulations from PBS on cognitive difficulties or learning disabilities while performing reading and writing activities

# Cognitive Issues

- Results
  - Reported frustration when attempting to complete the activities in the simulations
  - Solution suggested by students:
    - Using tools such as voice recognition and spell checker
  - Problems with using tools:
    - Become too dependent on those tools and not learn to improve skills

# Accessibility Options

- Operating System-based
- Using a Screen Reader
- Using Colour Shifting and Shading
- Using a Magnifier
- Using Captioning
- Using Voice Recognition
- Using Single Switch Input

# Using a Screen Reader

- Purpose
  - To explore the benefits and issues of screen readers
- Activities
  - Read three web pages with white text on white background.
  - Compare between two screen readers

# Using a Screen Reader

- Results
  - Recognize that screen readers are a good way of presenting information to the blind.
  - Experienced difficulties navigating through the text.
  - Problems reading mathematical equations.
  - Web site design affects when an element is read and how it's read.

# Using Captioning

- Purpose
  - Explore hard of hearing issues and the benefits and issues of captions in videos
- Activities
  - Audio clips with background noise, different audio speed and volume
  - Videos with different caption presentations

# Using Captioning

- Results
  - Understand the effects of noise, speed, and volume and how captions can help.
  - Solutions suggested by students:
    - Give users option to adjust the speed of the audio component and frame rates
    - Colour of the captions have to contrast the background

# Using Voice Recognition

- Purpose
  - Explore the benefits and issues of voice recognition software
- Activities
  - Training the software
  - Dictating text
  - Issuing commands

# Using Voice Recognition

- Results
  - Recognize the convenience of being able to type while away from the computer or for those with physical disabilities.
  - Must go through training numerous times especially if you have an accent
  - Frequently need to check reference card
  - Recognize only certain applications
  - Solutions suggested by students:
    - Using single-word commands
    - Compatibility with more applications

# Future Work

- Creating new ADEs
  - Creating Alternative Text for Images
  - Form-filling technology
  - Language translations
  - Supporting various operating systems
- Accepting new ideas for ADEs
- Looking for tools and simulations to use in ADEs

# Creating Alternative Text for Images

## ADE

- Currently being developed
- Understanding the importance of alternative text and context
- Looking at the issues
  - Too terse vs. Too descriptive
- Presentation Friday at noon
  - Room: Windsor B

# Thank You

## Questions / Comments?

ADEs at: <http://userlab.usask.ca/ade>

Slides at: <http://userlab.usask.ca/CSUN2011>

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