HEDSA. 11.09.2018

An Introduction to Accessibility in Digital Learning Environments

Dominique Wooldridge. Team Leader: Learning Technologies.
Centre for Learning, Teaching & Development

Online learning content is web content

- Web Content Accessibility Guidelines ("WCAG")
- Technical standard published by W3C

- WCAG 2.1 - published on 5 June 2018
- Available at: https://www.w3.org/TR/WCAG21/
- Backward compatible

WCAG 2.1

- WCAG consists of 13 guidelines

- Guidelines organised under 4 principles:
  - Perceivable
  - Operable
  - Understandable
  - Robust

- Each guideline has ‘success criteria’
- Measurable at 3 levels (A, AA, AAA)

Principle 1: Perceivable

(Information and user interface components must be presentable to users in ways they can perceive.)

Text alternatives for non-text content

Example: Text alternative for a button/icon in the interface (function), or a description of content of an image

Captions and other alternatives for multimedia

Example: Text transcripts for video & audio content

Content can be presented in different ways

Example: Information independent of any presentation (tables & lists marked up, text size and colour can be changed

Content is easier to see and hear

Example: Colour not the only way of identifying content, sufficient contrast, text resizable to 200% in normal browser

Principle 2: Operable

User interface components and navigation must be operable.

All functionality available from keyboard controls

Example: Keyboard access to interface components, not just mouse

Users have enough time to read and use the content

Example: Text transcripts for video & audio content

Users have enough time to read and use the content

Example: Pause, stop, or hide moving, blinking, or scrolling content

Content does not cause seizures

Example: No flashing content

Users can easily navigate, find content, and determine where they are

Example: Pages have clear titles and are organized using descriptive section headings

Principle 3: Understandable

Understandable information and user interface

All functionality available from keyboard controls

Example: Keyboard access to interface components, not just mouse

Text is readable and understandable

Example: Identifying the primary language of a web page, or using simple & clear language

Content appears and operates in predictable ways

Example: Navigation mechanisms that are repeated on multiple pages appear in the same place each time

Users are helped to avoid and correct mistakes

Example: Error messages, context sensitive help, opportunity to review before submission

Principle 4: Robust

Robust content and reliable interpretation

Content is compatible with current and future user tools

Example: Ensuring markup can be reliably interpreted to enable assistive technologies to process the content reliably, and to present or to operate it in different ways

Most online learning delivered via LMS

- Dominant technology deployed by higher education institutions to support teaching and learning.
- The LMS has seen unprecedented adoption rates. Estimates of institutions running an LMS are almost always near 99%. (Dahlstrom and Bichsel, 2014)
- No other academic application has come close to this adoption rate. (Brown et al, 2015)

Brown, M., Dehoney, J., and Millichap, N. (2015). The Next Generation Digital Learning Environment: A Report on Research. EDUCAUSE. https://library.educause.edu/resources/2015/4/the-next-generation-digital-learning-environment-a-report-on-research

Leading LMSs comply with WCAG

Canvas:

- W3C WCAG & Section 508 & General accessibility design guidelines

Blackboard

- Web Content Accessibility (WCAG) Guidelines 2.0 Level, & Blackboard Ally: checks accessibility of files uploaded to BB site manage

Sakai:

- Accessibility working group: Our goal is to meet all of the W3C Web Content Accessibility Guidelines (WCAG) 2.0 Level A and AA Success Criteria. We also use emerging standards and best practice design techniques that support existing and emerging adaptive technologies. (https://www.sakaiproject.org/accessibility)

edX:

- Web Content Accessibility Guidelines ("WCAG") 2.0 AA, & Accessibility Best Practices Guidance for content providers

Accessibility of LMS content

- Enabled by the LMS (The features exist in the application)
- But- that doesn’t necessarily mean content development are using these features
- Content development highly decentralised
- Accessibility issues often not highlighted in training provided to academics on how to use LMS
- Move to blended learning: Previously developed content may not be accessible
- Even where features are used, may not be best practice (eg: ALT tags)

Changing context for online learning

Teaching & Learning critiques of the LMS:

- The LMS is seen as symbolic of pedagogies that standardise learning experiences.
- The core tool set of LMSs allow for the presentation of structured content. Emphasis on the design of content is aligned with behaviorism and cognitivism, two learning theories which see learning as occurring when an individual processes information.
- In contrast, learning theories such as constructivism and connectivism emphasise the need for learning experiences to be both personalised and socialised.
- LMS has been highly successful in enabling the administration of learning but less so in enabling learning itself

Changing context for online learning

Teaching & Learning critiques of the LMS:

- LMSs organise content into courses. Often these course sites become inaccessible to students as soon as they finish the course. creates a compartmentalisation of knowledge, and minimises potential for integration of knowledge across courses.

- Anderson and Dron (2011) note that “a learning management system that sees the world in terms of courses and content will strongly encourage pedagogies that fit that model and constrain those that lack content and do not fit a content-driven course model.”

- “The next generation of online learning will undoubtedly be more connectivist, self-directed, active, and personalized. This next generation of online learning will likely see a move away from the ‘learning management system’ as we know it.” (Puzziferro and Shelton, 2009, 12-13)

Anderson, T. and Dron, J. (2011). Three Generations of Distance Education Pedagogy. *The International Review of Research in Open and Distributed Learning (12)* 3. *Special Issue - Connectivism: Design and Delivery of Social Networked Learning.*

Puzziferro, M. and Shelton, K. (2009). Challenging Our Assumptions About Online Learning. A Vision for the Next Generation of Online Higher Education. *Distance Learning (6)* 4, 9-20.

Changing context for online learning

New standards of interoperability:

- APIs (Application Programming Interface)

- xAPI: The Experience API is a new specification for learning technology that makes it possible to collect data about the wide range of experiences a person has (online and offline). This API captures data in a consistent format about a person or group's activities from many technologies.

- Learning Tools Interoperability (LTI) is a standard created by the IMS Global Learning Consortium for connecting LMSs with external tools.
- LTI 1.0 specs in 2010, LTI 2.0 in 2014; Current work: Focus on LTI 1.2

- Various others under development (eg: TinCan API, Calipre)

From LMS to NGDLE

- Research on next gen LMS - Educause White Paper (2015) – NGDLE
- Less a system, than an environment or eco-system: “a setting comprising many interacting components that enable learning of all kinds to flourish”
- Component based architecture enabled by new interoperability standards
- The NGDLE is not an off-the-shelf product. It is an eco-system that each HEI will construct to fit their institutional aims, culture, and resources.

Brown, M., Dehoney, J., and Millichap, N. (2015). The Next Generation Digital Learning Environment: A Report on Research. EDUCAUSE. https://library.educause.edu/resources/2015/4/the-next-generation-digital-learning-environment-a-report-on-research

What does NGDLE mean for the accessibility of learning content?

The NGDLE is conceived as a learning environment with five dimensions (Brown et al, 2015; and ELI, 2015):

1. interoperability and integration;
2. Personalization;
3. analytics, advising, and learning assessment;
4. collaboration; and
5. accessibility and universal design.

- Universal design embedded in the conception of the NGDLE

What does NGDLE mean for the accessibility of learning content?

On a practical level:

- Wider selection of learning tools, not necessarily integrated into an LMS – makes it more difficult to ensure applications and tools meet accessibility standards
- Also more difficult to train content developers in accessibility settings, and how to screen linked content
- Judgement and tech skills of content developers become even more critical

Spaces for Advocacy & Action

Institutional level:

- Adoption of W3C guidelines for all online learning content
- Research on 5th dimension of the NGDLE
- Procurement policies
- Institutional policy: Accessibility checklist
- Training & support:
  - Awareness
  - Technical training for content developers in ‘relevant’ authoring tools and LMSs
  - Tutorials on very common issues (auto-generating and uploading transcripts; formatting text versions, font and colour selection, etc)
  - Best Practice Guides (eg: How to write good ALT tags)

#News

Print This

University May Remove Online Content to Avoid Disability Law

U.S. Justice Department finds that Berkeley MOOCs and YouTube content don't meet federal requirements.

By Scott Jaschik // September 20, 2016

154 COMMENTS

The University of California, Berkeley, has announced that it may eliminate free online content rather than comply with a U.S. Justice Department order that it make the content accessible to those with disabilities.

The content in question is all free and is for the general public to use. "The department's findings do not implicate the accessibility of educational opportunities provided to our enrolled students," said a statement on the situation by Cathy Koshland, vice chancellor for undergraduate education.

While the university has not made a final decision, she said, it may not be able to afford complying with the Justice Department's recommendations on how to make the online material accessible.

"In many cases the requirements proposed by the department would require the university to implement extremely expensive measures to continue to make these resources available to the public for free," she wrote. "We believe that in a time of substantial budget deficits and shrinking state financial support, our first obligation is to use our limited resources to support our enrolled students. Therefore, we must strongly consider the unenviable option of whether to remove content from public access."

The announcement added that Berkeley hoped to avoid that path through additional discussions with the Justice Department.

COLLEGE PAGES

College Name SEARCH

Featured college pages

PIEDMONT Technical College

The UNIVERSITY of VERMONT

Thank You

dominique.wooldridge@wits.ac.za

Example from Practice

edX Courses Programs & Degrees Schools & Partners About Search:

Home > All Subjects > Humanities > Forced and Precarious Labor in the Global Economy: Slavery by Another Name?

Forced and Precarious Labor in the Global Economy: Slavery by Another Name?

Much of the global economy runs on forced and precarious labor. This course explains how this economic engine operates, and how worker and migrant rights can be strengthened.

UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG

Evaluating Potential Solutions for Forced and Precarious Labor (Part 1)

Bookmark this page

Week Two Exercise: Evaluating Potential Solutions for Forced and Precarious Labor

Many different solutions, strategies and approaches have been proposed as part of efforts to combat forced and precarious labor. Not all of these solutions are compatible. Some point in one direction, while others point in another. Some are straight forward. Others are more challenging.

We therefore need to undertake an analysis of what the most promising solutions to forced labor might look like, and how they might in turn contribute to a larger overall strategy for effectively challenging global patterns of exploitation and vulnerability.

Once again, this is not a graded exercise which has one right answer. We instead want you to make up your own mind regarding which of many potential solutions are likely to have a positive effect, and which potential solutions are instead likely to have limited or even negative effects.

In future weeks the list of potential solutions will be expanded to include additional options associated with different themes, such as supply chains, migration, and sex work. By the end of the course you should have come to an overall conclusion regarding what you think the most effective solutions are likely to be, and should therefore have an platform for action and analysis.

We therefore ask that you assign a color to each of the solutions identified below based on your assessment of what you believe their overall effects are likely to be.

EXERCISE NUMBER TWO:
Evaluating Potential Solutions for Forced and Precarious Labor

KEY

- Likely to hurt, rather than help
- Likely to make no real difference either way
- Likely have a minor positive effect on forced and precarious labor
- Likely to have moderate positive effects on forced and precarious labor
- Likely to have a major positive effects on forced and precarious labor
- Not really sure about overall effects

The passage of new laws

The prosecution of offenders

Ratification of international conventions

Consuming 'ethical' fair trade goods and services

Corporate social responsibility

Technological innovations

Increasing public inspections of employers and workplaces

Exercise Instructions

1. Click the "Launch Course" button. The exercise will open in a new browser window.
2. Click the information icon on any solution for additional information about that solution
3. Assign a color to each solution by clicking that color on the strip beneath each solution
4. When you are finished, take a screenshot of your colored-in rating of how different solutions are likely to impact upon global patterns of forced and precarious labor.
5. Share your thoughts in the Week 2 discussion forum (below) by:

- Posting a copy of your screenshot to the forum, or
- Sharing your motivation for why you believe one solution is likely to make either a positive or negative contribution.
- You also have the option of proposing further solutions for consideration on the forum (keeping in mind that the list will be expanded upon as the course progresses).

Launch Course

EXERCISE:

The Politics of Forced and Precarious Labor

Round 1

KEY- Efficacy

- Likely to hurt, rather than help
- Likely to make no real difference either way
- Likely have a minor positive effect on forced & precarious labour
- Likely to have moderate positive effects on forced & precarious labour
- Likely to have major positive effects on forced & precarious labour

KEY- Difficult

- Bipartisan political support
- Majority political support
- Significant opposition
- Entrenched opposition
- Political and economic polarisation

The passage of new laws

Will be effective?

Will be difficult?

Raising awareness campaigns

Will be effective?

Will be difficult?

Increasing public inspections of employers & workplaces

Will be effective?

Will be difficult?

Ratification of international conventions

Will be effective?

Will be difficult?

The prosecution of offenders

Will be effective?

Will be difficult?

Technological innovations

Will be effective?

Will be difficult?

Corporate social responsibility (CSR)

Will be effective?

Will be difficult?

NEXT >

EXERCISE:

The Politics of Forced and Precarious Labor

Round 1

KEY- Efficacy

- Likely to hurt, rather than help
- Likely to make no real difference either way
- Likely have a minor positive effect on forced & precarious labour
- Likely to have moderate positive effects on forced & precarious labour
- Likely to have major positive effects on forced & precarious labour

KEY- Difficult

- Bipartisan political support
- Majority political support
- Significant opposition
- Entrenched opposition
- Political and economic polarisation

The passage of new laws

Will be effective?

Will be difficult?

Raising awareness campaigns

Will be effective?

Will be difficult?

Increasing public inspections of employers & workplaces

Will be effective?

Will be difficult?

Ratification of international conventions

Will be effective?

Will be difficult?

The prosecution of offenders

Will be effective?

Will be difficult?

Technological innovations

Will be effective?

Will be difficult?

Corporate social responsibility (CSR)

Will be effective?

Will be difficult?

NEXT >

Course Handouts

Course Syllabus

Course Guide

Handout for Week 1 Exercise

Handout for Week 2 Exercise

Handout for Week 3 Exercise

Handout for Week 4 Exercise

Handout for Week 5 Exercise

Handout for Week 6 Exercise

Handout for Week 7 Exercise

Reflections

- Exercise complied: marked-up, text only versions, also available for download
- But- compliance doesn’t mean the learning experience was the same
- Design challenge: Revisit the design of the exercise, while adjusting the tab order in Storyline
- Ask ourselves: If it doesn’t work for everyone, should we be using it?