

# Designing for Diversity

Creating Learning  
Experiences that  
Travel the Globe



**Una Daly, OCW Consortium**  
**James Glapa-Grossklag, College of the Canyons**  
Special thanks to Jutta Treviranus, IRDC

# Welcome, please introduce yourself



Una Daly,  
OCWC Community College Director,  
OER Library Services Manager  
California State University

James Glapa-Grossklag  
Dean, College of the Canyons  
President, CCCOER Advisory  
OCWC Board

# Agenda

- Introductions & Understandings
- Framing the Conversation
- Definitions, Regulations, Guidelines
- Diverse Learners
- Group Activity: Persona & Goals
- Basics for Ensuring Accessibility
- Group Activity: Designing Learning Experience
- Communities & Resources



# We are diverse, we share many things

Working with a partner ...

1. Two ways in which you and your partner are different
2. Two ways in which you are the same
3. For each person, one way in which you are unique from anyone else in the room

# We all face barriers..

- What was your most challenging learning experience? Why?
- What was your most positive learning experience? Why?



# Framing the conversation

- Definitions
  - Diversity
  - Accessibility
- Objectives
  - Identify elements of design
  - Identify main resources



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# Education is changing

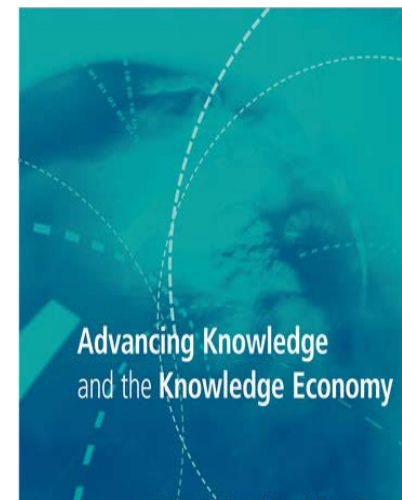
- What we learn
- Who we learn from
- How we learn
- When we learn
- What skills and knowledge are of greatest value



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wikipedia.org

# In a global knowledge economy

- Education becomes more important
- Prosperity of society depends on educational development of its members
- Requires retooling of educational practice
- Requires a diversity of learners





# Global education dilemma:

- More student diversity:  
migration, increase in disabilities
- Less time to prepare curriculum
- More curriculum to cover
- Difficult to address needs of average student, let alone students with disabilities, alternative learning needs or language barriers.
- Increase in marginalized, disengaged students



# Learning needs to be addressed

- Sensory, motor, cognitive, emotional and social constraints,
- Individual learning approaches and motivations
- Linguistic or cultural preference
- Technical, financial or environmental constraints.



Image: cc-by-nc-sa The Advocacy Project

# Important relearned insight:

- Learners learn differently.
- Best learning outcome when learning is personalized.
- Disability - a mismatch between the needs of the learner and the learning environment offered
- Accessibility – ability of the learning environment to adjust to the needs of the learner
- How does this address the education dilemma?



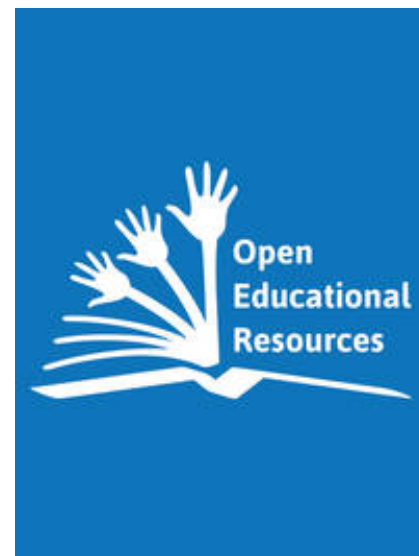
# Collective, Connected Effort...

- Growing global pool of diverse resources
- Most “born digital” so can be transformed and reconfigured – enlarged, spoken, transcribed or reorganized – if a few simple design principles are followed
- Open license supports creation of derivatives, modifications or variants
- Can the diversity of resources serve to address the needs of the diversity of learners?



# Open Educational Resources

Teaching, learning or research materials that are in the public domain or released with an **intellectual property license** that allows for free use, adaptation, and distribution.



OER Logo 2012, J. Mello CC-BY

Sources: UNESCO, William and Flora Hewlett Foundation

# What is an Open License?

- **Free:** Free to access online, free to print and copy
- **Open:** Reuse, Revise, Remix, Redistribute
- **Creative Commons:** less restrictions than standard copyright but author retains full rights.



# Examples

Includes –

- Course materials
- Lesson Plans
- Modules or lessons
- OpenCourseWare (OCW)
- Open textbooks
- Videos
- Images
- Tests
- Software
- Any other tools, materials, or techniques used to support ready access to knowledge

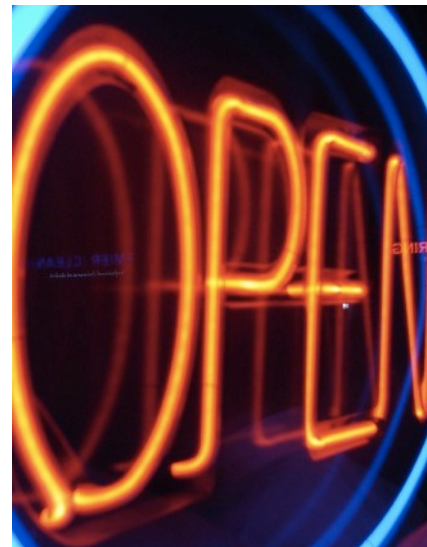


**OPEN**COURSEWARE  
CONSORTIUM



# Characteristics of OER

- **Digital**
  - Easy to modify
  - Free to distribute
- **Open License**
  - Reuse, revise, remix, redistribute
- **Expands access**
  - Lower cost, translations, accessibility



Labeled for reuse by MrKCoolsPhotostream

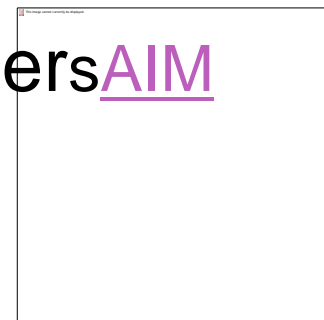


# OER Conundrum



# Need for Accessibility

- ~1 billion worldwide have form of disability  
[World Report on Disability](#), 2011
- Disproportionate affect on health, education, employment, and poverty [World Report on Disability](#), 2011
- 11% U.S. postsecondary students report disability [AIM Commission Report](#), 2011
- Many experience accessibility barriers [AIM Commission Report](#), 2011



# Treaties and Laws

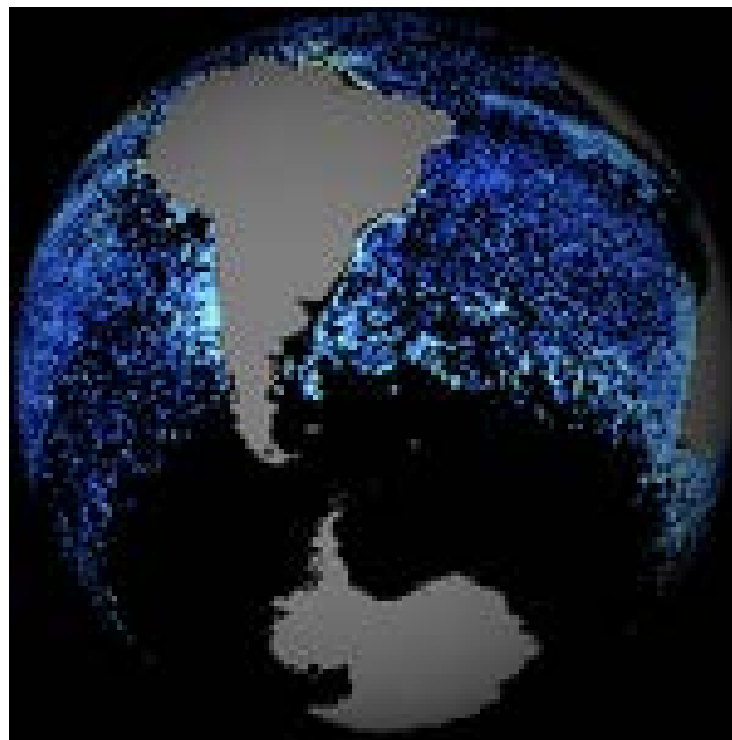


- United Nations Convention on Rights of Persons with Disabilities (2006)
  - Ratified by 141 countries
- United Kingdom Equality Act (2010)
- Americans with Disabilities Act (1990)
- European Union Digital Agenda (2010-2020)

# Digital Agenda for European Union

- Enhancing digital literacy, skills & inclusion
  - Over 50% of Europeans use the internet daily – but 30% have never used it at all! Moreover, disabled persons face particular difficulties in benefiting fully from new electronic content and services. As ever more daily tasks are carried out online, everyone needs enhanced digital skills to participate fully in society. The Digital Agenda tackles the digital divide. (digital literacy, skills and inclusion analysis and data)

# What are the laws and accepted practices in your country?



# Design & Guidelines

- Universal Design for Learning
- AccessForAll ISO 24751
  - IMS Global working group, has created a robust set of property values and terms for accessibility
- Web Accessibility Initiative – 3 guidelines
  - WCAG 2.0, WAI-ARIA Authoring, WAI-ARIA User Agent
- Accessible Digital Office Documents (ADOD)

# Universal Design for Learning

- Origins in Universal Design
  - Embedding choice in the things we design
- Provide multiple means for learners to
  - Express knowledge
  - Represent knowledge
  - Engage with knowledge



# Web Accessibility Initiative

- **Web Content Access Guidelines**
  - Evaluate web content: Perceive, Operable, Understandable, Robust
- **Authoring Tool Accessibility Guidelines**
  - Support creation of accessible content
- **User Agent Accessibility Guidelines 1.0**
  - Designing browser and media players and interoperability with assistive technology.



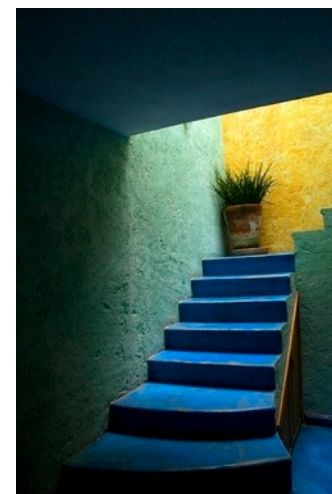
# Other forms of diversity

- Internationalization
  - Language, culture
- Digital Literacy/Illiteracy
- Age-related constraints



# Group Design Project

- Step 1: Choose a learner persona
- Step 2: Pick a learning goal
- Step 3: Create a learning experience for your learner



San Miguel stairs creative commons licensed by larry&flo 2007

# Step 1: Choose Learner Persona

- Get to know and add detail to your learner

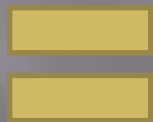


# Step 2: Choose Learning Goal

- What is the learning goal for this user?
- Examples:
  - Review materials
  - Demonstrate ability to apply concept.



# EXAMPLE OF ACCOMMODATION



# UNIVERSAL DESIGN EXAMPLE



# SECTION 508 UMBRELLA



Online content



Brick and mortar content



Departmental technology



Physical hardware, software, tools and devices.



# THIS SOUNDS LIKE MORE WORK! PLEASE GO AWAY!





# IT'S ACTUALLY LESS WORK!



Eliminates hiccups from the ground up



Reach a much broader audience



Most of section 508 is now considered standard web and content design.



# GUIDELINE A

- (a) A text equivalent for every non-text element shall be provided (e.g., via "alt", "longdesc", or in element content).

*Laymen's Explanation: Add text descriptions to vital images (i.e. images that show procedures, convey vital information, and/or enhance student understanding. This is NOT required for decorative/non essential images.*

# Archaeology 101

Dr. Bob Lah Blah  
College of the Valleys

## REQUIRED TEXTBOOKS

“Archaeology Law”, by the law firm of Dewie, Cheetum, and Howe.

“Ancient Mummies and YOU!”, by Dr. Bob Lah Blah

“Sweating to the Ancients”, Dr. Ricardo Simmonsons

ARCHAEOLOGY TOOL KIT CONTAINING THE TOOLS BELOW IS  
REQUIRED! PLEASE BRING THESE TOOLS TO FIRST DAY OF CLASS:



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Kit contents: Spade, 22mm brush, pick, hammer, tape measure.

# GUIDELINE A: EXAMPLE



Two scientists mix Alzine (the blue liquid on the left) and benxenite (the red liquid on the right) to produce the chemical reaction known as Albenzenitration.

# GUIDELINE B: CAPTIONS

(b) Equivalent alternatives for any multimedia presentation shall be synchronized with the presentation.

*Laymen's explanation: Videos (movies, short video clips, and anything with images and audio combined) must be captioned. This applies to online and on ground content as well as content designed for outside of the classroom.*

# CAPTIONING OPTION 1: YOUTUBE AUTO TRANSCRIPTION

GUIDELINEBDEMO.mp4



## Available Caption Tracks

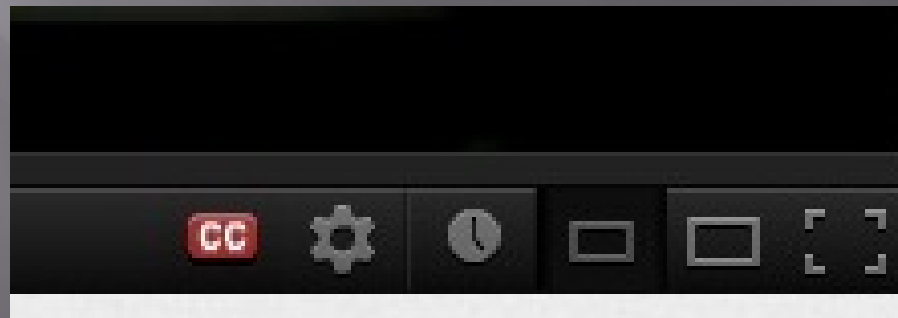
Uploaded Captions:

Machine Transcriptions:

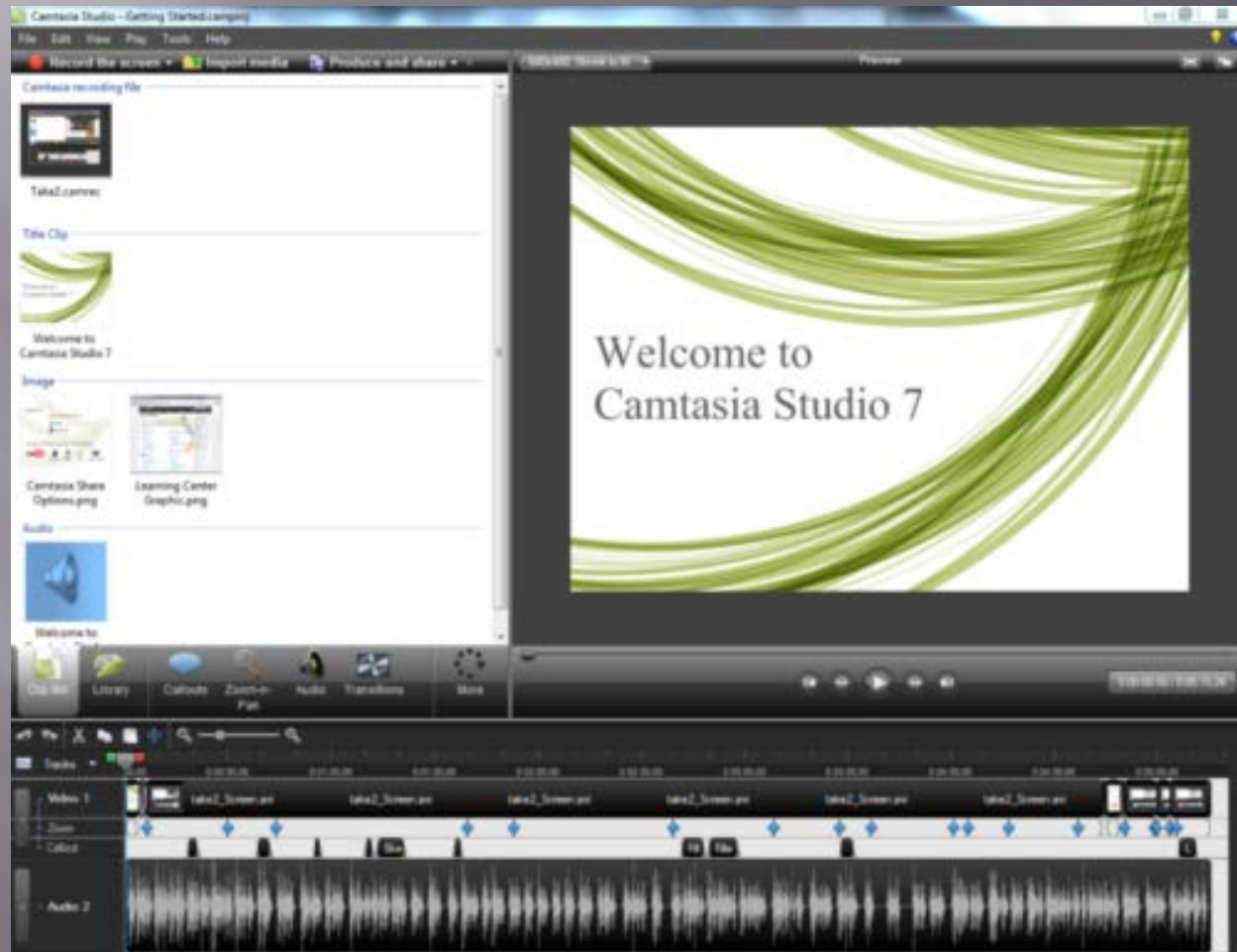


English

+ Add New Captions or Transcript

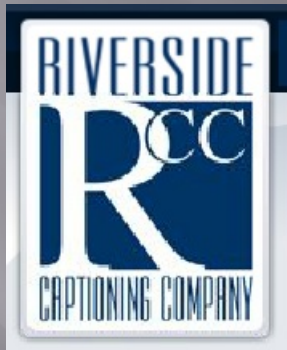
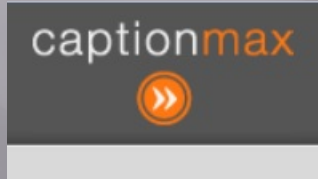


# CAPTIONING OPTION 2: CAMTASIA (CAPSCRIBE, MAGPIE, AMARA)





# CAPTIONING OPTION 3: PAY FOR CAPTIONS



# GUIDELINE C: COLOR

(c) Web pages shall be designed so that all information conveyed with color is also available without color, for example from context or markup.

*Laymen's explanation: Colors are fine to use, but don't depend on color alone for directional or informational cues.*

Click on the RED LIGHT to access course assignments

Click on the GREEN LIGHT to access grading information

Click on the YELLOW LIGHT to access supplemental readings.

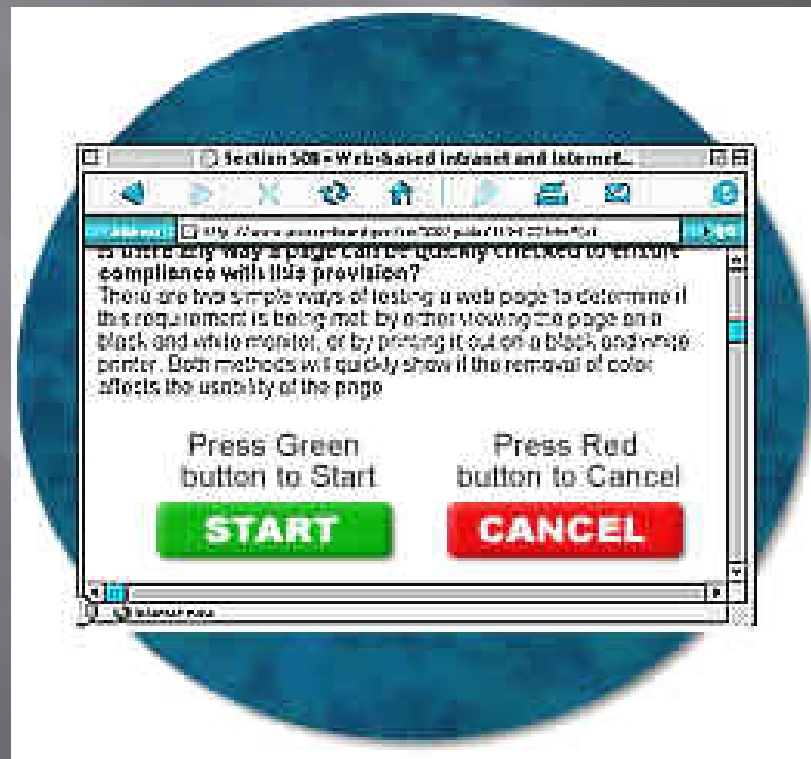


Click on the RED LIGHT to access course assignments

Click on the GREEN LIGHT to access grading information

Click on the YELLOW LIGHT to access supplemental readings.





# GUIDELINE D: STYLES



# GUIDELINE E: Hyperlinks

- ▣ Hyperlinks are navigation aids for AT users
- ▣ Do NOT use “Click Here”
- ▣ Examples
  - [Download course syllabus \(MS Word, 78KB\)](#)
  - [Submit Assignment #3 Here](#)

# GUIDELINE F: Table Headers

Column Header 1	Column Header 2	Column Header 3
Data 1 Column 1	Data 1 Column 2	Data 1 Column 3
Data 2 Column 1	Data 2 Column 2	Data 2 Column 3



# FAQ 1

I have no blind or deaf students in my class. Do I still need to caption my video content? Do I still need to make my web content accessible?



# FAQ 2

A blind/deaf/mobility impaired student could never work in the field that I teach. Am I still required to comply with the law?



# FAQ 3

This seems like such a hassle and “College of the Hills” doesn’t enforce the law. Do we really need to do this?



## Step 3:

# Design the Learning Experience

- Select content (OER, OCW)
- How content is presented
- How content is structured, organized and navigated
- Any experiential, interactive, collaborative elements
- Feedback and motivational elements
- Assessment and evaluation\*\*

# Sharing your project

# Continuing the Journey

- **Communities**
  - CCCOER-OCWC
  - MERLOT
  - FLOE
  - Raise the Floor
  - What about in your country?
- **Resources**

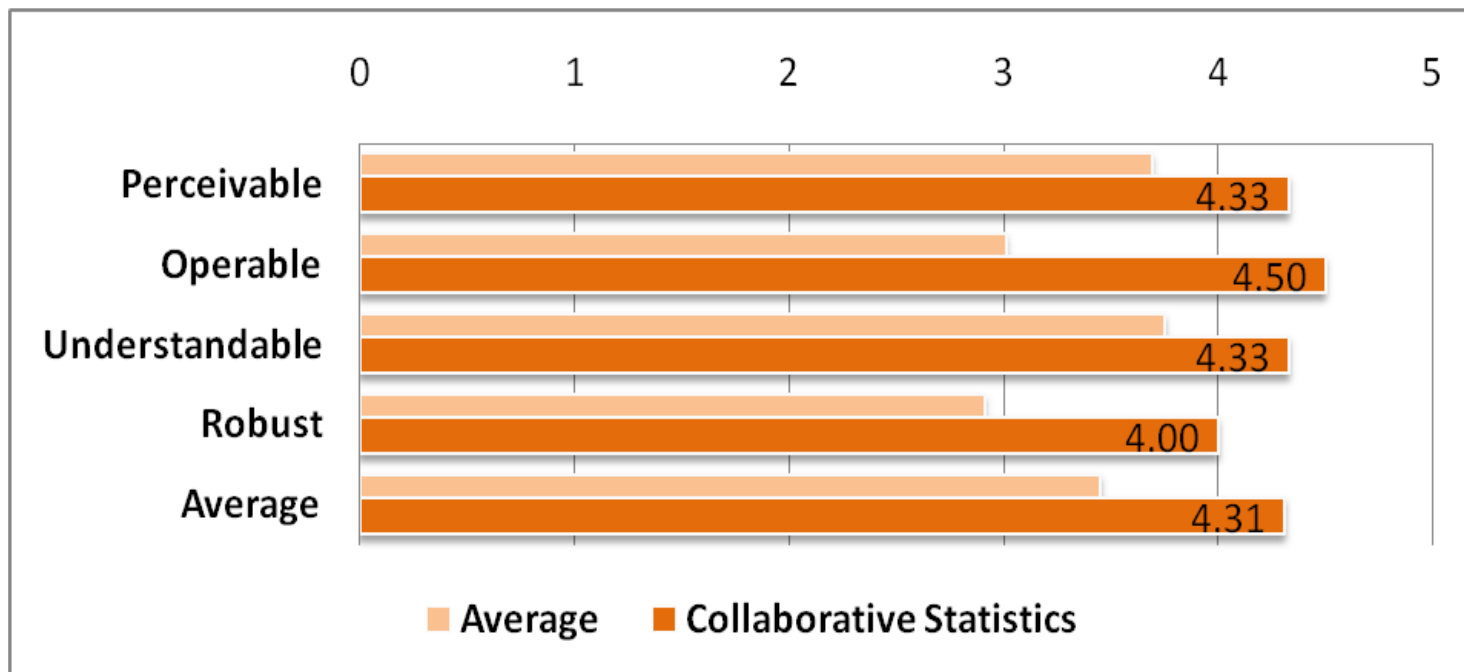




# CCCOER-OCW

- OCWC Toolkit
- Open Textbook Accessibility Reviews

**Textbook: Collaborative Statistics**  
**Accessibility reviewed by: Virtual Ability, Inc.**



# OER, Accessibility & Strategic Alliances

<http://oeraccess.merlot.org>

## OER AND ACCESSIBILITY:

BUILDING A COMMUNITY OF EXPERTS  
AND A COLLECTION OF EXPERTISE








[advanced search materials](#) | [advanced search members](#)

## Welcome to OER and Accessibility!

Our mission is to enable the community of accessible technology experts, advocates, and users to build an online community and collection of open education resources that can improve universal learning by facilitating the contribution and sharing of accessible technology information, expertise, and accessible online teaching and learning materials.

### Our Goals are:

1. Enable educational institutions to find the expertise and the professional development resources that will improve their capacity to deliver a quality education reliably and in a timely manner to all students, including those with disabilities
2. Build a collection of quality and accessible OER that can be reliably used by all

### If you only have a little time, READ THESE!

[Students with disabilities at degree-granting post-secondary institutions](#) (PDF) by the National Center for Educational Statistics (Oct. 18, 2011)

[Designing OER with Diversity in Mind](#) presented by Anna Gruszczynka, Jutta Treviranus, and Una Daly ([Webinar recording](#))

[Report of the ARL Joint Task Force on Services to Patrons With Print Disabilities](#)



# Exploring the OER-Accessibility Teaching Commons

- **Locating accessibility-specific resources, experts, organization on the OER Accessibility site**
  - The Welcome page offers [quick access to resource libraries](#)
- **Reviewing accessibility info during OER searches**
  - Reviewing info on search results & resource details pages
  - Locating OER resources that provide accessibility information on the [Finding Accessible OER site](#)
- **Joining the accessibility community**
- **Adding accessibility information for OER resources**
  - Reviewing the [Accessibility Policy page](#)

# MERLOT Accessibility Goals/Objectives

- **Promote the use of accessibility info during OER selection**
  - Develop a standardized accessibility metadata framework
  - Display accessibility information within search results
- **Leverage accessibility knowledge in the user community**
  - Provide a way for users to contribute accessibility info
- **Increase awareness, knowledge, and collaboration regarding accessible online teaching/learning**
  - Build collections of accessibility resources, experts, organizations
- **Provide comprehensive, up-to-date accessibility info for MERLOT services (digital library site and authoring tools)**
  - Provide an accessibility policy, roadmap, compliance docs

## MERLOT Accessibility Checkpoints

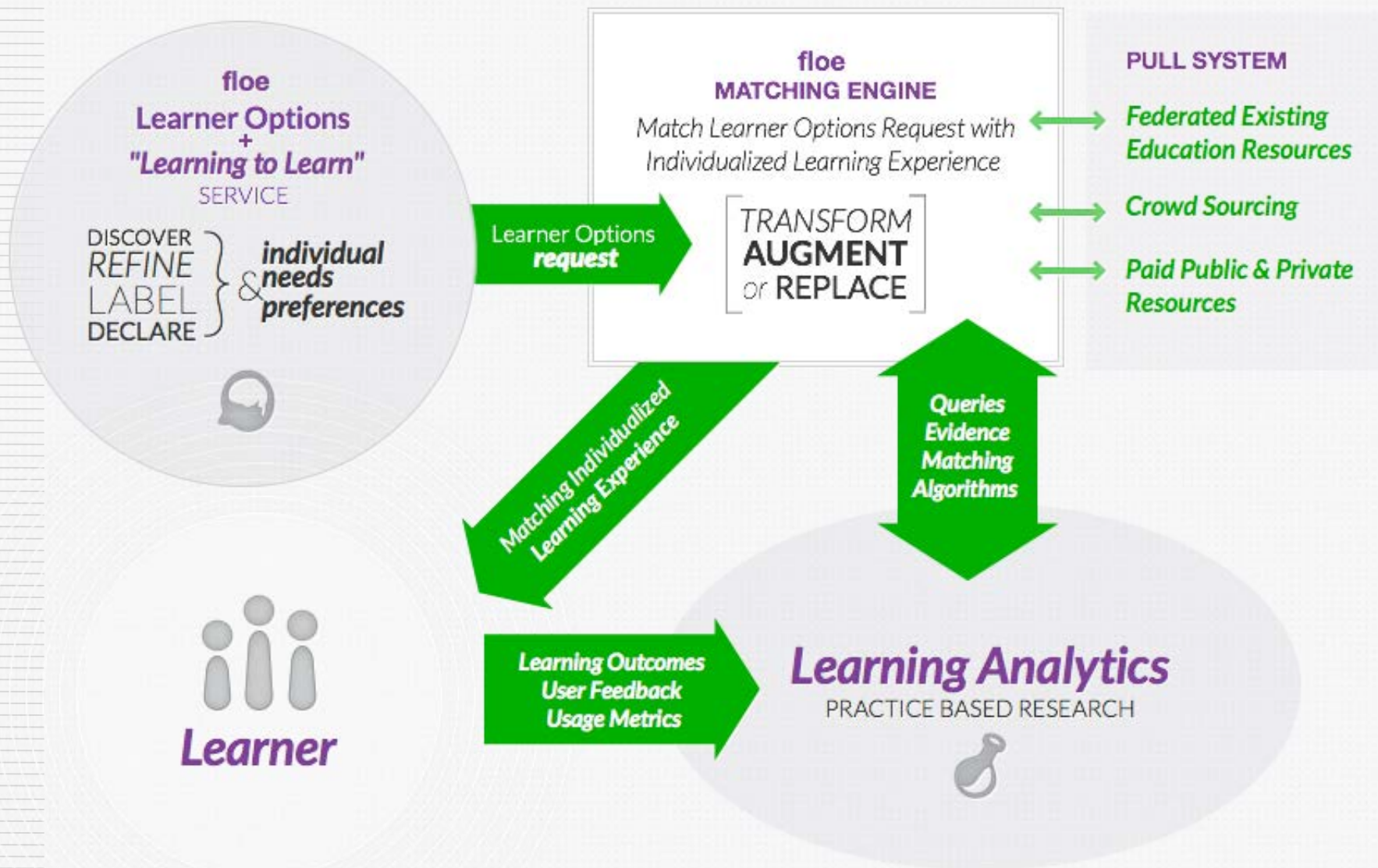
- Aligned with Section 508 and WCAG guidelines
- Balanced between brevity and breadth of coverage
- Tailored to common eLearning formats
- 32 total checkpoints organized in 15 functional areas
- Collectively represent baseline accessibility support by addressing the most common, high-impact barriers
- Easily validated with free or low-cost tools & methods
  - Firefox [WAVE toolbar](#) extension
  - Firefox [Web Developer](#) extension
  - Manual evaluation

# FLOE Project

- Global, public infrastructure to deliver a learning experience that matches each learner's individual needs
- uses AccessForAll ISO 24751 interoperability standard, a common language for describing learner needs and labelling resources that meet those needs
- support for creating resources amenable to transformation and augmentation
- support for filling the gaps
- <http://floeproject.org>
- Funded by William and Flora Hewlett Foundation (with feasibility study funded by US Dept of Education)

# Requires...

1. information about each **learner's access needs**,
2. information about the **learner needs addressed by each resource**, (a11y metadata effort and schema.org)
3. **resources** that are amenable to transformation, and a pool of alternative equivalent resources, and
4. a method of **matching** learner needs with the appropriate learning experience



# Authoring Support

- Support within OERPublisher at Connexions repository

<http://oerpub.org/>

- Handbook for authors -

<http://handbook.floeproject.org>

- <http://adod.idrc.ocad.ca/> for simple document accessibility

# Raise the Floor

To make the web and mobile technologies accessible to everyone with disability, literacy and aging-related barriers, regardless of their economic status.

- What is needed?
- What exists to meet those needs?
- How can we fill the gaps?
- Creating an infrastructure to deliver
- Highlight work being done





# Resources

- The Web Accessibility Initiative - <http://www.w3.org/WAI/>
- Accessible components for creating interactive Web apps - <http://fluidproject.org/>
- OpenCourseWare Toolkit  
<http://www.ocwconsortium.org/resources/toolkits/accessibility/>
- A resource site for educators - <http://snow.idrc.ocad.ca/>
- FLOE Project Website - <http://floeproject.org>
- FLOE Community Wiki - <http://wiki.fluidproject.org/display/fluid/Floe>
- The Global Public Inclusive Infrastructure - <http://gpii.net>
- The Cloud4All Project - <http://cloud4all.info>
- The AEGIS Project - <http://aegis.idrc.ocad.ca/>
- MERLOT OER Accessibility Project – <http://oeraccess.merlot.org/>
- Handbook on creating accessible learning experiences - <http://handbook.floeproject.org>
- Information on Assistive Technologies - <http://collaborativeportal.atis4all.eu>
- Raising the Floor - <http://raisingthefloor.org/>
- OER Commons - <http://www.oercommons.org/> (learner options tab on upper right)

# Thank you for joining us today!



OPEN<sup>COURSEWARE</sup>  
CONSORTIUM

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