

Todd Rose's video file



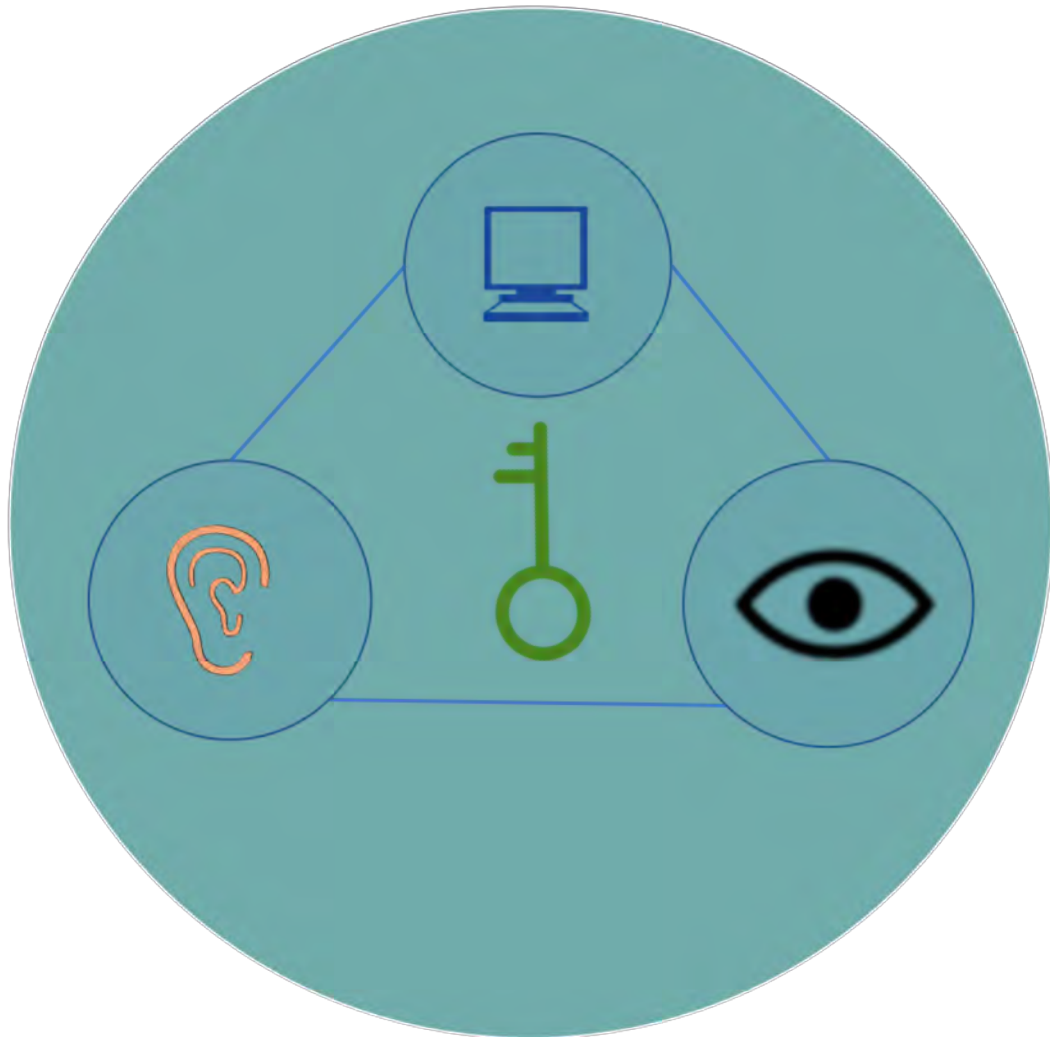
EMERGING TRENDS IN EDUCATIONAL TECHNOLOGY

**Limited Hearing, Limited Vision:
Help Students Succeed in Your Class**

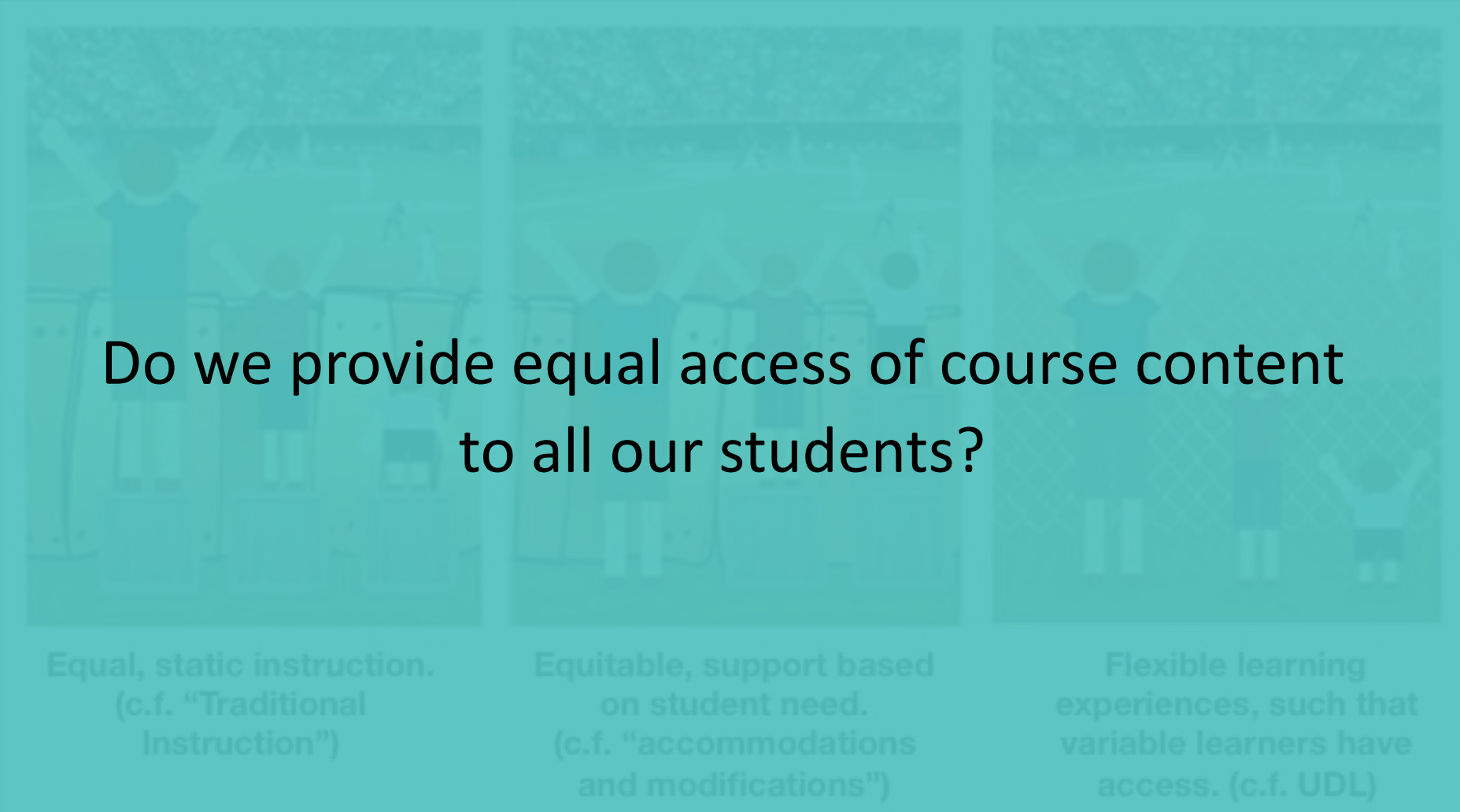
A partnership of the Office of the Provost and
the College of Liberal Arts and Social Sciences

UNIVERSITY of **HOUSTON**
OFFICE OF THE PROVOST

UNIVERSITY of **HOUSTON** | **CLASS**
Office of Educational Technology



**Limited Hearing, Limited Vision:
Help Students Succeed in Your Class**



Do we provide equal access of course content
to all our students?

The image consists of three vertical panels, each with a teal background and faint illustrations of students. The first panel shows a teacher at a whiteboard and students at desks. The second panel shows a teacher and students, with one student using a wheelchair. The third panel shows a teacher and students, with one student using a wheelchair and another student using a stroller.

Equal, static instruction.
(c.f. "Traditional
Instruction")

Equitable, support based
on student need.
(c.f. "accommodations
and modifications")

Flexible learning
experiences, such that
variable learners have
access. (c.f. UDL)



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Image resource: <http://jewishspecialneeds.blogspot.com/2013/07/fair-isnt-equal.html>



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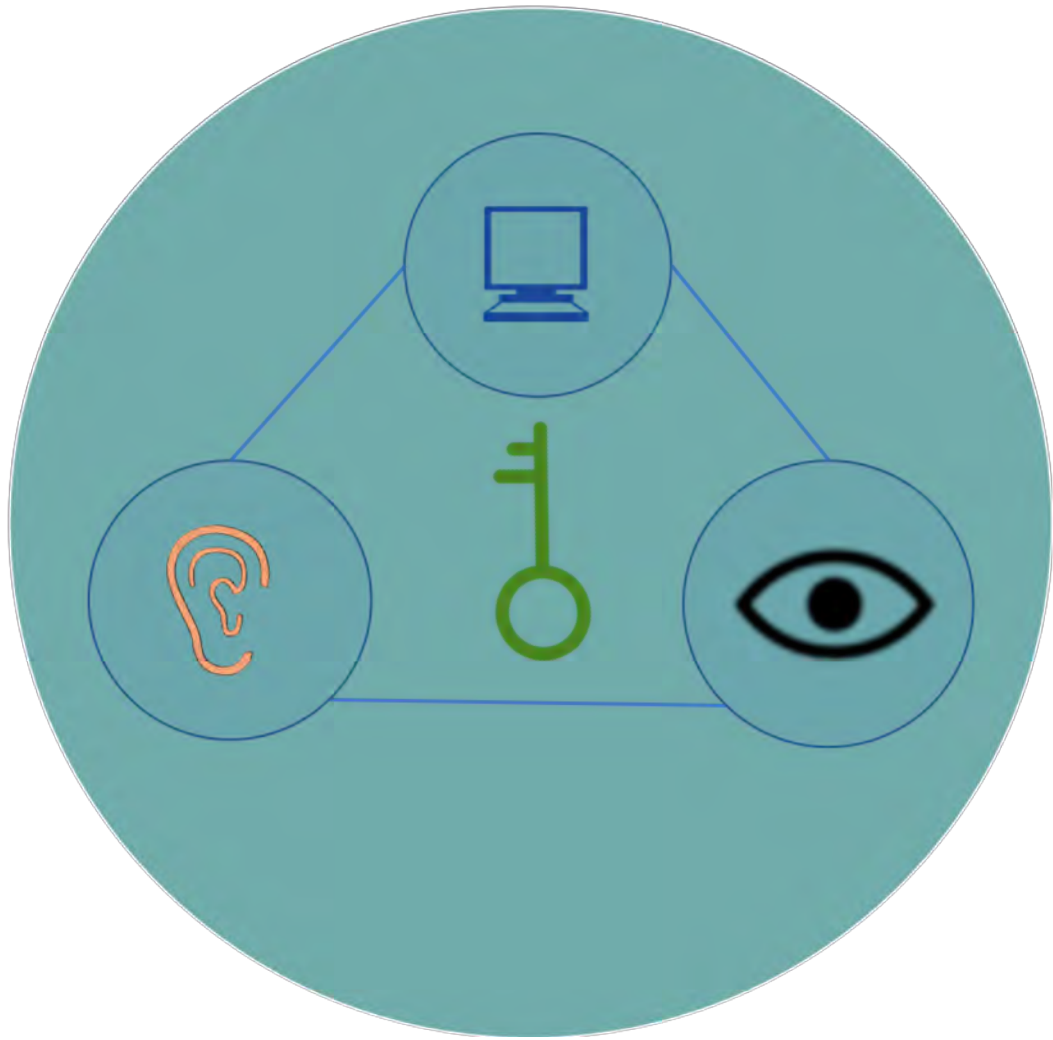
Warm-up quiz



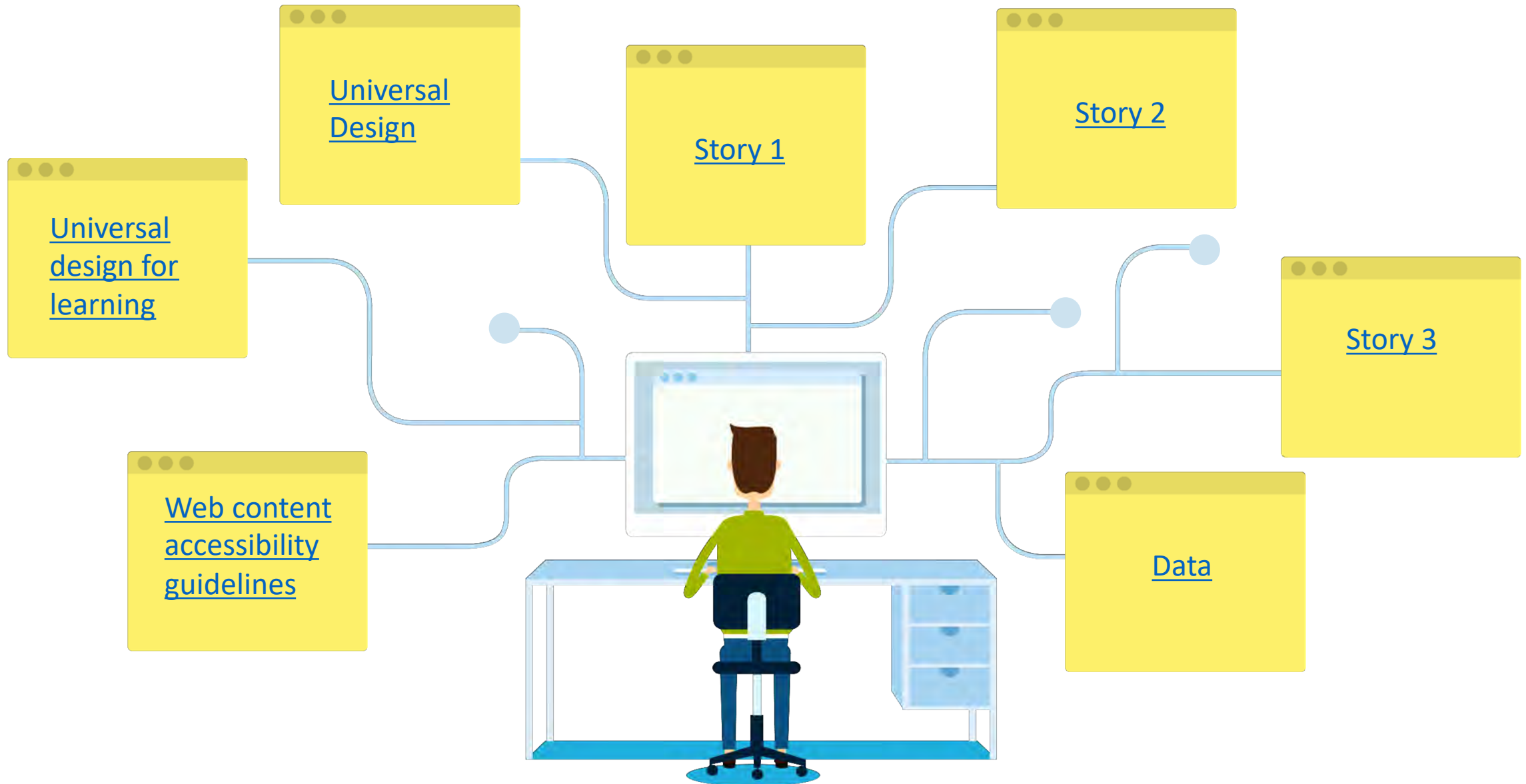
URL: bit.ly/2EXQrMq

Related Laws

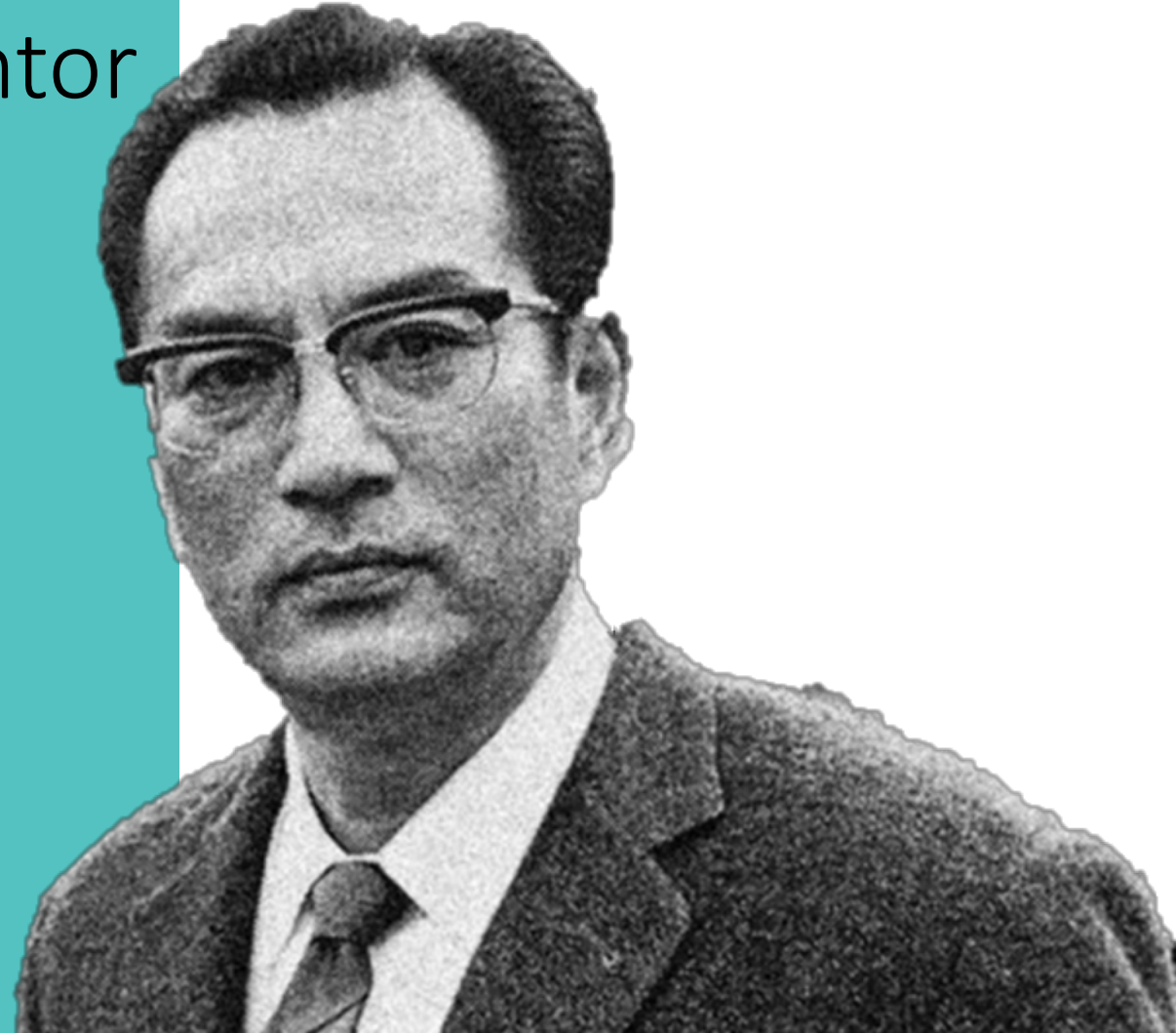
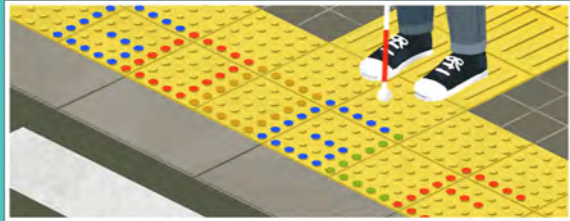
- Title II of the Americans with Disabilities Act
- Section 504 of the Rehabilitation Act
- Section 508 of the Rehabilitation Act



Conceptual Frameworks



Seiichi Miyake,
a Japanese inventor
of tactile blocks



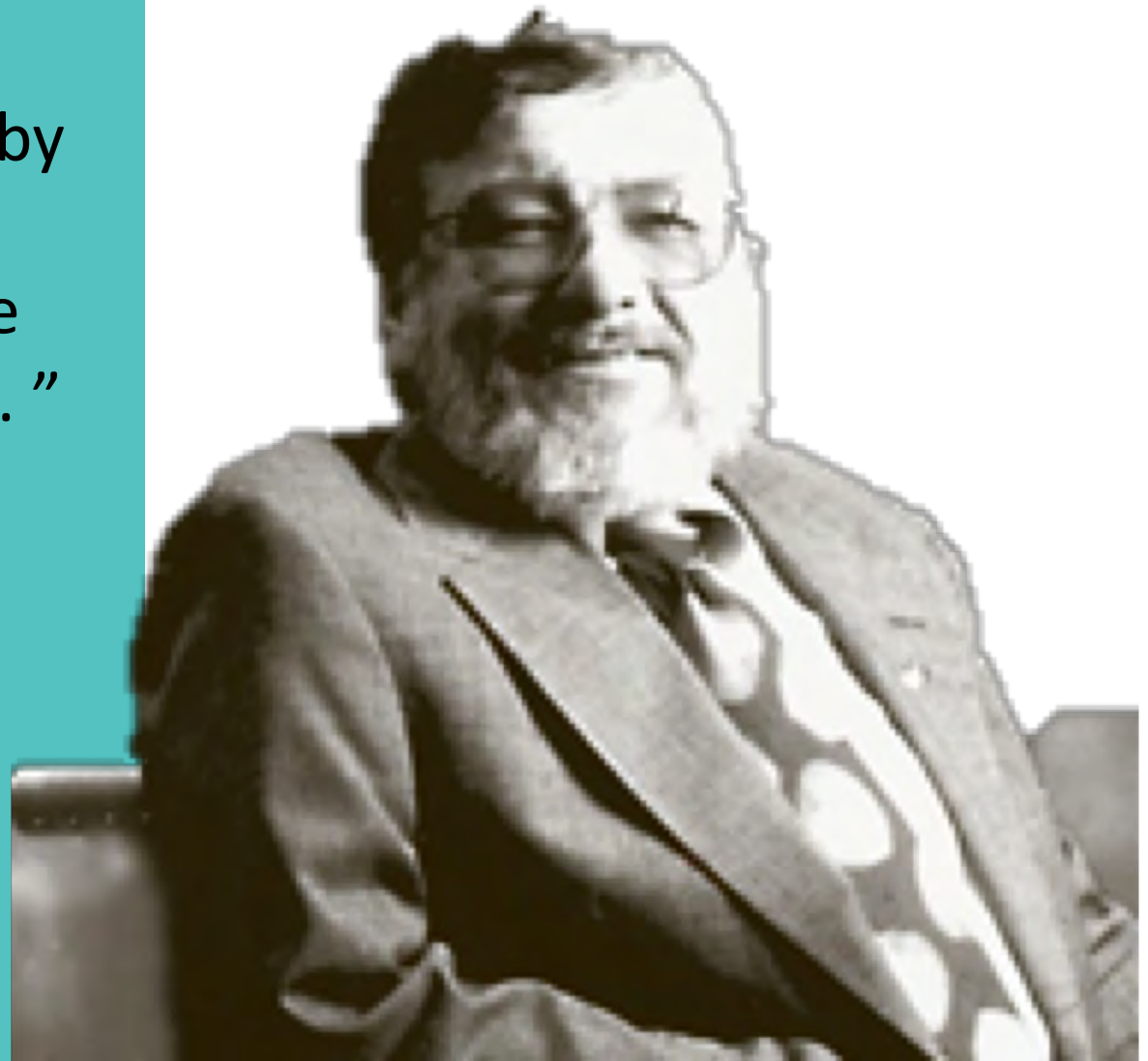
Dr. Anne-Marie Womack's problem

- Ph.D at Texas A & M
- A professor of practice and director of writing at Tulane University



“Design of products and environments to be usable by all people, to the greatest extent possible, without the need for special adaptation.”

- Ronald Mace -



Curb cuts, Accessible Ramp, and Tactile Blocks



Curb cuts



Accessible Ramp



Tactile Blocks

Universal Design for Learning

“UDL is a framework to reduce barriers in the design of the learning environment to make accessible instruction for all.”

- David Rose-



Universal Design for Learning : 3 principles

Multiple Engagement

to attract the easily bored or easily distracted learners

Multiple Presentation

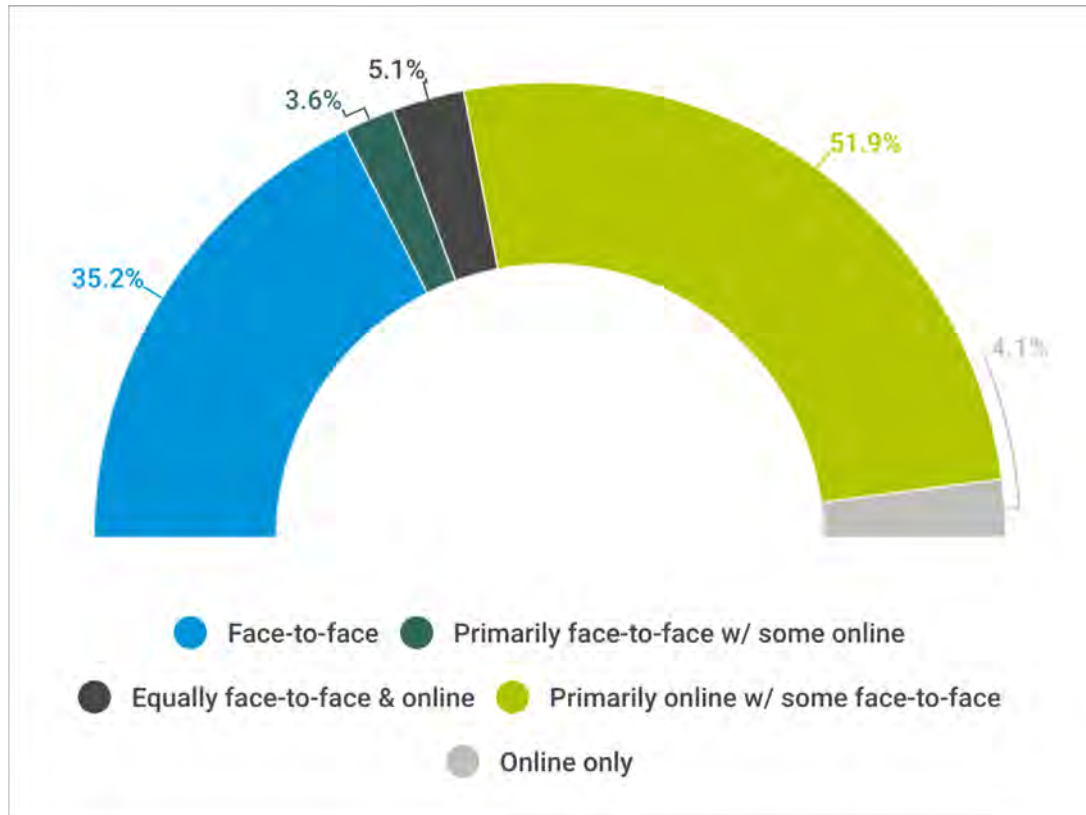
to present information and content in different ways to support understanding

Show a math concept in both text, storytelling, and graphic modes

Action & expression

to allow learners to present in different formats

Modality & Video Use



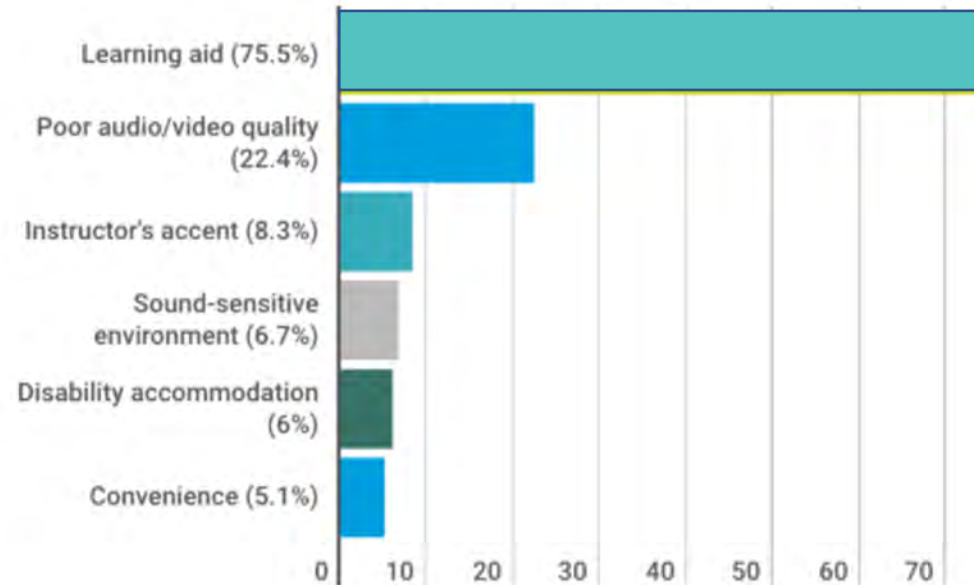
99.7%
have courses that
include videos

What kind of course modality?

Why do students use captions?

75% of Students
that use captions
said they use
captions as a
learning aid

Reasons for Using Captions



REQUIRED TEXTS AND TECHNOLOGIES

- Blackboard, *check daily for schedule and assignments* <http://University.blackboard.com>
- If you have a smartphone, get the Blackboard App—it makes life so much easier.
- Class Notebook; *Bring to Class Daily*. We are writing our own textbook, you will not purchase one.
- Class Text System: Text @text2014 to (555) 555-5555; then text back your name when prompted
- Class Facebook Page: <https://www.facebook.com/class> "Like" page
- Oxford English Dictionary, www.oed.com (Off campus? From library.edu, go to top right corner and click OFF CAMPUS LOGIN. After logging in, you will be brought back to the library homepage and you can use subscription databases.)

COURSE DESCRIPTION (FROM ENGLISH DEPARTMENT)

English 101 is designed to help you write clearly and organize complex arguments that engage in a scholarly way with expert knowledge. Toward that end, you will learn to conduct independent bibliographic research and to incorporate that material appropriately into the sort of clear, complex, coherent arguments that characterize academic discourse. Specifically, you'll learn that:

- To **write clearly** means that you must take a piece of writing through multiple drafts in order to eliminate any grammatical errors or stylistic flaws that might undermine the author/audience relationship;
- To **write with meaningful complexity**, you must learn to practice a variety of invention strategies (e.g., the five classical appeals, freewriting, reading and analysis, and library research) and to revise continuously the materials generated by these methods;
- To **make coherent arguments** without sacrificing complexity, your practice of revision must be guided by certain principles of style and arrangement, and you must grow adept in the genre of argument itself through work with models and templates established by standard persuasive rhetorics;
- To **create effective arguments**, you must cultivate strategies for positioning texts against each other to familiarize yourself with the arguments of others before developing your own claims, and grow adept at using warrants, evidence, counter-claims, and other rhetorical tropes to craft your own arguments. You will learn strategies for active, critical reading, strategies for deciphering why a text might be arranged a certain way and what that arrangement might mean;
- To **conduct effective research** means utilizing the library, evaluating sources, and incorporating the work of others into your texts using the proper conventions of citation endorsed by the Modern Language Association (MLA). You will also learn strategies and conventions for summarizing, paraphrasing, and quoting others' work to support and develop original claims.

To develop the skills mentioned above, English 101 balances seminar-style discussions with heavy student participation; brief lectures; hands-on productive writing; writing prompts and graded lab exercises; and regular one-on-one conferencing with your professor.

Grade Determination: I am required to enforce a grading policy uniform with the standards of the university and the English department because this is a multi-section class in which many students must be graded similarly. At the same time, I want to work with you to ensure you earn the highest grade of which you are capable. That's why I have daily work so you build toward papers and earn completion points; that's why I give reading quizzes and notes so you get credit for your work and stay on top of the reading; and that's why I create revision assignments so you always have thorough comments before you turn in the most heavily weighted version of the paper. I've set up this class to make it possible for you to do well while still maintaining ethics in grading, similarity across sections, and integrity at the university.

Unit 1: Analysis Paper	15%	Unit 2: Analysis Paper – Extension & Revision	20%
Unit 3: Research Paper	15%	Unit 4: Hybrid Argument Paper	20%
Group Work	10%	Low-Stakes & In-Class Writing / Quizzes / Homework	15%
<i>(Approx. 20 activities, calculated at end of semester)</i>		Handwritten Notes (Submitted periodically)	5%

Figure 1. Old syllabus.



First-Year Writing: Rhetoric and Research in the Digital Era

Table of Contents

Course Description.....2
Course Values.....3
Grades.....4
Absences & Make-Up.....4
Official English 1010 Policies.....5
Course Schedule.....Posted on Canvas

What Students Say

- "Dr. Womack is unlike other teachers ... Traditionally, teachers teach topics and send you home to practice. Dr. Womack does this in reverse, you take notes at home and then you practice in class."
- "Come to class everyday ... discussions are crucial for success. Review old notes while writing essays to add elements we learned in class. This will boost your grade significantly."
- "Don't write off Dr. Womack's teaching style right off the bat because you're not used to it. Her method seems strange at first, but in the long run it will make you a better writer...you learn to become your best critic and analyze writing."

After

Course Resources

Dr. Anne-Marie Womack
Awomack1@tulane.edu

canvas

Google Drive

No books to buy. We write our own.

remind
 Text @class to 81010

Figure 2. Revised syllabus.

ACCESSIBLE SYLLABUS

Accessible classroom resources promote student engagement and agency



IMAGE



TEXT



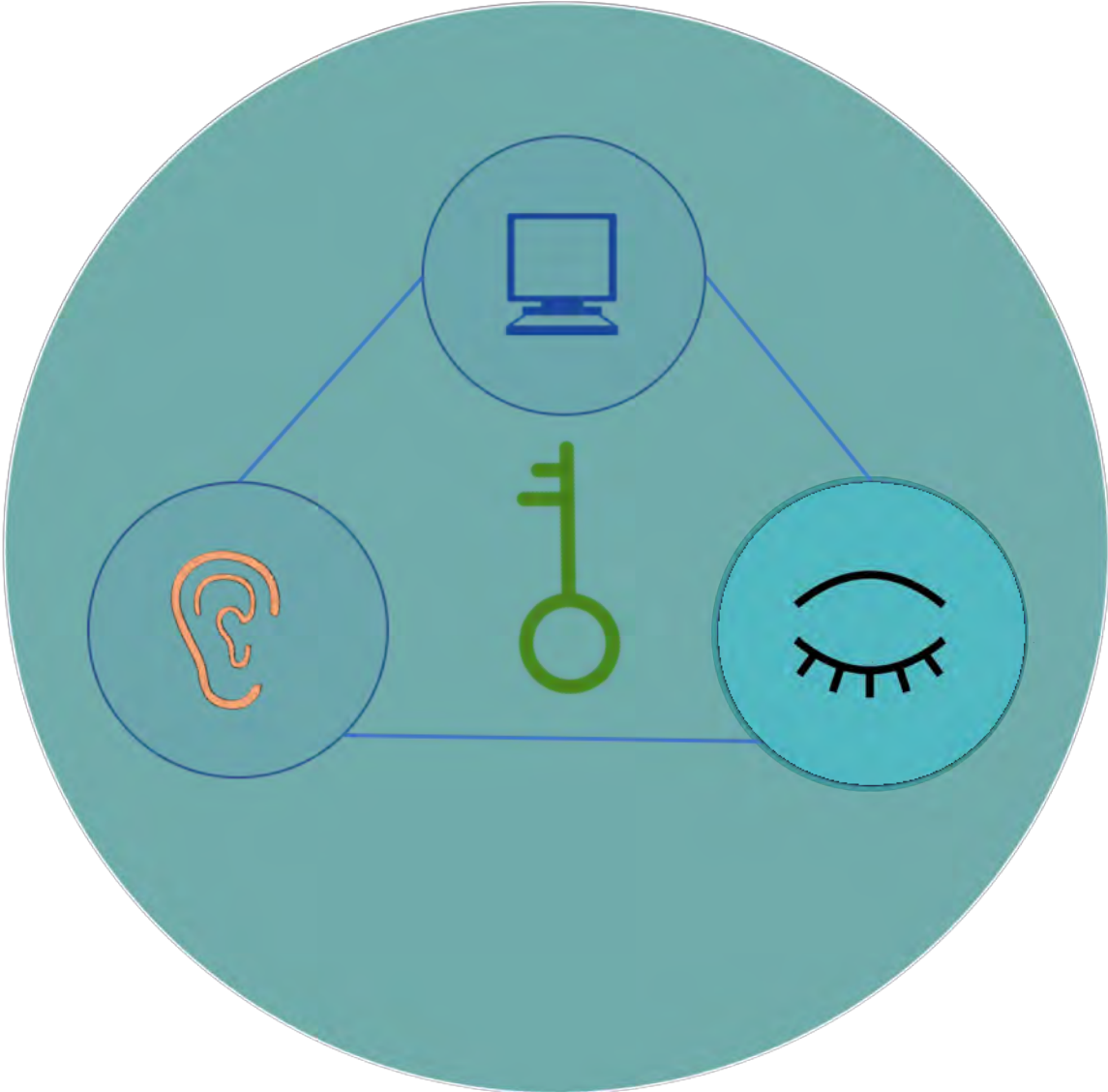
RHETORIC

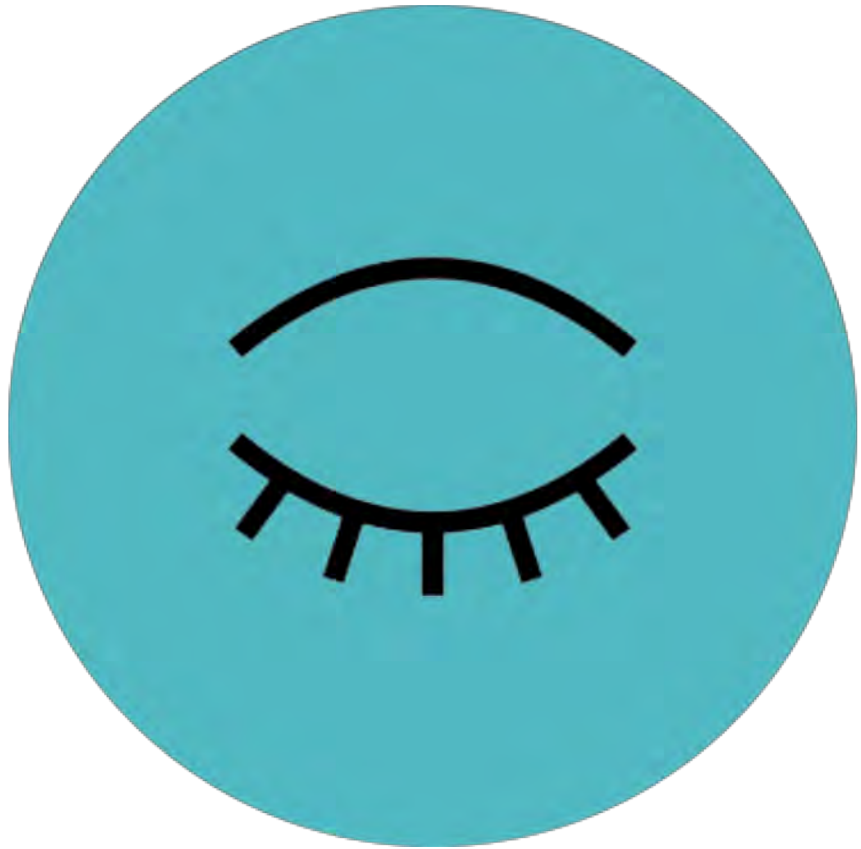


POLICY

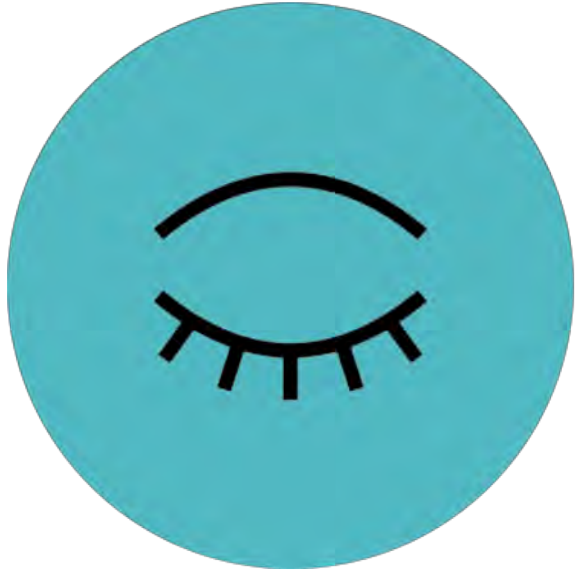
Web Content Accessibility Guidelines Four principles

- **P**erceivable
- **O**perable
- **U**nderstandable
- **R**obust



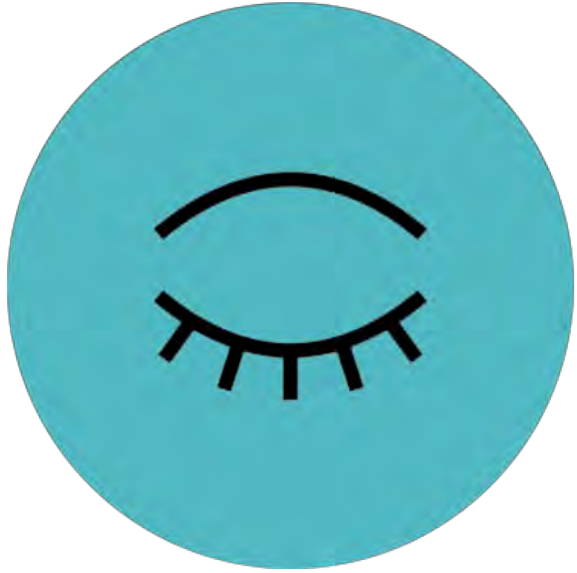


Visual Impairment Simulation and Guidelines



Visual Impairment Simulation

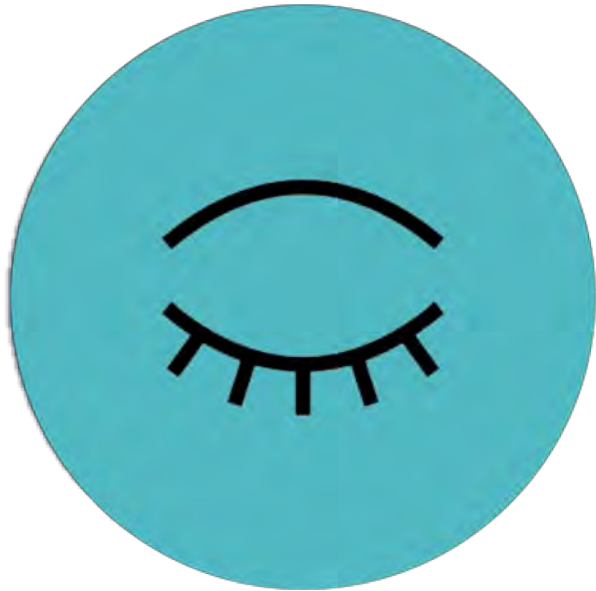
- [What is like to be color blind?](#)
- [More simulations of vision loss](#)



Visual Impairment Web User's Technology

- Screen Reading Software ([Demo](#))
- [Special Browsers](#)
- [Screen Magnification](#)





Accessibility Guidelines for Visual Impairment - Printing

- Readable typeface/font (height for low vision people to improve readability)
- Color selection
- Spacing and white space
- File structure: headings and subheadings, lists and bullets
- Avoid all caps or all bold for large amount of text
- Background: plain color for text
- Paper: light color



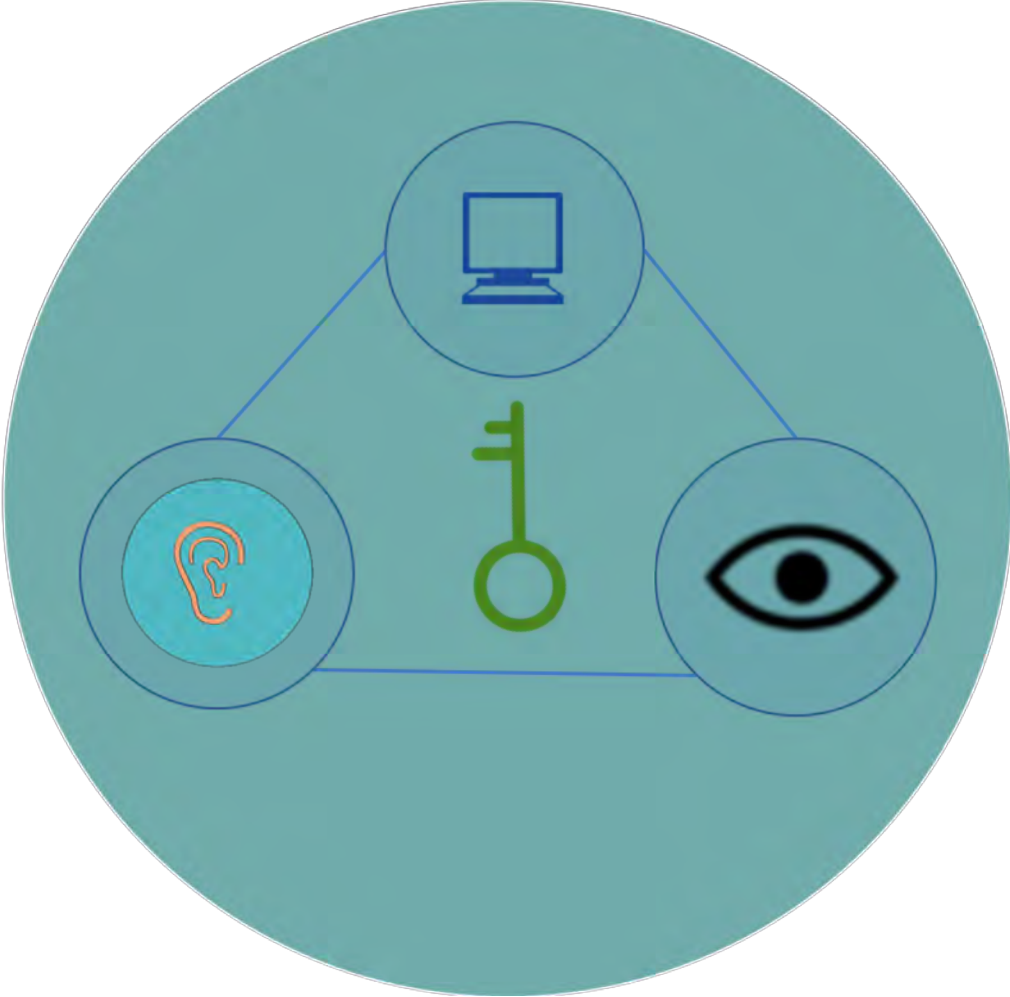
Accessibility Guidelines for Visual Impairment – Online Content

- Provide text alternatives: label graphics and images explicitly
- Do not solely rely on sensory characteristics to convey info or build content structure
- Select right elements: such as text font, size, spacing, background color, etc.
- Brightness



Tips for Checking Accessibility

- Accessibility self-check: [Cheatsheet](#)
- Web Accessibility Evaluation Tools





Hearing Impairment Simulation and Guidelines



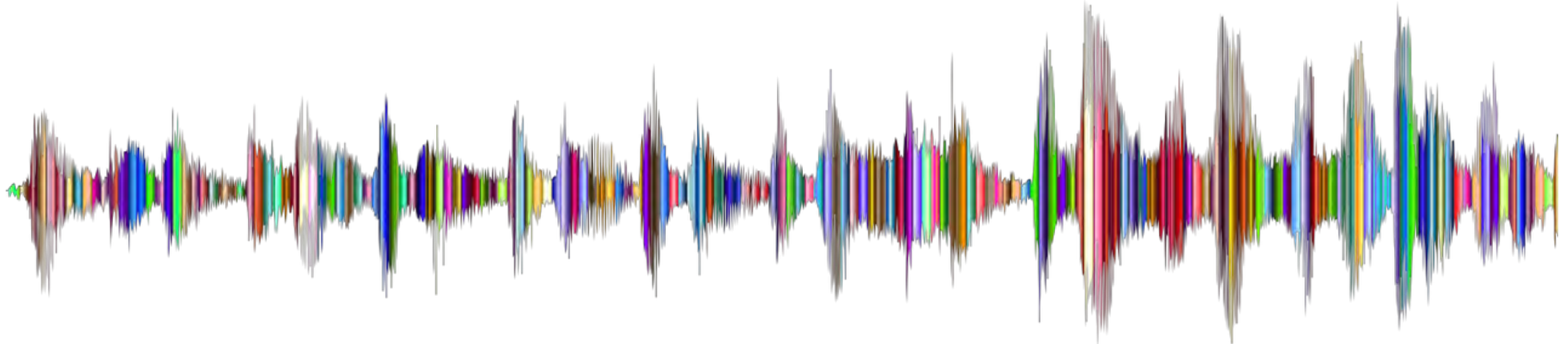
The Four Levels of Hearing Loss

1. Mild Hearing Loss
2. Moderate Hearing Loss
3. Severe Hearing Loss
4. Profound Hearing Loss





Hearing Impairment Simulation

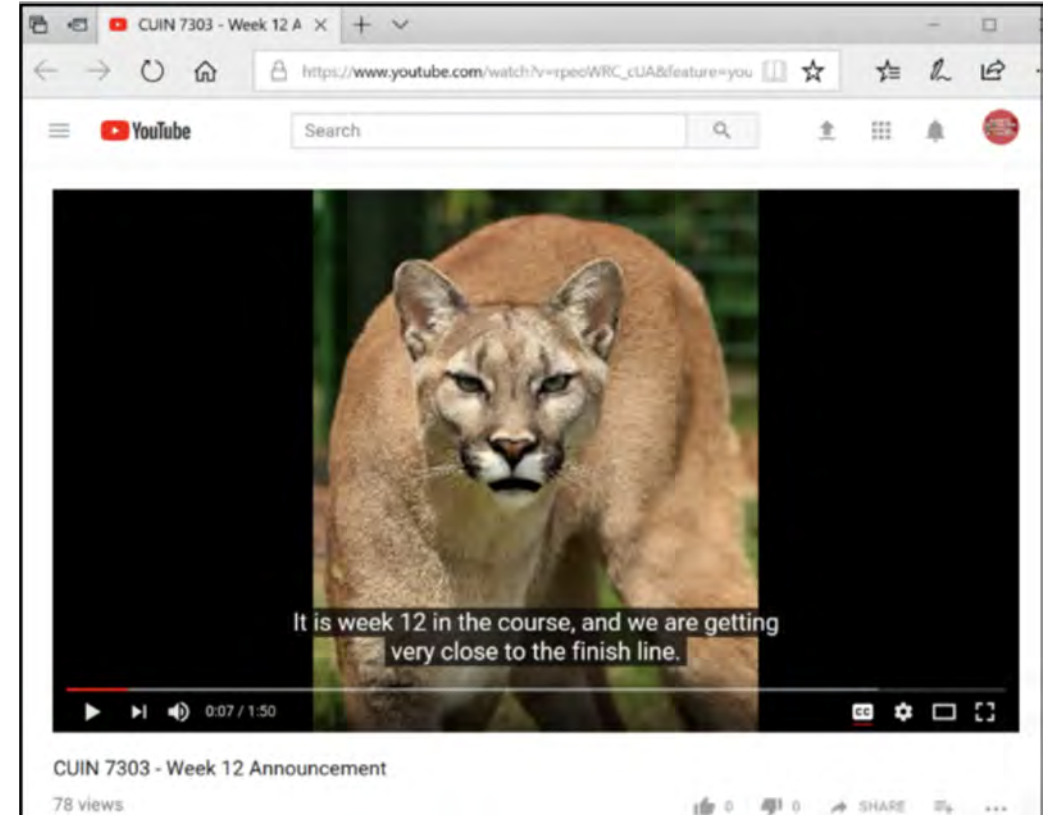




Guidelines Based on WCAG 2.1 (Web Content Accessibility Guidelines)

1. Provide Captions for Video Content.

- Make sure the accuracy of captions
- Make sure that captions are synchronized with the video





Guidelines Based on WCAG 2.1

2. Provide a transcript/summary of audio/video content.

- Transcribe your audio/video using [Google docs](#).

The screenshot shows a Blackboard LMS interface for a course titled "2019YR-JFUB-DEVHELL-Jingyuan Personal Developmental Shell". The "Assignments" section is active, displaying three assignment entries:

- Assignment week One**: Includes an "Instruction" link.
- Assignment Week Two**: Includes an attached file named "Podcast transcript .docx" (9.396 KB). A red arrow points to this file with the label "Transcript". Below it, an audio file "jingyuanpodcast_2017-10-25T06_14_34-07_00.mp3" is listed. A red arrow points to this file with the label "Audio content".
- Week One peer review presentation**: Includes submission and evaluation dates and a "View/Complete Assessment" link.

The interface also shows a left-hand navigation menu with options like "Homepage", "Resources", "Course reserves", "Course Content", "Assignments", "Messages", "Announcements", "Discussion Board", "Email", "Grades", "Tools", "Content Area", "week 1", and "Discussion". A green banner at the top indicates "Success: Assignment week One Edited."



Guidelines Based on WCAG 2.1

3. Make sure that audio/video doesn't play automatically.

Create Audio

Select an audio file to play on the page. If Autostart and Loop are both set to Yes, the audio file will begin playing when users open the page and will continue to play until they stop it or navigate away from the page. Include a transcript for those that cannot hear the audio file. [More Help](#)

* Indicates a required field.

SELECT AUDIO FILE

* Name

Color of Name Black

* Find File

AUDIO OPTIONS

Autostart Yes No

Loop Yes No

Add alignment to content Yes No

Include Transcript Browse to select a file containing a transcript for people who cannot hear the audio.

STANDARD OPTIONS

Permit Users to View this Content Yes No

Track Number of Views Yes No

Select Date and Time Restrictions

Display After

Enter dates as mm/dd/yyyy. Time may be entered in any increment.

Display Until

Enter dates as mm/dd/yyyy. Time may be entered in any increment.

Click Submit to proceed.



Guidelines Based on WCAG 2.1

4. Make your content structured and organized.

The screenshot displays a course management system interface. On the left, the 'Home Page' features a navigation menu with the following items:

- Welcome to the CLASS Online Teaching Program
- Start Here
- Module 1: Developing Quality Online Courses Based on Alignment
- Module 2: Aligning Assessment with Learning Objectives
- Module 3: Aligning Learning Activities to Objectives and Assessment
- Module 4: Organizing Your Course
- Module 5: Text, Media, and Accessibility in Your Course
- Module 6: Establishing Instructor Presence

The main content area shows the 'Table of Contents' for 'Module 1: Developing Quality Online Courses Based on Alignment'. The table of contents includes:

- Introduction
- QM standards
- Part 1: Quality Matters rubric
- QM at UH
- Part 2: Alignment in the QM
- Part 3: Backwards design
- Part 4: Developing a course
- Part 5: Writing learning objectives
- Finding the right verb
- Module 1 Activity (OPTIONAL)
- Common pitfalls in writing learning objectives
- Module 1: Self-check Quiz
- Module 1 Assignment: Write learning objectives
- Module 1 Survey for Pilot Test

The 'Introduction' section of Module 1 states: 'Module 1 will introduce the research-based principles used in quality online course design.' The 'Module 1 Learning Objectives' section lists:

- Explain and apply the principle of alignment in your course
- Identify observable and measurable learning objectives
- Write three to five learning objectives for your course

The 'Overview of Module 1' section lists:

- Quality Matters rubric
- Alignment in the QM rubric
- Backwards design
- Developing a course outline
- Writing learning objectives

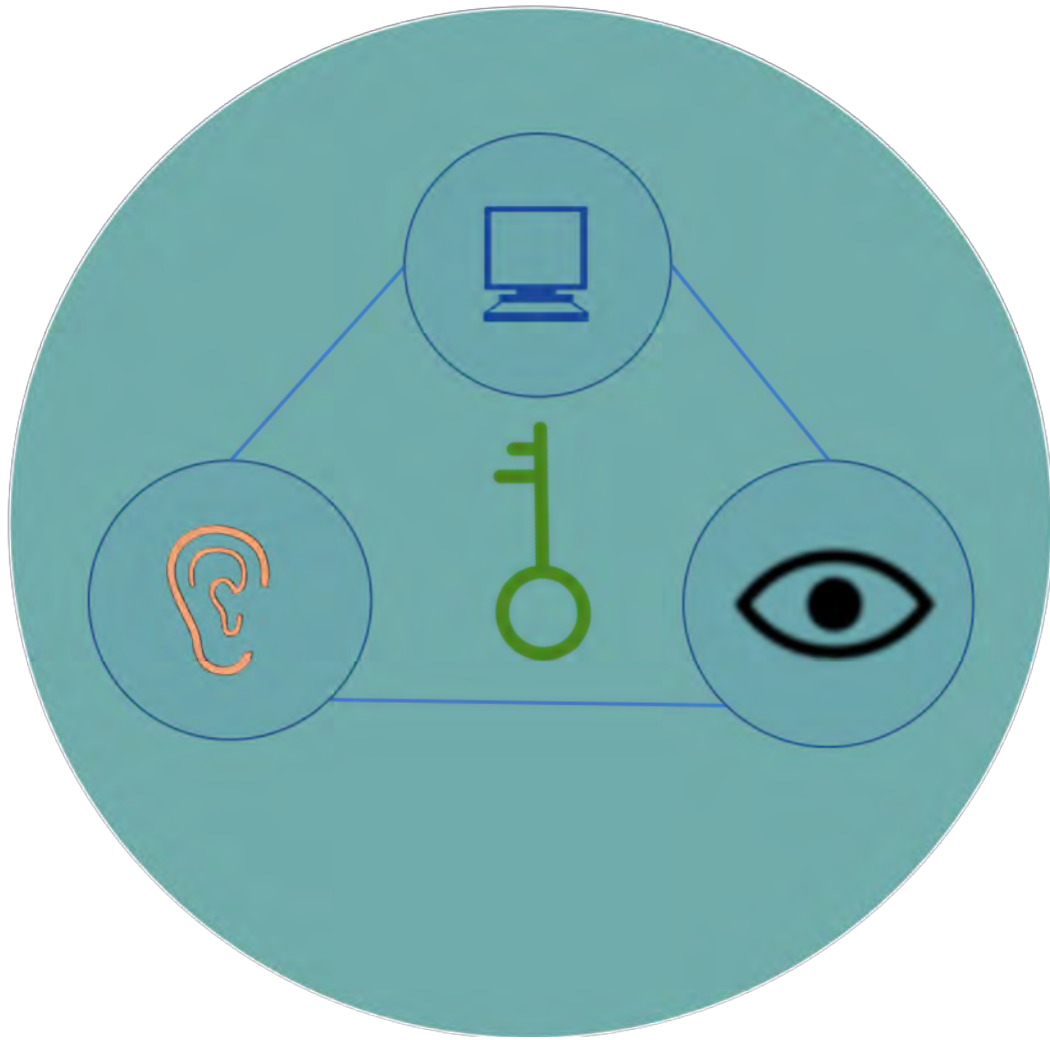
The 'QM standards' section states: 'This module addresses the following Quality Matters standards:'

- 2.1 The course learning objectives, or course/program competencies, describe outcomes that are measurable.
- 2.2 The module/unit learning objectives or competencies describe outcomes that are measurable and consistent with the course-level objectives or competencies.

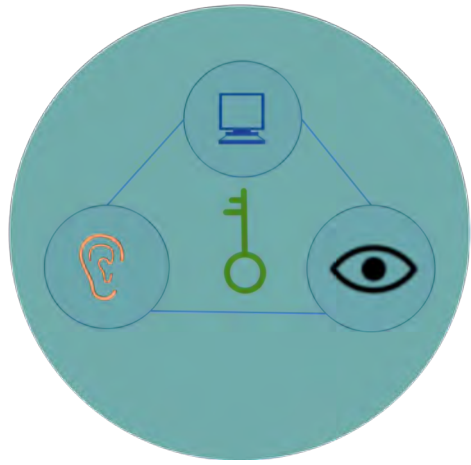


Cheatsheet Practice for Video Files

Captioning YouTube Videos

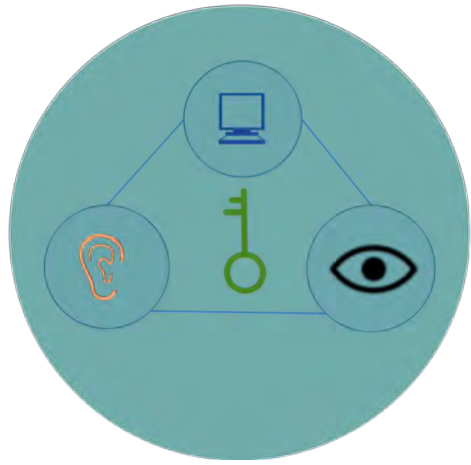


Tips for Enhancing Accessibility



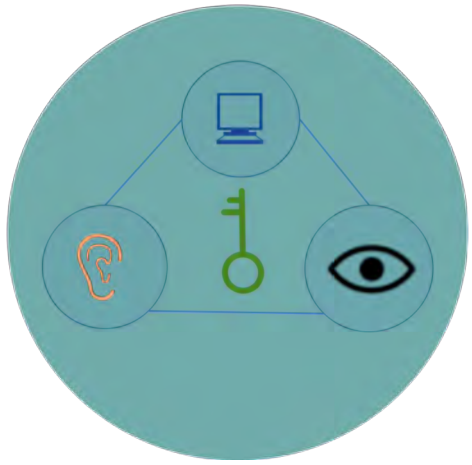
Best Practices for Documents

- Use legible fonts, e.g. Arial, Calibri, Georgia, Helvetica, Tahoma, Verdana
- Ensure sufficient color contrast between text and background
 - [Color Contrast Checker](#)
- Use descriptive anchor text for active hyperlinks
 - [Museum of Fine Arts](#) vs. <https://www.mfah.org/>
- Tag PDF files to ensure they can be read by screen readers
 - [PDF Accessibility Standards](#)
- Use appropriate tools to create headings, sections, and lists, instead of bold and italics
- For tables, use headers for rows and columns and captions for table titles and avoid merged cells
- Use [MathJax](#) for compatibility with screen readers



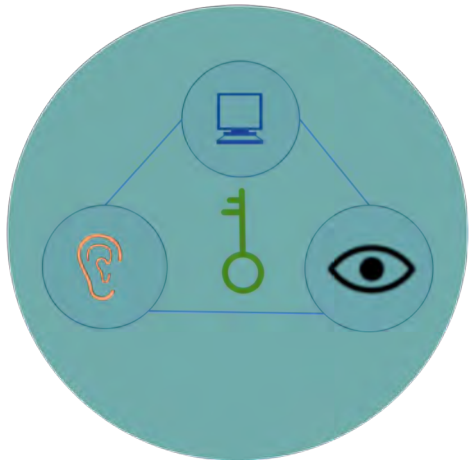
Best Practices for Multimedia

- Include captions and transcripts for video and audio and alt text for images
- Avoid using color to convey information, if unavoidable, use a color contrast checker
- Avoid animations, but if using them, describe sufficiently
- Avoid flashing graphics that may cause [photo epileptic seizures](#)



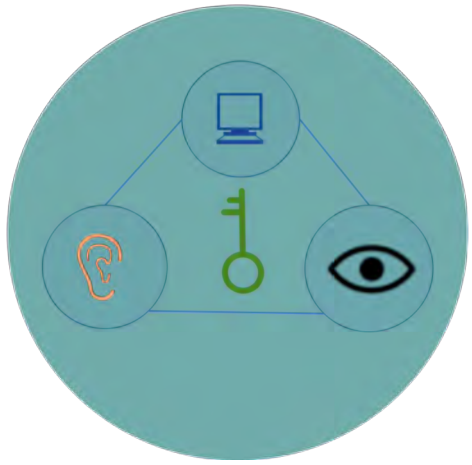
Best Practices for General Instruction

- Provide clear directions and expectations to help students focus and succeed
- Present content in multiple ways, such as, combination of text, video, audio and image format
- Choose options for communication and collaboration suitable for individuals with disabilities
- Provide options for demonstrating learning, such as, different types of test items, portfolios, presentations, discussions
- Check your web sites and web applications for accessibility
 - E.g. [WAVE](#) - web accessibility evaluation tool



Get Help!

- Would you like to incorporate these tips and learn more about accessibility?
- Contact [Instructional Designers](#) in your college.



Resources

[Accessibility and Universal Design](#)

[Universal Design: Process, Principles, and Applications](#)

[Equal Access: Universal Design of Instruction](#)

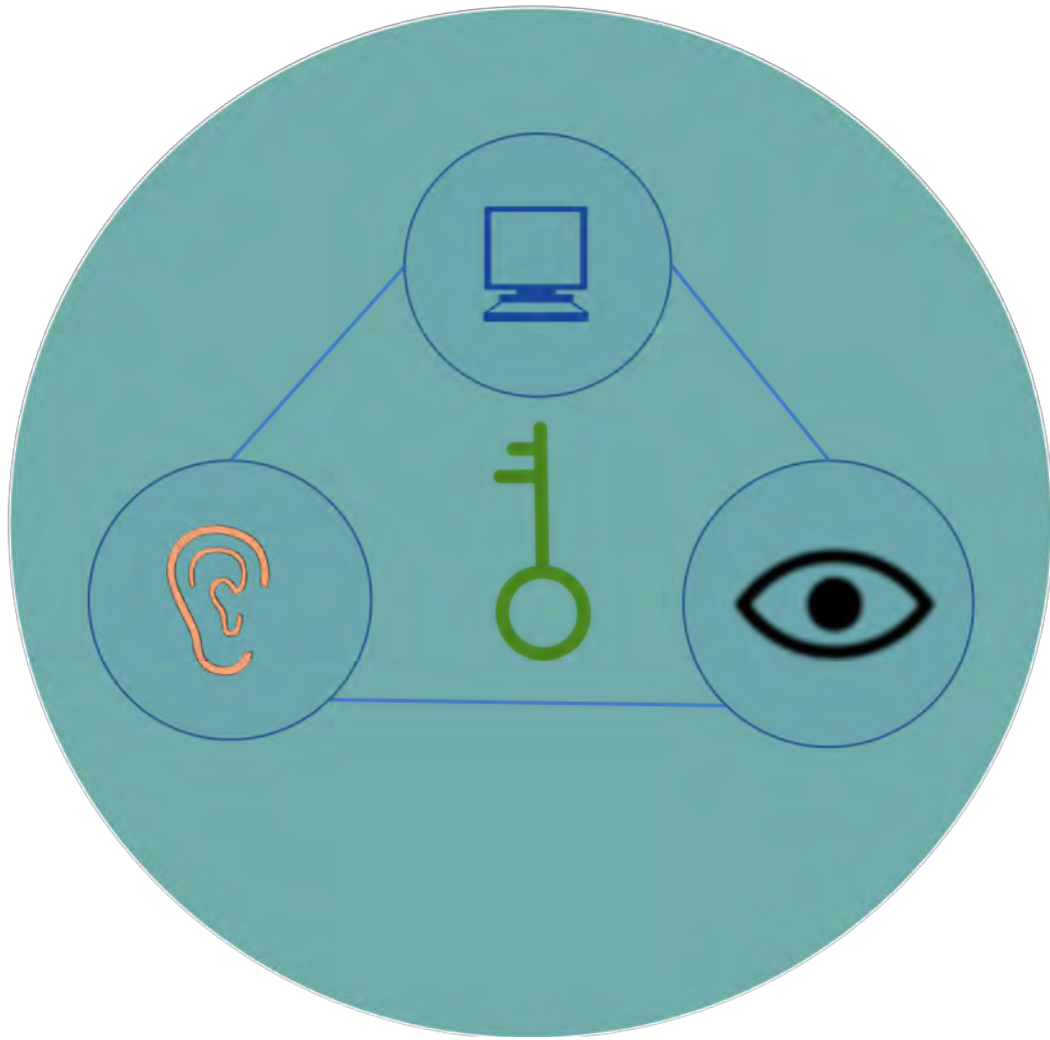
[Universal Design Online Content Inspection Tool](#)

[Difference between accessible, usable and universal design](#)

[The concept of Universal Design](#)

[Making Progress on Course Content Accessibility](#)

[Accessibility Blog on Instruction@UH](#)



Sammy's conclusion and Q&A

Key Issues in Teaching and Learning

- EDUCAUSE Learning Initiative (ELI) recognized their importance, ranking UDL and accessibility together as the NO. 4 in 2017 and number 2 in 2018

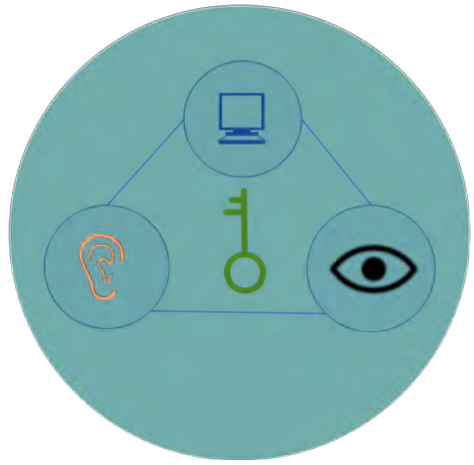
2017



2018



EDUCAUSE Survey



Q & A

- What is your take away?
- What are some of the practices you can incorporate in your teaching, research, and publication?