MEETING FACULTY IN THE MIDDLE

Practical Strategies for Helping Instructional Faculty Implement Inclusive Teaching Practices

Korey Singleton, Ph.D., ATP, RET
ATI Manager

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ICT ACCESSIBILITY IN HIGHER EDUCATION
Existing Disability Support Model in Higher Education

“Existing strategies for supporting SWDs in higher education rooted in ‘medical model’ (Burgstahler, 2012).”

Extended time
Notetaking support
Interpreter
Trends in Higher Education

Disability Rates in Higher Education Increasing

- Increasing # of SWDs enrolling in higher education (U.S. GAO, 2009).
- SWDs have lower participation and completion rates in higher education than their nondisabled peers (Mamiseishvili & Koch, 2011).

Growing Role of Online Learning in Higher Education

- Increasing role of online learning in higher education (Allen & Seaman, 2013).
- Increasing adoption of newer and more innovative EIT (Kim, 2011).
- Inaccessible EIT can adversely impact the ability of a SWD to access course content (Bühler, Fisseler, & others, 2007; Fichten, Asuncion, Barile, Ferraro, & Wolfforth, 2009).
- Growing number of legal challenges against higher education institutions for implementing inaccessible EIT (Zou, 2011; Szpaller, 2012).
Snapshot of Recent Litigation (Re: ICT Accessibility)…

• Inaccessible E-Learning Technologies
  • Educational technologies (i.e., captions, documents, LMS, CMS, supplemental applications, polling, library databases, etc.)
  • Websites/non-academic web-based resources

• All involve students with sensory impairments (blind, low vision, deaf, and/or hard of hearing)

• Possibly biggest issue of all…
UNIVERSAL DESIGN
Accommodation vs. Accessibility vs. Inclusive Design

• Model adapted from presentation given by Luis Perez, Apple ambassador

• Takeaway: Rather than focusing on individual solutions, use broad strategies
Why Universal Design?

- Term borrowed from the movement in architecture and product development that calls for curb cuts, automatic doors, video captioning, speakerphones, and other features to accommodate a vast variety of users, including those with disabilities.
Think about your users...

![Image of accessibility considerations](http://www.udlcenter.org/aboutudl/take_a_tour_udl)

- **Touch**
  - Permanent: One arm
  - Temporary: Arm injury
  - Situational: New parent

- **See**
  - Permanent: Blind
  - Temporary: Cataract
  - Situational: Distracted driver

- **Hear**
  - Permanent: Deaf
  - Temporary: Ear infection
  - Situational: Bartender

- **Speak**
  - Permanent: Non-verbal
  - Temporary: Laryngitis
  - Situational: Heavy accent

*Image courtesy of from [http://www.udlcenter.org/aboutudl/take_a_tour_udl](http://www.udlcenter.org/aboutudl/take_a_tour_udl)*
Example #1:  
*Curb Cuts/Automatic Doors*
Example #2:
Stairs/Ramps (GMU)

Front Entrance
(Aquia Building)

Ramp Access between
Aquia and SUB I
Example #3:
Computers/Mobile Devices
Example #4:
Accessible Video Player: OzPlayer

- All controls accessible via keyboard
- Accurate, synchronized Captions
- Interactive Video Transcript
- Synchronized audio description
UDL OR UNIVERSAL DESIGN FOR LEARNING
Key Points

“[Universal Design for Learning] UDL provides a blueprint for creating flexible goals, methods, materials, and assessments that accommodate learner differences.” (CAST, www.cast.org)

- Current instructional approaches have common activities that create access barriers
- *Universal Design for Learning* (UDL) is one strategy to remove these barriers
- When implemented consciously these approaches improve the experience for all students, including those with disabilities
About UDL

**Universal Design for Learning**

**Affective networks:**
THE *WHY* OF LEARNING

- How learners get engaged and stay motivated. How they are challenged, excited, or interested. These are affective dimensions.
- Stimulate interest and motivation for learning

**Recognition networks:**
THE *WHAT* OF LEARNING

- How we gather facts and categorize what we see, hear, and read. Identifying letters, words, or an author’s style are recognition tasks.
- Present information and content in different ways

**Strategic networks:**
THE *HOW* OF LEARNING

- Planning and performing tasks. How we organize and express our ideas. Writing an essay or solving a math problem are strategic tasks.
- Differentiate the ways that students can express what they know

Image taken from [http://www.udlcenter.org/aboutudl/take_a_tour_udl](http://www.udlcenter.org/aboutudl/take_a_tour_udl)
E.g., Multiple Means of Engagement

- Heighten interest and monitor progress by:
  - Journals/Personal reflections
  - Small group activities/work
  - Welcoming emails/messages
  - Real life demonstrations and experiences
E.g., Demos/Hands-On (Project-Based Learning)

Lab demonstrations (e.g., hackathon)

Work experience
E.g., Multiple Means of Representation

- Offer multiple options to perceive and comprehend information:
  - E-books
  - Video with captions and transcripts
  - Audio
  - Lecture
Web-based Tools – Library Databases
(Full-text HTML, ReadSpeaker)

- Ability to translate text
- Downloadable mp3 file
- Built-in text-to-speech capability
- Text Highlighting
- Also available as separate PDF
E.g., Alternative text descriptions for complex images

**Process Diagram as Flow Chart**

**Description:**

The Krebs Cycle is depicted as a linear reaction which leads downward into a cyclical reaction. Here, the steps of the reactions are presented as lists.

1. **Linear Reaction**
   - Pyruvic acid, a 3-carbon compound.
   - One carbon molecule is lost as part of a CO2 molecule.
   - An NAD-positive molecule enters the reaction, then leaves as NADH.
   - A 2-carbon acetyl group remains.
   - Coenzyme A, or CoA, joins the 2-carbon acetyl group to form Acetyl CoA.
   - CoA leaves the reaction as it delivers the acetyl group to the circular reaction.

2. **Circular Reaction**
   - The two-carbon acetyl group joins a four-carbon compound to form a 6-carbon compound, citric acid.
   - A carbon is lost as CO2.
   - NAD-positive enters, then leaves as NADH.
   - A 5-carbon compound remains.
   - Another carbon is lost as CO2.
   - NAD-positive comes in and leaves as NADH.
   - ADP comes in and leaves as ATP.
   - A four-carbon compound remains.
   - FAD comes in and leaves as FADH2.
   - NAD-positive comes in and leaves as NADH.
   - Back again at the top of the circular reaction, a two-carbon acetyl group from the linear reaction enters, forming the 5-carbon citric acid at the beginning of the cycle.

Image courtesy of [NCAM Image Description Resources site](https://www.ncam.org/resources/descriptions/)
E.g., STEM Content

- STEM can be particularly challenging
- Tactile graphics (more common), 3D printing (possible)

Whenever possible:
- Provide **LaTeX or MathML** (do not use Equation Editor in Word)
- Avoid handwritten content
E.g., Multiple Means of Action and Expression

- Offer multiple options for demonstrating comprehension:
  - Oral Exams
  - Papers
  - Group presentation/project
  - Tests/quizzes
  - VoiceThread
E.g., VoiceThread, Kaltura, Bb

Image courtesy of Mason Online Stories: Teaching Spanish Online
E.g., Personal Experience (EDRS 824 – Research Methods)

- Course built around three module assignments

- Each module assignment offered students options for demonstrating comprehension:
  
  - Module 1
    - Four different writing assignments (Choose 1)
  
  - Module 2
    - Writing assignment, Flowchart/Mind Map with shorter writing assignment, Oral Presentation (w/ short PPT) (Choose 1)

  - Module 3
    - Writing assignment, Flowchart/Mind Map with shorter writing assignment, Oral Presentation (w/ short PPT) (Choose 1)
EXISTING SUPPORT STRATEGIES @MASON
Accessibility@Mason: A Collaborative Partnership

Accommodations for Employees w/ Disabilities

Accommodations for Students w/ Disabilities

Technology Accommodations/ICT Accessibility & Compliance
ATI’s Role...

- In addition to the **provision of assistive technology resources**, the ATI works to ensure equivalent access to ICT resources for individuals with different learning styles and abilities in the Mason community through **video captioning, web and document accessibility, alternate formats**, and **training**.
STRATEGIC PLAN

High Risk/High Impact
Strategic Partnerships

✓ Disability Services
  • Pre-semester faculty training workshops

✓ Office of Digital Learning (Provost’s Office)
  • OCDI Workshops (6-week cohorts)
  • SOUPR (grant funded, year-long support)

• Information Technology Services
  • Online Learning Resources (Bb, Kaltura)

• University Libraries
  • Library requests, purchasing and procurement

• Communications & Marketing
  • Front-facing multimedia content
High Risk/High Impact Approach

- **Collaboration with Disability Services (DS)**
  - Focused on proactively addressing needs of students with sensory impairments (i.e., 120+ students)

- **Collaboration with Mason Online (ODL)**
  - Accessibility integrated in the online course development process
Working with DS (Existing)

- **Pre-semester faculty workshops** (2-3 weeks) for all instructors who have a student with sensory impairment in their course.
  - Emphasis on resources and what is needed from faculty (e.g., alt text, built-in layouts for PPT, etc.)
  - Additional one-to-one support offered to faculty unable to make workshops
Working with DS (est. Fall ‘19)

- **Mason Academic Accessibility Plans or MAAPS**
  - Focused on students with sensory impairments

- Involves **Identification, Education, and Follow-up**
  - **Identify** students, degree programs, academic courses students are enrolled in, Academic Advisors, Dept. Chairs
  - **Educate** Dept. Chairs and instructional faculty about support and training resources
  - **Follow up** to ensure remediation timelines are met and any new faculty are trained on available resources
A path forward…

- ~120+ students with sensory impairments (~2-5 courses/student)…
- ~240 – 600 courses per semester
- ~240 – 600 instructional faculty per semester
  - Degree programs?
  - Department Chairs?
  - Academic Advisors?
Working with ODL (Existing)

- OCDI faculty cohorts (6 weeks)
  - Faculty build one module of their online course
  - Faculty spend one entire week on UDL/accessibility

- SOUPR (full academic year)
  - Faculty, through grant-supported initiative, build entire online course with one-to-one ID support
  - MOU agreements with Depts. Include accessibility language
  - Instructor Contracts include accessibility language

- Course Accessibility Reviews (Open-Call, ODL-supported) – Provide Faculty Action Plans
  - Over 100 online courses reviewed since Spring 2015
SERVICE DELIVERY

Captioning & Transcription, Document Accessibility, and Web Accessibility
Accessibility As A Service…

- Document Remediation*
- Captioning & Transcription*
- Web Accessibility*

* - Links lead to ATI presentations specifically addressing topic.
Captioning & Transcription

- Kaltura (Video Management Platform)
  - Integrates with Blackboard
  - APIs with captioning vendors (Cielo24, 3Play Media, Verbit)
    - Tagging to support different TATs (turnaround times)
    - Vendor uploads completed captions back to video
    - Use vendor supported editing tools for ease of any needed corrections
  - Support for other 3rd streaming services (e.g., YouTube, Vimeo, etc.)
captioning & transcription cont.

• Processed can be managed by one staff member
• Requests submitted using online request form (individual requests) or Excel spreadsheet (bulk requests)

• Scalable!
  • ~1,500 videos processed/year over last 3 years
    • Over 2,500 requests processed so far in FY19
  • Over 600 faculty/staff users
  • ~10,000 videos processed

• New statewide contracts!
Document Accessibility Reviews

• Started as service for faculty/staff teaching students with vision impairments and those building online courses through ODL

• ATI staff converts PPT, Word, and PDF documents into accessible formats using *CommonLook Office Pro* and Adobe Acrobat Pro DC (service includes remediation and quality control)
Faculty Responsibilities for Document Accessibility…

Before submitting your documents, the faculty/staff member must **add** the following:

- **Word documents**
  - Alternative text for meaningful images, charts, graphs, and objects*

- **PPT presentations**
  - Use built-in slide layouts*
  - Alternative text for meaningful images, charts, graphs, and objects*
    - For multiple images on one slide, **group** image and then add alt text for the grouped image.

- **PDF documents**
  - Send as is!
Document Accessibility Reviews cont.

- Service piloted in FY18
  - Had 40 faculty/staff participants
  - ~500 documents processed/~8,000 pages
- By Format:
  - Almost evenly split between Word, PPT, and PDF
  - Findings revealed how faculty design content and where they struggled in terms of accessible design (e.g., table structure, built-in layouts for PPT)
- By Type of Request:
  - Even split between accommodation and compliance

- In FY19, requests have nearly doubled!
  - Unique users nearly equivalent to FY18 totals
Web Accessibility

• Architecture Standards Review Board (ASRB) – Purchasing and procurement process

• Services involves review of 3rd-party websites or applications (e.g., Piazza, MATLAB, Pearson, etc.) for instructional faculty

• Review Process:
  • Automated reviews using OzART
  • Manual Reviews using JAWS/NVDA, JAWS Inspect, WAVE, ANDI, and/or CCA
TECHNOLOGY TOOLS & SUPPORTS

Assistive Technology, Alternate Formats
Assistive Technology Tools & Supports

Notetaking Supports
- Sonocent Audio Notetaker
- Smartpens

Text-to-Speech Supports
- EquatiO
- Read & Write
- Math to speech (with Read&Write)

Speech to math
Alternate Formats

- **Memberships:** AccessText, Learning Ally, Bookshare

- **In-House:**
  - Use Textbook Accessibility Levels (AL) to streamline service delivery
    - AL1 (Automated)
    - AL2 (Manual)
      - Includes AL1 plus:
        - Chapter Headings and Additional Heading Levels as needed
        - Linked TOC
    - AL3 (Manual)
      - Includes AL1 and AL2 plus:
        - Bookmarks
        - Alternative Text for all meaningful images
        - Structured tables
Alternate Formats cont.

Braille Production
- Juliet Pro 60 Embosser
- Duxbury

Tactile Graphics
- SpotDot Emprint Embosser
- TactileView
WHAT ARE OUR PARTNERS ACROSS VIRGINIA DOING?
Keep C.A.L.M. and…

- CALM stands for the “Choose Accessible Learning Materials Initiative”

- Marketing/Training efforts (i.e., swag, videos, posters, faculty/staff trainings, etc.) focused on slowly building capacity across campus that align with WCAG standards and indirectly to UDL

- CALM Campaign Roadmap
  - FY19 – Captions & Contrast
  - FY20 – Alt text (images) & Headings
  - FY21 – Descriptive Links & Checking Accessibility
Targeted Training Initiatives

• General efforts
  • Web Accessibility training, [https://www.umw.edu/web/fundamentals/](https://www.umw.edu/web/fundamentals/)
  • Guest speakers highlighting digital accessibility in higher education

• Faculty-focused efforts
  • Joint UMW/VCU mini-series on creating accessible documents
  • *Accessibility 101* course offered by Office of Disability Resources (ODR)
  • Currently developing **CANVAS course** for faculty on how to design an accessible online course
Raising Awareness

- JMU-sponsored conferences
  - Diversity Conference
  - Technology in Education Conference
  - Disability Awareness Month

- Course Content Reviews
  - Accessible Media Group within ODS offers one-on-one review of course content, DIY captioning, and to a limited extent, web accessibility
UDL/Accessibility Workshops

• UDL Workshops
  • Partnership between Provost Office and the Center for Teaching Excellence (CTE) to offer UDL workshops
    • Invited speakers
    • Integration of UDL into Course Design Institute

• Lunch & Learn Series
  • Partnership between Provost Office and Student Disability Access Center (SDAC) to offer UDL workshops focused on document accessibility, captioning, and resources at UVA
Accessibility Demonstrations

• Technology Demos

• Faculty invited to meetings with students who use assistive technology to see what things “look like” from the student’s perspective (e.g., blind students demonstrating use of JAWS with Pearson products. “The sales reps were there and even they were blown away to see how much the students couldn’t access!”)
ADDITIONAL STRATEGIES FOR BUILDING FACULTY BUY-IN
Go where the faculty members go…

- Faculty Senate
- Faculty Orientations (New, Adjunct, Term)
- Center for Teaching and Faculty Excellence
- Departmental Meetings
- Campus Teaching & Learning Events
- Conferences
- Instructional Designers
- Library
Incentivize Inclusive Design

- Annual awards (faculty, departments)
- Promotion and tenure recognition
Focus on Best Practices

• Highlight strategies that faculty can/will do (e.g., captions, alt text for complex images, styles in Word, digitize STEM content)
Use Integrations!

- LMS Accessibility Integrations
  - Bb Ally
  - UDOIT
  - Captioning & APIs

- If possible, try to limit what you ask faculty members to do
“We found that what we call the session sometimes helps. We recently switch from Bb to Canvas and so for a period of time, we found that if our session had Canvas in the name – i.e., *Making Your Course Materials Accessible in Canvas* – we had a good turnout.”

– NVCC DS Director
Questions
Contact Information

GMU Assistive Technology Initiative

- Location: Aquia, Rm. 238
- MSN: 6A11
- Phone: 703-993-4329
- Email: ati@gmu.edu
- Web: http://ati.gmu.edu