

# Tips for promoting accessible IT campus-wide within the context of a universal design framework

Sheryl Burgstahler, Director Accessible Technology Services, UW-IT

#### Two ATS Centers at UW

#### Access Technology Center

- **1**984–
- To ensure IT procured, developed & used at UW is accessible

#### **DO-IT Center**

- **1992**
- Supported with grants
- 2007— DO-IT Japan



Disabilities
Opportunities
Internetworking
Technology

#### Basic approaches

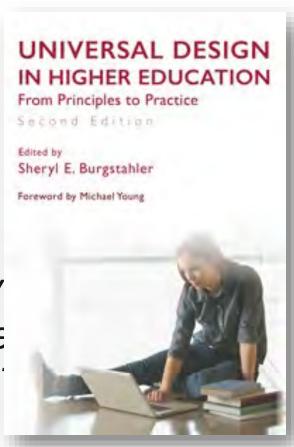
 When we are working with faculty, staff, institutions, technology companies, we promote UNIVERSAL DESIGN (UD)

When we are working with students, we promote

SELF DETERMINATION

### Book: Universal Design in Higher Education (UDHE): From Principles to Practice

- > 40 authors/co-authors
- Harvard Education Press
- Email doit@uw.edu to join the UDHE online community of practice
- Coming soon: Creating Inclusiv Learning Opportunities in Highe Education: A Universal Design



#### In an "inclusive" environment everyone

- who meets requirements, with or without accommodations, is encouraged to participate
- feels welcome
- is fully engaged in accessible & inclusive activities



#### Why exclude groups of people



My quest to become a patrol boy



#### Consider ability on a continuum

Not able Able

understand English, social norms see hear walk read print write with pen or pencil communicate verbally tune out distraction learn manage physical/mental health





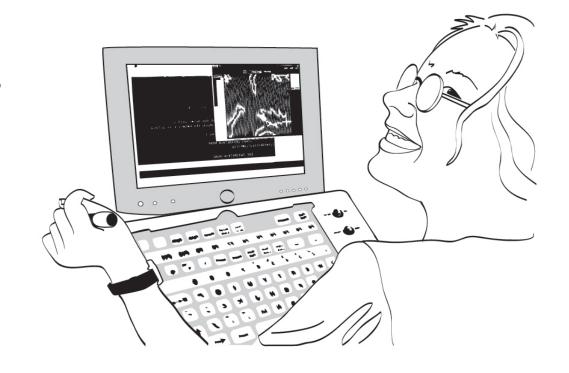


Most disabilities are "invisible"

 Fewer than 1/3 of students with disabilities may be reporting them to the disability services office

#### What is the legal basis for access?

- Section 504 of the Rehabilitation Act of 1973
- The Americans
   with Disabilities
   Act of 1990 &
   its 2008
   Amendments
- State & local laws



## Most common accommodations for online courses at UW:

 Creating accessible documents, mainly reformatting PDF files

Captioning videos

#### An Inclusive Campus Model

Vision: Inclusive campus Values:

Diversity
Equity
Inclusion
Compliance

Framework:

UDHE (scope, definition, principles, guidelines, practices, processes) **Current Practices:** 

Stakeholder roles
Funding
Policies
Guidelines
Procedures
Training
Support

**New Practices:** 

Stakeholder roles
Funding
Policies
Guidelines
Procedures
Training
Support

Outputs & Outcomes:

Measures
Benchmarks
Data
Analysis
Reports

Impacts:

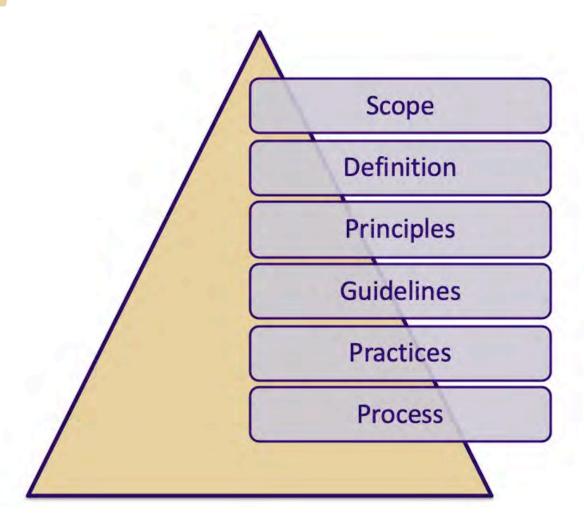
Diversity
Equity
Inclusion
Compliance

Revise new practices

## Theoretical & conceptual foundations include:

- Social justice view of disability instead of medical/deficit model
- Disability as a diversity issue
- Instead of an accommodations approach, apply a Universal Design (UD) Framework (which includes accommodations)

#### **UDHE Framework**



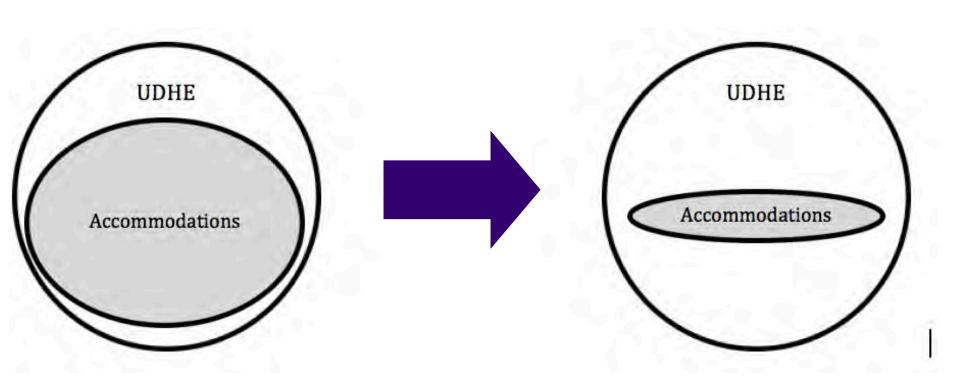
#### Universal design =

"the design of products & environments to be usable by all people, to the greatest extent possible, without the need for adaptation or specialized design."

The Center for Universal Design www.design.ncsu.edu/cud

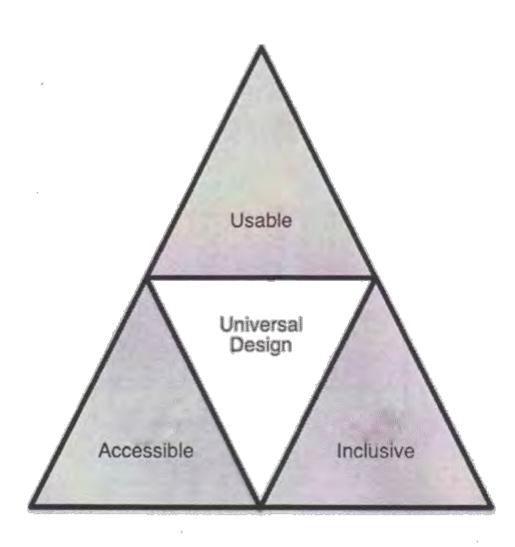


## A paradigm shift— from accommodation-focused to UDHE-focused campus



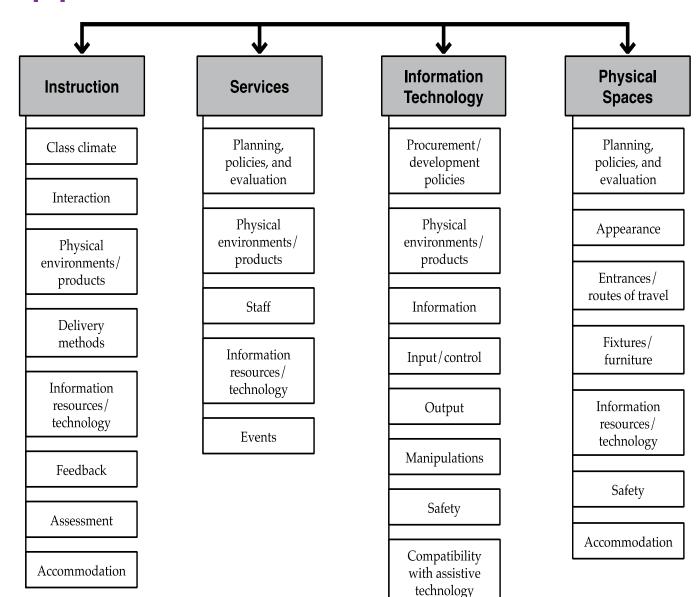
#### Proactive design terminology

- Accessible design
- Usable design
- Inclusive design
- Universal design
- Barrier-free design
- Design for all



#### **Applications of UD**

#### Text version at: <a href="https://tinyurl.com/y5t799yp">https://tinyurl.com/y5t799yp</a>



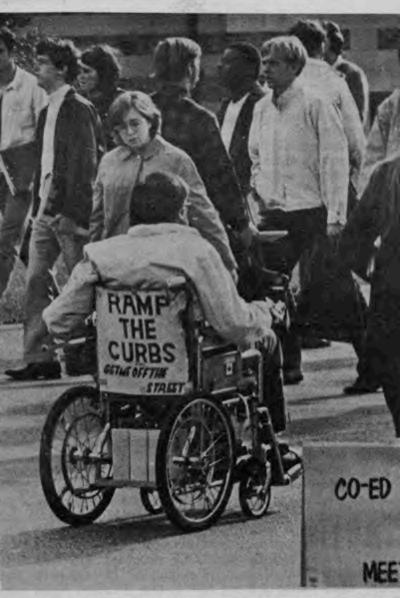
#### (1) Principles of UD

- Equitable use
- Flexibility in use
- Simple & intuitive use
- Perceptible information
- Tolerance for error
- Low physical effort
- Size & space for approach & use



- Center for Universal Design

#### Ramp The Curbs



Forging a stream of humanity, this silent protester carries his campaign on his back. His goal: to end high-rise sidewalks.

(photo by grant haller)

"The Daily"
UW

1970

#### UD provides inclusive access





#### (2) Principles for UD for Learning (UDL)

#### Offer:

- Multiple means of representation
- Multiple means of engagement



- Multiple means of action & expression
- Center for Applied Special Technology (CAST)

#### "When you plant lettuce,

if it does not grow well, you don't blame the lettuce. You look for reasons it is not doing well.

It may need fertilizer, or more water, or less sun..."

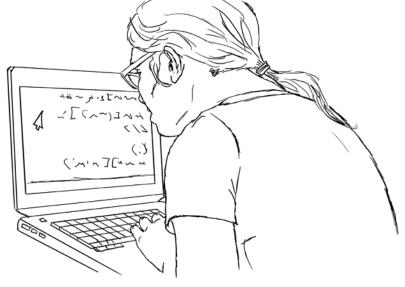
-Thích Nhất Hạnh, Vietnamese Buddhist Monk



#### (3) Principles for UD of IT

Underpinning of Web Content Accessibility Guidelines to ensure that digital tools/content is

- Perceivable
- Operable
- Understandable
- Robust



- Web Accessibility Initiative (W3C)

#### Rodney & the Apple II

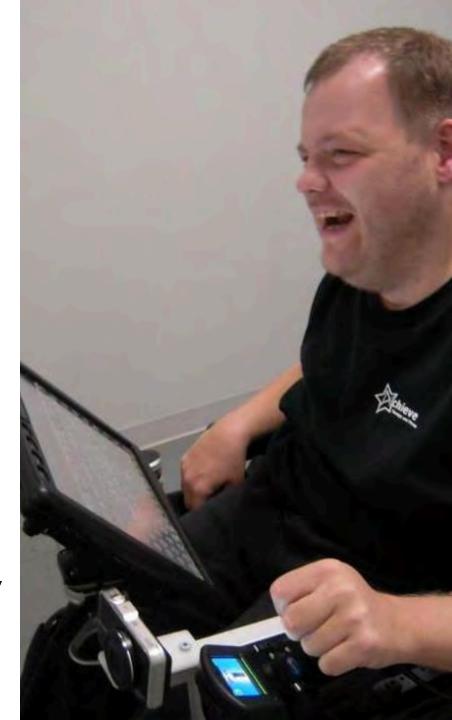


- 6 years old, 1980
- No use of hands& legs
- Used mouth wand

- Issue: Could not press 2 keys at once
- Solution: Switch box to lock shift, control, repeat keys

#### Anthony AT Specialist Prentke Romich Co.

- grammar/spell checkers
- synthesized voice on communication device
- touch screen
- computer-based environmental control, phone access





#### Nicole BA, Computer Science Stanford Google

- speech output
- Braille translation software
  - Braille display & printer

Jessie BA, Informatics, UW Manager Web Services Amazon.com

- speech output
- speech input
- grammar/spell checkers



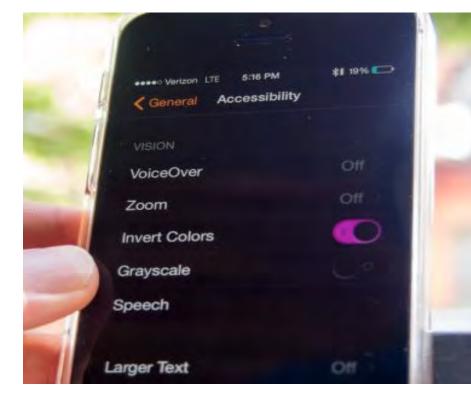
## Accessibility practices that are informed by limitations of assistive technology

Assistive Technology:	Therefore:
May emulate the keyboard, but not the mouse	Design web, software to operate with keyboard alone
Cannot read content presented in images	Provide alternative text
Can tab from link to link	Make links descriptive
Can skip from heading to heading	Structure with hierarchical headings
Cannot accurately transcribe audio	Caption video, transcribe audio

#### **UD** of IT

builds in accessibility features





ensures compatibility with assistive technology

#### The first online course at UW

- Year: 1995
- Instructors: Me & Dr. Norm Coombs
- **Title**: Adaptive Tech. for People with Disabilities
- Technology: Email, discussion list, Gopher server, telnet, file transfer protocol
- Online materials: In text format
- Postal mailed materials: Publications, captioned
   & audio described VHS videos

#### Access Cyberlearning

#### 20 Tips for Teaching an Accessible Online Course

By Sheryl Burgstahler, Ph.D.

I taught the first online learning course at the University of Washington in 1995. My coinstructor was Dr. Norm Coombs, who was, at the time, a professor at the Rochester Institute of Technology. We designed the course to be accessible to anyone, including students who were blind, deaf, or had physical disabilities.



uw.edu/doit/20-tips-teaching-accessibleonline-course

#### Websites, documents, images, videos:

- Structured headings
- Descriptive wording for hyperlinks
- PDFs avoided; no scanned images Text descriptions of content in images
- Large, bold fonts, uncluttered pages, plain backgrounds
- Content & navigation accessible using keyboard alone
- Videos captioned; audio transcribed

#### Instructional methods:

- Address wide range of tech skills
- Content presented in multiple ways
- Acronyms/jargon spelled out/defined
- Instructions & expectations clear
- Feedback on parts & corrective opportunities provided
- Options for communicating/collaborating
- Options for demonstrating learning

#### Examples of UD

#### in Instruction

- A statement on a syllabus that invites students to meet with the instructor to discuss learning needs.
- Multiple delivery methods that motivate and engage all learners.
- Flexible curriculum that is accessible to all learners.
- Examples that appeal to students with a variety of characteristics with respect to race, ethnicity, gender, age, and interest.
- Regular, accessible, and effective interactions between students and the instructor.
- Allowing students to turn in parts of a large project for feedback before the final project is due.
- Class outlines and notes that are on an accessible Web site.
- Assessing student learning using multiple methods.
- Faculty awareness of process and resources for disability-related accommodations.

#### In Services

- Part of a service counter that is at a height accessible from a seated position.
- Staff that are aware of resources and procedures for providing disabilityrelated accommodations.
- Pictures in publications and on Web sites that include people with diverse characteristics with respect to race, age, gender, and disability.
- A statement in publications that states how to request special assistance, such as a disability-related accommodation.
- A student service Web site that adheres to accessibility standards of the U.S. federal government (see http://www. section508.gov/).
- Printed materials that are easy to reach from a variety of heights and without furniture blocking access.
- Printed publications that are available in alternate formats (e.g., electronic, large print, braille).

#### In Information Technology

- · Captioned videos.
- Alternative text for graphic images on Web pages so that individuals who are blind and using text-tospeech technology can access the content.
- Procurement policies and procedures that promote the purchase of accessible products.
- Standards for the universal design of Web sites.
- Comfortable access to computers for both left- and right-handed students.
- Software and Web sites that are compatible with assistive technology.
- Computers that are on adjustable-height tables.

#### In Physical Spaces

- Clear directional signs that have large, high-contrast print.
- Restrooms, classrooms, and other facilities that are physically accessible to individuals who use wheelchairs or have other mobility challenges.
- Furniture and fixtures in classrooms that are adjustable in height and allow arrangements for different learning activities and student groupings.
- Emergency instructions that are clear and visible and address the needs of individuals with sensory and mobility impairments.
- Nonslip walking surfaces.

Accessible version of this chart

### UD is an attitude, a framework, a goal, & a process—UD:

- values diversity, equity, & inclusion
- promotes best practices & does not lower standards
- is proactive & can be implemented incrementally
- benefits everyone
- minimizes the need for accommodations

#### The Inclusive Campus Model

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**New Practices:** 

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Outputs & Outcomes:

Outcomes: Measures Benchmarks Data Analysis Reports Impacts:

Diversity
Equity
Inclusion
Compliance

Revise new practices

#### Apply the Model to accessible IT

- Vision: IT procured, developed, used is accessible
- Values: Diversity, equity, inclusion, compliance
- Framework: UDHE's scope, definition, principles, guidelines, practices, processes
- Current & new practices: Stakeholder roles, funding, policies, guidelines, procedures, training, support
- Outputs & outcomes: Measures, benchmarks, data, analysis, reports
- Impacts: Increased alignment with vision & values

#### **UW** leadership

- IT Accessibility Coordinator
- IT Accessibility Team (ATS)
- IT Accessibility Task Force
- IT Accessibility Liaisons



## Policy, guidelines, checklists... UW's IT Accessibility Guidelines:

- Purpose
- Definition
- Scope
- Standards—Web Content Accessibility Guidelines (WCAG) 2.0 Level AA
- Progress & Plan
- Resources

#### Sample of UW approaches 1/2

- Promote accessibility within context of UD & inclusive campus
- Model IT accessibility compliance after IT security compliance efforts
- Build on existing policies, procedures, & job/unit assignments.
- Undertake efforts that are both
  - reactive & proactive
  - top-down & bottom-up



#### Sample of UW approaches 2/2

- Assign specific roles
- Integrate training/activities within those sponsored by other campus units
- Search for internal funds to:
  - offer incentives (e.g., videos, PDFs)
  - purchase tools (e.g., Site Improve, Ally, SensusAccess)
- Benefit from external funding
- Post resources, engage online







#### Accessible Technology at the UW

#### Experiencing inaccessible IT? Please let us know.

The University of Washington (UW) strives to ensure that people with disabilities have access to all services and content, including those delivered using information technology (IT). If you experience a barrier that affects your ability to access UW websites, videos, on-line forms, or other IT, please send a detailed message to <a href="help@uw.edu">help@uw.edu</a>.

For additional issues or needs related to accessibility or accommodations at the UW, please see our <u>Getting Help</u> page.

#### **UW Promotes IT Accessibility Guidelines**

The University of Washington values diverse experiences and perspectives and strives to fully include everyone who engages with the UW. Inaccessible information technology (IT) negatively impacts people with a variety of disabilities, including mobility/orthopedic impairments, sensory impairments, specific learning disabilities, attention deficits, autism spectrum disorders, speech impairments, health impairments, and psychiatric conditions.

For many years, UW-IT Accessible Technology Services and other IT leaders have consulted with campus units in making IT accessible to all faculty, students, staff and visitors.

The UW's commitment to equal access to IT has been more formally stated through publication of an IT Accessibility Policy and IT Accessibility Guidelines. The Guidelines state that the UW looks

#### ACCESSIBLE TECHNOLOGY

#### **UW Policy**

IT Accessibility
Guidelines

IT Accessibility
Checklist & Tutorial

IT Accessibility
Leadership

**Progress & Plan** 

**Getting Started** 

**Creating Documents** 

**Creating Videos** 

**Developing Websites** 

Designing Online
Courses

Procuring IT

Managing for Accessibility

**Getting Help** 

**Events & Collaboration** 

Laws, Policies & Standards

#### Issues pre- vs post-pandemic

- For students with disabilities
- For faculty
- For disability services office

What if UD framework was or was not adopted pre-pandemic?





## Inclusiveness: What can we learn from my quest to become a patrol boy?







#### Sheryl Burgstahler • <a href="mailto:sherylb@uw.edu">sherylb@uw.edu</a>

- Center for Universal Design in Education www.uw.edu/cude
- UDL on Campus <u>udloncampus.cast.org</u>
- IT Accessibility www.uw.edu/accessibility