



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

- 1984–
- To ensure IT procured, developed & used at UW is accessible

DO-IT Center

- 1992–
- Supported with grants
- 2007– DO-IT Japan



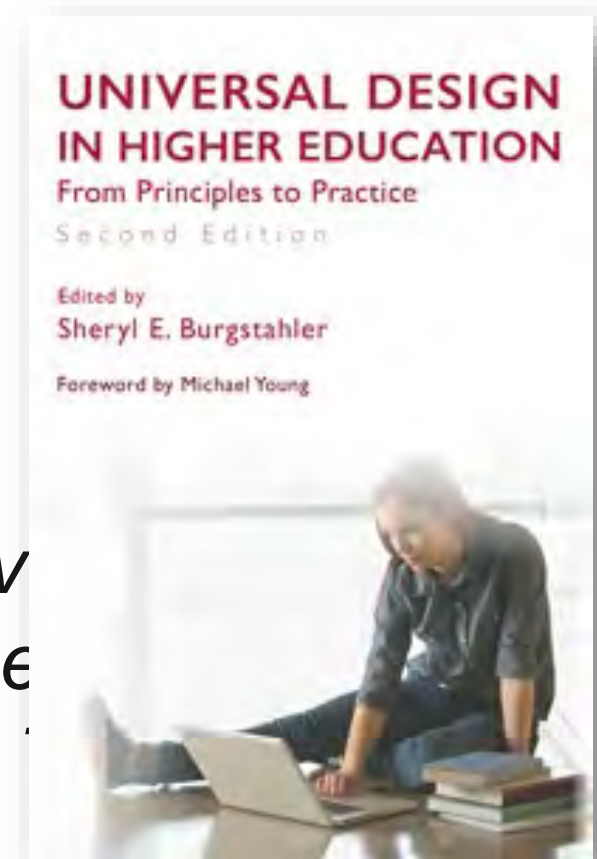
Disabilities
Opportunities
Internetworking
Technology

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 Inclusive Learning Opportunities in Higher 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



understand English, social norms

see

hear

walk

read print

write with pen or pencil

communicate verbally

tune out distraction

learn

manage physical/mental health



Note



- 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

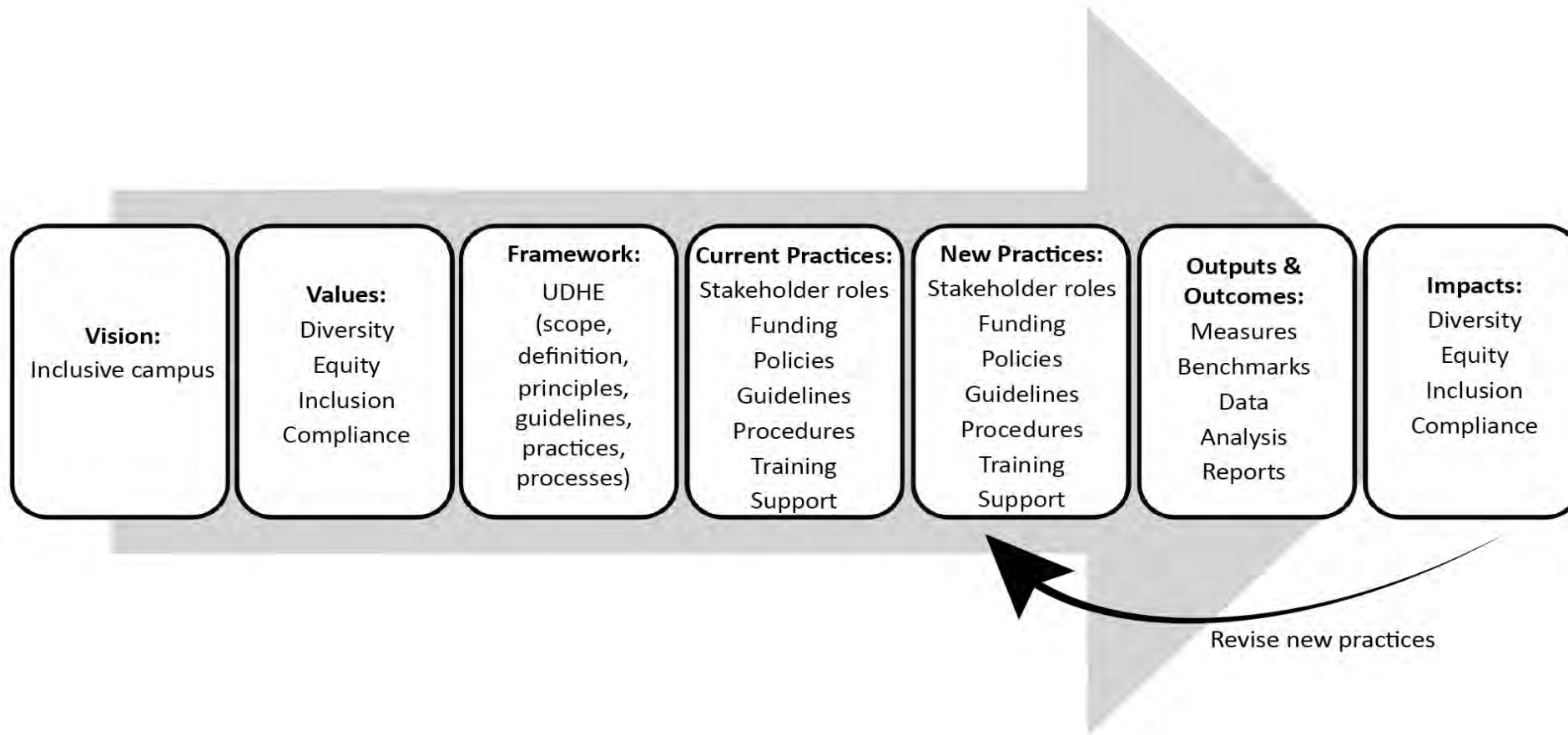


Most common accommodations for online courses at UW:

- Creating accessible documents, mainly reformatting PDF files
- Captioning videos



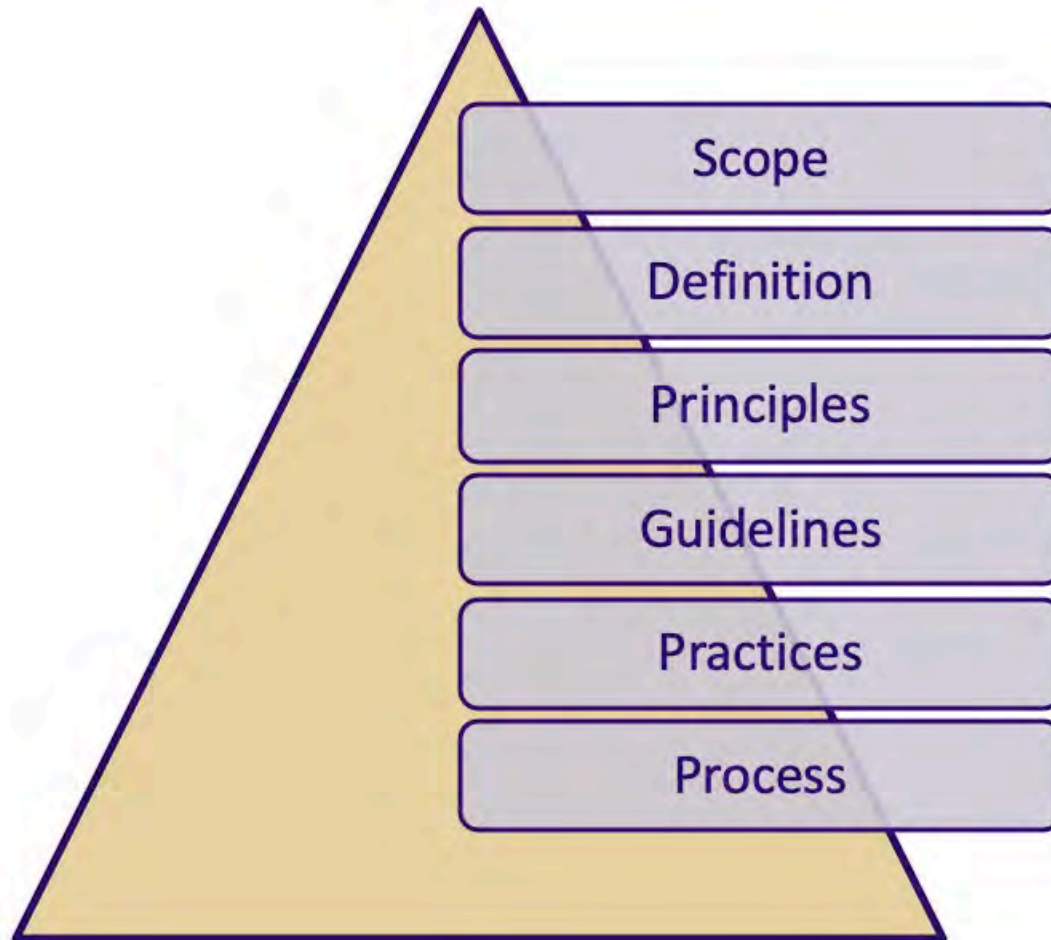
An Inclusive Campus Model



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



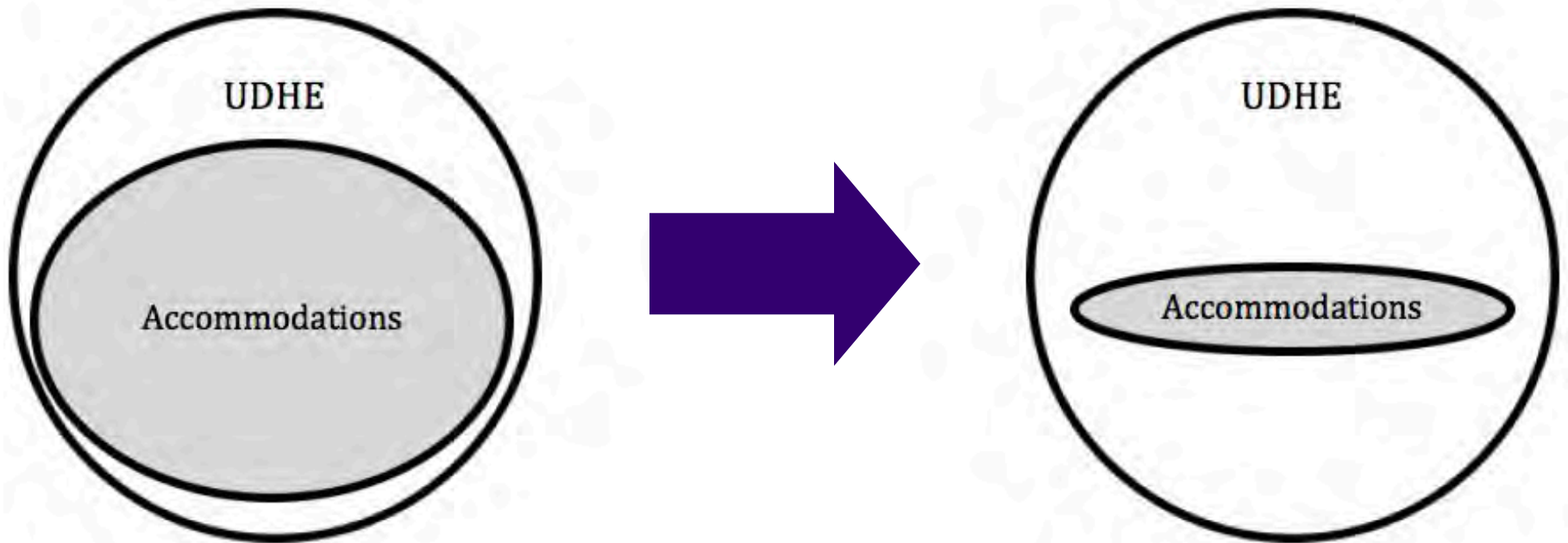
Universal design =

“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

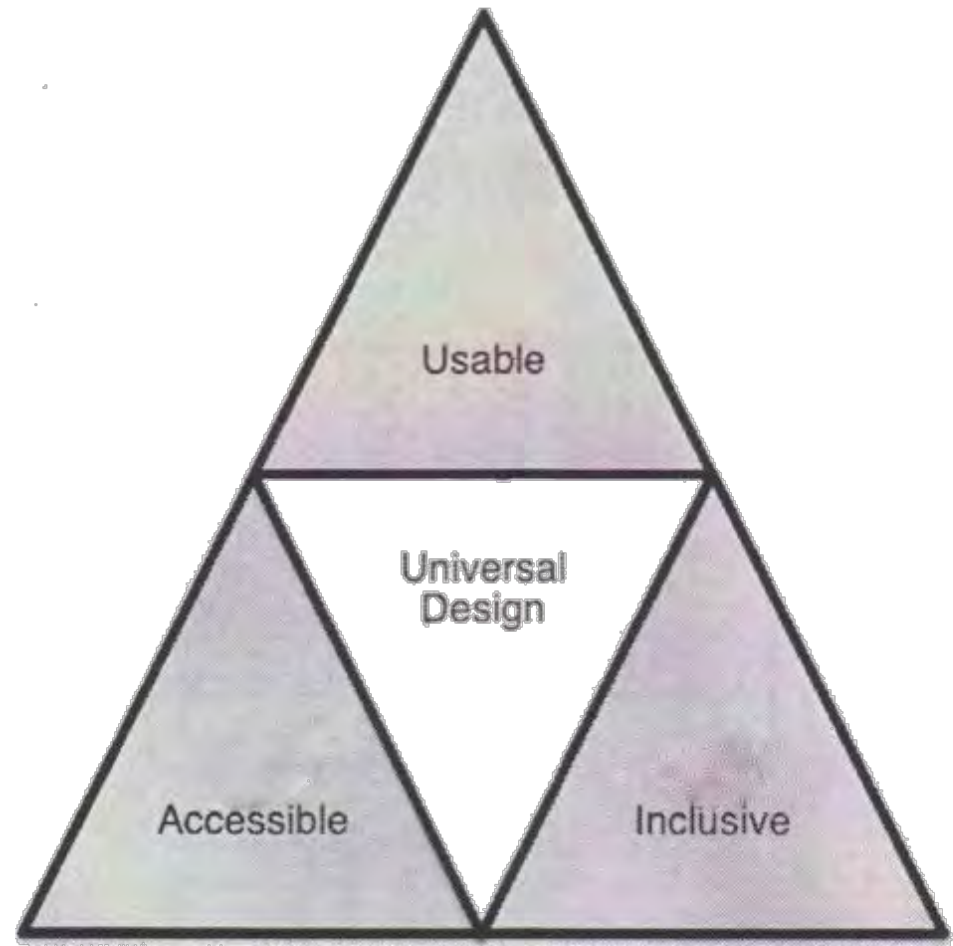


A paradigm shift—
from accommodation-focused to
UDHE-focused campus



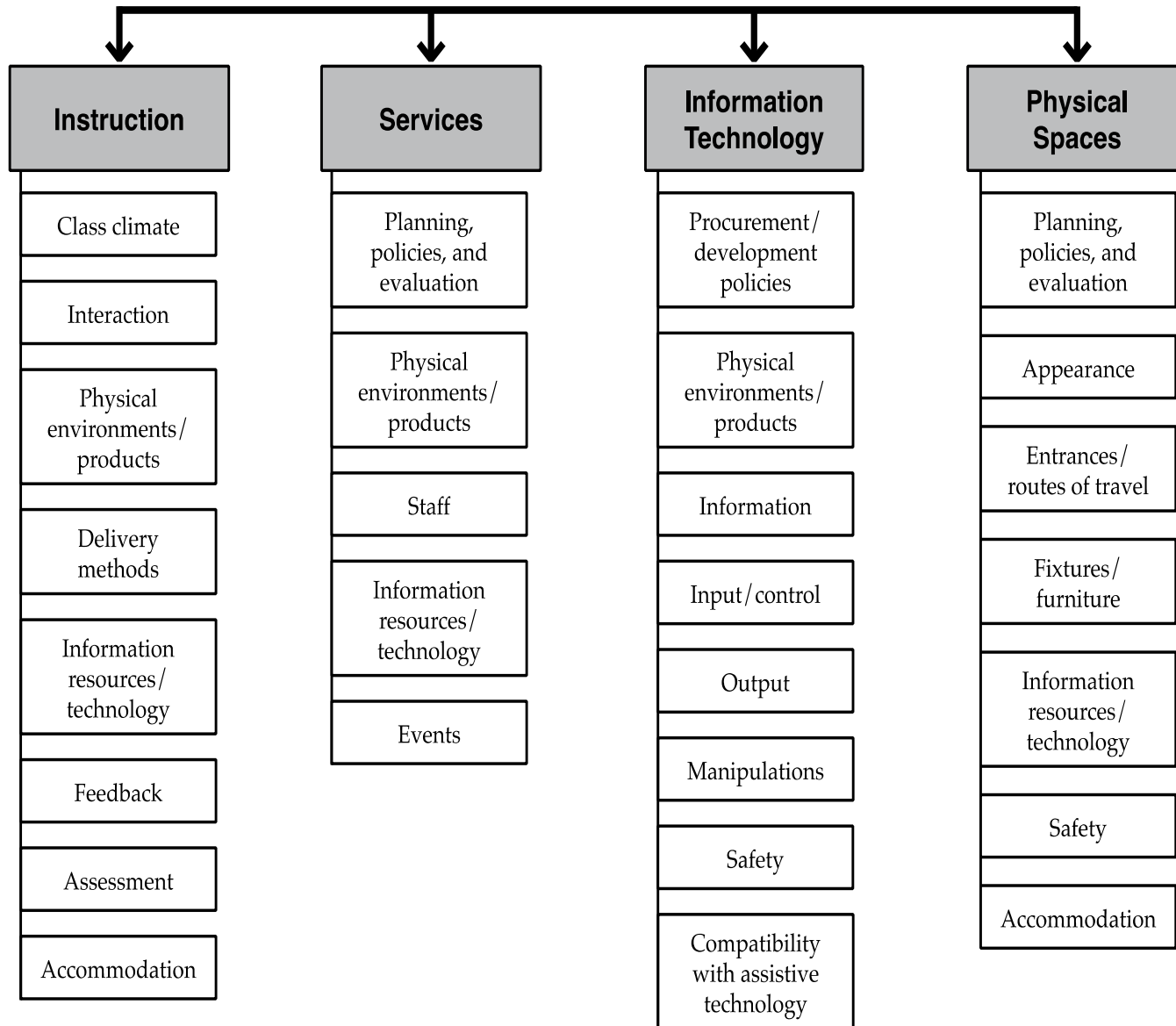
Proactive design terminology

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



Applications of UD

Text version at:
<https://tinyurl.com/y5t799yp>



(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



“The Daily”

UW

1970

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)

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...”

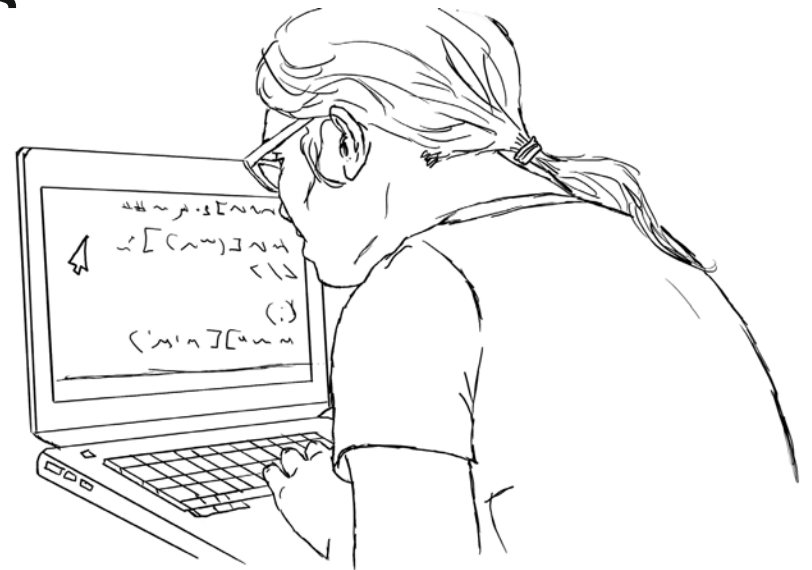
-Thích Nhất Hạnh,
Vietnamese
Buddhist Monk



(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)

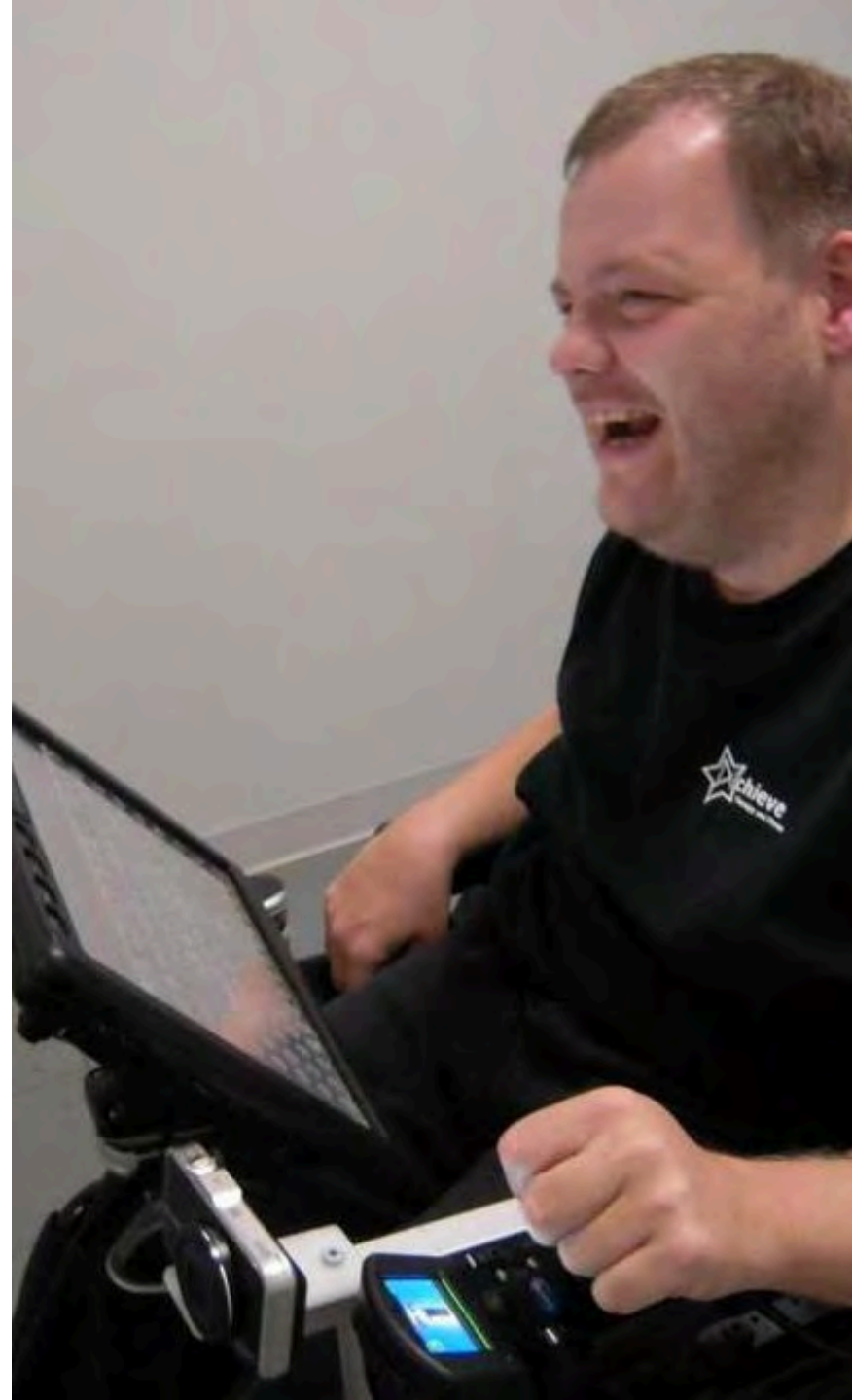
Rodney & the Apple II



- 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

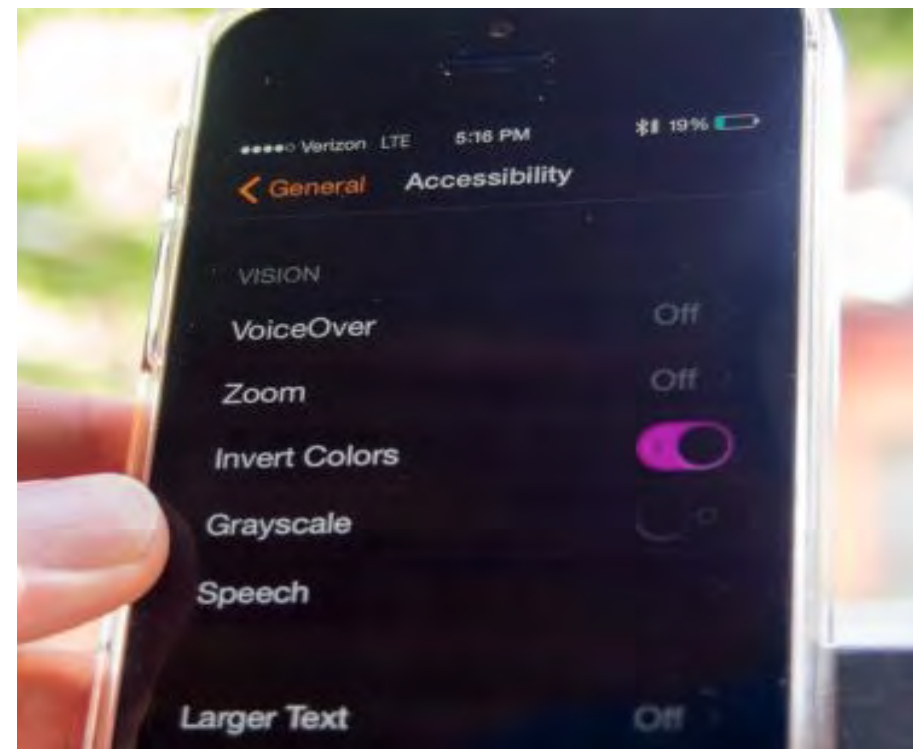


Accessibility practices that are informed by **limitations** of assistive technology

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*

AccessCyberlearning 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 co-instructor 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-accessible-online-course

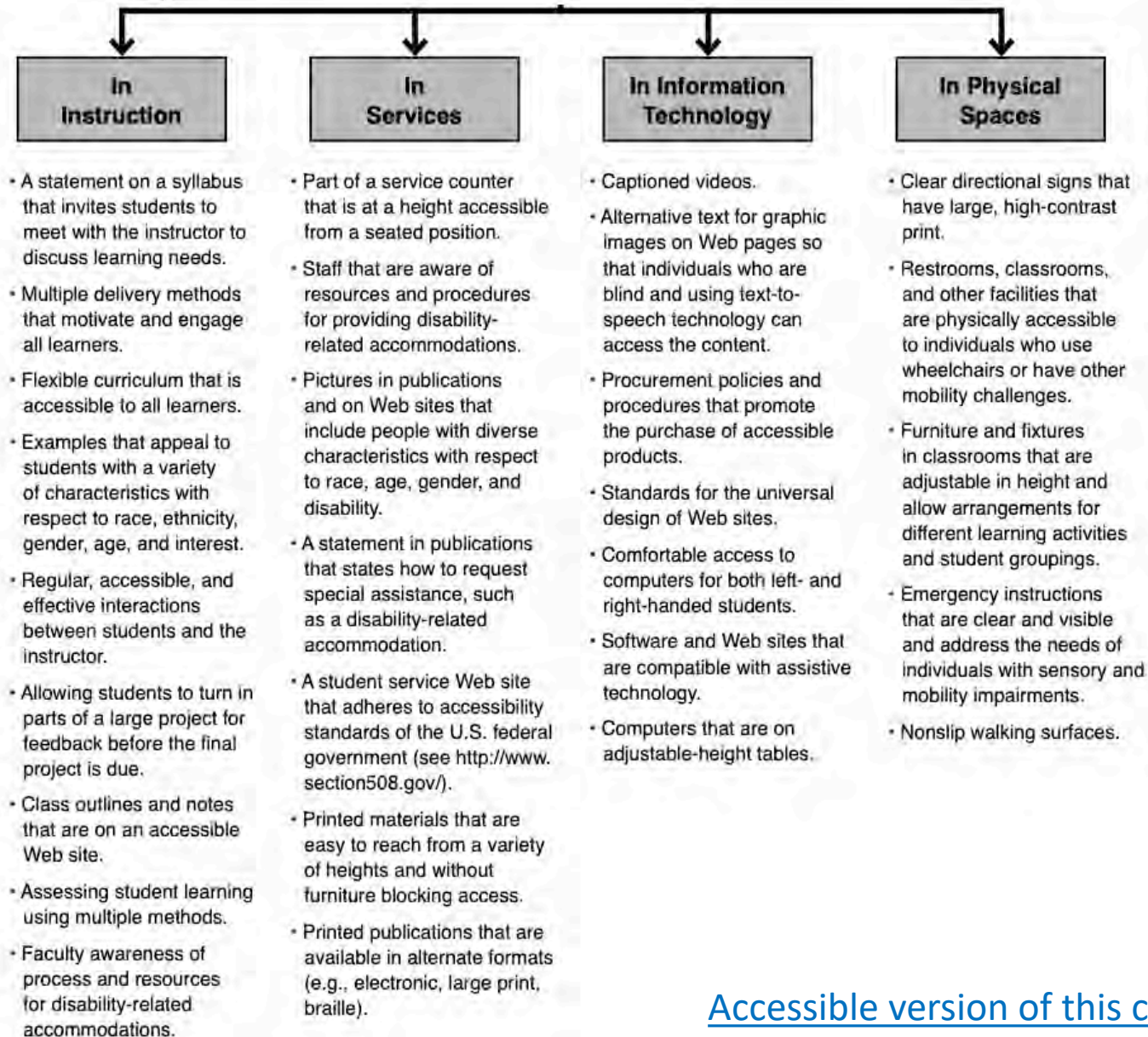
Websites, documents, images, videos:

- 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

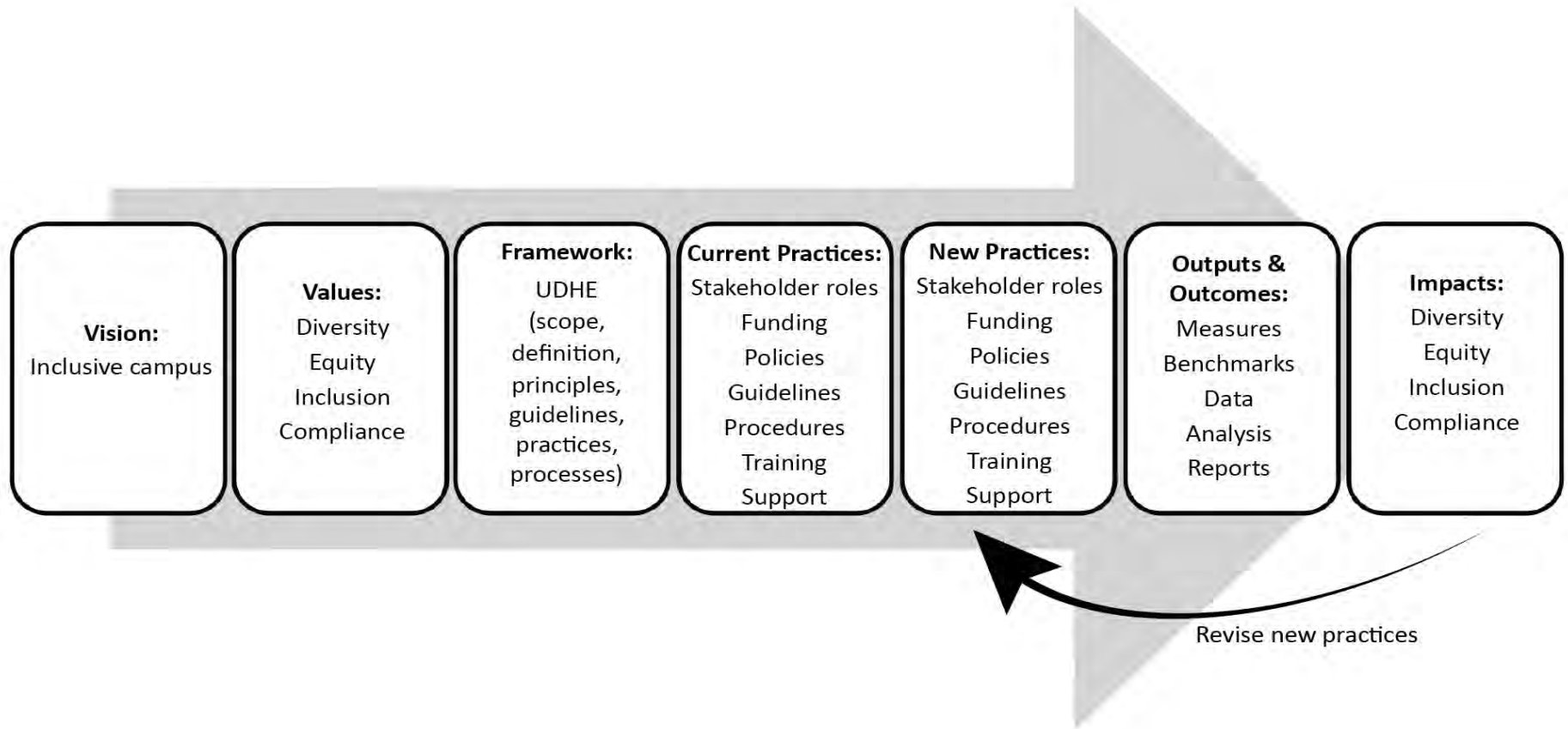


[Accessible version of this chart](#)

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



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

🏠 [Accessible Technology](#)

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 help@uw.edu.

For additional issues or needs related to accessibility or accommodations at the UW, please see our [Getting Help](#) 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?





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