

FAILURE IS NOT AN OPTION

ACCESS TO EDUCATION IN THE DIGITAL WORLD

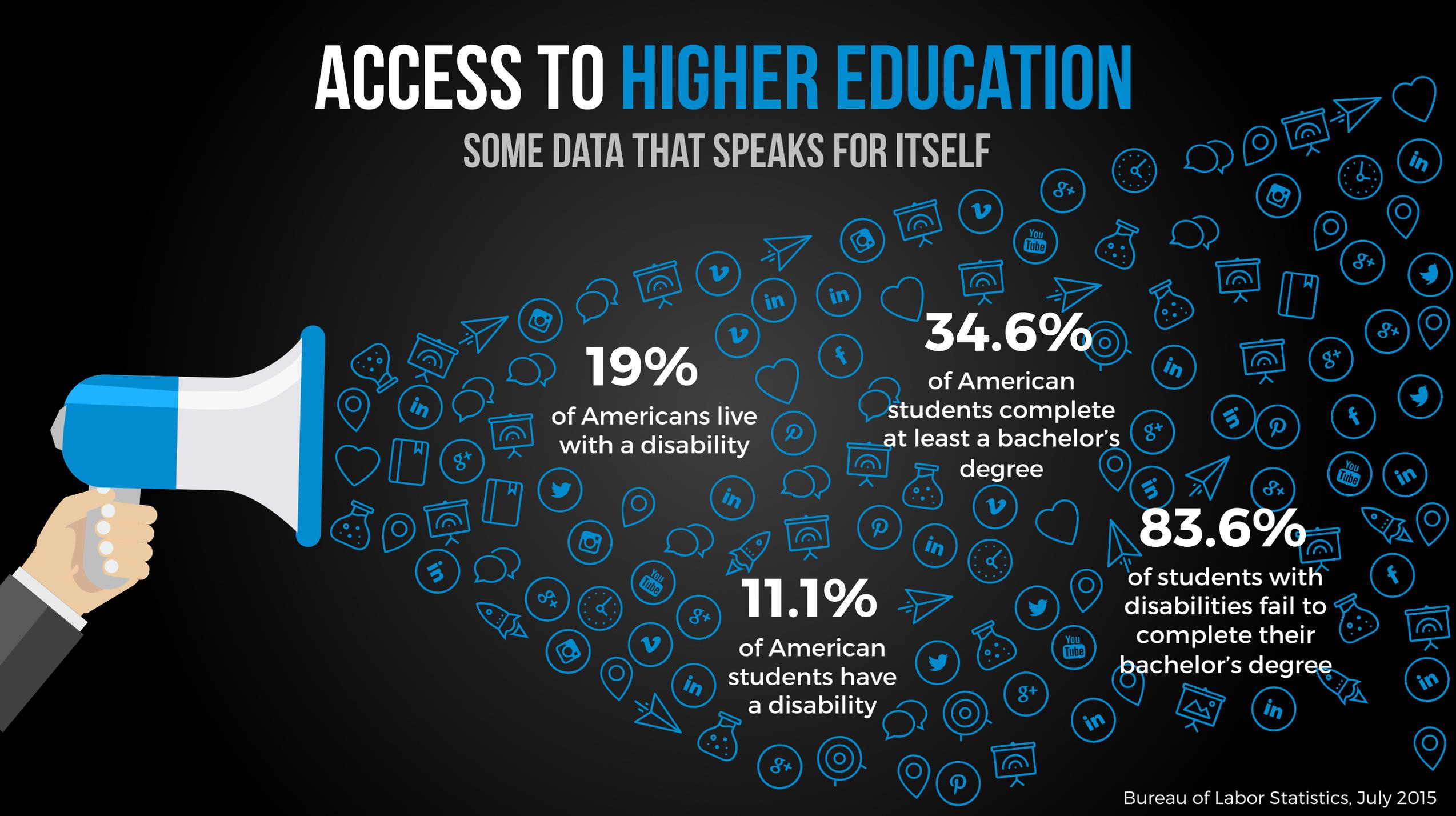
Accessing Higher Ground 2016
AHEAD - Westminster, Colorado
November 18th, 2016





ACCESS TO HIGHER EDUCATION

SOME DATA THAT SPEAKS FOR ITSELF



19%

of Americans live with a disability

34.6%

of American students complete at least a bachelor's degree

11.1%

of American students have a disability

83.6%

of students with disabilities fail to complete their bachelor's degree



Despite the many advances in technologies, students with special needs have never had to struggle so much to get a degree.



Meet Mark

- 30 year old software engineer student
- Incredibly talented with a computer
- Been using computers for 19 years
- Lost his sight in an accident at 17
- Regularly struggles in the classroom
 - Struggles with PDF materials
 - Struggles with online content
 - Struggles with learning platforms

**Mark slowly loses confidence.
Considers dropping out and
maybe filing a complaint.**



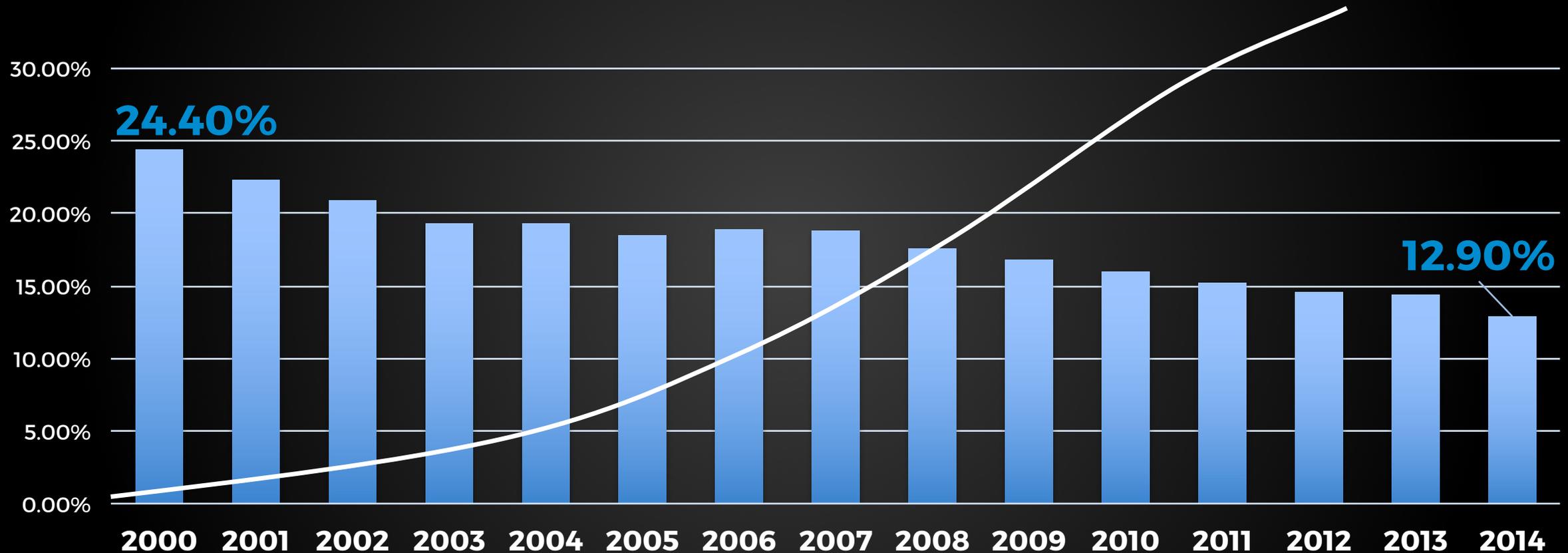
Meet Debbie

- 55 year old computer science teacher
- Been using computers for 30+ years
- Now has a blind student in her class
- Relates to Mark - has poor eyesight
 - Discovers the issues Mark runs into
 - Wants to do right by him
 - Feels helpless to help him
 - Is already spread so thin

Debbie feels really awful for her student, but how can she possibly help him?

EMPLOYMENT OF PEOPLE WITH DISABILITIES

AGE 18-64, EMPLOYED IN THE UNITED STATES FROM 2000 TO 2014



Reference

<https://www.disabilitystatistics.org/reports/cps.cfm?statistic=employment>



As a society, can we really afford to let so many talents go to waste?



Web accessibility is one of the most critical issues facing higher education today.



DENIS BOUDREAU

User eXperience. Accessibility. Inclusive Design. Gamification. Empathy.
Empowering all users. Geek. Introvert. Pragmatism. Good design = inclusive design.

Deque Systems / Knowbility / W3C

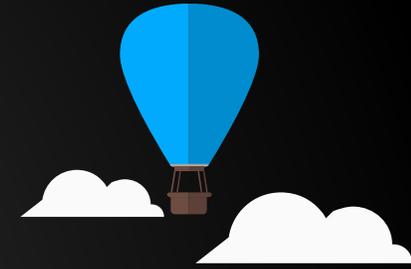


@dboudreau



OUR JOURNEY TODAY

TODAY'S PROPOSED AGENDA



LEVERAGING DESIGN
FOR INCLUSION

MAKING A DIFFERENCE
IN THE CLASSROOM

PRACTICAL TIPS AND TRICKS
TO BRING DOWN BARRIERS

ACCESSIBILITY CHALLENGES
IN HIGHER EDUCATION

LEARN WHAT YOU
CAN DO NEXT

FOLLOW ALONG!



<http://bit.ly/2goG00h>



Whether we like it to admit it or not, inequities faced by people with disabilities begin in the classroom and we're all part of the problem.



MAKING A DIFFERENCE **IN THE CLASSROOM**

CHALLENGES FACED WITH **DIGITAL CONTENT**

HOW DO STUDENTS WITH DISABILITIES USE CONTENT?



MARK

Computer science
Blindness



LAUREN

Anthropology
Repetitive stress injury



CHLOE

Architecture
ADHD and dyslexia

Mark's struggles

- Almost exclusive use of keyboard
- Very linear approach to content
- Regular lack of semantic structure
- Constantly miss out on info
- Understand & predict interactions

What does it mean to use the Web or rely on PDF documents as someone who can't see?



HOW WE CAN **HELP MARK**

5 SIMPLE ACCOMMODATIONS TO CONSIDER WHEN TEACHING

- ! Provide instructions in digital text format
- ! Don't rely exclusively on screen projections
- ! Describe what is visually presented on the screen
- ! Use content that meets accessibility guidelines
- ! Offer extra time to complete assignments



Lauren's struggles

- Cannot easily take notes in class
- Has to record most things
- Mouse interactions are painful
- Depends heavily on keyboard
- Voice-recognition software issues

What does it mean to use the Web as someone who can't easily rely on a mouse?



HOW WE CAN **HELP LAUREN**

5 SIMPLE ACCOMMODATIONS TO CONSIDER WHEN TEACHING

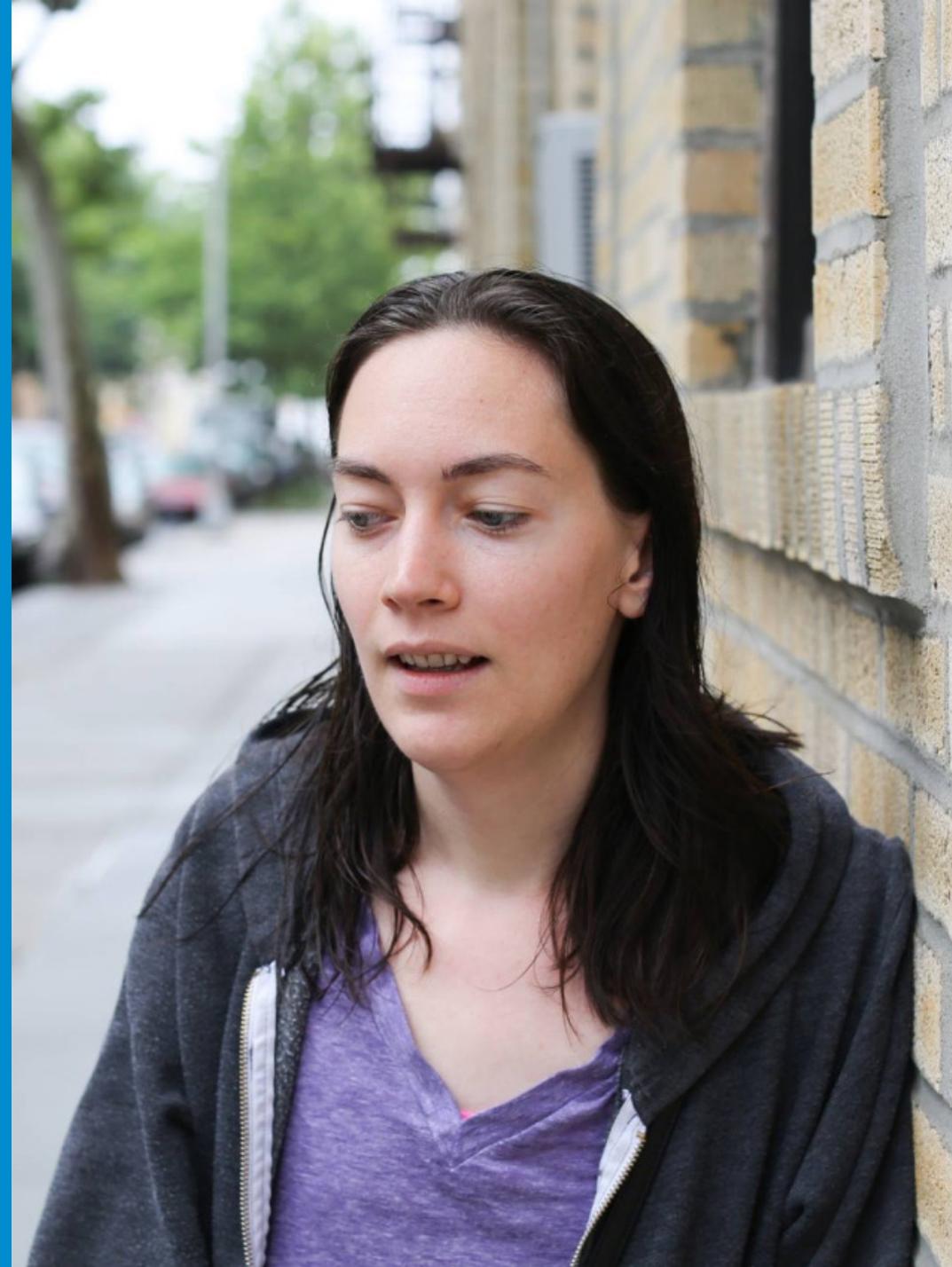
- ! Allow for speech-to-text and assistive technologies
- ! Validate digital content is mouse independent
- ! Ensure interaction flows are keyboard friendly
- ! Use platforms that meet accessibility guidelines
- ! Offer extra time to complete assignments



Chloe's struggles

- Has difficulty reading walls of text
- Letters seem to jump around
- Needs more time than most
- Depends on assistive technology
- Has very low self-esteem

What does it mean to use the Web as someone who struggles with reading & concentrating?



HOW WE CAN **HELP CHLOE**

5 SIMPLE ACCOMMODATIONS TO CONSIDER WHEN TEACHING

- ! Provide syllabuses and instructions ahead of time
- ! Take advantage of “read aloud” technologies
- ! Allow for alternate versions with larger fonts
- ! Integrate hands-on experiences and demos
- ! Offer extra time to complete assignments



**Dilexsya is czrertcaaihed by dfitflcuiy wtih
Inrneaiig to read fflenuty and with autaccre
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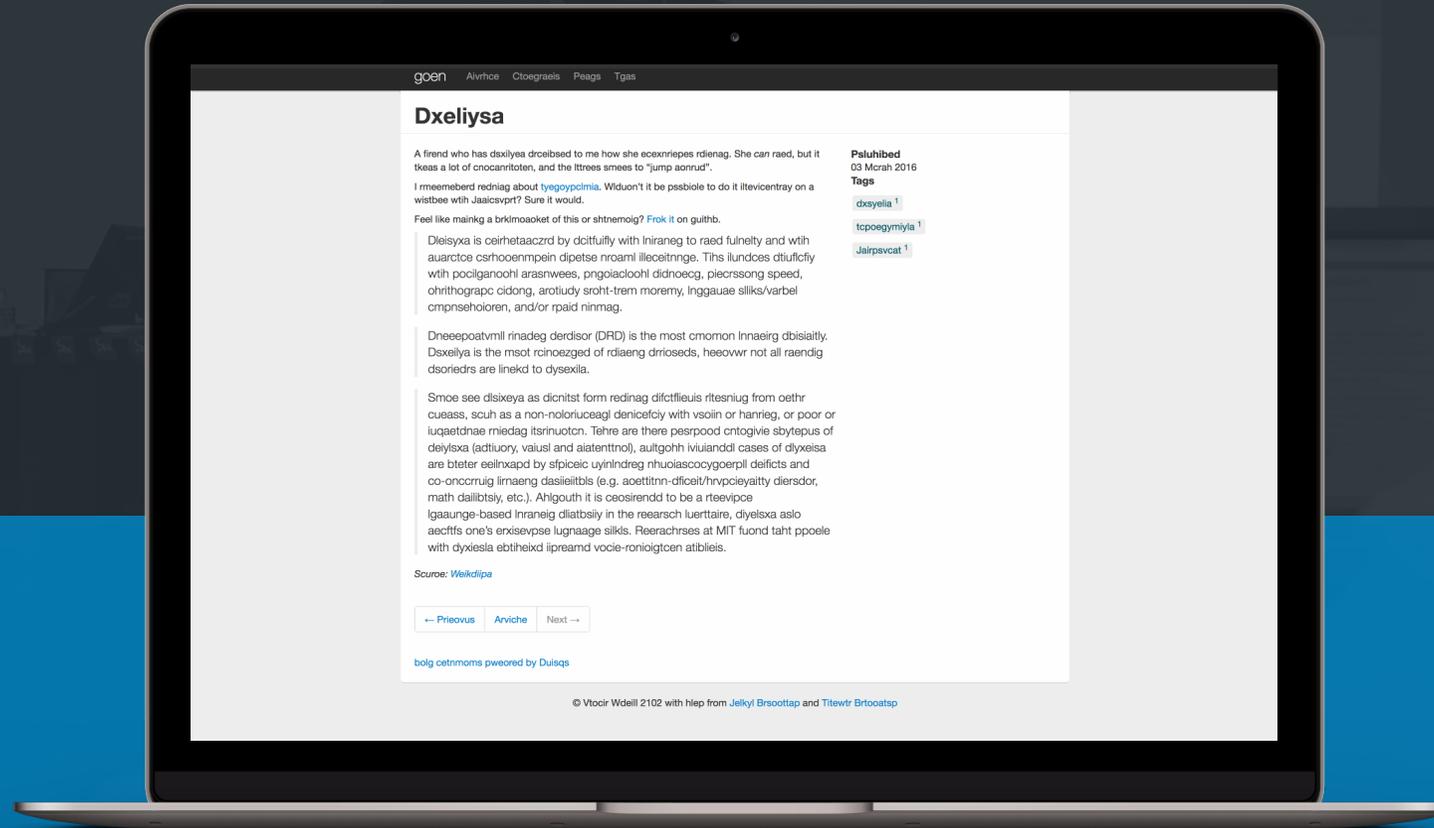
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speed, oriropgtahhc cnodig, airtuody sorht-
term moermy, luagnage silkls/vrabel
crohmseonepin, and/or raipd nainmg.**

Dyslexia is characterized by difficulty with learning to read fluently and with accurate comprehension despite normal intelligence.

This includes difficulty with phonological awareness, phonological decoding, processing speed, orthographic coding, auditory short-term memory, language skills/verbal comprehension, and/or rapid naming.

DEALING WITH DYSLEXIA

20% OF THE POPULATION HAS ONE FORM OR ANOTHER OF DYSLEXIA



Resource

<https://geon.github.io/programming/2016/03/03/dsxylea>



LEVERAGING DESIGN **FOR INCLUSION**

“ What can I possibly do to help my students, when I have very limited time and even more limited resources? ”



BASIC WEB ACCESSIBILITY ISSUE TYPES

SIMPLE CONSIDERATIONS TO IMPROVE INCLUSION



KEYBOARD ACCESS

Any situation where students are unable to use their keyboards to perform certain tasks, or where failed focus management will cause issues.



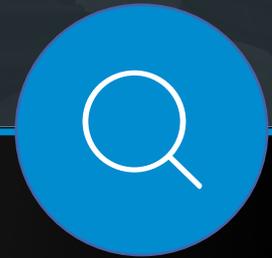
COLOR CONTRASTS

Any situation where students have trouble perceiving information due to poor color combinations that are not sufficiently contrasted.



ONLINE PLATFORMS

Any situation where students struggle with content presented in software due to features, that are inaccessible, or incompatibilities with assistive technologies.



PDF FORMATS

Any situation where students are being left behind, due to content that presented in a format that is not adapted to their particular needs.

RECOMMENDATIONS FOR **KEYBOARD ACCESS**

SOME OF THE TOP THINGS TO KEEP IN MIND...



1

Ensure every object in the page can be fully interacted with, using only the keyboard.

2

Ensure people using keyboards to navigate can easily and clearly identify where the focus is at all times.

3

Ensure people using keyboards to navigate can easily and intuitively move inside any component, or out of it.

RECOMMENDATIONS FOR CONTRASTS

SOME OF THE TOP THINGS TO KEEP IN MIND...



1

Ensure foreground & background colors used for text and images of text present sufficient contrasts.

2

Ensure link text used in content is sufficiently contrasted, when compared to its surrounding text.

3

Ensure colors used remain sufficiently contrasted in less than optimal lighting conditions.

RECOMMENDATIONS FOR PLATFORMS

SOME OF THE TOP THINGS TO KEEP IN MIND...



1

Ensure features used designed in such a way that the use of a mouse is never mandatory.

2

Ensure reliable text transcripts and captions are provided when videos are played, or audio/speech is required.

3

Ensure functionalities are designed so they are compatible with assistive technologies.

RECOMMENDATIONS FOR PDF FORMATS

SOME OF THE TOP THINGS TO KEEP IN MIND...



1

Ensure the content is text-based, as opposed to images of text. Rely on OCR technology if needed.

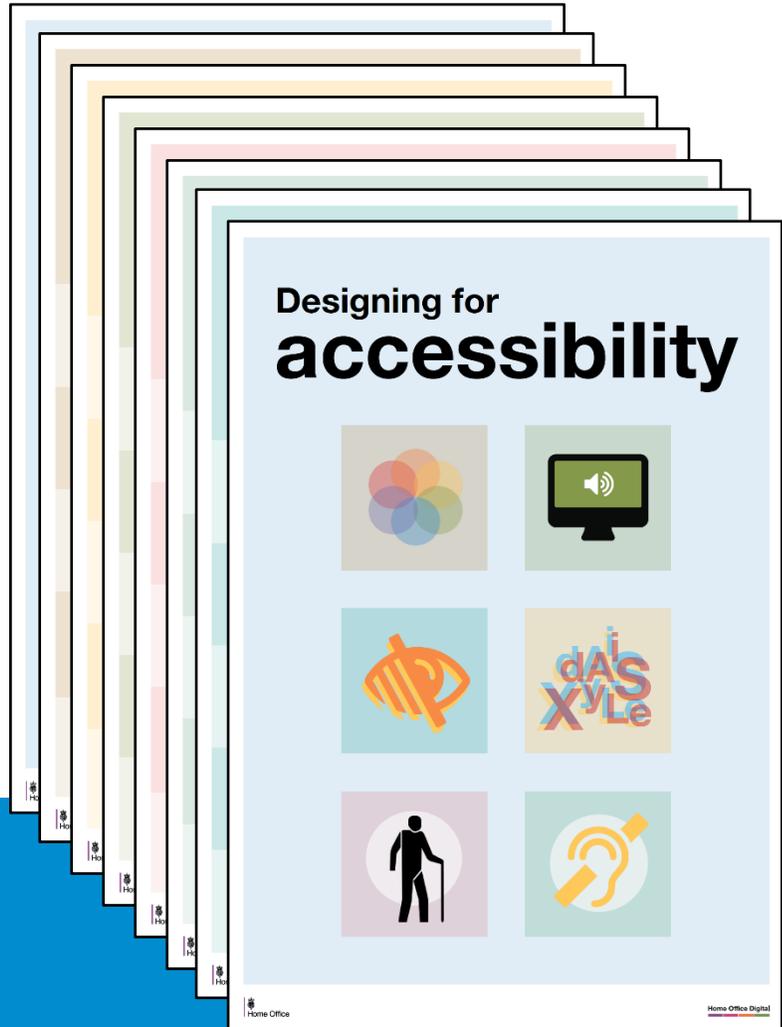
2

Ensure the content can easily reflow into a single column to meet the needs of low vision students.

3

Ensure documents are provided with a tagging structure that conveys semantic meaning to assistive technologies.

DESIGNING FOR ACCESSIBILITY



Considerations to help you get started with designing content for students...

- Who have low vision
- Using screen readers
- Who are deaf or hard of hearing users
- With motor or physical disabilities
- On the autistic spectrum
- With dyslexia



Resource

<https://t.co/7EcvhHsLnV>



HOW CAN DEBBIE HELP?

DISTANCE EDUCATION ACCESSIBILITY
GUIDELINES FOR STUDENTS WITH
DISABILITIES

<http://bit.ly/2fCUdhT>



DISTANCE EDUCATION ACCESSIBILITY GUIDELINES

For Students with Disabilities



WHAT CAN DEBBIE DO?

2016 ROADMAP TO WEB ACCESSIBILITY
IN HIGHER EDUCATION

<http://bit.ly/2fdAfvY>



@dboudreau

White Paper

2016 ROADMAP TO
WEB ACCESSIBILITY IN
HIGHER EDUCATION

 3PlayMedia

ROADMAP TO WEB ACCESSIBILITY 2016

STRATEGIES INSTITUTIONS COULD USE TO MAKE A DIFFERENCE

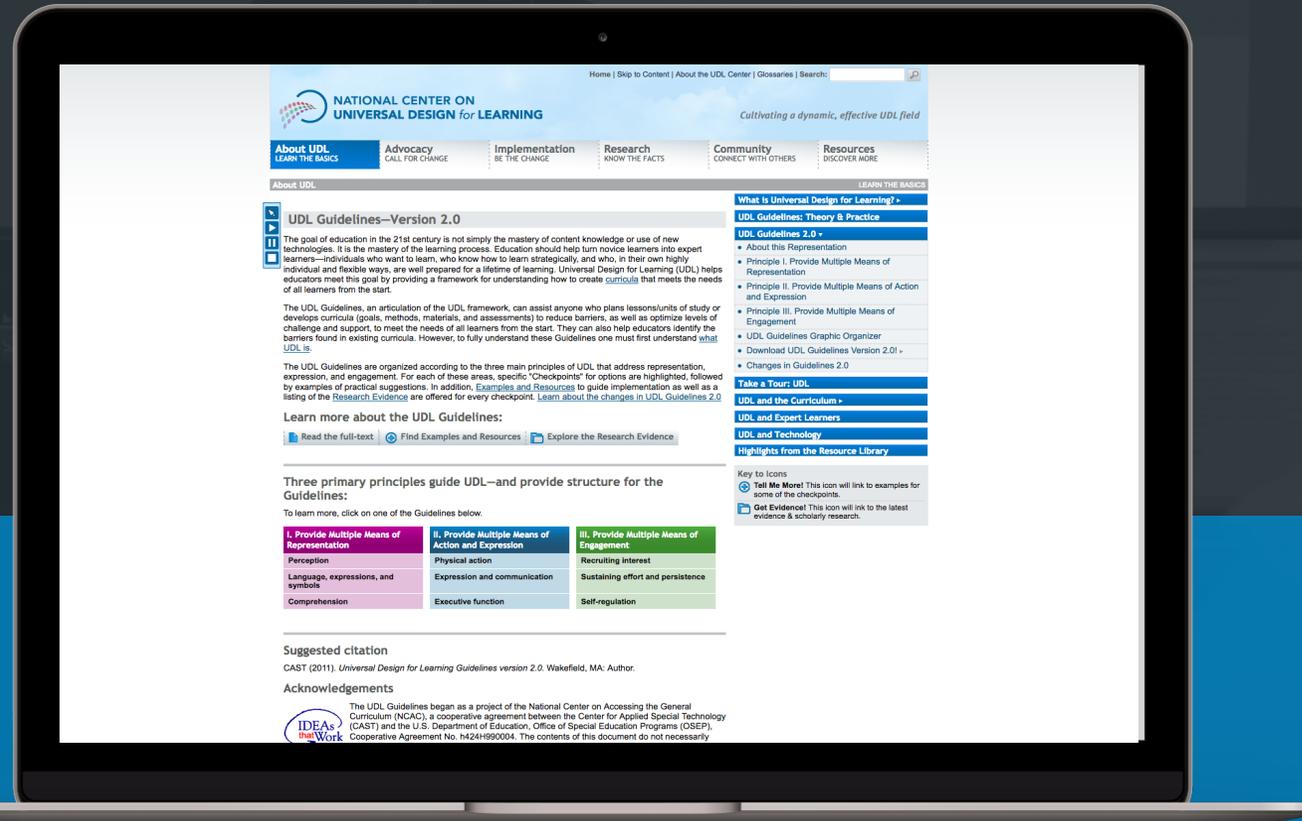




TIPS & TRICKS TO **BRING DOWN BARRIERS**

UDL GUIDELINES 2.0

THE GOAL IS THE MASTERY OF THE LEARNING PROCESS



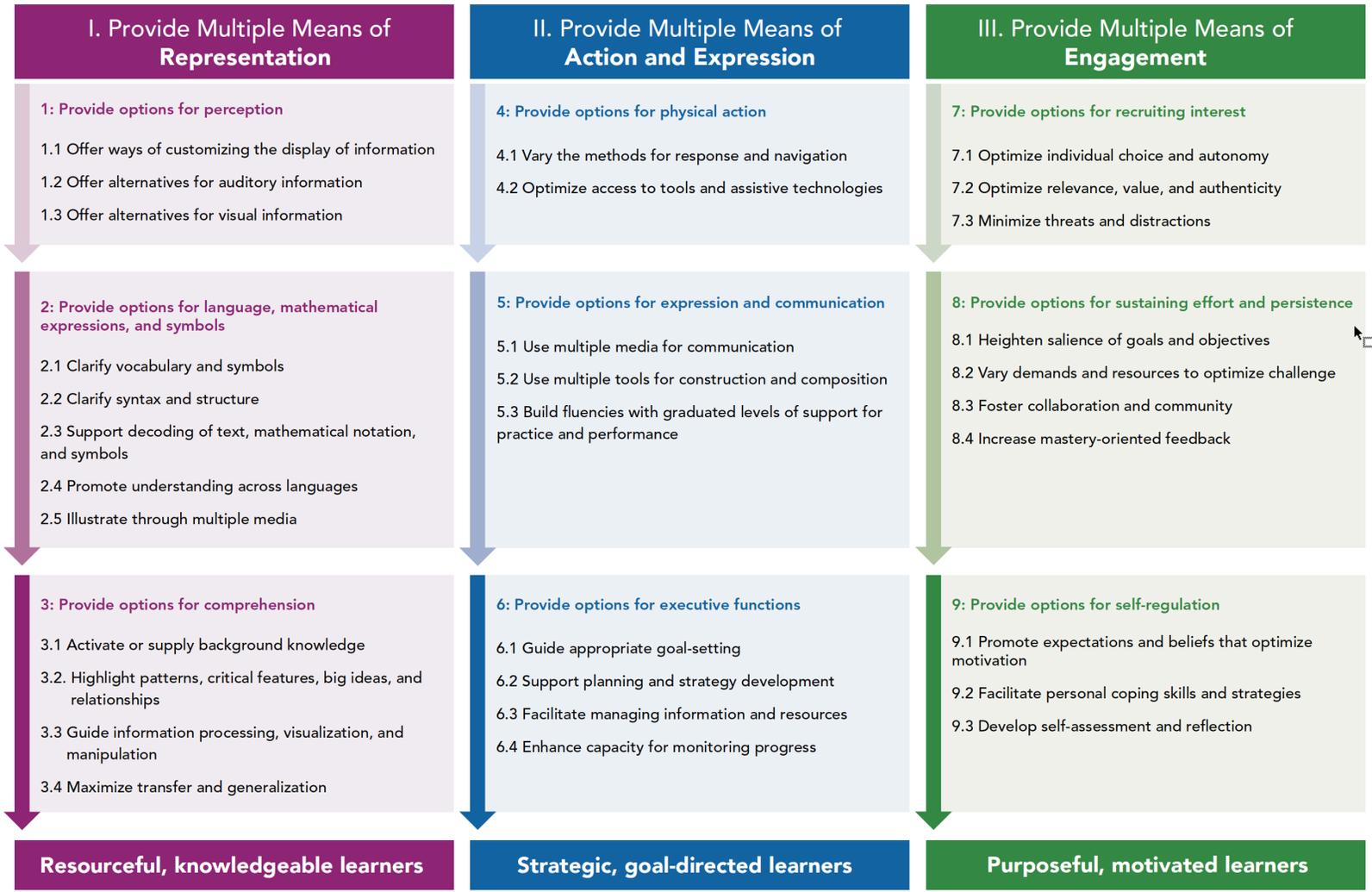
Resource

<http://www.udlcenter.org/aboutudl/udlguidelines>

Tags

No Tags available

Universal Design for Learning Guidelines



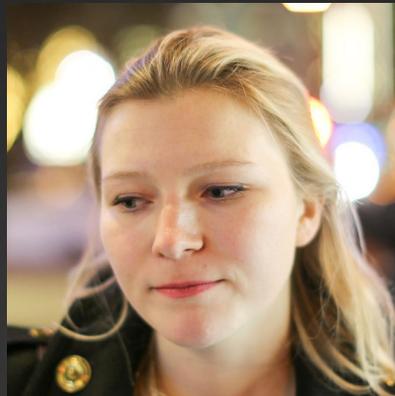
PRACTICAL TIPS AND TRICKS

LEVERAGING THE POWER OF UDL & ACCESSIBILITY



EXAMPLE 2

Offer alternatives for visual information



EXAMPLE 4

Optimize access to tools and AT



EXAMPLE 1

Offer ways to customize the display of information



EXAMPLE 3

Illustrate through multiple media



EXAMPLE 5

Optimize individual choices and autonomy



1. CUSTOMIZE DISPLAY OF INFORMATION



“ Provide flexible formats, so display of information such as digital text or images sizes can be modified, the contrast between background and text or image can be set, the font used for print materials can be adjusted, etc. ”



Resource - checkpoint 1.1

http://www.udlcenter.org/aboutudl/udlguidelines/principle1#principle1_g1

2. ALTERNATIVES FOR VISUAL INFORMATION

“ Ensure equal access to information with non-visual alternatives by providing descriptions for images, graphics, video, or animations, using touch equivalents for key visuals that represent concepts, and provide auditory cues for key concepts and transitions in visual information. ”



Resource – checkpoint 1.3

http://www.udlcenter.org/aboutudl/udlguidelines/principle1#principle1_g1

3. ILLUSTRATE THROUGH MULTIPLE MEDIA



“ Support key concepts in one form of representation with an alternative form, and create explicit links between text information and any accompanying representation of that information in diagrams, illustrations, equations, or charts. ”



Resource - checkpoint 2.5

http://www.udlcenter.org/aboutudl/udlguidelines/principle1#principle1_g2

4. OPTIMIZE ACCESS TO TOOLS

“ Provide alternate keyboard commands for mouse actions, build options for increased independent access and keyboard alternatives, provide access to alternative keyboards, and select software that works seamlessly with assistive technologies. ”



Resource – checkpoint 4.2

http://www.udlcenter.org/aboutudl/udlguidelines/principle2#principle2_g4

5. OPTIMIZE INDIVIDUAL CHOICE AND AUTONOMY



“ Allow students to participate in the design of activities and tasks, involve them in setting their own personal goals, give them control over aspects such as the tools used for information gathering or production, and the sequence or timing for completion of subcomponents of tasks. ”

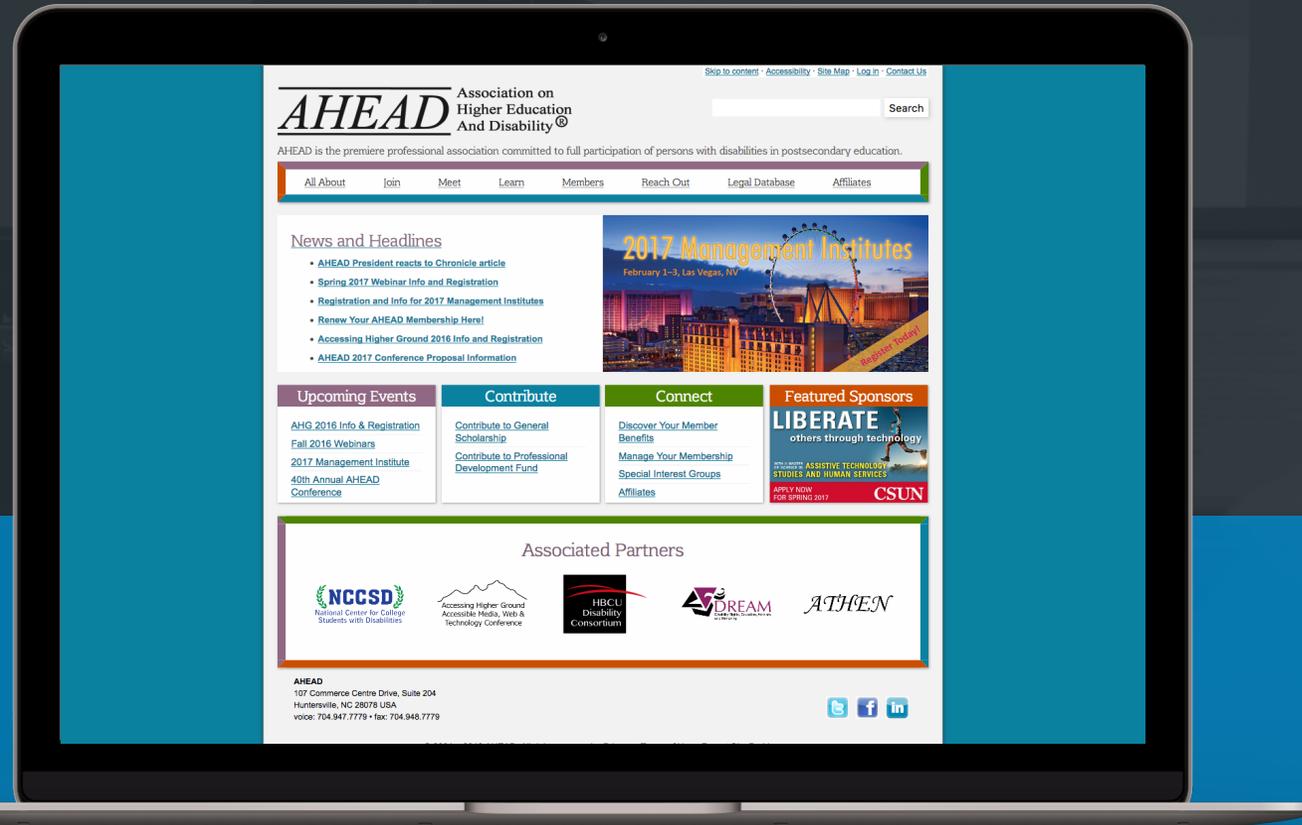


Resource - checkpoint 7.1

http://www.udlcenter.org/aboutudl/udlguidelines/principle3#principle3_g7

GETTING FURTHER AHEAD

THE GOAL IS THE MASTERY OF THE LEARNING PROCESS



Resource

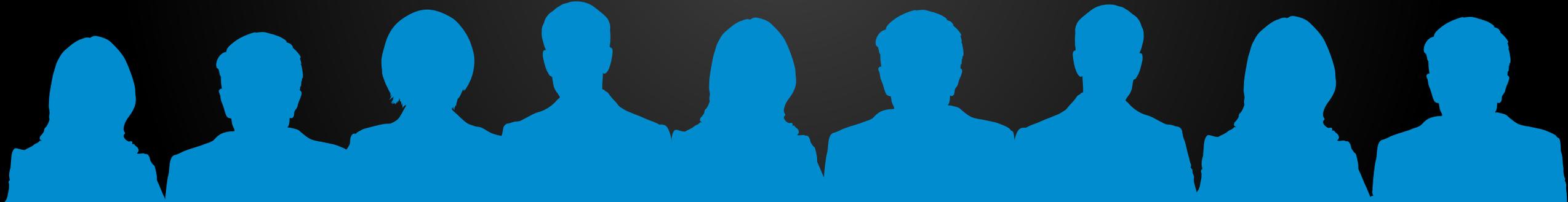
<http://www.ahead.org/>



Debbie would tell you that making a difference isn't that hard after all.



QUESTIONS & COMMENTS



STAY IN TOUCH!

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MERCI BEAUCOUP!

IT'S UP TO ALL OF US TO MAKE HIGHER EDUCATION ACCESSIBLE.



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<http://a11yMTL.org/>