The Inclusive Future: Evaluating Classroom Technology for Accessibility and Universal Design

Sebastian Niles

SITT 2023

Who am I?

- **Accessible Technology Specialist with Student Disability Center**

- **B.S. in Psychology, M.Ed in Higher Education**

- **Experience peer mentoring and teaching in scholarship programs**

SDC Purpose

Facilitate equal opportunity and full participation
in UCD's programs, services, & activities

Jarrod, 2021

Students

Guide, support, and advise students
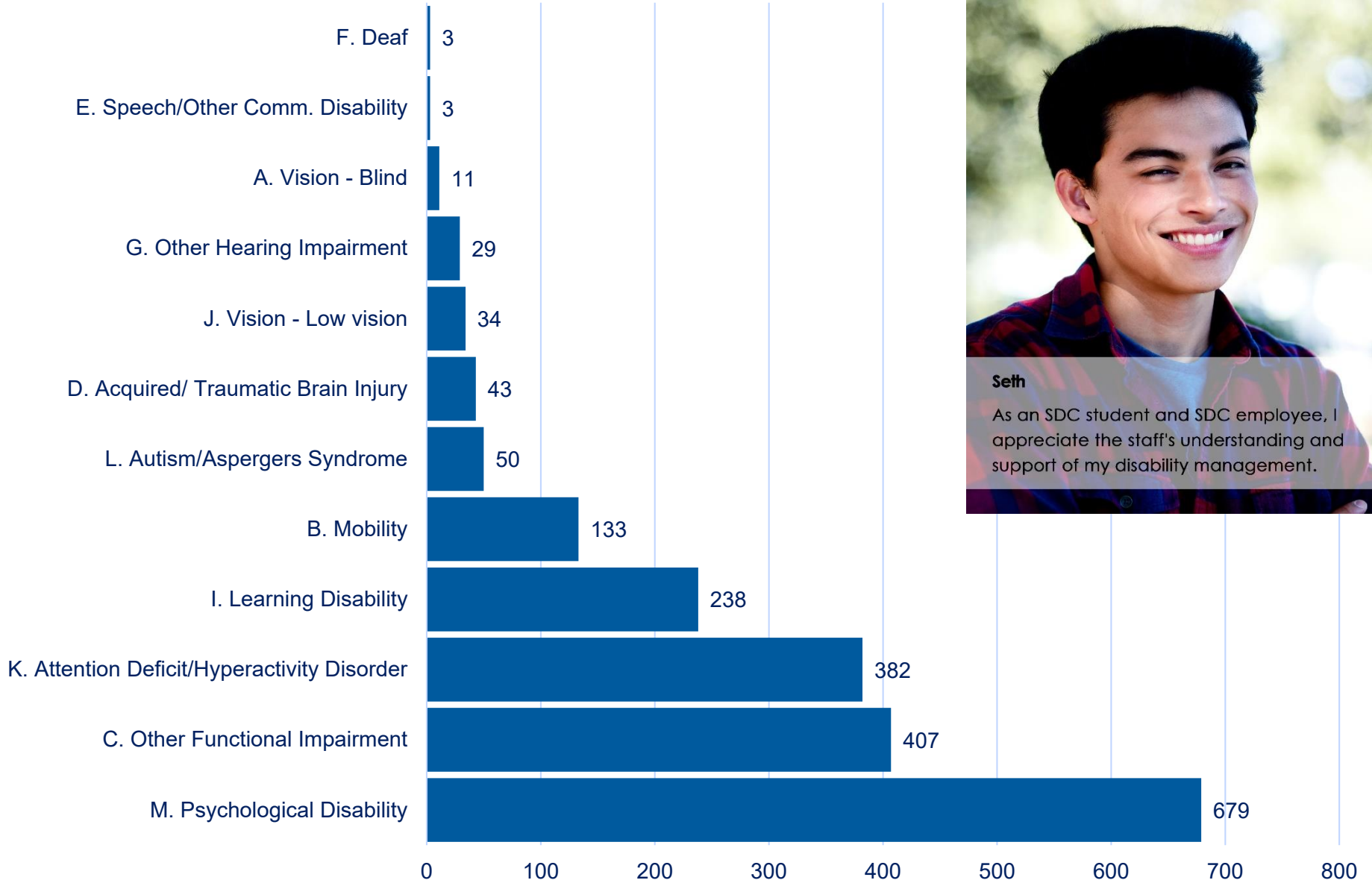
Evaluate accommodation requests, extend services

Faculty/Community Partners

Serve as an informational & consultation resource
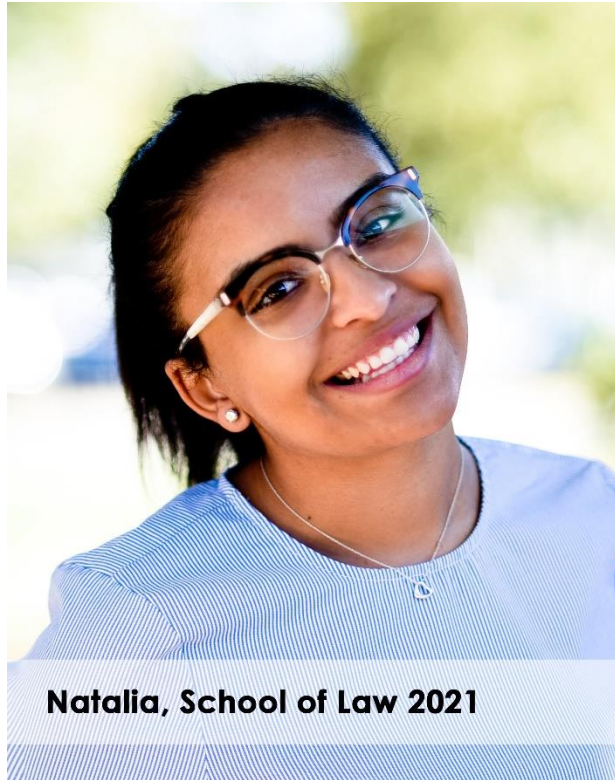
Protect academic rigor & technical standards

Institution

Create a welcoming office and inclusive community

Risk Management

Total Students Served by Disability Type

Disability Type	Count
F. Deaf	3
E. Speech/Other Comm. Disability	3
A. Vision - Blind	11
G. Other Hearing Impairment	29
J. Vision - Low vision	34
D. Acquired/ Traumatic Brain Injury	43
L. Autism/Aspergers Syndrome	50
B. Mobility	133
I. Learning Disability	238
K. Attention Deficit/Hyperactivity Disorder	382
C. Other Functional Impairment	407
M. Psychological Disability	679

Seth

As an SDC student and SDC employee, I appreciate the staff's understanding and support of my disability management.

Universal Design and Technology

Natalia, School of Law 2021

Designing an environment with EVERYONE in mind based on seven principles

- Equitable Use
- Flexibility in Use
- Simple and Intuitive Use
- Perceptible Information
- Tolerance for Error
- Low Physical Effort
- Size and Space for Approach and Use (Burgstahler, 2020)

Any technology used in class should adhere to these principles

Examples of Assistive Technology

- Assistive Listening Devices for Deaf/Hard-of-hearing individuals

- Screen readers and text-to-speech programs

- Wheelchairs, canes, walkers

- Smart pens, recorders

- Screen overlays, screen magnifiers
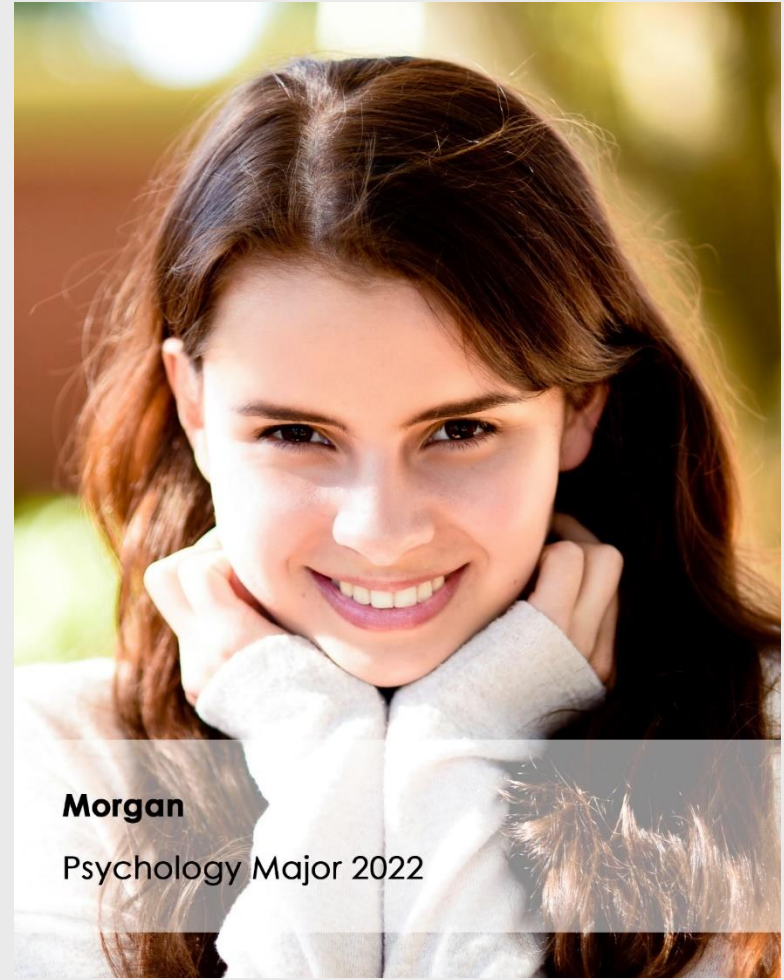
Morgan

Psychology Major 2022

Where Assistive Technology Collides with the Classroom

- A professor utilizes an LMS/CMS for managing classroom readings and assignments, but the program doesn't let a student use their screen reader or text-to-speech tool.

Where Assistive Technology Collides with the Classroom

- A professor assigns videos as homework (or shows them in class), but the videos either don't have captions or only utilize automatic captioning.

Where Assistive Technology Collides with the Classroom

- Linking students to a website or managing a Canvas page that doesn't meet Web Content Accessibility Guidelines (WCAG 2.1) standards
  - Contrast
  - Use of images
  - Page navigation

Evaluation

Evaluation aids instructors in knowing what is working and what changes are necessary
- Summative vs Formative (Guyot, 1978)

The good news: You're likely already doing evaluation!

You just have to apply it to the technology you use in the classroom too.

Jana
Disabled does not mean incapable.

Formative Evaluation with Technology

Formative evaluation assesses as instruction is happening, so evaluate as the quarter/semester marches forward.

Things to consider
- Why did students do well or not do well with an online reading assignment or LMS-based task?
- Are students actually watching videos you post?
- Can students find the material you post on the LMS?

Anonymous post-class feedback can aid with formative evaluation

Summative Evaluation with Technology

Summative evaluation assesses as the quarter/semester ends, so evaluate between instruction periods.

Things to consider
- Did students fully utilize the website or LMS you integrated? (Look at statistics!)
- What are students saying in class evaluations?
- Was the new technological component useful or even necessary?
- If accessibility is an issue, will the developers remedy the situation before the next teaching period?

Every bit of feedback matters! Even if one student speaks out, you should consider their concerns.

Preventative Steps

Evaluation is key but so is being proactive!

Considerations before implementing new technology
- Did you test for accessibility? (The SDC can help!)
- Voluntary Product Accessibility Templates (VPAT) from vendors
- Built in accessibility checkers

Sometimes the best step is to ask why you want to implement it at all.

Oliver, 2019

Some Closing Thoughts

Easier to do this when planning a class than in the middle of the quarter

Do you have an obligation to make changes if it's proven to actually help students?

You don't need to be an expert, and there is plenty of help for this on campus!

Why implement technology if there's no evidence for its success?

Questions?

Jordan, Class of 2020

"Defining myself, as opposed to being defined by others, is one of the most difficult challenges I face." -Carol Moseley
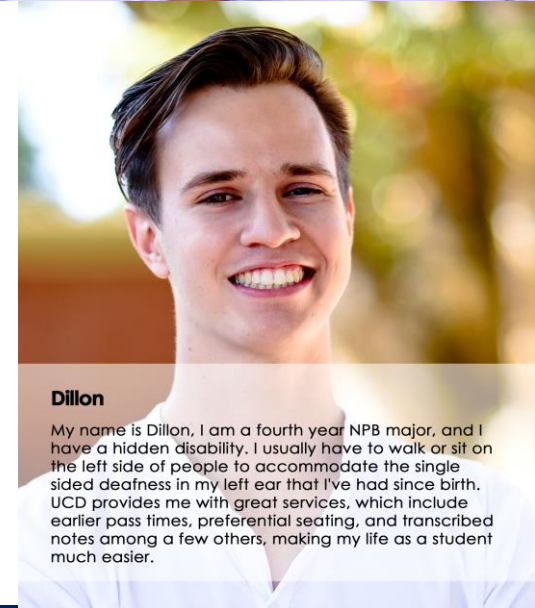
Email smniles@ucdavis.edu

Visit the Student Disability Center in the Cowell Building

Faculty/Staff drop-in hours on Zoom Monday through Friday from 12-1pm (https://ucdavis.zoom.us/j/99420559204)

Dillon

My name is Dillon, I am a fourth year NPB major, and I have a hidden disability. I usually have to walk or sit on the left side of people to accommodate the single sided deafness in my left ear that I've had since birth. UCD provides me with great services, which include earlier pass times, preferential seating, and transcribed notes among a few others, making my life as a student much easier.

References

Burgstahler, S. (2020). Universal Design in Education: Principles and Applications. *Disabilities, Opportunities, Internetworking, and Technology*. https://www.washington.edu/doit/universal-design-education-principles-and-applications

Guyot, W.M. (1978). Summative and Formative Evaluation. *The Journal of Business Education, 54:3, 127-129. DOI: https://doi.org/10.1080/00219444.1978.10534702*

WCAG Guidelines: https://www.w3.org/TR/WCAG21/