Creating Disability Friendly & Inclusive Accessible Spaces in Higher Education

National Academies of Sciences, Engineering, and Medicine
June 15th, 2023

CAST

CAST Mission and Goals

Our vision is for every learner to have engaging opportunities to access education and training environments designed with their needs and preferences in mind.

Sam Johnston
Chief Postsecondary and Workforce Development Officer
sjohnston@cast.org

Luis Perez
Disability Inclusion and Digital Accessibility Lead
lperez@cast.org

Narrow Definition of Intelligence and Learning

Defining expectations for what, how and when to learn too narrowly contributes to the elimination of differences and the social construction of disadvantage (Ontario Human Rights Commission, n.d.).

UDL centers difference (variability) as an asset. It takes an outside-in approach to the design of learning environments and experiences: start with the needs of those in the margins/edges and work inwards.

Social Construction of Disadvantage

Example of left-handedness:

Design denied left-handed people the ability to write, and then a change in design enabled them to write, deconstructing the particular disadvantage of being left-handed. The flaw was always in the design, not in the ability to write of the left-handed person.

Similarly, if someone is not learning in a STEM course, we should look at the barriers that are getting in the way of that learning, not blame the learner.

UDL Defined

An evidence-based framework drawing from the learning sciences and research-based instructional methods to design for the widest range of learners from the outset by creating flexible, customizable, and accessible learning environments and experiences.

First defined in the Higher Education Opportunity Act of 2008, today, UDL is specifically referenced in all federal legislation that governs education and training.

UDL Principles

Affective Networks
The “Why” of Learning

Provide multiple means of Engagement

Affective networks monitor the internal and external environment to set priorities, motivate, and engage learning and behavior.

How will learners engage?

Recognition Networks
The “What” of Learning

Provide multiple means of Representation

Recognition networks sense and perceive information in the environment and transform it into usable knowledge.

How will learners perceive?

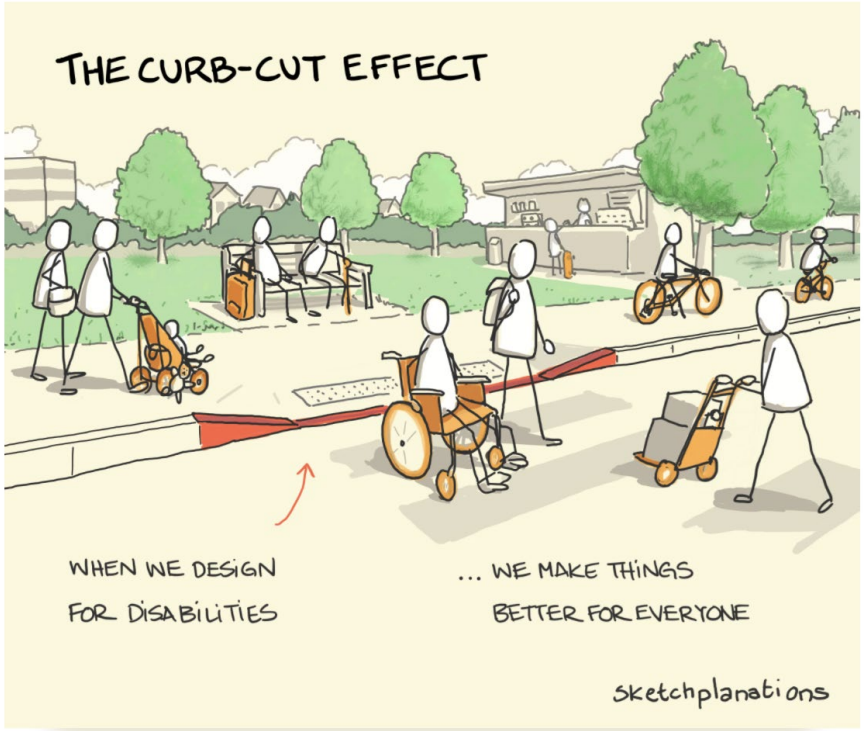
Strategic Networks
The “How” of Learning

Provide multiple means of Action & Expression

Strategic networks plan, organize, and initiate purposeful actions in the environment.

How will learners act on their understanding?

Accessibility is Foundational: Essential for Some, Helpful for All



Accommodations and UDL: Partners in Inclusion

Accommodations, and flexible design through the application of UDL principles, are not exclusive of each other. Taking a UDL-first approach addresses limitations of accommodations:

- Much of STEM learning does not follow the predictable structure needed for the administration of most accommodations
- Accommodations may not reach beyond the classroom into lab spaces, research facilities, etc.
- Accommodations place the burden (through disclosure) on students rather than the curriculum

The two can work together: captions and American Sign Language.

Recommendations for Lab-Based Learning

- Incorporate Universal Design principles in the design of the lab space.
- Explore accessible lab tools.
- Vet digital materials for accessibility.
- Ensure information about accommodation for service animals is readily available.
- Create accessible virtual tours of lab facilities.

Recommendations for Fieldwork

- Provide a way as part of fieldwork evaluations for students to report both positive and negative experiences as relate to the accessibility of their field work placement.
- Set up tours of the facilities where fieldwork will take place to help students familiarize themselves with the environment.
- For situations where safety is a concern, pair up individuals with similar field work interests using a buddy system.

Looking to the Future: AI and UDL

"Augmented intelligence is a design pattern for a human-centered partnership model of people and artificial intelligence (AI) working together to enhance cognitive performance, including learning, decision making and new experiences." (Gartner Glossary, n.d.)

Emphasizes the role of AI to augment human intelligence and potential, rather than merely replace it.

To minimize negative implications of AI, include people with disabilities in design and implementation ("learn from diversity")

Thank You!

We look forward to the panel's feedback!

"For the first time in history, we have the power to include everyone."

David Berman