

Defining "disability"

From Disabled People's International [1]:

Impairment: “the functional limitation within the individual caused by physical, mental, or sensory impairment”

Disability: “the loss or limitation of opportunities to take part in the normal life of the community on an equal level with others due to physical or social barriers”

Ableism

Discrimination or prejudice in favor of able-bodied people

Belief that non-disabled people are inherently superior to disabled people

Wolbring [2]: "Ableism reflects the sentiment of certain social groups and social structures that value and promote certain abilities, for example, productivity and competitiveness, over others, such as empathy, compassion and kindness."

Dolmage [3]: "academia powerfully mandates able-bodiedness and able-mindedness, as well as other forms of social and communicative hyperability, and this demand can best be defined as ableism. In fact, few cultural institutions do a better or more comprehensive job of promoting ableism"

Disableism vs. Ableism

Dolmage [3]: "Disablism negatively constructs both the values and the material circumstances around people with disabilities. Disablism says that there could be nothing worse than being disabled, and treats disabled people unfairly as a result of these values.

Ableism, on the other hand, instead of situating disability as bad and focusing on that stigma, positively values able-bodiedness. In fact, ableism makes able-bodiedness and able-mindedness compulsory."

Anti-Ableism (in education)

One can engage in anti-ableism by recognizing abled privilege and using strategies, theories, actions, and practices to actively dismantling it

Lalvani & Bacon [4]: "Disrupting ableism can only be achieved if teachers position disability as a valued form of human diversity, create spaces for rethinking the constructs of disability and normalcy, and teach their students to embrace differences without stigmatizing them"

Nieminin and Pesonen [5]: "systemic approach to both i) promoting the belonging of disabled students and ii) preventing the exclusion and marginalization of disabled students. The aim of anti-ableism is to disrupt the ideals of normalcy and productivity as often underlying teaching practices"

Talking about Disability

- Use "disability" [6]
- There is no consensus on person-first (i.e., person with disabilities) vs identity first (i.e., disabled person) [6, 7]
- Learn about and avoid harmful language [8]

Laws do not create full inclusion

- Americans with Disabilities Act
- Rehabilitation Act
- Telecommunications Act
- Architectural Barriers Act

In postsecondary education, laws fail to create a "positive obligation" to include students. Rather, "the onus of asserting rights or identifying Code breaches rests with students... As a result, those students who lack the will, endurance, means or ability to lodge a formal complaint may continue to be victims of discrimination." [9]

Common Models of Disability: Medical and Social [10]

- Medical model
 - Disability situated within the person
 - Disability results from impairments
 - Rooted in notions of treatment and cure
 - May led to improvements in disabled people's lives
- Social model
 - Disability is situated in social structures and environment
 - Disability results from inadequate and inaccessible environmental conditions
 - Access is provided by removing social and structural barriers
 - May lead to positive integration of disability with one's identity

Considering Disability as a Cluster of Models [11]

- Cause dimension: medical vs social models
- Effect dimension: tragedy vs affirmative models
- Ability/disability dichotomy: minority vs. universal models

Examples:

- Antidiscrimination policies regarding disability (Social & Minority)
- Universal design to guide restructuring to account for human variation (Social & Universal)

Additional Disability Models

- Critical Disability Theory
- Crip Studies
- Critical Realism
- Deaf Epistemologies
- DisCrit
- Political Model

Locating Statistics on People with Disabilities in STEM

- *Women, Minorities, and Persons with Disabilities* [12]
 - Includes
 - Employment
 - Degrees awarded
 - Postsecondary enrollment
 - Gaps
 - Bachelor's degrees earned by persons with disabilities
 - Graduate degree program enrollment
- National Longitudinal Transition Study [13]
- Educational Longitudinal Study [14]
- National Center for Education Statistics

Selected Statistics

- Disability status in the STEM workforce is 3%, the same as the overall workforce, but lower than the labor force (4%) and total population (9%) [12]
- In STEM & Engineering (S&E) occupations, disabled people have similar median wages compared to nondisabled people. However, in S&E related occupations, they earn less [12].
- Doctorate degrees earned vary among S&E fields, from ~13% in psychology and social sciences to ~8% in engineering [12].
- Other reports have found that while 27% of U.S. adults are disabled, only 9% of the scientific workforce, <2% of National Institutes of Health funded investigators, and <1% of National Science Foundation funded investigators are disabled [16].

Selected Statistics: Changes in disability representation among postsecondary students

In 2011-2012, 11.1 percent of postsecondary students self-reported as having any disability; in 2015-2016, that percentage rose to 19.5 percent. [15]

Percentage of postsecondary students with any disability who described their disability as...	2011-2012	2015-2016
Visual	3.6	4.2
Hearing	7.0	3.9
Speech	0.2	1.3
Orthopedic	9.3	5.9
Specific learning disability	4.8	3.5
Attention deficit disorder	21.8	26.4
Mental illness/depression	30.8	40.0
Other	22.4	14.7

Recommended Next Steps

- Support disability disclosure
- Adopt similar metrics across populations, i.e., include disability status in the Integrated Postsecondary Education Data System (IPEDS) [17] and the Survey of Graduate Students and Postdocs (GSS)
- Support with qualitative data, i.e., what pushes disabled people out of STEM or allows them to stay in STEM?

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