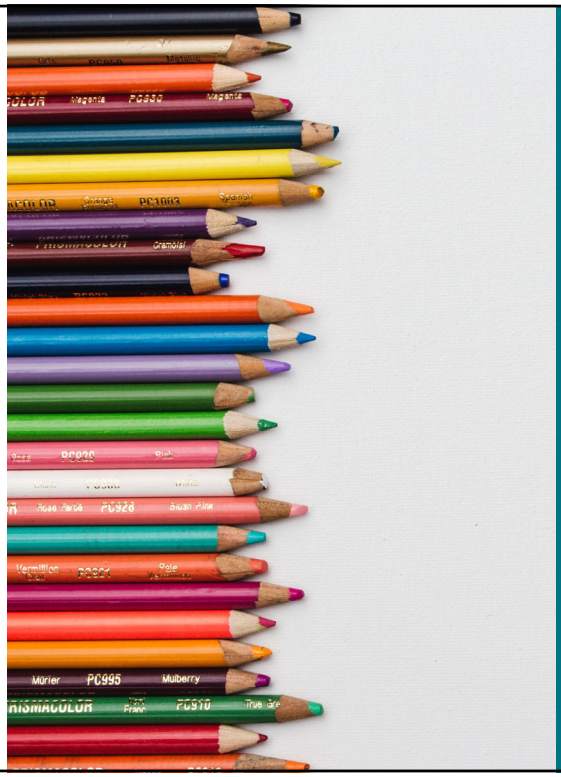
EPFL



Inclusive Classrooms

Joelyn de Lima Ph.D.
Teaching Support Centre
cape.epfl.ch

1

EPFL

Learning objectives

- Reflect on the importance of self-awareness as an important component of inclusive teaching
- Increase awareness of human tendencies and develop strategies to moderate their impact
- Construct arguments to support inclusivity in classrooms using evidence from literature
- Develop strategies inclusivity in lessons using universal design for learning

2

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Match the definitions

1. Inclusion

2. Microaggressions

3. Inclusivity

4. Implicit bias

A. The practice of including people across differences. Inclusivity implies an intentional practice of recognizing and working to mitigate biases that lead to marginalization or exclusion of some people.

B. The degree to which, the classroom physical environment and the interactions that occur as a function of the course produce, is welcoming and provides opportunities for success for all identities.

C. A form of bias that occurs automatically and unintentionally, that nevertheless affects judgments, decisions, and behaviours.

D. Commonplace daily verbal, behavioural or environmental slights, whether intentional or unintentional, that communicate hostile, derogatory, or negative attitudes toward stigmatized or culturally marginalized groups

INCLUSIVE CLASSROOMS

3

EPFL

Inclusion and Inclusivity

- **Inclusion:** The degree to which, the classroom physical environment and the interactions that occur as a function of the course produce, is welcoming and provides opportunities for success for all identities.
- **Inclusivity:** The practice of including people across differences. Inclusivity implies an intentional practice of recognizing and working to mitigate biases that lead to marginalization or exclusion of some people.

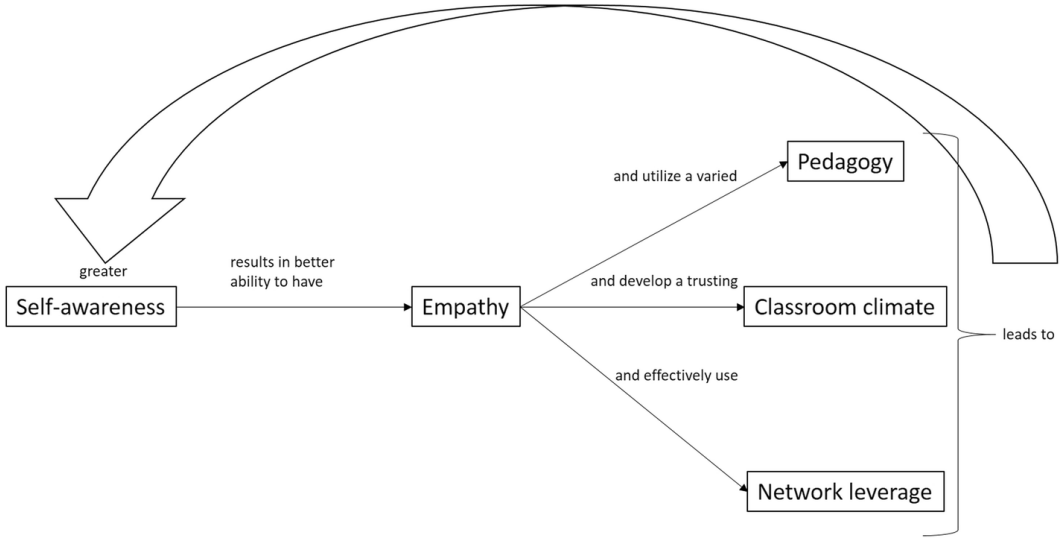
INCLUSIVE CLASSROOMS

Dewsbury, B., & Brame, C. J. (2019)

4

EPFL

Inclusive teaching framework



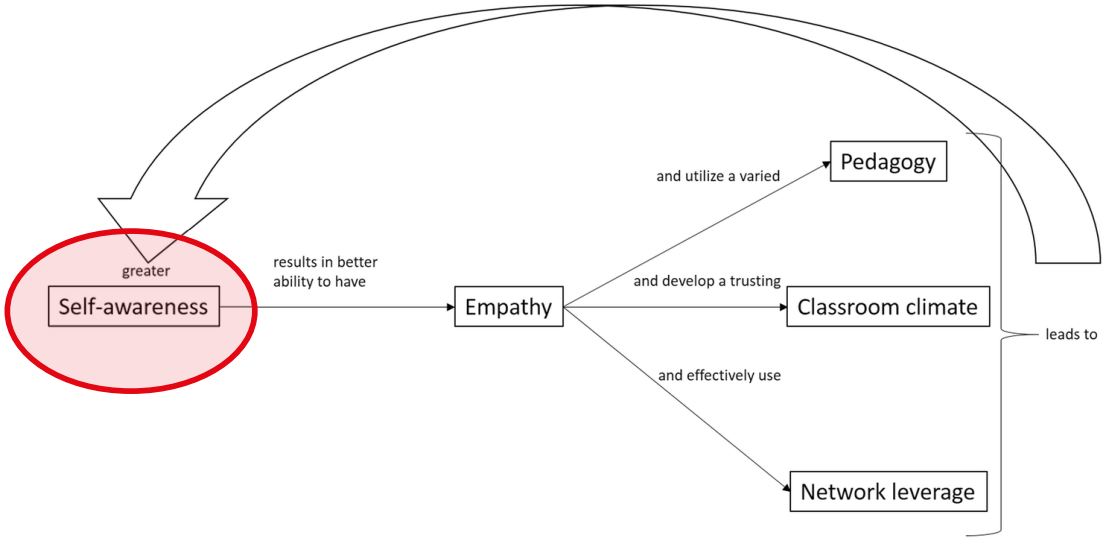
INCLUSIVE CLASSROOMS

Dewsbury, B. M. (2020)

5

EPFL

Inclusive teaching framework



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Dewsbury, B. M. (2020)

6

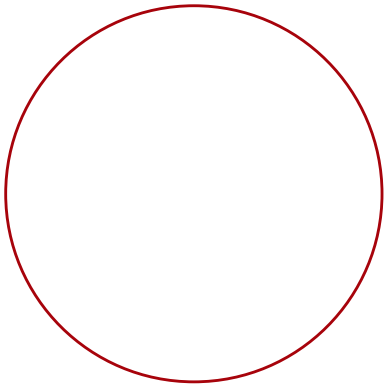
EPFL

Identity pie

List some aspects of your identity

-
-
-
-
-
-
-
-

Based on their relative importance to you – slice your pie



INCLUSIVE CLASSROOMS

7

EPFL

Our identities/experiences shape our teaching

What aspects of identity are/could be salient in your teaching?

Aspects	Strength wrt teaching	Blind spot to monitor
Include the different aspects from your identity wheel		

Sharing welcome

INCLUSIVE CLASSROOMS

8

EPFL

Implicit bias

Implicit bias is a form of bias that **occurs automatically and unintentionally**, that nevertheless **affects judgments, decisions, and behaviours**.

- What are some implicit biases that teachers could have?

Implicit biases are normal!

INCLUSIVE CLASSROOMS

U. S. National Institute of Health

9

EPFL

Unpacking microaggressions

Commonplace daily verbal, behavioural or environmental slights, whether intentional or unintentional, that communicate hostile, derogatory, or negative attitudes toward stigmatized or culturally marginalized groups

It's the impact that matters – not the intent

Image credit: Simmons University Institute for Inclusive Leadership

INCLUSIVE CLASSROOMS

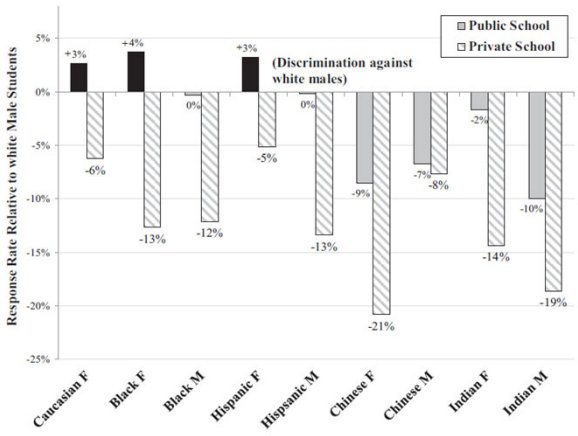
https://en.wikipedia.org/

10

EPFL

How micro discriminations add up to big differences

- When considering requests from prospective students seeking mentoring in the future, faculty were significantly more responsive to White males than to all other categories of students, collectively, particularly in higher-paying disciplines and private institutions
- Has implications for future pay gaps



over 6,500 professors at top U.S. universities drawn from 89 disciplines and 259 institutions

Milkman, et.al., (2015). What happens before? A field experiment exploring how pay and representation differentially shape bias on the pathway into organizations. *Journal of Applied Psychology, 100*(6), 1678–1712. https://doi.org/10.1037/apl0000022

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11

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Photo by Naassom Azevedo on Unsplash

Milkman, et.al., (2012). Temporal Distance and Discrimination: An Audit Study in Academia. Psychological Science, 23(7), 710–717. https://doi.org/10.1177/0956797611434539

INCLUSIVE CLASSROOMS

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Photo by Samuel Sianipar, Unsplash

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Goldin, C., & Rouse, C. (2000). Orchestrating Impartiality: The Impact of "Blind" Auditions on Female Musicians. *American Economic Review*, *90*(4), 715–741. https://doi.org/10.1257/aer.90.4.715

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Photo by freestocks.org

INCLUSIVE CLASSROOMS

Hoffman, et. al.,(2016). Racial bias in pain assessment and treatment recommendations, and false beliefs about biological differences between blacks and whites. *PNAS*, *113*(16), 4296–4301. https://doi.org/10.1073/pnas.1516047113

14

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How can we reduce unintentional bias?

Think of an instance that could be highly stressful

- Teaching a session where students ask you a lot of questions
- Grading an exam

- Where could unintentional bias manifest?

- How could you mitigate the impact of bias?

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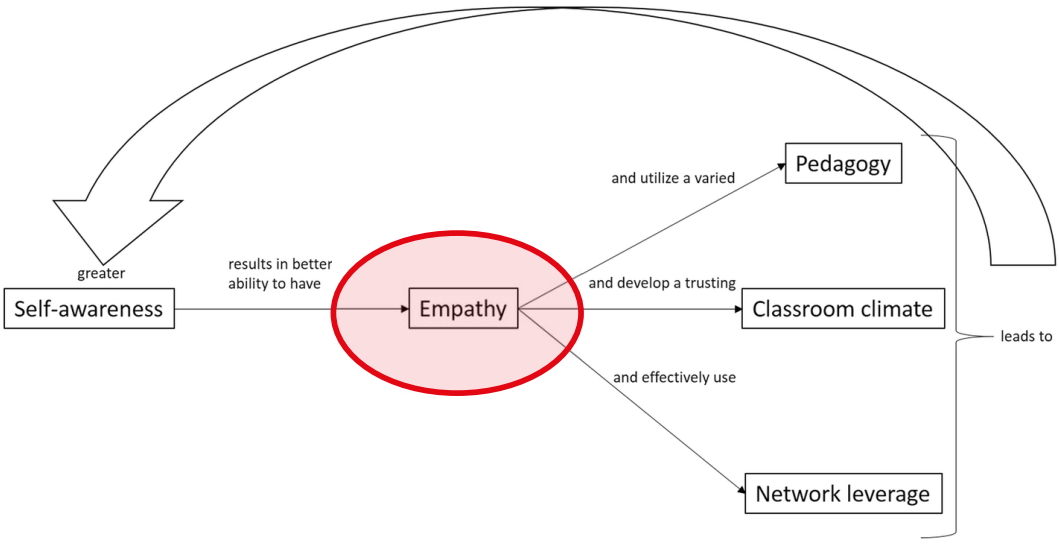
Inclusive teaching framework



Dewsbury, B. M. (2020)

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Students in Higher Ed in Switzerland

53% are women

Average age is **25.9 years**

5.4% have children

73% work for pay

18% have long-term health problems

53% First generation college

33% have a migration background

Federal Statistical Office, Switzerland

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EPFL

A diverse student body at EPFL

Bachelor's level:

31% are female

Master's level:

30% are female

Top 10 represented countries in Masters admissions

Based on students admitted in 2022-23

120 nationalities are represented on campus

~11% have chronic diseases of which only 21% receive support from EPFL

EPFL sans barrière

INCLUSIVE CLASSROOMS: SUSTAINABLE CLASSROOMS

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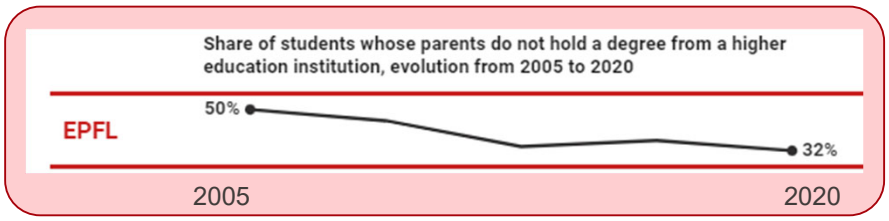
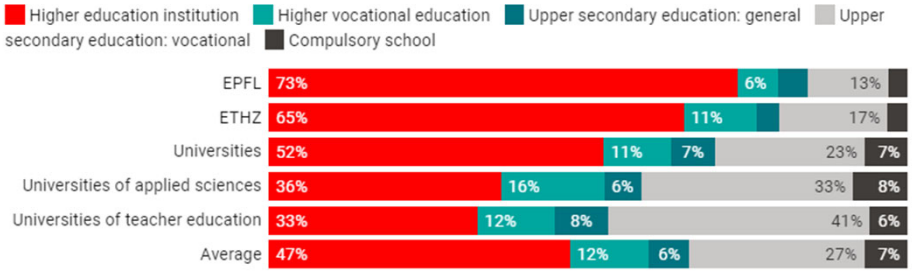
EPFL

Is EPFL becoming less inclusive for first-gen students?





https://www.epfl.ch/about/facts/social-mix-at-epfl/

INCLUSIVE CLASSROOMS: SUSTAINABLE CLASSROOMS

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EPFL

How about your students?

- What do you know about the diversity of your students?
- How could you find out more?

INCLUSIVE CLASSROOMS

20

EPFL

Data – not stories: High-leverage strategies

- Pre-course survey
- Mid-semester feedback
- Quick polls
- LMS analytics
- Office-hour booking data
- Student services data

Equity & ethics

- Use opt-in questions and anonymous polls for sensitive topics.
- Ask only for data you will use; explain why you're asking.
- Prefer class-level solutions over one-off exceptions when possible.

INCLUSIVE CLASSROOMS

21

EPFL

What are the assumptions…
…what could you say instead?

When your parents were in college, the chemistry they learnt…	When I was in college, the chemistry I learnt…
When you go skiing for a holiday….	When you go for a holiday…
If your wife or husband has cancer one day…	If your loved one has cancer one day…
When a physicist sets up an experiment, he…	When a physicist sets up an experiment, they…

Adapted from: Tanner, K., & Allen, D. (2007).

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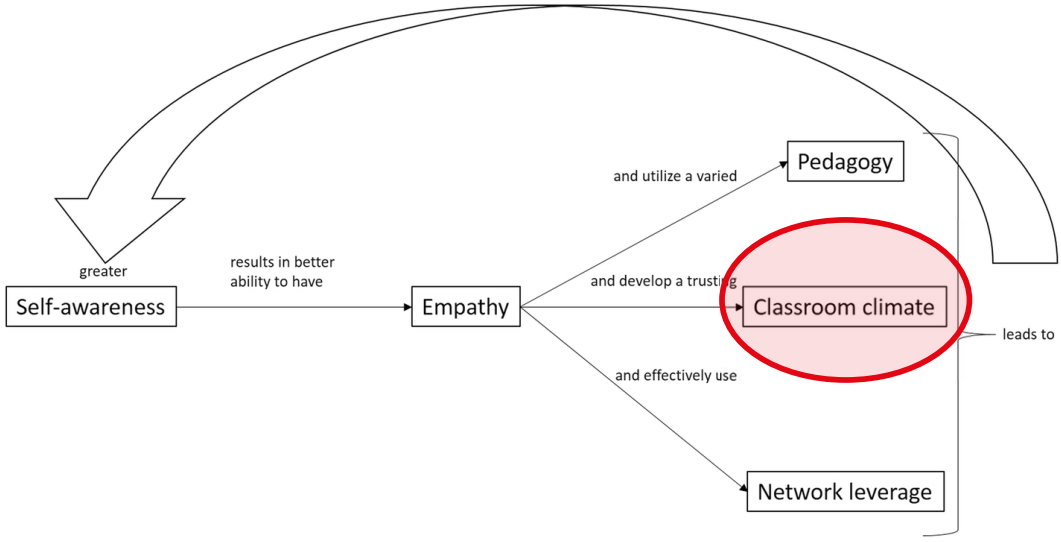
Inclusive teaching framework



INCLUSIVE CLASSROOMS

Dewsbury, B. M. (2020)

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Our EPFL classrooms are not inclusive

- One-third of the female student respondents report having been victim of **unwanted physical contact**, 14% report being the **victim of a sexual assault** and 2.8% report being **victim of a rape** during their work or studies
- For students who signalled being a target of **inappropriate remarks**, **79.4% of these remarks took place in a classroom.**
- **Classrooms were the second most common location** where sexual **harassment and violence** was witnessed.

INCLUSIVE CLASSROOMS

The EPFL Culture of Respect Survey (2021)

24

EPFL

Students cause chilly classroom climates

- Making disparaging remarks, interrupting when a female student is speaking
- Showing condescending facial expressions in response to questions from female students

- Data from several studies found that **70–90% of women** reported at least one incident in which a **male student created a negative situation for them in class**

INCLUSIVE CLASSROOMS

Wenzel & College, (2002).

25

EPFL

Teachers cause chilly classroom climates with verbal and non-verbal behaviours

- **Males were asked more follow-up questions** or had more responses than females.
- Responses from **males were praised for their intellectual content** more often than those from women
- **Women received chillier body language** (turning away, failing to make eye contact, or other signs of inattentiveness, such as looking at a watch)

In one study, **76% of the women**, but less than half of the men, reported **feelings of fear, humiliation, or intimidation in courses taught by males**

INCLUSIVE CLASSROOMS

Wenzel & College, (2002).

26

EPFL

How hard do you have to work to get good grades?

It was mid semester when we had our first exam for that course. The moment I got it back, **I had to realise that my grade was drastically lower than the one of a friend** who had the exact same answers. I went to the teacher, asking why my grade was so significantly lower. He answered: "You are a girl, and **girls in engineering simply have to work harder than boys to achieve the same grade.**"

EPFL Polyquity

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Words matter…

I don't know why you do not like Calculus. It really isn't that hard.

I got an A in that class, and I did not have to study at all

Okay, this next type of calculation is very straightforward so you shouldn't have any problems.

You don't need to understand it, you just have to plug and chug.

Thanks to Dr. Cori Fata-Hartley, MSU College of Nat Sci, MSU

INCLUSIVE CLASSROOMS

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A warm classroom climate

- Increases sense of belonging
  - Increases motivation, self-efficacy, and **academic achievement**

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Freeman, et. al., (2007); Zumbrunn, et.al., (2014)

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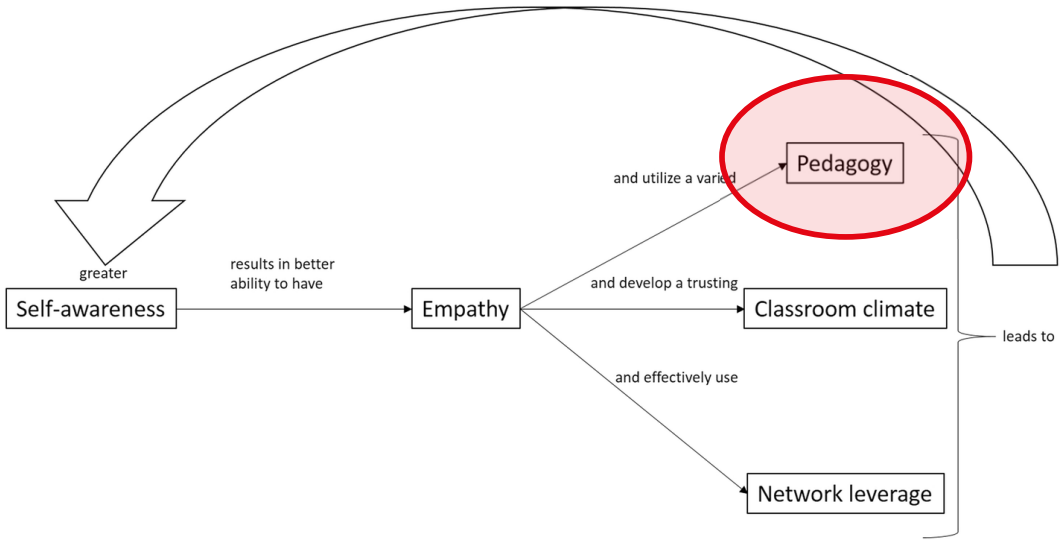
Inclusive teaching framework



INCLUSIVE CLASSROOMS

Dewsbury, B. M. (2020)

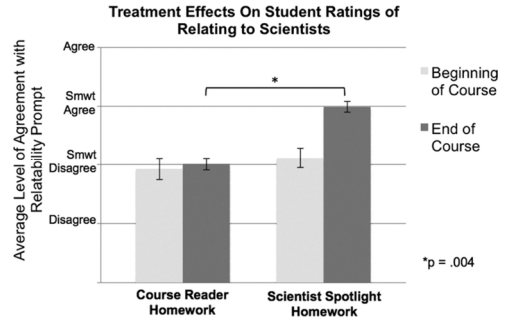
30

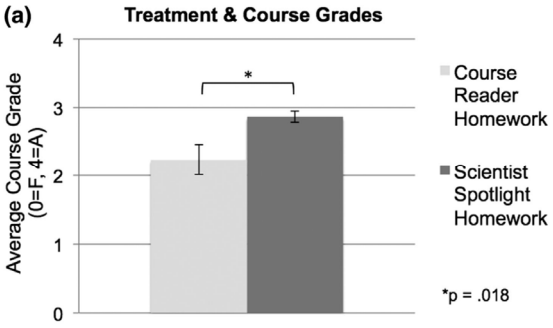
EPFL

Using counterstereotypical examples of scientists in homework enhances belonging

Students in experimental group:

- conveyed an enhanced ability to personally relate to scientists following the intervention
- these shifts were maintained 6 months after the completion of the course
- **earned significantly higher grades**





INCLUSIVE CLASSROOMS

Schinske, et.al., (2016). Scientist Spotlight Homework Assignments Shift Students' Stereotypes of Scientists and Enhance Science Identity in a Diverse Introductory Science Class. *CBE—Life Sciences Education*, *15*(3), ar47. https://doi.org/10.1187/cbe.16-01-0002

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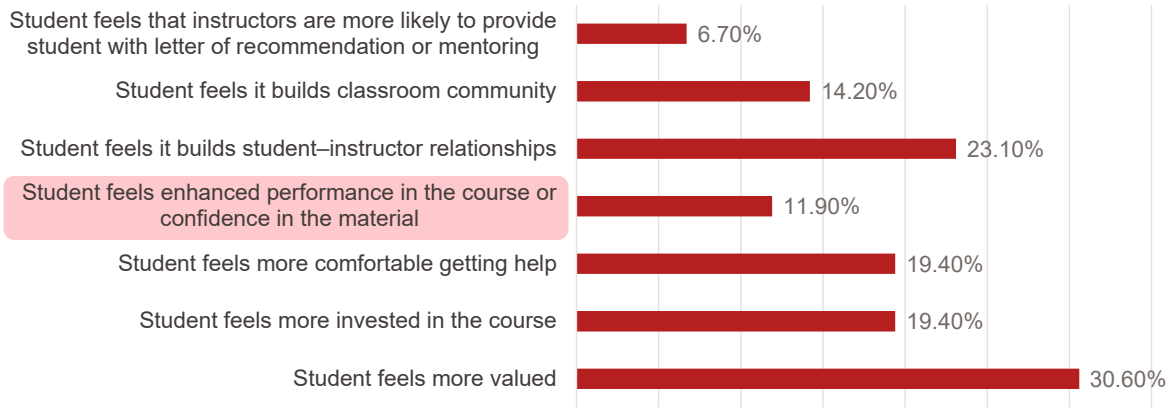
EPFL

Learning students names influences student behaviour and attitudes



78% of students perceived that an instructor of this course knew their names. However, instructors only knew 53% of names, indicating that instructors do not have to know student names in order for students to perceive that their names are known.

INCLUSIVE CLASSROOMS

Cooper, et.al., (2017). What's in a Name? The Importance of Students Perceiving That an Instructor Knows Their Names in a High-Enrollment Biology Classroom. *CBE—Life Sciences Education*, *16*(1), ar8. https://doi.org/10.1187/cbe.16-08-0265a

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EPFL

Fostering a sense of belonging

- Make place for students personal narratives in your class
- Create opportunities for informal interactions (before class, in the corridors, etc.)
- Give students a voice and agency – they are an integral part of the classroom.
- Lots of feedback – and thereby communication

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Dewsbury, B., & Brame, C. J. (2019)

33

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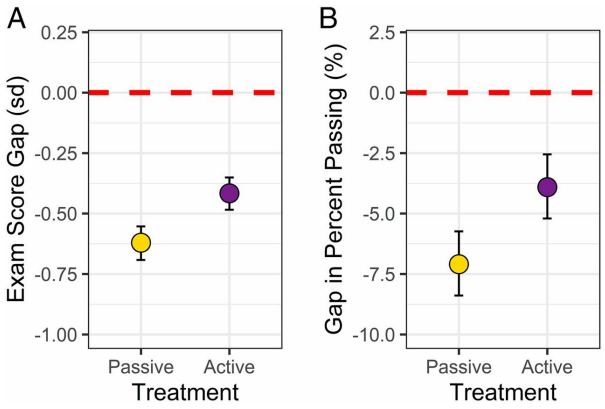
Active learning narrows achievement gaps for underrepresented students in undergraduate STEM

- Active learning **reduced achievement gaps in examination scores by 33% and narrowed gaps in passing rates by 45%.**
- Only classes that implemented high-intensity active learning narrowed achievement gaps



student examination scores:15 studies (9,238 total students)
student failure: 26 studies (44,606 total students).

INCLUSIVE CLASSROOMS

Theobald, et.al., (2020). Active learning narrows achievement gaps for underrepresented students in undergraduate science, technology, engineering, and math. *Proceedings of the National Academy of Sciences*, *117*(12), 6476–6483. https://doi.org/10.1073/pnas.1916903117

34

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Strategies to increase inclusiveness

- Based on the Tanner reading – discuss some strategies that you could use in your class
- Think of in person – and online learning spaces

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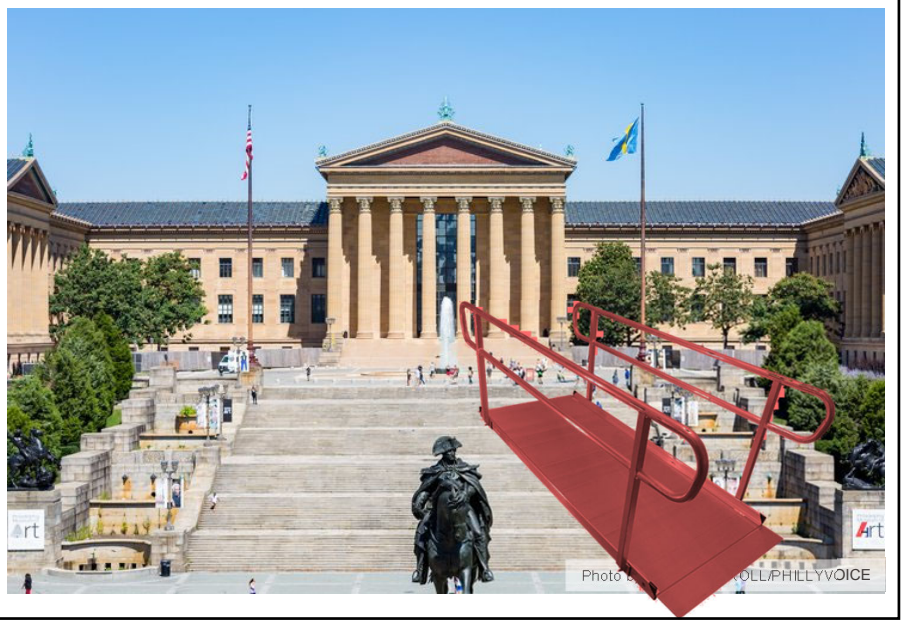
Learning from architecture

How to make architecture more accessible?



INCLUSIVE CLASSROOMS: SUSTAINABLE CLASSROOMS Joelyn de Lima

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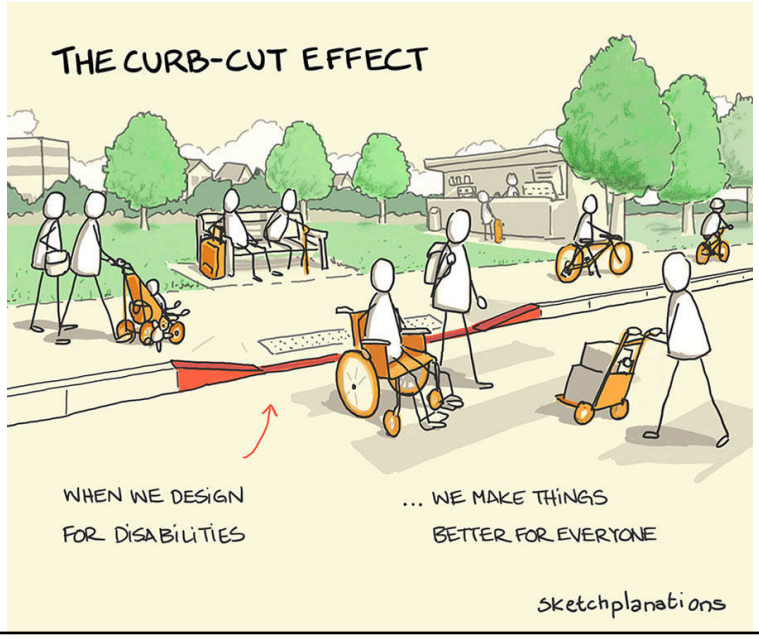
Incorporating accessibility into design



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Versoix being inclusive!

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Universal Design for Learning (UDL)

- Grew from ideas about making architecture more accessible
- Not JUST for students with disabilities

Universal design focuses on eliminating barriers through initial designs that consider the needs of diverse people, rather than overcoming barriers later through individual adaptation

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Rose, et.al. (2006).

39

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Universal Design for Learning (UDL)

Who would this benefit?

- Closed captions
- Using a microphone
- Using structure rather than colour in graphs

Group discussion

INCLUSIVE CLASSROOMS

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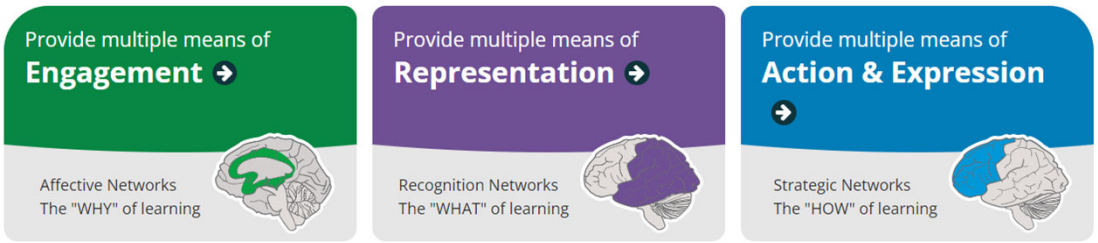
Principles of UDL

1. Multiple means of representation
2. Multiple means of expression
3. Multiple means of engagement



Rose, et.al. (2006).

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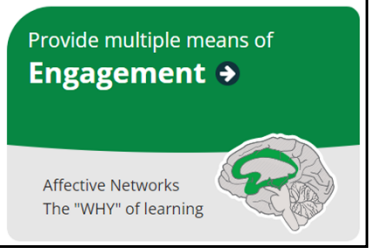
Multiple Means of Engagement

- Students differ in their comfort with **levels and types of engagement**
- Students have different motivating factors

Intellectual engagement matters!



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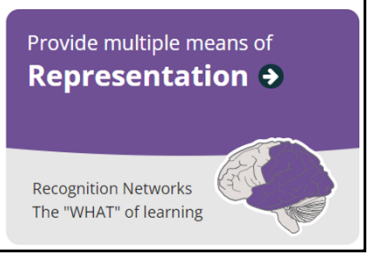
Multiple Means of Representation

- Students differ in how they **access and process information**
- Make information accessible!
- Use multiple means of representation



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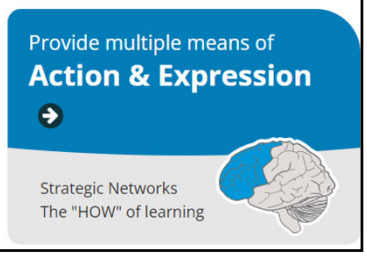
Multiple Means of Expression

- Students differ in how they **demonstrate their knowledge**
- Provide alternate means of expression



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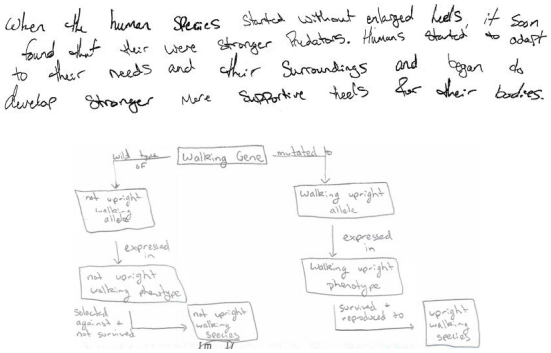
Students **expressed different ideas** in written narratives v/s constructed models



de Lima, J. (2021). *Contextual Influences on Undergraduate Biology Students' Reasoning and Representations of Evolutionary Concepts*. Michigan State University.

At EPFL:

Adding 30 minutes to the exam, without changing the wording or number of questions, reduces stress. But, given more time, other **students score almost an entire grade point higher**.

https://learn.epfl.ch/news_learn/raising-the-first-year-pass-rate-without-compromising-on-standards/

INCLUSIVE CLASSROOMS

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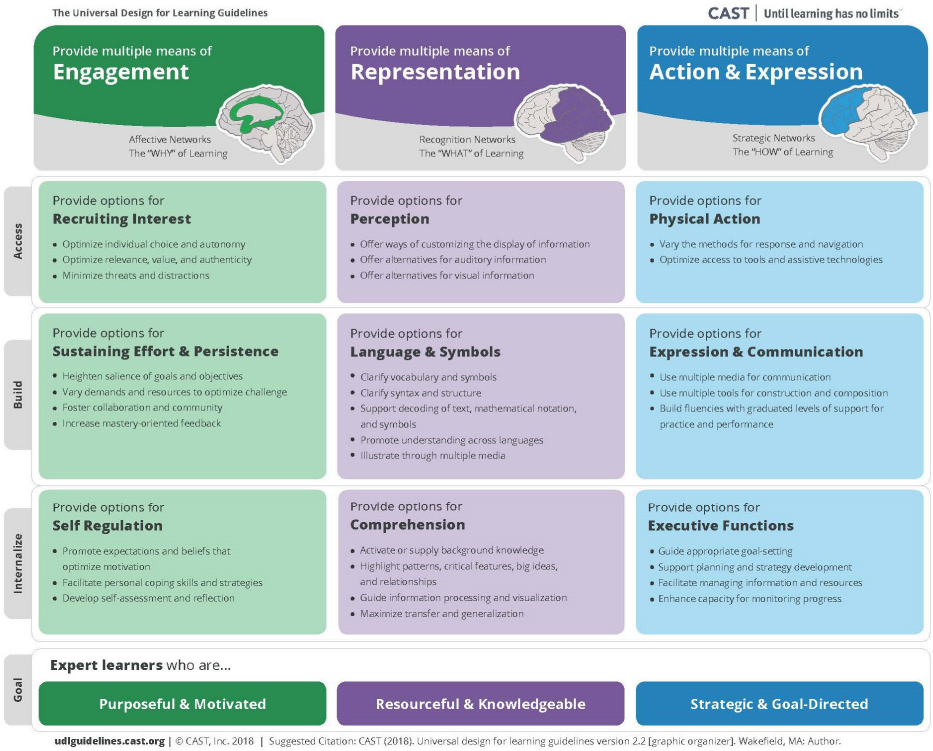

https://udlguidelines.cast.org/

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How could you modify your lecture using UDL?

1. Multiple means of representation
2. Multiple means of expression
3. Multiple means of engagement

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Good Teaching

Results in increased **learning**

INCLUSIVE CLASSROOMS

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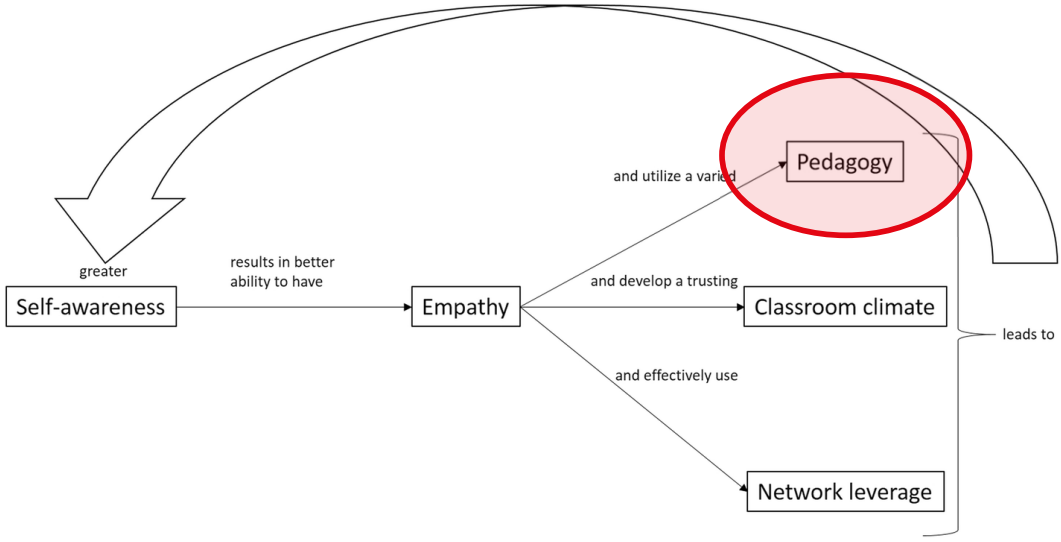
EPFL

Inclusive teaching framework



Dewsbury, B. M. (2020)

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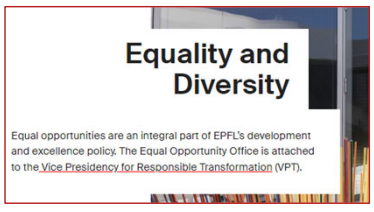
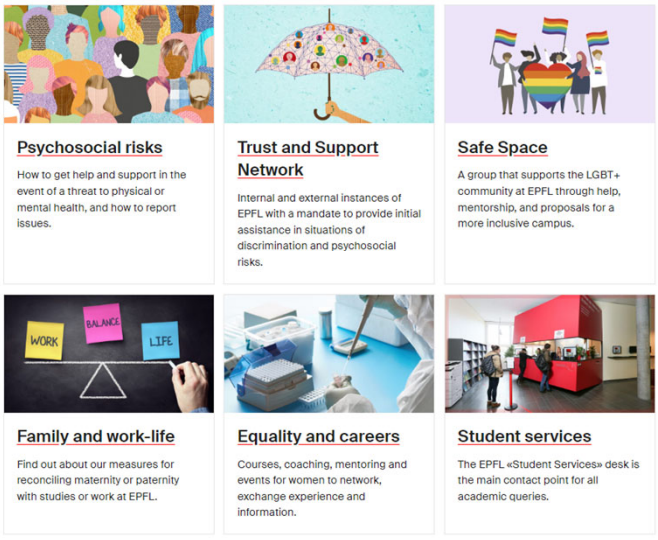
EPFL

You and your students can get help on campus



https://www.epfl.ch/about/equality/

https://polyquity.agepoly.ch/



https://www.epfl.ch/campus/community/

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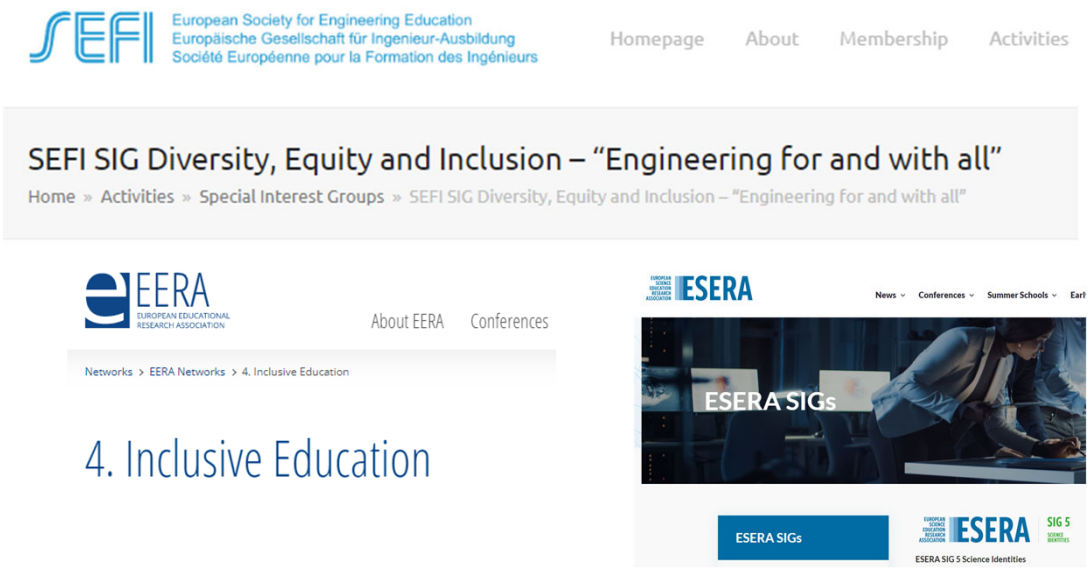
EPFL

Explore and interact with disciplinary communities



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EPFL

EPFL resources

- EPFL Respect training: https://www.epfl.ch/about/respect/respect-training/
- EPFL courses on Implicit Bias Awareness: https://www.epfl.ch/campus/community/equality-and-careers/implicit-bias-awareness/
- EPFL resources on inclusive language: https://www.epfl.ch/about/equality/inclusive-language/practical-guide/principles/
- EPFL equality and diversity office: https://www.epfl.ch/about/equality/

52

Aeby, P., Fong, R., Vukmirovic, M., Isaac, S., & Tormey, R. (2019). The Impact of Gender on Engineering Students' Group Work Experiences. International Journal of Engineering Education, 35(3), 756–765.

Canning, E. A., Muenks, K., Green, D. J., & Murphy, M. C. (2019). STEM faculty who believe ability is fixed have l arger racial achievement gaps and inspire less student motivation in their classes. Science Advances, 5(2), eaau4734. https://doi.org/10.1126/sciadv.aau4734

Cooper, K. M., Haney, B., Krieg, A., & Brownell, S. E. (2017). What's in a Name? The Importance of Students Perceiving That an Instructor Knows Their Names in a High-Enrollment Biology Classroom. CBE—Life Sciences Education, 16(1), ar8. https://doi.org/10.1187/cbe.16-08-0265

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