Office for Teaching & Learning — Wayne State

Purdy/Kresge Library
5265 Cass Avenue
Detroit, MI 48202

Phone: 313.577.0001
Fax: 313.577.6777
otl.wayne.edu

Notes – Mind Bugs: How Implicit Bias Affects Teaching and Learning

Presentation by Nilanjana Dasgupta

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Errors in subconscious thinking (mind bugs) are normal and ordinary. Everyone experiences them.

- Example: our visual system naturally registers what we expect to see, with little conscious control.

Our judgment is full of errors, most of which are unintentional.

Our social culture reinforces concept pairs

- Example: Words and colors – When viewing text of the names of colors, we are likely to name the color of the text, even when we're asked what color the letters spell.

In academia and during the hiring/interview process, mind bugs enable people to overlook talent and hard work in search for a narrow stereotype.

- Implicit bias = Bias that stems from learned associations, that can bleed over into actions

Examples of Implicit Bias in Academia:

1. Instructors unconsciously evaluate students based on a stereotype:
   - Some instructors subconsciously view white and Asian students as high achieving students, and black/African American students as student athletes.
   - A study found that instructors graded the same essay differently based on the student's race.
   - Implicit bias associated with who could be the high achieving student influences which student gets the benefit of the doubt. Weaknesses of perceived highly achieving students are de-emphasized.
   - Exacerbated in STEM fields due to the small percentage of women:

     Ex: PNAS Study, where the same resume was sent to different institutions, with either a female or male job seeker. The male job seeker was deemed more qualified for the position.

     Moss-Racusin, C. A., Dovidio, J. F., Brescoll, V. L., Graham, M. J., & Handelsman, J. (2012). Science faculty's subtle gender biases favor male students. *Proceedings of the National Academy of Sciences, 109*(41), 16474-16479. doi: 10.1073/pnas.1211286109

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2. Students unconsciously evaluate an instructor based on stereotypes
    -   Student biases against professor affect end of semester student evaluations of the professor. Female and male faculty will be rated with different criteria, such as warm for a female professor, and knowledgeable for a male professor.

3. Student evaluate themselves based on a stereotype
    -   Students who are minorities in a certain major or career path will be constrained by feelings of "fitting in," making them feel as if they don't belong.
    -   Some women in STEM face issues of "belonging." Having a female instructor, especially in the early years of study, positively impacts the feelings of belonging female students have in a STEM curriculum.

Solutions:

1. De-identify students of race and gender. Have students write their ID on assignments, and not their name.
2. Rank merit criteria in order of most important concepts while evaluating student work prior to grading assignments.
3. Reduce time pressures and distractions when you have to grade student work. Pressure and distraction increase the likelihood of mental shortcuts that lead to bias.
4. When interviews are involved, develop a structure and stick with it. Avoid free flowing conversations that stray from work-related discussions.
5. Use the same criteria when writing all recommendation letters for students, and compare letters.
6. Expose numeric minorities to successful experts in the field.
7. Encourage peer mentoring by forming early and late student pairs for the first two years of the early students' studies.