Identity Balance of Female and Male Engineering Students

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Introduction

- Women are regularly faced with the stereotype that men excel in science, technology, engineering, and mathematics (STEM), thus creating a gender gap in these fields.
- Compared to other formerly male-dominated fields, women are participating at lower rates in the physical sciences and in engineering (Diekman & Benson-Greenwald, 2018).
- Women make up half of the total U.S. college-educated workforce, but only 14% of engineers are women (Funk & Parker, 2018).
- Previous research has shown that a strong STEM identity (e.g., me = engineer) is predictive of persistence in a STEM-related pathway (Woodcock et al., 2012).
- Implicit association tests (IATs) measure implicit identities by measuring how quickly and accurately a participant responds to stimuli presented to them (Greenwald et al., 2002).
- The current research measured and classified the identity balance of female and male students entering an engineering degree.

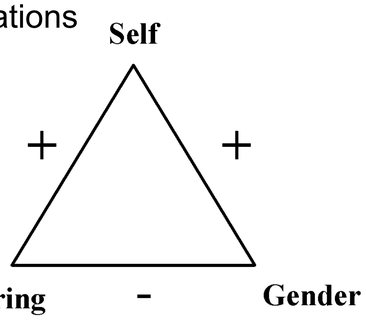
Hypothesis

- Male engineering students would be more likely to simultaneously hold a strong engineering identity and gender identity then their female peers.

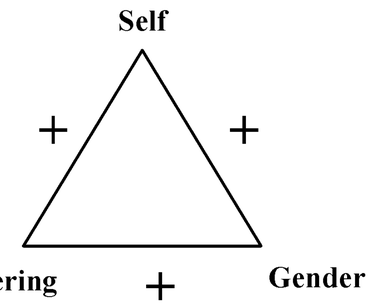
Method

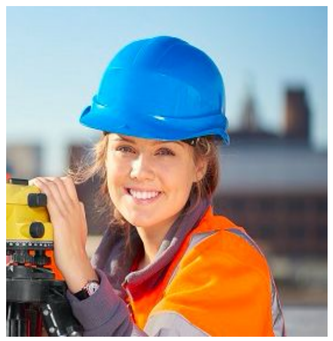
- **Participants**
  - Incoming first-year engineering students at Virginia Polytechnic Institute and State University (N = 533)
    - Demographics: 40% female; 63% White
- **Procedure**
  - Ps completed
    - A mechanical aptitude test
    - A self-affirmation writing task (Walton & Cohen, 2006)
    - 3 Implicit identity measures (IATs) that measured associations in engineering identity, gender identity (me = my gender), and stereotypic associations

Imbalanced Identity Triad



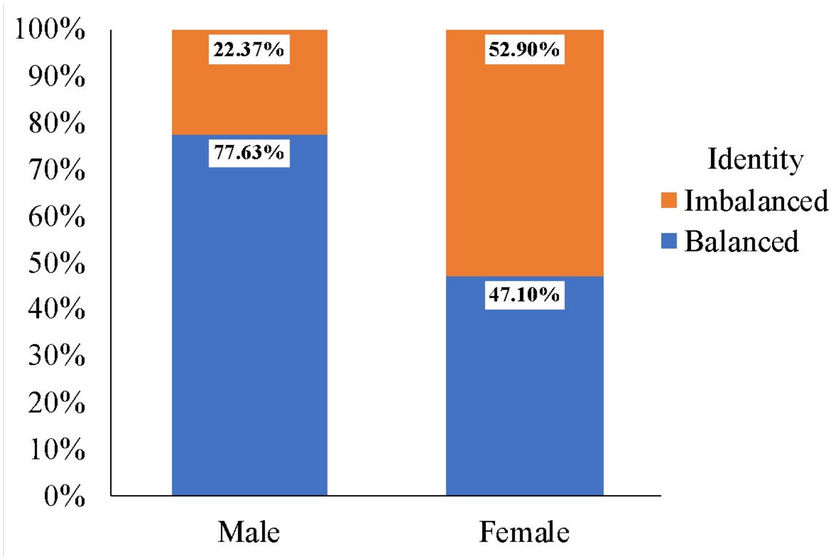
Balanced Identity Triad





Results

- 77.63% of male students that had balanced identities, compared to 47.10% of female students, $X^2(1) = 34.99$, $p < .001$.



Discussion

- First-year students from underrepresented groups in STEM may be struggling with identity imbalance.
- Addressing this imbalance may help contribute to more women staying on a STEM-related career pathway as they strengthen their STEM identity, lessening the gender gap between men and women in the field.

References

Please see handout.

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