Creating Growth Mindset Cultures to Mitigate Inequalities in Higher Education

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Institutional Opportunities to Reduce Inequalities

• Direct-to-Student Interventions:
  – Addressing Belonging (Social Belonging Intervention)
  – Helping Students Cultivate Growth Mindsets (Growth Mindset Intervention)

• Institutional/Cultural Interventions:
  – Psychologically-wise Messaging to Students (Probation)
  – Creating Growth Mindset Cultures Inside and Outside of the Classroom
We can intervene at multiple points to remedy maladaptive mindsets

Intervene through:
- Opportunity structures
- Stereotypes
- Prejudice & Bias

Intervene through:
- Direct-to-students programs.
  Example: Social-Belonging exercise

Intervene through:
- Student messaging (Probation)
  Example: Growth Mindset Culture
- Curriculum/Pedagogy
- Assessment

Adapted from diagram designed by Mindset Scholars Network
Mindsets

People’s personal beliefs about the malleability of human characteristics

— Intelligence/intellectual ability

— Personality

— Athletic ability

— Musical ability...
2 Types of Mindsets

Fixed Mindset:

– Intelligence and ability are fixed traits

– They can’t be changed; either you have it or you don’t

– E.g., “I’m just not a math person.”
2 Types of Mindsets

Growth Mindset:

– Intelligence and ability are malleable qualities

– A potential that can be developed and improved by effort, applying the right strategies, and seeking help

– *E.g.*, “I just haven’t mastered math yet”
Personal Mindset Beliefs

Predict many motivational and behavioral outcomes

The degree that people might:

– Fear failure
– Hide mistakes
– Cheat (to demonstrate their ability)
– Exert effort
– Relish (or shy away from) challenges

Mindset 2.0: From Personal Mindsets to Mindset Culture

• Personal beliefs about the malleability of human characteristics (Dweck, 1996; Dweck & Leggett, 1988)
  • Fixed Mindset: abilities are fixed
  • Growth Mindset: abilities are malleable

• Perceptions of professors’ mindsets influence men & women’s performance & experiences of identity threat in STEM
Perceived Mindsets of STEM Ability

• Fixed Mindset
  – STEM abilities are *fixed*
  – STEM abilities can’t be changed; either you have them or you don’t
  – *Inference: Professor may expect men > women*

• Growth Mindset
  – STEM abilities are *malleable*
  – STEM abilities can improve with effort and learning
  – *Inference: Professor may expect men = women*
Perceiving a fixed faculty mindset of ability creates a context of stereotype threat.

- **Risk of confirming a negative stereotype about one’s group** (Steele & Aronson, 1995)

- **Effects of stereotype threat:**
  - Women underperform relative to men on “diagnostic” math tests (Spencer, Steele, & Quinn, 1997)

He thinks women just don’t have it…
Women’s Math Performance

$F(1, 34) = 6.952, \ p = .013$

Murphy, Garcia & Zirkel (in prep)
Exposure to the *growth mindsets* of STEM faculty buffers women’s math performance relative to exposure to STEM faculty who espouse *fixed mindsets*. 
Experience Sampling in STEM and non-STEM Classrooms

Within STEM classrooms, what are the effects of perceived faculty mindsets?

-Institutional differences?
Perceived faculty mindsets on women’s imposter feelings at 3 institutions

![Bar chart showing imposter scale (0-5) for Women's College, Polytechnic School, and Public University. Fixed Mindset and Growth Mindset are compared.]

Institution X Perceived Lay Theory Cross-Level Interaction, $B = .31$, $SE = .10$, $p = .002$
Perceived faculty mindsets on women’s sense of **belonging** at 3 institutions

Institution X Perceived Lay Theory Cross-Level Interaction, $B = -1.87$, $SE = .61$, $p = .002$
Not just about students’ perceptions…

Larger racial achievement gaps in (self-reported) fixed faculty mindset classrooms

Racial achievement gap is more than twice as large in classes taught by fixed-mindset faculty
Implications

• Situational cues shape students’ experiences in academic environments
  • Fixed faculty mindsets

• Instructors who communicate a growth mindset of ability:
  • Reduce identity threat
  • Increase comfort and performance
How do students come to know (perceive) their professors’ mindsets?

- Focus groups data
- Thematically grouped and analyzed
- **4 Critical time points: Messages & Behaviors**
  - Initial, explicit messages about limited/exclusive vs. expandable/developing abilities
  - Opportunities for practice and feedback
  - Responses to poor performance
  - End-of-semester comments: who should continue
Current and Future Work
Inside Classroom

• Videotaping 60+ Intro STEM classes
  – Faculty self-reported mindset
  – Students’ perceptions of the professor’s mindset
  – Verbal/nonverbal faculty behavior

• Over 1300 faculty interested in participating at a single R1 university!
Current and Future Work

Inside Classroom

• Videotaping 60+ Intro STEM classes
  – Faculty self-reported mindset
  – Students’ perceptions of the professor’s mindset
  – Verbal/nonverbal faculty behavior

• Designing and testing faculty-focused interventions
  – Educate faculty about role of mindset culture
  – Help identify and adopt 2-3 flagship practices to create a growth mindset culture in classroom
  – Evaluate intervention

• New faculty orientation; Graduate student teaching orientation; ~25 most influential faculty
Current and Future Work
Outside Classroom

Working with Advisors, Administrators, Staff to Create Growth Mindset College Cultures

- Educate about role of mindset culture and how it is communicated to students
- Help identify places where growth mindset messaging can infuse their practice and interactions with students

• E.g., choosing courses, selecting majors, navigating financial aid, convocation addresses
Conclusion

• Situational cues shape students’ experiences in academic environments
  • Fixed mindset culture

• Instructors, Administrators, Advisors, and Staff who communicate a growth mindset of ability:
  • Reduce identity threat
  • Increase comfort and performance
  • Reduce racial and gender inequalities
• What if we created environments that minimized threats to belonging and potential?

• What if we reduced interpersonal and institutional signs that you don’t belong and can’t cut it?

• What would our inequalities look like? How much human potential could be unleashed?
Thank You

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