



IDENTITY-BASED MENTORING MODEL (IBMM)

How mentors can support and challenge minoritized students for growth, belonging, and engineering identity development



Developed from qualitative and quantitative studies of mentoring among undergraduate engineering students with minoritized identities.

FOCUS: Understanding how identity similarity and differences shape high-quality mentoring—and how mentors can use power responsibly to foster mutual growth and engineering identity development.



Dr. Rajashi Ghosh

Associate Professor of Adult Learning and Leadership
Teachers College,
Columbia University



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1. WHY THIS MATTERS

Students with minoritized identities in engineering frequently experience:



- Isolation and lack of belonging



- Stereotypes and bias



- Discrimination and microaggressions



- Questions about fit and competence



- Barriers to professional identity development

Mentoring can help—but not all mentoring works equally well. We need to understand how identity, power, and context shape mentoring that truly supports growth.

RESEARCH QUESTION

What mentoring behaviors create high-quality developmental mentoring across both shared-identity and cross-identity relationships?

2. THE CORE IDEA

Development happens through BOTH support and challenge.



Mentoring is most effective when support and challenge coexist within a developmental “holding environment.”

3. THE IDENTITY-BASED MENTORING MODEL (IBMM)

Two Paradoxes Shape Effective Mentoring

	POWER BALANCE (How mentors use power)	FOCUS (What mentors pay attention to)
Tension	 Hierarchy ↔ Mutuality From positional power to partnership and shared voice	 Individual ↔ Systemic From focusing on the individual to addressing systemic inequities
Key Question	How do mentors use their power?	What do mentors pay attention to?

Effective mentoring requires navigating these paradoxes rather than choosing one side over the other.

4. SHARED-IDENTITY MENTORING

(Mentors share at least one minoritized identity)



SUPPORT
Sharing Experiential Knowledge

- Use lived experience and seniority
- Normalize challenges
- Provide identity-relevant guidance
- Model coping and persistence



SUPPORT
Holistic Care

- Avoid assumptions
- See the mentee as a whole person
- Build relationships beyond identity categories



CHALLENGE
Encouraging Independent Thinking

- Avoid creating clones
- Make space for different interpretations
- Help mentees find their own voice



CHALLENGE
Questioning Inequities

- Name systemic barriers
- Help mentees recognize structural challenges
- Encourage critical awareness and advocacy

5. CROSS-IDENTITY MENTORING

(Mentors do NOT share the mentee's minoritized identities)



SUPPORT
Recognition and Acceptance

- Validate competence
- Reject stereotypes
- Create inclusive spaces
- Signal belonging



SUPPORT
Tailored Care

- Learn who the mentee is
- Personalize support
- Avoid one-size-fits-all approaches



CHALLENGE
Learning Across Identity Differences

- Listen deeply
- Decenter themselves
- Learn from mentees
- Create mutuality in conversations



CHALLENGE
Bridging Privilege Gaps

- Recognize systemic inequities
- Understand differential access
- Adjust expectations fairly
- Help remove barriers

6. EVIDENCE BASE



QUALITATIVE STUDY

- 21 minoritized engineering students
- 16 mentors
- Shared-identity and cross-identity mentoring relationships
- Identity-Based Mentoring Model developed through IPA analysis



QUANTITATIVE VALIDATION
Identity-Based Mentoring Scales (IBMS)

Measures:

- ✓ Validation-Hierarchy
- ✓ Validation-Individual
- ✓ Challenge-Mutuality
- ✓ Challenge-Systemic

Validated with 217 engineering student responses from multiple institutions.



7. CURRENT CHALLENGE AREA

NEXT STEP: FROM THEORY → MENTOR DEVELOPMENT

The current research challenge is:

How do we translate the Identity-Based Mentoring Model into professional development that helps mentors intentionally practice these behaviors?

Key questions guiding our work:

- What training experiences build identity awareness?
- How can mentors learn to balance support and challenge?
- How do mentors develop skills for navigating power, privilege, and mutuality?
- How can institutions scale identity-conscious mentoring practices?

Current work focuses on developing evidence-based mentor training modules grounded in the IBMM.



REFERENCES

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