A Systematic Review of the Intersections of Engineering Identity and Financial Need Literature

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Engineering Identity & Students with Financial Need

• Need high-quality, diverse engineering workforce; all socio-economic levels access and complete engineering degrees.

• Students from low-socioeconomic backgrounds and students with financial need may experience difficulty seeing themselves as engineers.

• Little research has connected the concepts of engineering identity and financial need.
Purpose

• Part of a Larger National Science Foundation Grant
  • SSTEM - Collaborative Research: ECSEL Scholarship Program (Electrical, Computer, and Software Engineers as Leaders) (#1565130)

• Systematic Review
• Engineering Identity, Financial Need
Systematic Literature Review Process

- Filters
  - Peer-reviewed
  - 2000-present

- Databases
  - Compendex
  - EBSCHost
  - PsychINFO

- n=11 articles relevant to Engineering Identity and students with Financial need
Overview of the Findings

- Multitude of different frameworks used to examine engineering identity and financial need
- Majority of studies employed mixed methods
- Studies investigated a variety of engineering disciplinary contexts
- Literature focus limited
Multitude of different frameworks used to examine engineering identity and financial need

Compendex

- Critical Pedagogy
- Cultural capital
- Feminist Theory
- Intersectionality
- Motivation Theory (3)
- Social Capital
- Student Development Theory (2)
- Value co-creation theory
Majority of studies employed mixed methods

Compendex

- Mixed Methods: 5 (46%)
- Quantitative: 3 (23%)
- Assessment: 2 (13%)
- Qualitative: 1 (18%)
Studies investigated a variety of engineering contexts.
Topical Slide

Student programming

Women of color, women

Traditionally aged college students (18-24)

Undergraduates

Intersectionality – race, gender
Implications: Future Research

- Engineering identity models + finance
- Creative mixed methods; qual
- Pre-engineering; subdisciplines
- Settings and populations
Implications: Policy & Practice

- Considering identity and financial need
- Engineering as an identity process
- Contextualizing by sub-discipline
- Understanding factors of identity for students with financial need
QUESTIONS?

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