students’ changing images of engineering & engineers

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engineering images

• images - narrative representations that students develop of engineering

• engineering as a science
  – (e.g., mathematics, engineering design processes)

• engineering as an occupation
  – (e.g., good communication skills, teamwork)
image of a good engineer

• later year responses take on a more realistic understanding
• not just engineering as a science, but engineering as an occupation
image of a good engineer cont’d

and there are a lot of qualities that are not necessarily, um, not necessarily emphasized in engineering curriculum that I think are becoming more emphasized as you see curriculums changing, which are your, you know, your non-engineering type of things. You know, not your problem-solving but your presentation. You know, not your mathematical ability but your ability to work as part of a team. (Darrell, SPRI, Year 3)
images of engineering work & the engineering workplace

• *Um, I could also see myself working in a lab trying to, you know, invent the best catalyst for whatever.* (Erica, LPUB, Year 2).

• students evaluated the work they do in classes and internships.
At first, probably, you know, some drafting, some busy work. Hopefully as time goes on, more designing and more decision-making, um, kind of overall planning stuff, because that’s what I really like doing, the planning and problem-solving rather than the actual, you know, implementation. (Steve, SPRI, Year 3)
institution specific images

• Large Public University (LPUB)
  – creativity & efficiency in design
• Technical Public University (TPUB)
  – ethics and teamwork
• Suburban Private University (SPRI )
  – great expectations
• Urban Private University (UPRI )
  – engineering for the social good
reconciliation work

• reconciliation work
  – narrative repair where some students augmented their narrative identity
• Adam at LPUB and mathematics in design
• Gabrielle at TPUB and group work
discussion & implications

• images are both a hindrance and an aid
  – do not reflect reality and can have a negative impact on identity
  – offer something to aspire to (e.g., to be efficient and ethical in design, do engineering for the social good) and when positive impact the field
  – not all students will work in design
  – great expectations

• How do we help students be advocates for change in the profession?