Jenni Case
Centre for Research in Engineering Education
Department of Chemical Engineering
University of Cape Town (UCT)
jenni.case@uct.ac.za

Adjusting the lens knowledge, capability and self-authorship in graduate narratives

Photo: Silindile Mhlongo
What this talk is about

- student learning in HE, outcomes of HE
- researching student learning, graduateness
- researching the social world
- using theory
- using methodology
- trying to make some sense
- trying to build knowledge
Who’s here?

Go to www.govote.at and use the code 95 07 24
The problem with ‘common sense’

Example: motivation as a causal influence on learning outcomes... how does it work?

1. Common sense ideas on motivation & learning
2. Create a questionnaire and find a correlation between those who tick statements which describe them as motivated and those who get good results
3. Voila! A student learning theory
The most important things you need

1. To tell that what you are talking about are real entities
2. To have a model of causality that is not direct and linear
3. To have a model of how the past influences the present
4. To have a complex model of human agency
5. To be able to account for a very fast changing contemporary context
6. To have a theory of knowledge

Therefore... (speaking esp to PhD students)

• This is the only reason you need theory
• You are most probably going to go to social theory of some sort
• You might need a passing acquaintance with philosophy
• You need to get reading
• But remember that what you are actually needing this for is because you are doing research
MAJOR caveat

If all you have is a hammer, everything looks like a nail

Abraham Maslow, 1996
The case study

Early 2000s
3rd year chemical engineering class at UCT
Participant observation during one core course
Two interviews with 36 students (out of class of 45)

10 years on
Follow up telephonic interviews with 30 of the 36 originally interviewed

<table>
<thead>
<tr>
<th>Gender</th>
<th>African</th>
<th>coloured</th>
<th>Indian</th>
<th>white</th>
<th>Internat</th>
</tr>
</thead>
<tbody>
<tr>
<td>male</td>
<td>49%</td>
<td>3%</td>
<td>3%</td>
<td>31%</td>
<td>14%</td>
</tr>
<tr>
<td>female</td>
<td>40%</td>
<td>3%</td>
<td>3%</td>
<td>31%</td>
<td>14%</td>
</tr>
</tbody>
</table>

male: 60%  female: 40%
Confessions of a miner – 2002 dataset

With 2011-13 follow up interviews

Knowledge

• ‘Reclaiming knowledge...’ (Muller)
  ‘Bringing knowledge back in...’ (Young)
• When did we lose knowledge?
  A short history...

analysis

• Knowledge acquisition manifested as:
  – Confidence
  – Engineering approach to problem-solving
  – Working independently & responsibly
  – Ability to learn new knowledge

• (Limited reference to actual content of engineering degree)
Capabilities

• “what people value being and doing, and to work to increase their freedom to be in those ways or to do those things in terms of living lives they regard as good”

analysis

• Capabilities manifested as
  – Being an engineer
  – Locating career in bigger life decisions
  – Locating engineering within the broader societal/environmental context

• cf. to Walker & McLean 2013
  – Knowledge & skills
  – Assurance and confidence
  – Resilience
  – (Limited informed vision & affiliation)
Self-authorship

• ‘shift in meaning-making capacity from outside the self to inside the self’

• domains
  – Cognitive
  – Intrapersonal
  – Interpersonal

analysis

• Self-authorship basically identifiable in all (30) graduate interviews
  – Distinct ways in which the degree formed them and which defines their current identity
• More elaborate manifestations of self-authorship in 9 interviews
  – Non-traditional career routes (4 graduates)
  – Traditional engineering corporate jobs yet expressing a voice (5 graduates)
Lens comparisons (my view)

• Knowledge acquisition in itself a limited conceptualisation of graduateness
• Capabilities too broad and insufficiently linked to distinct HE experience
• Self-authorship lacking an explanation of the interplay between structure & culture
• BUT bring these into a broader social realist conceptualisation of the formation of agency... more on Thursday!
Discussion