



Becoming an Engineer

What *does* it take to succeed?

Jo Devine

Faculty of Engineering & Surveying

University of Southern Queensland, Toowoomba

Traditional Engineering Students:

Full time, school leaver, professional parent(s), upper middle class, On-campus, Male

- Trend towards greater diversity
- But are HE institutions prepared?

Background



- More than 50% struggle with first year engineering
- Non-traditional students are high risk in terms of progression & retention
- USQ has many non-traditional students

USQ's Engineering cohort



- Programs: BEng, BEngTech & AD
- On-campus / External
- Full time / Part Time
- School Leaver & Mature Age
 - Trade qualified
 - Working in the industry

Not too many 'Dilberts'!



Stereotype engineer

- Socially inept
- Fascination with mechanical & electrical objects
- Positivist approach to work and life

Retention & Progression

■ Success Factors

- Integration
- Prior academic achievement
- Self-efficacy & optimism

■ Barriers to success – non trad students

- ‘Culture shock’
- Home environment / support
- Competing responsibilities

Demographics & Academic Outcomes Established 'Risk Factors':

- Part Time studies / work
- Distance mode
- Rural / regional background
- Mature age
- First in family
- Poor high school results
- Low socio-economic background
- International / English as second language

The focus of this study



- Some non-traditional students shine!
 - These are the exceptions
- Explore their educational journeys
- Document their experiences and perceptions

Research Question



What issues or factors do successful, non-traditional students identify as important to their academic success?

- Qualitative phenomenological study with a naturalistic approach
- Semi – structured interviews to collect narrative reflections
- Data will be analysed to identify themes & key issues

USQ has many non-traditional students, many have multiple 'risk factors'

- Understanding of key issues that influence academic outcomes
- Inform development of appropriate
 - systems,
 - programs &
 - methodologies