When will I ever use that?

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Modelling at SHU

- Strong modelling and employability focus throughout degree
- Modelling 1 core module in first year
- 100 students
- 1 lecture + 1 tutorial for each student
- Applying models to different situations (e.g. rocket flight, population growth, great lakes, management science)
Project outline

- Funding to bring in 3 speakers during 1 lecture
- 3 x 10 minute talk + 5 min questions
- Use of models in industry
  - Banking (credit risk)
  - Chemistry research
  - Transport Engineering
- Tutorials used Socrative quiz to discuss the talks and relevance to modelling module
Rationale

- Quotes from students
  - ‘I have never done maths like it before’
  - ‘Not clearly understood what modelling is exactly’
  - ‘Am yet to understand the concept behind it’

- Grove (2012) students have little or no experience of mathematical modelling

- To allow students to see where models are used in industry in a variety of applications

Rationale

• Transferable skills
  • Less tangible, building up a skills set

• Value of the skill set
  • Skills used by all speakers in different context

• Dealing with uncertainty
  • ‘prefer things with one fixed answer’
In practice

- Getting speakers

- Experience of speakers
  - Varied
  - Superficial coverage

- 2 speakers also attended tutorials for informal discussions

- Overall successful
Speaker feedback

• Positive

• Enjoyed the experience

• Felt informal discussions easier platform to get across the ins and outs of the job

• More able to answer questions in tutorials as students more willing to ask questions
Student feedback - Socrative

• What was the key benefit from today?

• Modelling
  • ‘looking at how models can be created’
  • ‘learning the real life application of modelling’
  • ‘made me think about modelling’
  • ‘it was beneficial to see how modelling relates to real life and how it can be used to work out many things.’
  • ‘Hearing about mathematics in practical situations, especially banking’
Student feedback - Socrative

- What was the key benefit from today?
- Employability
  - ‘Talking to the guest speakers in the tutorial and seeing how they use maths within their profession’
  - ‘New ideas career wise’
  - ‘good to talk to people with jobs etc. good to see some applications’
  - ‘the bank was really interesting for placement year and jobs’
Student feedback - logbooks

- Generally positive
- Modelling skills
  - ‘some time to reflect on the module’
- Employability
  - ‘VERY helpful... tutorial was particularly helpful as I got the opportunity to talk to these people 1 to 1. So THANK You’
  - ‘showed me some areas I could go into’
  - ‘I found the transport modeller quite interesting as I hadn't even realised that the job existed’
  - ‘made me reconsider what I wish to do in the future’
  - ‘it was very helpful and insightful’
Student feedback - Socrative
SHUMaths community

- 'She was a previous student so we can see the job she went into after graduating'
Student feedback - structure

- Key benefits
  - 'Meeting the speakers on a more personal level'
  - 'Talking to the guest speakers in the tutorial'

- Improvements
  - More variety
  - Maybe more specific to the course
Future Plans

• Teaching Enhancement Funding 2015-16
• More opportunity for informal discussion with speakers
• More guidance for speakers
  • Make our aims clearer
  • One example of developing a problem
  • How they deal with uncertainty and making assumptions
• Structured discussion to highlight transferable skills