Best Practices in Teaching

Dr Lindsey Corson
University of Strathclyde

Retreat for Women in Applied Mathematics

8th January 2024

About me

BSc Hons Mathematics (2003 – 2007)

University of Strathclyde

MS Meteorology (2007 – 2008)

The Pennsylvania State University

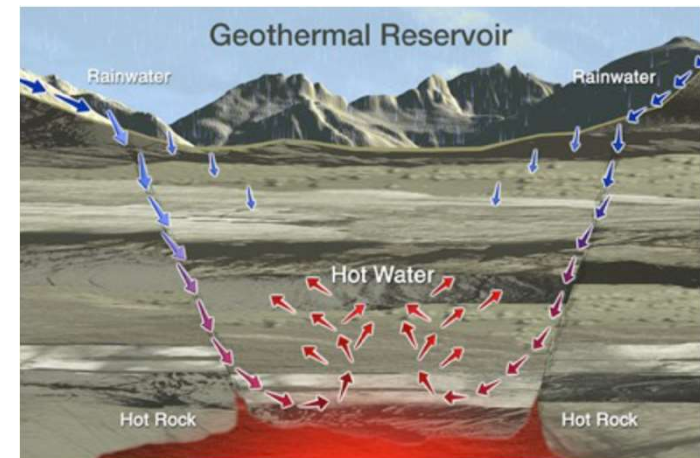Teaching Associate: Meteorology for non-Science majors

PhD Mathematics (2009 – 2012)

University of Strathclyde

Tutoring UG service classes (maths for engineers)

The weather wall at Penn State

PhD looking at convection in porous media

About me

Research Associate (2012 – 2015)

Mathematics, Strathclyde

Tutoring UG classes, lectured Y1 Maths for Engineers

Research Associate (2015 – 2018)

Civil & Environmental Engineering, Strathclyde

Tutoring UG classes, lectured Y3 Maths for Civil Engineers (focus on applications)

Teaching Associate, then Teaching Fellow (2018 –)

Mathematics, Strathclyde (fixed term until 2020, Teaching Fellow 2022)

Module lead, supervising student projects, Year Adviser, supporting junior members of staff, serving on teaching related committees and Faculty Exam Boards...

2019: Fellow of the Higher Education Academy

Drops and electric fields

Mathematician does field work!

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Maternity Leave July 2017 – June 2018

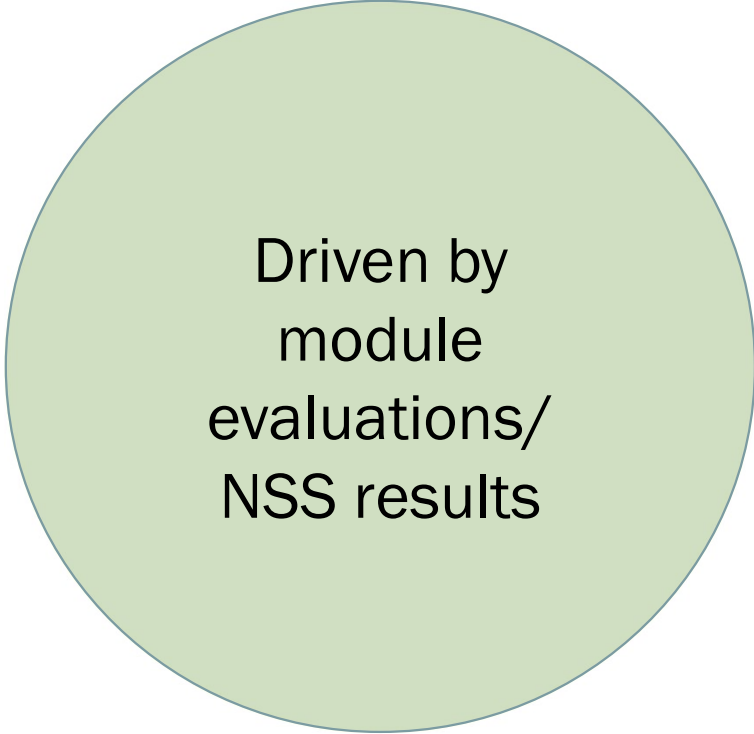

Maternity Leave Jan 2020 – Jan 2021

What are best practices in teaching?
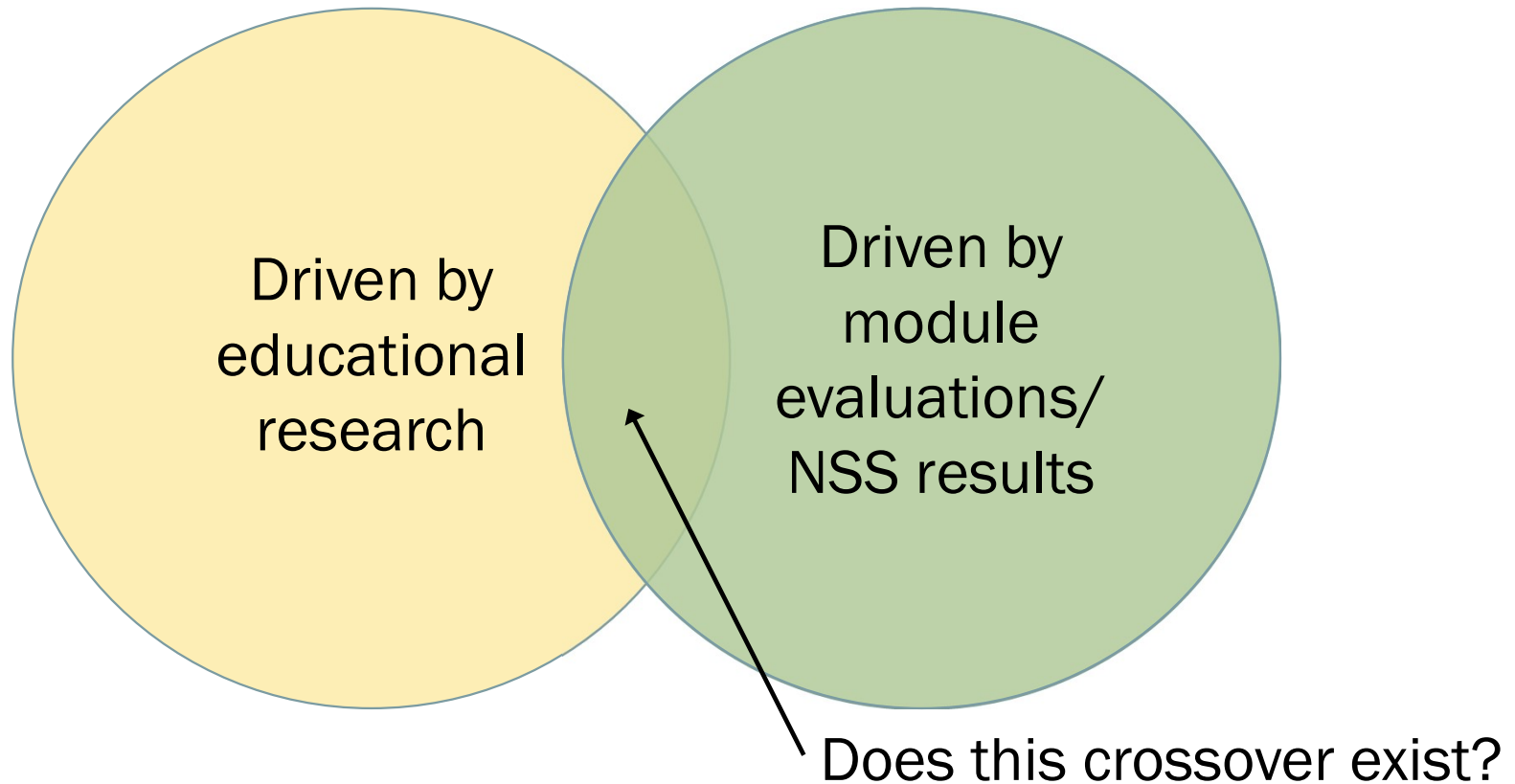
Driven by educational research

Driven by module evaluations/ NSS results

What are best practices in teaching?

Driven by educational research

Driven by module evaluations/ NSS results

Does this crossover exist?

Question 1

What material to release and when?

Student opinion

"Please upload the notes before the lectures. I understand why you wouldn't want to however it is of great detriment to the learning experience. I (and many others I'm sure) find lectures far more effective if we have the ability to look over the notes beforehand or even better copy them in. This gives us an opportunity to sit and listen to what the lecturer has to say, rather than furiously scribbling down slides that move too quickly, leaving us with more work after the lecture to try and catch up."

What is best practice?

- A set of lecture notes was available to the students from the start of the course.

- What do students consider to be "the notes"? In this case, it was the lecture slides rather than the pdf notes. Not as I intended!

- Is it too confusing for students to have a set of notes and complementary slides?

- Is there a good timing for release of notes and/or slides?

Question 2

Model solutions for exam past papers: yes or no? Why?

Student opinion

- The general consensus is that students at Strathclyde (at least!) like having access to full worked solutions for past exam papers

- Skeleton solutions or final answers aren't enough.

- Unhappy if there isn't consistency across all classes

What is best practice?

- Should we release full worked solutions to past papers?

- If we do, how do we discourage students from learning/memorising past paper solutions? Should we be discouraging this?

- If we don't, what do we release? How do we explain our decisions to the students?

- Is releasing full worked solutions the easy option (I've found it means fewer emails asking questions)?

Question 3

Feedback: what and when?

Student opinion

"Getting a chance for feedback with the assignments is the best part."

"Given the nature of Linear Algebra, receiving weekly feedback on a set of solutions is incredibly useful. The feedback I have always gotten from my tutor/lecturer has been useful and I have focused on fixing any errors in my solutions to various problems in the future, this helps me not only prepare for the mid semester class test but also the exam in December."

"I have not received sufficient feedback and feel like I am struggling to understand the class"

What is best practice?

- Make it clear to students at the beginning of a semester how often and what type of feedback they will receive (e.g. verbal feedback during tutorials, written feedback on homework, immediate feedback on quizzes etc)

- Offer the opportunity to discuss any feedback comments on written work

- Are optional weekly homework submissions too much? Engagement dropped to ~15%

- What is good feedback? Is there such a thing as too much feedback?

Conclusions?