University of Edinburgh
Learning and Teaching Conference

Preparing students for dealing with wicked problems

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#uoeltconf18

Thanks!

❖ Principal's Teaching Award Scheme

❖ The University of Edinburgh Development Trust

❖ Our participants

❖ Project team

Research project:
Preparing students for wicked problems

How do staff members in the University facilitate the development of their students' capabilities to handle wicked problems?
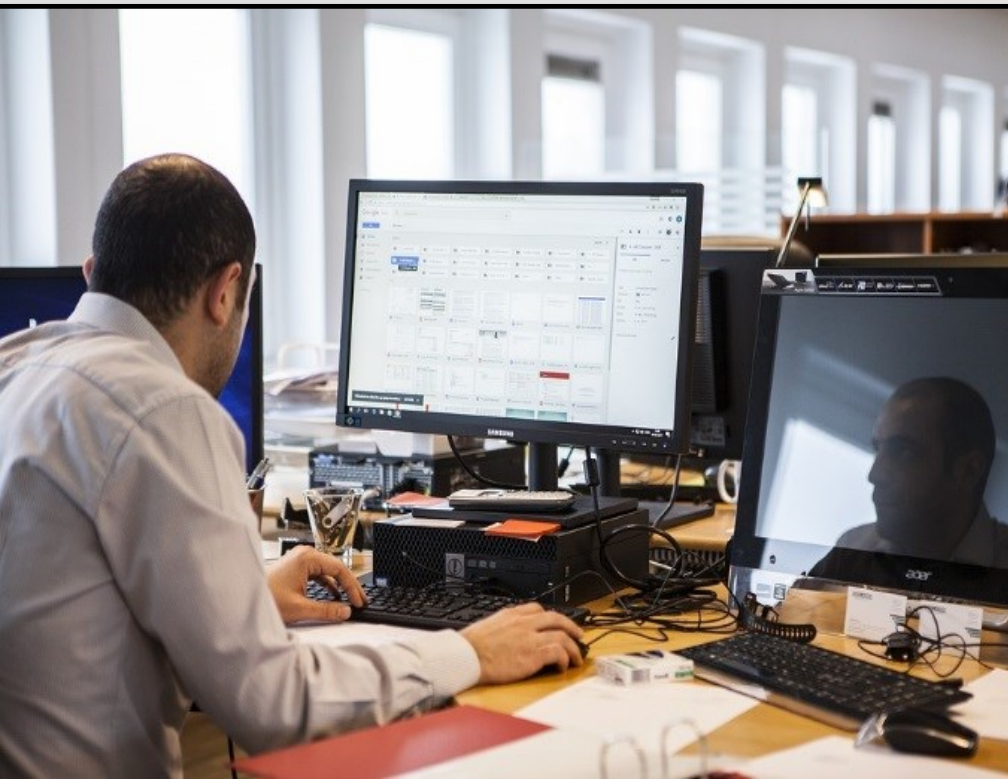
❖ Which capabilities do the teachers aim to develop in their students?

❖ What do they do as teachers to facilitate this development?

Research project:
Preparing students for wicked problems

- ❖ 30 academic staff members
- ❖ Semi-structured interviews
- ❖ Ethnographic data in:
  - ■ virtual settings & online resources used by participants for learning about teaching
  - ■ virtual learning environments that teachers used for their courses

DANGER
RADIOACTIVE
MATERIALS

WELCOME ASYLUM SEEKERS AND REFUGEES

Wicked problems are…

…messy real-world problems which cannot be fully defined. They have no single right solution, have a dynamic and uncertain character, involve incomplete and often contradictory information, are interconnected with other complex problems, require imaginative interdisciplinary problem solving, and bring together multiple stakeholders with diverse perspectives.

Uncertainty competences

'Uncertainty competences' is an umbrella term referring to skills, strategies, knowledge, attitudes and capabilities needed to handle uncertainty, ambiguity and complexity (Tauritz, 2016)

Examples of uncertainty competences from the literature

Being able to...

❖ understand people with different perspectives

❖ work in teams with mixed knowledge, skills and experience

❖ formulate a plan of action to deal with uncertainty

❖ prioritise among many urgent issues

Activity

What competences, skills or attributes do your students need?

Uncertainty competences staff members find important

❖ Generic skills

❖ Understanding multiple perspectives

❖ Curiosity

❖ Understanding that there are no black & white answers

❖ Understand the complexity of wicked problems

❖ Willingness to accept one is complicit in wicked problems

❖ Capacity to apply theory to wicked problems

❖ Willingness for ongoing engagement with wicked problems

Uncertainty competences staff members find important

*it's about seeing **different perspectives**. About seeing why different **stakeholders** with different **vested interests** are coming at things from a particular angle and what that means in terms of their short, medium and long term? Or what that might mean in terms of what might be behavioural outcomes that are possible in the short, medium and long term?* SFAHSS15012018

*engineers and some scientists, they like the idea of optimising – this must be an "optimal" solution here and actually one of the things that we are teaching is that, that's the wrong way to think about it because **you can't actually come up with an optimum** […]. people are very **messy and complex** and hence the whole subject is infused with **diversity, polarity** […] So you can't just simply reduce that to "optimum" […] people that haven't done the social sciences, it takes quite a long time to try to get them to think like that.* FPCSE30012018

How do staff members facilitate the development of uncertainty competences?

Inviting uncertainty into the teaching process may provide the conditions under which students can safely develop these competences

How do staff members facilitate uncertainty competence development?

❖ Select controversial topics, that students can relate to

❖ Expose students to multiple perspectives

❖ Being authentic & sharing personal experience with uncertainty

❖ Modelling congruent values

❖ Creating authentic learning and assessment experiences

❖ Helping students feel they can make a difference

❖ Helping students reflect on their beliefs about wicked problems

How do staff members facilitate uncertainty competence development?

*what we hope to do is **connect** with some of **our partners** in the global south so that we can **skype** [name of country] or involve people in some way which is perhaps less technologically risky in **videos** or something like that so that we can really bring a sense of the **perspectives** of people in [name of country] dealing with the [wicked problem]* SDMVM17112017

*I would not always manage my waste perfectly, you know – or you might think, you know my carbon footprint in terms of flying may make me uncomfortable … so there's lots, so you might bring in your own **personal stories** in getting people to think about it **in their own lives** […]* SFAHSS15012018

How do staff members facilitate uncertainty competence development?

*the idea is that with **group work** […] maybe some are maybe more quantitative, some are more qualitative, some are more into [one aspect of this subject], some are into [another aspect of this subject] – so they come together to use that expertise, **different expertise** to **help each other** and that's how real world [wicked problems work]– that's how it's kind of **interdisciplinary** so you bring your expertise together to form a group and use that expertise to try to **solve the challenge** that has been put before you.* SEMVM21112017

Questions and comments

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References

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