



PTAS Project Report

How do our teachers prepare their students to face *wicked* problems?

Type A: Research Project

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For dissemination materials and publications see: <http://www.wickedproblems.ed.ac.uk/>

This project focused on how teachers in this University prepare students to deal with *wicked problems* in their future lives. *Wicked problems* are messy and cannot be fully defined. They have no single obvious solution, require imaginative interdisciplinary problem solving, and bring together multiple stakeholders with diverse perspectives. *Wicked problems* include climate change, poverty and conflict. The capabilities required to respond effectively to *wicked problems* are increasingly important in a world where ways of knowing are contested and students' future roles in knowledge economies are unpredictable.

We collected qualitative data across three Colleges of the University through semi-structured in-depth interviews with 35 teachers and by using techniques from virtual ethnography. We continue to analyse the data but some of our main findings to date are as set out below.

Learning for wicked problems: Our participants had rich ideas about what students might need to learn in order to be prepared for wicked problems. These included learning to work well between different academic disciplines and being open to their different ways of knowing. Related to this, our participants told us how important it was for students to learn to work with diverse stakeholders in respectful and participative ways. Another focus was on students learning to accept the complexity, messiness and uncertainty of wicked problems and developing strategies to work with this. This was related to the 'uncertainty competences' the teachers hoped students might acquire which included:

- Capacity to think through intended and unintended consequences;
- Ability to go against the (social and political) flow;



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- Being able to use uncertainty as a catalyst for creative action.

Building on this, the teachers we spoke with discussed the importance of students developing their ways of being and doing, not just their knowledge and understanding. They hoped students would become, for example, more politically aware or more willing to take responsibility for acting on wicked problems.

Teaching for wicked problems: Some of the teaching strategies used by our participants to prepare students for wicked problems included:

- Selecting controversial topics that students could relate to;
- Exposing students to multiple perspectives on wicked problems;
- Being authentic in sharing their own concerns and personal experiences with uncertainty;
- Modelling congruent values;
- Creating learning experiences which focused on messy real-world problems.

Curricula for wicked problems: Our findings, taken together with the wider literature, offer directions for higher education curricula that can prepare students for wicked problems. Such curricula would have a broad perspective on learning encompassing: knowing and understanding; being and becoming; creating, communicating and doing. The communities collaborating to create these curricula would extend beyond single academic disciplines, perhaps including: charities; students and alumni; several academic disciplines; businesses; people experiencing the consequences of wicked problems; and more. The curricula would have characteristics that might include being: dialogic; participatory; research-informed; authentic; contemplative; flexible; interactive and experimental. It is key for teachers to bear in mind the importance of striking a balance between students being challenged and well supported. Attention needs to be paid, not only to the cognitive and skills development, but also reflecting on the values and feelings of the students.

These findings are relevant to enhancing student learning across all three Colleges and also to programme development in the Edinburgh Futures Institute.

Dissemination

So far we have used the findings to give a presentation at the University's Learning and Teaching Conference in 2018 and to run two well-attended and well-received IAD workshops in 2019. We plan to run at least one further workshop in 2020. We have had several discussions with colleagues in the Edinburgh Futures Institute about how our findings can support programme development. We have also shared the findings with colleagues at two events on (post) digital course design. In addition, we have created a blog with contributions from our research team as well as international guest writers, to continue dissemination and discussion of our findings (<http://www.wickedproblems.ed.ac.uk/>). On this blog page, colleagues within and beyond the University can sign up to a mailing list to be kept informed of our work in this area and to share



ideas. We have three publications in preparation from the project and will post details on the blog site.

Financial statement (please delete as appropriate):

This project had remaining funds unused but our finance administrator has returned the balance. The Principal Investigator or School Administrator appropriate can provide financial statements showing the funding usage as and when required by the UoE Development Trusts who may require it for auditing purposes.