Utilising the Teaching Tricky Topic Process to Identify and Address Student Misunderstandings Across Three OU Modules

Project Team: Elizabeth FitzGerald, Jo Iacovides, Rob Janes, Elaine Moore (Project Leaders & Module Chairs), Anne Pike (Tricky Topic specialist), Lesley Boyd (PhD researcher), June Barrow-Green and Thea Herodotou (Module Chairs), ALs from S215, MST124 and H800

START HERE

Q1: What's the project all about?

Working within learning networks we identified potential Tricky Topics – conceptual problems our students are facing which act as barriers to learning, and put in place interventions to address the stumbling blocks.

Q2: Who's been involved so far?

Associate Lecturers, Module Teams, the Tricky Topics project team, STEM faculty and representatives from LTI.

The Open University

Q3: When has all this been happening?

As part of a funded eSTEeM project, since February 2017.

Q4: Why did we do it?

To collaboratively learn together about Tricky Topics and develop a process for assuring a joint understanding between those that teach the students (ALs), those who develop the learning resources and activities (Central Academics) and those that support solutions (LTI). This will help us to:

- Improve student retention and satisfaction (KPIs and SEaM data)
- Develop students' deeper understanding of difficult concepts
- Investigate practicalities of systematically embedding the Tricky Topic process within current OU module presentation and production.

Q5: Where is this research taking place?

The project is focussed on 3 modules:

- MST124 Essential mathematics
- S215 Chemistry: essential concepts
- H800 Technology-enhanced learning practices and debates.

H800, which is being rewritten to become H880, was chosen as a non-STEM module.

Q6: How is it being done?

ALs were asked for their views, insights and experience on student Tricky Topics within a dedicated VLE website, called a learning network, for each module. This allowed them to identify issues together before an online or face-to-face Tricky Topics workshop, in which they completed Tricky Topics 'structure charts' on jointly agreed topics. These topics formed the basis for possible intervention in the module.

Q7: Any early results?

There are some early results in S215:

- Four new videos covering Tricky Topics have been produced for students, with two of the ALs involved in the workshop (Dr Neville Reed and Dr Catherine Halliwell) and the Module Team
- Novel video narrative proposed by ALs: discussing "this is where my students have struggled" and "here's how I've helped students get to grips with these concepts"
- Videos produced in Open Science Laboratories – produced by Dr Kate Bradshaw
- The videos now form part of the preparatory materials on the S215 module website

Q8: What's the next steps?

End of module and eSTEeM evaluation.
Involving ALs in issues regarding module design.
Applying lessons learned to other modules.

eSTEeM
The OU centre for STEM pedagogy

We gratefully acknowledge the input of the following colleagues in this project: Clare Turner, Tom Olney (STEM), Anne Adams, Rebecca Ferguson, Rebecca Galley (LTI). Permission to use the video image has been granted by Dr Neville Reed and Dr Catherine Halliwell.