

## Learning Models and Understanding Economic Modelling

Evidence collected in the 'embedding threshold concepts' project has supported the view that at first year undergraduate level it is crucial to develop students' understanding of economic modelling. Without this, students cannot progress to an understanding of threshold concepts.

The data have included:

- Interview evidence that suggested that many students, when first introduced to the graphical representations used in introductory economics, see them as fixed pictures of the world, rather than procedures to use to analyse change in terms of movement between equilibria. These students felt that they were being asked to 'learn models' during their first year of undergraduate study, but what they needed was to 'learn modelling'.
- Recordings of discussion of problem-based exercises in class found that students did not appreciate that identifying what model to apply was crucial in progressing to 'thinking like an economist'.
- The analysis of examination scripts identified specific difficulties encountered by students in one area - the understanding of a simple model of national income determination (and in particular the multiplier). In answers, students did not express how changes in injections and withdrawals involve a self-equilibrating process; many expressed the idea of a linear process, some referring to a single step in the process and others suggesting 'knock-on' effects.



The model of the development of a 'threshold concept' that we have suggested identifies understanding of modelling concepts - such as equilibrium - as critical. Our data suggest that making the modelling process more explicit in teaching may help in improving student understanding.

*The project is led by Staffordshire University and our partners are Coventry University, Durham University and the University of the West of England. The transferability phase of this project is concerned with embedding threshold concepts in business and management courses, both at undergraduate and MBA level.*

*The funding is by the Higher Education Funding Council for England (HEFCE) and the Department for Employment and Learning (DEL) under the Fund for the Development of Teaching and Learning.*

The ETC project has extended the identification of threshold concepts in economics and assessed ways of embedding these in the first year curriculum for both specialists and non-specialists.



# Website News

*This section highlights the main recent additions to the website.*

The following additions will be available on our updated website during September:

\* *New problem-focused microeconomics exercises*

'Rain affects play' uses demand and supply in the setting of the poor recent performance of the brewing industry, emphasising the role of equilibrium and the role of incentives provided by prices and profits.

'Is binge drinking an economic problem?' considers the welfare effects when markets provide incorrect incentives given externalities, stressing the use of economic models in analysing such situations.

These exercises have been designed for use on business and other non-specialist courses as well as for specialist economics students.

\* *Updated macroeconomics exercises*

We made small revisions to our macroeconomics tasks to take into account student difficulties with economic modelling identified by our analysis of examination papers and recordings of class group work.

## Current News and Developments

### Transferability to Business and Management Courses

This year we have worked on the integrating of the threshold concepts approach into the teaching and learning of economics on business and management modules at three institutions. The use of applied problems in our teaching and learning materials led to positive feedback from students on these modules as being 'relevant'. In the activities used, we stress the use of economic modelling, but use simple models only in exposition. Our macroeconomics exercises (available on the website) provide feedback using different models to allow choice of level to match students' background and development.

### Economics Resources

We have joined forces with the other economics FDTL5 projects (Classroom Experiments (FEELE), Mathematics for Economics (ME:TAL) and Applying WinEcon) in providing information about our resources. This dissemination project, centred at Nottingham Trent University, offers a dedicated team to:

- ~ discuss the benefits of each resource and introduce the material to groups of economics staff;
- ~ provide one-to-one telephone tutorials about specific projects;
- ~ provide advice and guidance on incorporating the tools in your teaching.

For more information email: [angela.scott@ntu.ac.uk](mailto:angela.scott@ntu.ac.uk).

### Conferences and Publications

The Second International Conference on Threshold Concepts, 'From theory to Practice' was held at Queen's University Ontario this summer with delegates from 9 countries and 27 disciplines. Economics was well represented with seven papers that considered learning in the discipline.

The current year has seen the publication of an article in *Studies in Higher Education* and two chapters in the book *Threshold Concepts within the Disciplines* (Land, R., Meyer, J.H.F. and Smith, J. (Eds), Rotterdam: Sense Publishers) from the project. A chapter for the Economic Network's series is presently in its finishing stages and we expect this to be available in the autumn.

### Contacting us.....

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<http://www.staffs.ac.uk/thresholdconcepts>