MCQs and Deep Learning: A Possible Fix?

Organizer: **Dr Matteo De Tina** (Dept. of Economics)
Sponsored: **Faculty of Humanities and Social Sciences** (Faculty TDF project)
Date: **Tuesday 9th of May 2017**
Time: **14:00 – 16:00** (including a Q&A session)
Room: **3E 2.1**
Speakers: **Prof Anthony Gardner-Medwin**, University College London (Dept. of Physiology)
   Dr Steve Draper, University of Glasgow (School of Psychology)

Main motivation

That multiple choice questions (MCQs) can only assess students learning at a superficial/notional level appears to be a widely accepted fact. In order to counteract this and make tests more challenging, the temptation is to design tougher (sometimes tricky) questions, to realise only later that this solution tends to increase students dissatisfaction, without achieving the result of testing deeper learning.

The idea to organize a workshop, inviting some of the most prominent experts in the field of e-learning, has been born by discussing with some colleagues in the Department of Economics about what features can make a multiple choice quiz effective and if there are particular ways of designing MCQs to test/enhance deeper learning, without compromising the students' experience.

This idea has led to a successful bid for a Faculty Teaching Development Fund proposal (Summer 2016), which has made the workshop **"MCQs and deep learning: a possible fix?"** a concrete possibility.

Prof Anthony Gardner-Medwin and **Dr Steve Draper**, two of the leading figures in the field of assessment through MCQs in the UK, will join us for the occasion on **Tuesday the 9th of May 2017, starting at 2pm**. In particular, Prof Gardner-Medwin's talk will focus on the advantages of **MCQs with Certainty-Based Marking**, especially in relation to summative assessment; while Dr Draper's talk will focus on the advantages of **Peer-Wise (student-authoring) MCQs**, especially in relation to formative assessment and deep learning.

Some background

Since online Moodle quizzes have been introduced for purposes of formative (and summative) assessment few years ago, there has been much debate on pros and cons of this tool in assessing students effective learning.

The main reason to keep using MCQs year after year consists of a significant reduction in marking time, making it an ideal assessment strategy for large cohorts of students. On the other hand, the opponents of the use of online MCQs often object that it requires a lot of investment upfront (e.g., setting up large question banks) or simply learning how to edit the quiz on Moodle.

As a matter of fact, those who are currently still using multiple choice quizzes as a feedback tool are the ones who did not surrender at the first difficulties/limitations, but tried to innovate, either by randomising the questions (to avoid students cooperation), or by finding out the optimal set of

Moodle quiz options (penalties, duration, feedback, etc.), with the purpose of fine tuning the quizzes to make them more effective.

Although these latter attempts represented a significant improvement in terms of flexibility of Moodle quizzes, some pedagogical questions remain unanswered: is it true that multiple choice quizzes can only test learning at a superficial level? Would it be possible to refine the multiple choice quizzes in order to make them a more effective tool for learning?

The Speakers

Prof Anthony Gardner-Medwin (University College London, Physiology) is an emeritus professor of physiology, with a background in Biophysics, Computational and Experimental Neuroscience. He has introduced many teaching initiatives into the curricula at UCL, particularly using computers to free teachers' time for the face-to-face roles where they are essential. He has focussed for many years on Certainty-Based Marking, to derive maximal advantage from use of objective test questions: to challenge students more effectively in self-tests and to render summative assessments more reliable and better measures of knowledge. [*http://www.tmedwin.net/~ucgbarg/*]

Dr Steve Draper (University of Glasgow, Psychology) has research interests in the theory and practice of higher education, especially technology enhanced learning. His background includes degrees in Physics, Computer Science and Artificial Intelligence. He has teaching interests in positive psychology and his current educational research interests include MOOCs, podcasting, jigsaw classrooms, tweeting in lectures. [*http://www.psy.gla.ac.uk/~steve/*]