



Teaching Earth Sciences as an interdisciplinary subject: Novel module design involving research literature

Vincent C H Tong

Birkbeck, University of London, London, UK (vincent.tong@ucl.ac.uk)

The study of Earth Sciences requires an interdisciplinary approach as it involves understanding scientific knowledge originating from a wide spectrum of research areas. Not only does it include subjects ranging from, for instance, hydrogeology to deep crustal seismology and from climate science to oceanography, but it also has many direct applications in closely related disciplines such as environmental engineering and natural resources management. While research crossing traditional disciplinary boundaries in geosciences is becoming increasingly common, there is only limited integration of interdisciplinary research in the teaching of the subject. Given that the transition from undergraduate education based on subject modules to postgraduate interdisciplinary research is never easy, such integration is a highly desirable pedagogical approach at both undergraduate and postgraduate levels.

My presentation is based on a recent teaching project involving novel design of an undergraduate course. The course is implemented in order to address the synergy between research and teaching (Tong, 2009). This project has been shown to be effective and successful in teaching geosciences undergraduates at the University of London. The module consists of studying core geophysical principles and linking them directly to a selection of recently published research papers in a wide range of interdisciplinary applications.

Research reviewing and reporting techniques are systematically developed, practised and fully integrated into teaching of the core scientific theories. A fully-aligned assignment with a feedback website invites the students to reflect on the scientific knowledge and the study skills related to research literature they have acquired in the course. This teaching project has been recognized by a teaching award (<http://www.clpd.bbk.ac.uk/staff/BETA>).

In this presentation, I will discuss how undergraduate teaching with a focus on research literature in Earth Sciences can be addressed through careful module design with aligned assessments and feedback. By providing an overview of the teaching project, I will highlight the importance of introducing interdisciplinary research at undergraduate levels (Tong, Nature, 2010). Main project outcomes with student feedback will also be assessed and explored for better teaching practices.

References:

Tong, C. H., Let interdisciplinary research begin in undergraduate years, *Nature*, v. 463, p. 157, 2010.

Tong, C. H., Approaching research literature: Module design with Electronic feedback package on written assignment (Project report), 2009. (<http://www.clpd.bbk.ac.uk/staff/BETA/vtong>)