

This event focused on the linkages between research & teaching and the development of research-related graduate attributes such as the skills of enquiry, analysis, synthesis, creativity and objectivity. The day was a combination of presentations of effective practice from Scotland and around the UK, interspersed with opportunities for discussion with bioscience colleagues. We were very pleased to have Professor Alan Jenkins as our keynote speaker. Alan is known internationally for his work in this area and has published extensively on linking teaching and research. The topic of the event reflects one of the current Scottish Enhancement themes but the programme was of interest to colleagues from throughout the UK.

Welcome and Introduction

Alastair Robertson, Higher Education Academy Senior Adviser for Scotland

Briefly, Alastair opened the workshop by outlining the aims of the day, sharing how the HEA's work supports the Research-Teaching Nexus, as well as, mentioning the HEA's work in Scotland. The HEA's aims in Scotland are designed to ensure appropriate delivery for the sector's needs, bring added value to the work of the Quality Enhancement Framework, and to support individual Scottish staff through activities aimed at professional development.

Keynote: Linking Teaching and Research in Disciplines and Departments

Professor Alan Jenkins, Oxford Brookes University

Alan shared his vast knowledge regarding the links between teaching and research through an interactive discussion-based session to examine research in the disciplines and student learning. Through some discipline-based 'speed dating' participants compared two discipline based case studies from outside of the biosciences looking for relevant ideas. Next, participants considered two of the given departmental case studies looking at whether they could inform how bioscience departments reshape teaching /research relations.

Not what to think but how to think: teaching science as a process

Charles Paxton & Morven Shearer, University of St Andrews

Charles discussed ways in which to help students to better understand the process of science and its application and relevancy in life. He shared information illustrating the lack of epistemological skills which would help students evaluate different arguments. At St Andrews an interdisciplinary module (Philosophy, Statistics, Computer Science, Psychology, Geoscience and Biology) was developed to teach basic epistemology, logic, experimental design, illustration of data, science ethics, and a little bit of history of science. He highlighted the success and future goals of the program.

Using data discussion to promote scientific thinking in undergraduates and MSc students

Maria Jackson, University of Glasgow

Two different approaches of working with undergraduates and international post-graduates as a way of modeling scientific thinking were reviewed. Both groups were presented with real data in the format of data from scientists and real case scenarios with the intent of eliciting class discussions. The overall impact on student knowledge and skills was examined.

Discussions on linking teaching and research

Led by Professor Kevan Gartland, Glasgow Caledonian University

Kevan provided a series of questions for the participants to consider and address. A variety of responses were recorded. Throughout the discussions different activities and programs from the participants were shared in small groups and as a whole. Participants also shared other examples of practice that linked teaching and research.

Swapshop

Swapshop sessions provide participants the opportunity to share practices, ideas and resources in a friendly forum. At Napier:

Bioscience student conceptions of experiential learning and the implications for skills development - Kirsty Magnier and Matthew Sharples ([Experiential Learning CETL](#), Plymouth) shared the results from initial research of the effectiveness of fieldwork, labwork and work based learning as pertaining to student skill development.

Undergraduate Research Opportunities Scheme – (Gillian Fraser, [CETL AURS](#) and University of Reading) highlighted the UROP (Undergraduate Research Opportunities) Scheme across the UK and at the University of Reading. The program is supported by the AURS CETL benefiting students in the development of various transferable skills while working on a summer scientific project.

National Journal for Undergraduate Research in Biosciences - Julian Park (University of Reading and Centre for Bioscience) outlined plans for the development of a national undergraduate research journal. Two institutional supported undergraduate research journals were shared, [Biolog-e](#) (University of Leeds) and [Origin](#) (University of Chester). Oxford University Press will host two trial editions of the national journal in an effort to foster its development. Departmental assistance will be needed in order to promote articles from undergraduates.

Other resources

Articles & Publications:

Jenkins A., Healey, M., and Zetter, R. (2007) Linking Teaching and Research in Disciplines and Departments Higher Education Academy: York. Available at http://www.heacademy.ac.uk/assets/York/documents/LinkingTeachingAndResearch_April07.pdf

Sears, H.J and Wood, E.J. (2005) Linking Teaching and Research in the Biosciences, Bioscience Education e-journal volume 5. Available at <http://www.bioscience.heacademy.ac.uk/journal/vol5/beej-5-4.pdf>

Linking Teaching and Research (2002) *Exchange*, 4 Available at <http://www.exchange.ac.uk/files/eissue3.pdf>

Jenkins, A. and Healey (2005) Institutional strategies to link teaching and research. The Higher Education Academy: York Available at http://www.heacademy.ac.uk/assets/York/documents/ourwork/research/Institutional_strategies.pdf

Websites:

The Centre for Bioscience's Linking Teaching and Research web pages
<http://www.bioscience.heacademy.ac.uk:8080/resources/ltrindex.aspx>

The Higher Education Academy's Linking Teaching and Research web pages
<http://www.heacademy.ac.uk/ourwork/research/teaching>

Selected References on Student Experiences of Research including Impact on Their Learning
<http://www.brookes.ac.uk/schools/planning/LTRC/bibliog/bib-student.htm>

All electronic resources accessed 10 August 2007