OPPORTUNITIES FOR HEIs TO SUPPORT 'RESEARCH-INFORMED' TEACHING

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in collaboration with the Higher Education Academy Research and Teaching Forum

"research and teaching are essential and intertwined characteristics of a university"
(Higher Education Research Forum, 2004)

"less research-intensive institutions should be supported in developing a research-informed teaching environment"
(DfES, 2004 *HEFCE Grant Letter*)

HEFCE announced on 6 October that the HEFCE Board, at its meeting in September, had approved: "*additional funding to support teaching informed by research, for 2006-07 and 2007-08, to be allocated in inverse proportion to an institution's research funding*." This is part of HEFCE's Funding for quality enhancement of learning and teaching. The funding being provided by HEFCE will be focused where funds are most needed, to supplement HEFCE's funding for learning and teaching. Not all institutions will receive any of these additional funds, as these will be paid to institutions where research resources limit capacity to develop activity in this area.

This note a) summarises the context to HEFCE's announcement; b) makes some suggestions for promoting the initiative; and c) outlines some student-centred examples for developing a research-informed teaching environment, which could be adapted by other HEIs. It should be of particular relevance to Pro-VCs (Teaching and Learning) and others who have institutional responsibilites for determining the use of the funds. The examples are relevant to all HEIs whether 'more' or 'less research intensive' and whether based in England or not.

THE FORTHCOMING FUND

Following a report by the Higher Education Research Forum on teaching and research relations, over the next two financial years £25m is to be allocated as part of the Teaching Fund. HEFCE have not yet announced how eligible insitutions will obtain their allocation, but it seems likely that they will have to present a short statement to HEFCE as to how they will use the money in line with their Teaching and Learning Strategies to develop research-informed teaching environments. The £25m made available by DfES in the December HEFCE grant letter matches the amount recommended by the Higher Education Research Forum. The money represents a significant shift in government thinking and the recognition that for universities to support honours-level dissertations their students need to learn in a 'research-informed environment' (Annex 1).

PROPOSALS FROM THE HIGHER EDUCATION RESEARCH FORUM

"16. Confirmation of the allocations would best be made dependent on the provision by HEIs of a short, strategic statement (not more than 3 A4 pages) showing how the allocations would be used to sustain *Research-informed Teaching*. Collaborative use of resources could be especially encouraged.

17. Other possible uses to which such an allocation might be put by HEIs are:
- developing the curriculum so that it brings out more fully current or previous research developments in the discipline
- enabling students to appreciate more fully how the core concepts, knowledge and practice of the discipline have developed through research and, thereby, helping students to understand the relationship between research and knowledge
- developing students' research skills through developing or recasting the curriculum so that it is delivered in a more research-like way, for example, by assessing students in ways that reflect research processes in the discipline
- teaching students research methods appropriate to the subjects being studied
- involving students in staff or post-graduate research, for example, by inviting them to staff seminars, disciplinary meetings on networks, and
- having students themselves carry out research supported or directed by academic staff. Enabling students and staff to disseminate the outcomes."
(Higher Education Research Forum, 2004, 4)

EXAMPLES OF SPECIFIC INITIATIVES TO DEVELOP RESEARCH-TEACHING LINKAGES

Below we give some examples of different ways in which a range of institutions in the UK, North America and Australasia promote linkages between research and teaching. Most are adaptable to other institutional cultures.

As the money is being allocated through the Teaching Fund we emphasise in this note those cases where there is a direct benefit to the student learning experience. This supports Elton's (2001, 43) view that there 'may well be a positive link (between research and teaching) under particular conditions.' These he sees less in terms of the outcomes (e.g. published papers of staff), which have been prominent in the research correlations studies, than in the extent to which students learn through some form of student-centred or inquiry-based approach e.g. problem based learning.

We have interpreted this student-centred approach broadly to include examples of where students gain discipline and professional based knowledge, understanding and skills through:
- undertaking research, scholarship and/or consultancy type activities, either on their own or in groups
- being involved in research-related activities, such as running student research conferences and publishing student research journals
- working with staff on research and consultancy projects
- collaborating with students in other institutions on inquiry-based learning projects
- working with communities in their local area, on what would be called in the US the 'scholarship of engagement' (Rice 2003)
- investigating the nature of research, scholarship and consultancy within their insitutions.

We have included some examples of a) subject-based initiatives and b) institution-wide initiatives from a wide range of countries. A list of some Centres for Excellence in Teaching and Learning (CETLS), which focus on inquiry and research-based learning are also included. A key source for further information is the Research and Teaching Symposium (2004).

SUBJECT-BASED INITIATIVES

Bournemouth University: Community-based Project
http://www.gees.ac.uk/pubs/planet/index.htm#PSE5
Environmental students work with a consortium of stakeholders including local authorities, the Environment Agency, water companies, English nature, NGOs, and private businesses on a variety of projects (Shah and Treby, 2003).

Chester University College: Student Research Journal http://www.chester.ac.uk/origin/
Operates an undergraduate journal, called *Origin*, to publish research work completed by students studying biology.

Cornell University: Research in Large Classes
http://ws.cc.stonybrook.edu/Reinventioncenter/spotlight.html;
http://biog-101-104.bio.cornell.edu/BioG101_104/explorations/explorations.html
The 'Explorations Program' introduces biology first year undergraduates to research by Cornell staff but in the context of a course of 700-900 students. Large scale funding has created 100-120 faculty-designed "experiences", each of approximately 3-4 hours, for groups of 6-8 students.

Sheffield Hallam University: Corvey Women Writers on the Web Project
http://www.shu.ac.uk/schools/cs/corvey/
Students research and publish on selected authors from this database.

University of Maryland: Project-based Learning
http://www.gemstone.umd.edu/
This innovative programme (Gemstone) is a four-year research-based enquiry where teams of 10-15 students investigate technological and social issues.

University of Michigan: Arts of Citizenship
(http://sll.stanford.edu/projects/tomprof/newtomprof/postings/222.html)
Arts, humanities and design students learn through community-based research directed by academic staff and community leaders.

University College London: Students Interview Staff about their Research
First-year geography students interview a member of staff about their research as a possible model to link research and teaching in the university (Dwyer, 2001).

INSTITUTION-WIDE INITIATIVES

Anglia Polytechnic University (UK) (http://web.apu.ac.uk/uclt/uclt/fellows.phtml)
An institutional teaching fellowship enabled a librarian to investigate how institutional library policies could better support effective teaching-research links (Garfield, 2005).

Auckland University of Technology: Excellence in Teaching and Research Awards
http://www.aut.ac.nz/staff/office_of_the_vice-chancellor/awards.htm
http://www.aut.ac.nz/resources/staff/vice_chancellor/vicech_excellence_awards04.pdf
These individual and team awards are intended to recognise and reward excellence in both teaching and research, recognising the dynamic interaction of the teaching/research nexus. The Academic Audit process highlights the need for universities to demonstrate the interactive nature of the teaching-research nexus. Having such an award will encourage AUT staff to reflect on and enact this link.

King Alfred's College: Aligning Research with Teaching
http://www.ncteam.ac.uk/resources/project_briefings/lts_publications/ilts.pdf
Case study 6 describes an institution-wide realignment of staff research explicitly to support the curriculum and student learning (now the University of Winchester).

Oxford Brookes University: Implementation of an Institution-wide Policy to Demonstrate Research-teaching Links in the Curriculum
http://www.brookes.ac.uk/publications/bejlt/volume1issue2/perspective/hugginsetal_05.html
In 2002-3 a University-wide requirement agreed for all courses to demonstrate how the 'linkages between research and teaching and learning are realised in the formal curriculum and the wider student experience'. Supported by a team of senior staff and indicative resources.

University of Alberta: Institution-wide Project 'Research Makes Sense to Students'
http://www.uofaweb.ualberta.ca/researchandstudents/nav01.cfm?nav01=19717&
An 'Integrating Teaching and Research Awareness Week' linked to the student orientation week was organised by the Research Office and the Student Guild. Events included seminars and workshops and activites aimed at students, a university-wide audit, and then specific proposals to strengthen teaching-research connections.

University of Calgary (**http://commons.ucalgary.ca/inquiry/**;
http://www.communitiesofinquiry.com/sub/coi_model.html)
The University has an institutional strategy that sees student inquiry as 'core to a research-intensive university'. The e-learning strategy has been reshaped to directly support student inquiry with a focus on developing 'communities of inquiry' using computer conferencing.

University of East Anglia: Students Research Teaching-Research Relations
(http://www.uea.ac.uk/lhi/rltl/)
Working with the Student Union, an educational researcher 'trains' selected students to investigate the student experience of staff research at UEA; and then develops proposals to strengthen research-based teaching (Zamorski, 2002).

University of Maryland: Student Research as Part of Widening Participation Agenda
http://www.hhmi.org/bulletin/may2001/intractable/umbc.html and
www.umbc.edu/Programs/Meyerhoff/Undergrad
Minority undergraduate students - in what is largely a 'white' institution - work with faculty in summer and term research programmes, with the institutional policy aim to increase

'minority' graduates in the sciences (see also this related programme at the University of Missouri http://web.missouri.edu/~gradschl/special/LS-MoAMP/).

University of Sydney: University-wide Partnership Approach http://www.itl.usyd.edu.au/rlt/
This involves a collaboration between educational developers in the Institute for Learning and Teaching and staff in faculties. The aim of the project is to enhance students' learning experiences by progressing the ways in which teaching is informed by research and scholarship at all levels of the University. They are developing both general and discipline-specific strategies to enhance research-led teaching and the scholarship of teaching.

University of Toronto: Awards for Linking Teaching and Research
http://www.alumni.utoronto.ca/events/awards/frye.htm
The Northrop Frye Awards are co-sponsored by the University of Toronto Alumni Association and the provost of the university. Annually one individual faculty member and one department or division are recognized with the award for demonstrating exemplary and innovative ways of linking teaching and research.

University of Victoria, Wellington (New Zealand)
(**http://www.utdc.vuw.ac.nz/excellence/awards2005/**)
Teaching Awards are 'awarded to applicants who demonstrate excellence in integrating their academic research effectively in their teaching, engaging undergraduate students in research, and or carrying out research on teaching and learning in their disciplines' (Angelo and Azmar, 2005).

University of Warwick: Student Research Scholarships
http://www2.warwick.ac.uk/services/cap/curriculum/rbl/urss/
Departments and research centres nominate potential projects which offer good opportunities for students to gain insight into research work.

University of York (UK) http://www.york.ac.uk/felt/gpresource/research&teaching.htm
In 2004 the Forum for the Enhancement of Learning and Teaching initiated surveys into …focused on the inter-relationship of teaching and research. The three objectives of the survey were: to ascertain how teaching is currently informed by research within departments; to determine whether research is ever informed by teaching, either by individuals or as departmental policy; and to collect examples from individuals of the inter-relationship of their teaching and research.

UK Centres for Excellence in Teaching and Learning Related to Inquiry and Research-Based Learning
Over the next five years significant outputs may be expected from these and other CETLs which will support the linkages between teaching and research.
1. University of Gloucestershire, the Centre for Active Learning in Geography, Environment and Related Disciplines (**www.glos.ac.uk/ceal/**)
2. University of Manchester, Centre for Excellence in Enquiry-Based Learning (**http://www.eps.manchester.ac.uk/tlc/sip/enquiry-based-learning/**)
3. University of Oxford Centre for Excellence in Preparing for Academic Practice (**http://www.learning.ox.ac.uk/iaul/CETL+main.asp**)
4. University of Reading Centre for Excellence in Teaching & Learning in Applied Undergraduate Research Skills (**http://www.rdg.ac.uk/cdotl/cetl-aurs/**)
5. University of Sheffield, Centre for Inquiry-based Learning in the Arts and Social Sciences (CILASS) (**http://www.shef.ac.uk/cilass/**)
6. University of Surrey, Surrey Centre for Excellence in Professional Training and Education (SCEPTrE) (**http://portal.surrey.ac.uk/portal/page?_pageid=736,316367&_dad=portal&_schema=PORTAL**)
7. Universities of Warwick and Oxford Brookes, The Reinvention Centre for Undergraduate Research **http://www2.warwick.ac.uk/fac/soc/sociology/research/cetl/**

REFERENCES AND OTHER USEFUL SOURCES

For a select bibliography on linking research and teaching with over 150 references and useful web sites see: **http://www.glos.ac.uk/ceal/resources/litreview.cfm**

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FDTL Project LINK http://www.brookes.ac.uk/schools/planning/LTRC/index.html

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Reinvention Center at Stony Brook, New York http://www.sunysb.edu/Reinventioncenter/index.html

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Annex 1: EXTRACTS FROM RESEARCH FORUM PROPOSALS AND RESPONSE

The UK government set up a group - The Research Forum - to examine teaching and research links in the context of research selectivity (i.e. continuation of the RAE) and in the context of criticisms of a government proposal (2003 White Paper) *The Future of Higher Education* (http://www.dfes.gov.uk/highereducation/hestrategy/) for 'teaching only' universities.

The report by the Research Forum concluded that (extracts)
(http://www.dfes.gov.uk/hegateway/hereform/heresearchforum/index.cfm)

"research and teaching are essential and intertwined characteristics of a university which can be advanced from two perspectives:
- that of the students acquiring a 'higher education', and
- that of the work of academic staff employed in higher education …."

"International experience suggests that there are various ways in which the students' learning experience can be effectively enhanced - ranging from vicarious exposure to the current research of their teachers through to the immediate impact of being researchers (broadly defined) in their own right …"

"… It is becoming clearer that those students who are not learning in an HE environment that is informed by research, and in which it is not possible to access research-related resources, are at a disadvantage compared to those who are …"

The group then proposed a special fund for those outside the research elite to support student learning in a research environment. **"Preliminary estimates indicate that funding level of ca. £25 million would deal adequately with the issue."**

The Minister (for HE) responded (November 2004)
(http://www.dfes.gov.uk/hegateway/hereform/heresearchforum/index.cfm)

"I am aware of the complexity of the issues surrounding teaching and research in particular, and it is to the Forum's credit that it has suggested a way forward."

The Funding Decision from DfES (December 2004)
(http://www.hefce.ac.uk/news/hefce/2004/grantletter/letter.asp)

"The Higher Education Research Forum was set up a year ago under the chairmanship of Sir Graeme Davies, to look into how we could more closely link teaching and research. One of its main proposals was that less research-intensive institutions should be supported in developing a research-informed teaching environment. We support the principle of this proposal and have therefore included in the attached teaching grant figures sums of £2.5/7.5/15 million over the next three financial years for this purpose. We anticipate that HEFCE will allocate these funds according to a formula in inverse proportion to current levels of research funding, and expect the Council to manage this funding in a way which minimises the burden on individual institutions."

HEFCE Email to Higher Education Institutions (October 2005)
(http://www.jiscmail.ac.uk/cgi-bin/webadmin?A1=ind0510&L=admin-hefce)

"HEFCE Board approved … additional funding to support teaching informed by research, for 2006-07 and 2007-08, to be allocated in inverse proportion to an institution's research funding."

The funding being provided by HEFCE will be focused where funds are most needed, to supplement HEFCE's funding for learning and teaching. Not all institutions will receive any of these additional funds, as these will be paid to institutions where research resources limit capacity to develop activity in this area.