

Designing a curriculum that values a research-based approach to student learning

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Purpose

This Guide, one of a series produced by the Imaginative Curriculum Network, provides an introduction to the way a curriculum might be designed to promote the values and ethos of a research-based approach to student learning.

Audiences

The Guide is written primarily for:

- ❑ teachers looking for ways to improve the quality of their students' learning;
- ❑ course leaders/coordinators who lead whole course curriculum design and/or who help other academics to develop the curriculum;
- ❑ staff developers and others who help academics to develop their knowledge and skills about curriculum design, for example, Tutors for PG Cert HE teaching and learning courses;
- ❑ LTSN Subject Centres who are growing disciplinary knowledge of practice.
- ❑ university administrators and others engaged in quality assurance

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Proposition

"Universities need to set as a mission goal the improvement of the nexus between research and teaching.The aim is to increase the circumstances in which teaching and research have occasion to meet", Hattie and Marsh. (1996 p533)

development of knowledge in their disciplinary community. For many academics their view of what is distinctive about higher education is that here there is a close interconnection between staff research and student learning. Yet the texts and discussions on course design generally ignore such concerns; a notable exception is Stark and Lattuca's (1997) discussion of how curriculum design should recognise and 'align with' disciplinary concerns.

Concerns for Research

Staffs' concerns for their research, if it is considered in discussions of pedagogy and course design, is often seen as an obstacle to effective teaching and good course design. Furthermore there is research evidence that a narrow view of 'research' as for example in the UK Research Assessment Exercise, where research is narrowly conceived as high level international 'discovery' research, and is abstracted from any concern for student learning, negatively impacts on staffs' concerns for teaching and can result inside institutions and departments in a structural separation of course design and delivery from staff research. (Jenkins, 2000; McNay, 1999). In my view teaching and research need to be re-shaped so that they connect in a productive way. This requires actions at a whole range of levels from the individual academic to the national system and indeed international disciplinary communities (Jenkins et al, 2002). Such actions need to start at the level of the individual teacher and course team and build on the insights of Brew and Boud (1995 p272) that 'teaching and research are correlated when they are co-

related." One way to achieve this is to 'exploit further the link between teaching and research in the design of courses.' (p272).(emphasis added).

Formulating Design Principles

How might we develop a set of principles that will guide us in designing a curriculum that seeks alignment between the cultures and practices of the teacher-researcher and the learning experiences and processes of students? One approach is to draw on examples of existing good practice.

University College London Case Study

Consider this as a curriculum strategy to connect the cultures and practices of teacher-researchers in a department with the learning experiences and processes of students. In the first term of the undergraduate course all students interview a member of staff about his/her research.

- Each tutorial group is allocated a member of staff who is not their tutor.
- Each tutor gives his/her tutorial group their CV and three pieces of writing which are representative of their work.
- Before the interview students read these materials and develop an interview schedule etc.
- On the basis of their reading and the interview, each student writes a report on a) the objectives of the interviewee's research; b) how that research relates to their earlier studies; c) how the interviewee's research relates to his or her teaching, d) other interests and geography as a whole (Dwyer, 2001, p366).

In my view this is very 'effective practice' for the context of a highly rated research Department. Such an approach expects that every member of staff will be 'research active' at an international level. This of course is not the context of most undergraduate courses elsewhere. Nevertheless, the case study reveals a basic principle 'that the connection between the teaching and the teacher as a researcher and the use of this situation as a rich resource for student learning does not occur incidentally: it needs to be explicitly designed into a course.'

The case study also highlights that the nexus (means of connection) between the teacher as researcher and the curriculum is introduced at an early stage of the course. In many courses this connection is only made at the time students complete their final year dissertation or thesis.

UCL students also learn from the interview with their tutor that teaching staff have commitments and responsibilities to research, and are not just here to teach students. Focus group interviews with undergraduates and postgraduates at Oxford Brookes (Jenkins et al 1998, Lindsay et al 2002) revealed that students were often not aware of staff research, or thought it was some sort of 'affair,' staff did surreptitiously late at night and at weekends. (Although perhaps there is some truth here!).

Curriculum Strategies for Developing Students as Stakeholders in Research

The task facing course teams whose view of 'quality teaching' is one that relates closely to staff research is to make undergraduate students feel that they are stakeholders in the learning through

research enterprise. The UCL case study shows the importance of careful explicit design to achieve that curricula aim. It is also a model that can be adapted to other contexts. I have seen similar courses in health care at Rutgers (New Jersey USA) where undergraduate student teams interview community health care professionals on how their practice explicitly draws on current research. This is a good way of exploring evidence-based professional practice which is central to a large range of undergraduate courses, and many at postgraduate level.

The UCL course is actually based on one devised in c. 1980 at the then Oxford Polytechnic, which then as an institution received little or no money for research. As part of a third year 'reflective' synoptic module integrating their studies in geography, student teams interviewed staff about their research and views about the development of the discipline, and how this had been developed in the courses students had experienced (Cosgrove, 1981).

Designing the Curriculum to Focus on What Students Do

Biggs (1999 and 2002) draws the distinction in any teaching and learning system between what the teacher does to promote students' learning and what the students do to learn.

One limitation of the UCL case study is that it can focus attention on what *staff* do and omit the important dimension of *what students do*. In this context we focus

on the 'scholarship and research' that *students* do in reading the research papers, interviewing the staff and analysing the interviews. For while the research evidence on the value of staff research to student learning is problematic, the benefits to students learning through research and enquiry is not in doubt. The central message for course teams is to *focus on the student experience of appreciating, using and doing research*. Here are brief descriptions of the views of four of the current researchers/scholars in this area, all of which direct us to focus on what *students* do as learners and *how* teachers teach and design courses

Perspectives from Current Research and Scholarship

Ron Barnett (2000, p163), argues that universities need to be reformulated to help students and society deal with 'supercomplexity'. He sees teaching and research as "activities (that) are separate and distinct and are not to confused. However... institutions, but also their students, have a right to expect that their lecturers are engaged in research ...*but the issue is whether lecturers adopt teaching approaches that are likely to foster student experiences that mirror the lecturers' experiences as researchers.*"

Angela Brew (1999, 299) sees "the relationships between teaching and research (as) dynamic and context driven." The contexts include whether research is seen as an objective product or as a process of enquiry, and whether teaching is seen as transmission of what is known or an exploration. "*If researchers recognise the ways in which their activities parallel those of students and take steps to involve students in research-like activities,*

research can inform practice in facilitating learning. (Ibid.298)

Lewis Elton (2001, p43) agrees that there " may well be a positive link (between research and teaching) under particular conditions." These he sees less in terms of the outcomes (eg. published papers by 'research active' staff) than in the extent to which students learn through some form of student-centred or enquiry-based approach.

Marcia Baxter-Magolda (2001) sees involving students in research and research-like activities as supporting them in developing more sophisticated 'ways of knowing' /conceptions of knowledge. In a research study of an intensive undergraduate summer research programme (at the University of Oxford, Ohio), she concluded that students who took part in the research programme became more confident as learners, more capable of thinking independently. Her research suggested that more complex assumptions of knowledge stemmed from participating in a mentored, independent research experience. Baxter Magolda (1999, p9) sees such research as validating what she describes as "constructive development pedagogy ...(in which) *teachers model the process of constructing knowledge in their disciplines, teach that process to students, and give students opportunities to practice and become proficient at it.*"

Guiding Principles for Curriculum Design

The way that course teams seek to apply these research perspectives in curriculum

design will of course vary by staff views and disciplinary concerns. There is no one way of making such effective links and developing courses that support students' understanding of, and ability to 'do' research. Sharing course structures and examples such as the UCL case study, will help course teams and disciplinary communities decide what they consider appropriate . This is a central aim of the project funded through the Generic Centre /LTSN on 'Linking Teaching and Research in the Disciplines. <http://www.brookes.ac.uk/genericlink/> While as educational developers perhaps we have spent too long bemoaning staffs' commitment to their discipline and research : and too little attention to working with those concerns (Healey and Jenkins in press). Our understanding of how to design course to work with these interests is limited. The two models of course design that follow, build on the insights of current pedagogic research on the nexus, but are very much work in progress and will benefit from critical analysis and discussion, and testing out in the disciplinary communities. Such also need to be supported by actions at department level that support staff in developing the teaching and research . Here again we need to share and discuss what is seen as effective practice (Jenkins and Zetter, 2002). But the central argument here, is that there is much that individual staff and course teams can do in the design of course to promote the 'teaching /research nexus.'

MODEL A: Curricula foster the connection between teaching and staff research when students:

- Learn how research within their disciplines leads to knowledge creation.

- Are introduced to current research in their disciplines.
- Learn the methods used to carry out research in their disciplines
- Are motivated to learn through knowledge of and direct involvement in research.
- Carry out research.
- Participate in research conducted by their lecturers .
- Learn and are assessed by methods resembling research procedures in their discipline.
- Learn how research is organised and funded.
- Become members of a School /Department and University culture within which learning, research and scholarship are integrated.

Linking teaching and research is also achieved through

- Teaching staff basing practice and policy on knowledge and learning obtained through research (and reflections on practice).
- Teaching staff use current pedagogic research findings when designing and delivering courses.
- Institutional managers and national policy makers basing policies - including those on teaching-research relations - on the best available research and scholarly evidence.
- And when staff are supported by systems and structures at departmental, institutional, and national level that facilitate scholarship and research in the pedagogy of the disciplines as well as disciplinary scholarship and research.

From Jenkins A , Breen R and Lindsay R (2002) *Re-Shaping Teaching in Higher Education :Linking Teaching and Research*. London , Kogan Page and the Staff and Educational Development Association.

MODEL B : Curriculum strategies for linking teaching and research (and consultancy) at the level of the module/course at undergraduate /postgraduate level

Curricula:

- develop students understanding of the role of research in their discipline;
- bring out current/or previous research developments in the discipline;
- develop student awareness of learning from staff involvement in research;
- develop student understanding of how research is organised and funded in the discipline/institution;
- develop students abilities to carry out research /consultancy in their discipline;
- support students' learning in ways that mirror/support the research/consultancy processes in the discipline;
- assess students in ways that mirror/support the research/consultancy processes in the discipline. For example requiring students to have their work assessed by colleagues according to the house style of a (fictitious) journal before submitting it to you; this mirrors how academic journals use referees to decide on whether an article is to be published;
- provide training in relevant research/consultancy skills/knowledge;
- develop student involvement in staff research/consultancy.

Perhaps, restrict certain research opportunities to selected students? In the USA which has long operated a mass higher education system, only those students with high grades / strong

motivation are involved in research with staff.

Manage student experience of staff research /consultancy

- Limit the negative consequences for students of staff involvement in research/consultancy. Most important here is managing the student experience of the days (and sabbatical terms) when staff are 'away' doing research. At a minimum students need clear information as to when staff are available/away.
- Evaluate/research student experience of research/consultancy and feed that back into the curriculum.
- Support students in making clear to them the employability elements of research and consultancy. This is particularly important for those students whose focus is on using a degree to get employment - and who may not otherwise appreciate the value of a research based approach.

Other strategies you have developed

From Jenkins A , Breen R and Lindsay R (2002) *Re-Shaping Teaching in Higher Education :Linking Teaching and Research*. London , Kogan Page and the Staff and Educational Development Association.

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