

## 7 Steps to: Linking teaching and research in the curriculum

### Overview

Research and teaching represents the core business of Universities. However, these activities are often conceptualised as separate entities, linked only by the academic who undertakes research *and* transmits findings to the student body (Barnett 1990). Pressure to concentrate research funding in the research-intensive universities has motivated renewed interest in the relationship between research and teaching. This has led to a number of commentators outlining the pedagogic advantages of aligning research and teaching and arguing for research-teaching links to be made explicit and nurtured (Healey and Jenkins 2009; Jenkins and Healey 2005). Various ways of linking research and teaching have been identified, usually summarised as follows:

**Research-led teaching** where content is based on staff research interests, there is a focus on research findings rather than on processes and this often (but not always) results in an 'information transmission' style of teaching. **Research-oriented teaching**, where the focus is on understanding the process of knowledge production through the teaching of inquiry skills and the development of a 'research ethos'. **Research tutored teaching**, where students and lecturers engage in critical discussions about research processes and outputs. **Research-based teaching**, where the curriculum is designed around inquiry-based activities rather than acquisition of subject content. In this scenario the traditional division of power between teacher and learner is minimised and replaced by a process of two way interaction of research and teaching (Healey and Jenkins 2009).

Although evidence is mixed (see Hattie and Marsh 1996), the ideal relationship between research and teaching is now commonly described as 'mutually enriching' (Neumann 1992:161). The importance of research for the student experience of HE has resulted in universities placing increased emphasis on addressing research-teaching links. This is evident at Plymouth University through the strategic focus on research as underpinning quality teaching and learning in all disciplines. This guide suggests some practical pointers for how lecturers can embed links between research and teaching into their own practice.

### 1. Review what you already do

Research at Plymouth University (Winter and Cotton 2010) suggests that academics intuitively use research to enhance their teaching but that this happens in different ways. Some academics make links primarily through **research-led** teaching by using research outputs to inform student learning. However, Brew and Boud (1995:261) argue that the common denominator of research and teaching is the 'act of learning' emphasising the value of the research process (**research-based teaching**) as a vehicle for student learning. This suggests that academics may benefit from reviewing the way in which they currently embed research-teaching links and looking for different approaches.

**Practical pointer: Undertake an audit of research-teaching links in your module or programme. If you are using mostly one kind of approach, see if you can vary this. Read key texts or case studies from your discipline to develop further ideas (Healey and Jenkins 2009).**

### 2. Teach research methods using real data

A research-orientated approach where students learn about research methods promotes students' ability to understand the research process, to critique research outputs and is an important vehicle in the development of critical thinking. These skills have become increasingly relevant with the emergence of the 'information society'. 'In what might be termed the commodification of knowledge, how knowledge is managed, synthesised and adapted becomes as important as the knowledge itself' (Jenkins and Zetter 2003:11). However, research demonstrates that students find learning how to use research methods challenging and fail to see how research methods are relevant to their future career paths (Murnotun 2005).

**Practical pointer: Use genuine research questions and real data to increase perceived relevance to students. Introduce real life scenarios and ask students to propose and critique research questions to develop an understanding of what constitutes an effective question. Get them to collect small amounts of data themselves, involve them in a current research project by providing data you have collected for them to analyse, or develop a longitudinal data-set that is added to each year.**

### 3. Get students talking about research

Arguably, students have mostly consumed research outputs through reading texts which have informed and developed their understanding of the discipline. However, social constructivist perspectives on pedagogy maintain there is a value in students developing their understanding of research through discussion with peers and/or with a tutor (**research-tutored teaching**) (Brookfield 1995).

**Practical pointer: Make use of small tutor groups for students to discuss papers in depth with the lecturer as the guide; online discussion where students read papers and provide summaries to their peer group; student working in groups to evaluate a body of literature, discussing the merits of different theoretical and methodological approaches; mini-conferences and seminars which offer valuable opportunities for students to share ideas about research.**

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## 4. Utilise problem-based and project-based learning

Most undergraduate programmes require that students undertake a research project, for example through the capstone year dissertation; however, there is evidence that learning situated within a research framework promotes active and experiential learning, problem-solving and critical thinking (Jenkins and Zetter 2003). This has led to calls for a research-based curriculum as the blueprint for HE at all levels (Healey 2005).

**Practical pointer: Introduce opportunities for students to complete research projects throughout their degree programme rather than waiting until their dissertation. Re-design learning outcomes and assessments to include problem-based learning and small projects. Independent and work-based modules also offer opportunities for research-based projects.**

## 5. Link research and teaching with employability

Healey and Jenkins (2009) suggest that research skills are essential to help graduates negotiate the complexities of the 21st century: uncertainty, risk, the knowledge society and the information economy. This is echoed by the demands of employers who want to see research skills embedded within graduate attributes. It is therefore important to make clear the links between research, teaching and employability.

**Practical pointer: When engaging students in research activity, label the activity clearly as research and explain to students how it may aid future employability. When choosing research questions to explore in class select appropriate sector/industry – based problems and make explicit the vocational and professional dimensions of the research process and outputs. Bring in external speakers and promote knowledge transfer research partnerships using student expertise. There are also valuable opportunities to link research and employability directly by making students aware of employment opportunities to do research within work-placements and internships.**

## 6. Collaborate with students on research

Research demonstrates that although students enjoy being taught by researchers (Zamorski 2002), they often see themselves as 'recipients of research, rather than actors in its production' (Healey 2005:194). Brew (1999) argues that universities can do more to engage students in scholarly research communities where students work in partnership with academics and participate in scholarly activities.

**Practical pointer: Make sure students are aware of the research expertise and current projects/publications in your department. Invite students to departmental research seminars and encourage them to hold their own. Alternatively you could run a mini-conference for undergraduate students to share their research findings. Encourage students to submit high quality research work to one of the student journals and consider submitting jointly authored papers with your students to peer-reviewed publications.**

## 7. Use student research in your teaching

Student research can provide valuable material for future teaching. It can be used as examples of good practice, its outputs can feed into lectures and its inclusion within the research community bestows it with academic kudos that may motivate other students to get involved.

**Practical pointer: Use the findings of previous undergraduate research in your teaching of subsequent cohorts. This helps students appreciate how research processes incrementally, and motivates them in their research. Get students to review and to present different contributions to a particular research field that way students get to teach and learn from each other. Direct students to electronic student journals (the 'Plymouth Student Educator' and the 'Plymouth Student Journal of Health and Social Work') and use examples from such journals where possible. Display students' posters about research in classrooms, labs and school offices. This will help students to feel that their research efforts are valued and relevant.**

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