



7 Steps to: Linking research and teaching

Overview

'Research informed teaching' is a term used to describe the different ways in which undergraduate students are exposed to research content and activity during their time at University. Exposing students to research content and process aids student understanding of knowledge construction within the discipline, enhances deep learning and promotes confidence, networking and employability (Pan et al, 2012; Walkington, 2015). This guide introduces ways in which lecturers can link research and teaching to enhance the student learning experience.

Different models linking research and teaching in the curriculum exist (Hensley 2015; Ozay 2012), the most prominent of which is Healey and Jenkins' (2009) [Research-education relationships and curriculum design](#). They suggest four ways to link teaching and research. **Research-led teaching** describes how existing research underpins curriculum content; **research-oriented teaching**, where the focus is on understanding the process of knowledge production through the teaching of inquiry skills; **research-tutored teaching**, where students and lecturers engage in critical discussions about research process and outputs and; **research-based teaching**, where the curriculum is designed around inquiry and students use learnt skills to do research. Healey and Jenkins argue that getting students to participate in these activities using active learning rather than didactic pedagogies creates engaged and meaningful learning experiences.

Research-informed teaching is critically important both for and beyond the student experience; Stern (2016) recognises it as underpinning institutional ability to contribute to the Teaching Excellence Framework and its potential to inform Research Excellence Framework submissions. Considering all these rationales, the University of Plymouth (UoP) has an institutional commitment to research-informed teaching, as evidenced in its Research and Innovation Strategy (2017-2022) and Education and Student Experience Strategy (2018-2023), the latter which states that *...all curricula will include Plymouth research-based material, and students will have opportunities to generate knowledge in their programmes*. There are then good reasons to get thinking about research-informed teaching in your own practice. This 7 steps suggests some practical pointers for linking research and teaching in the curriculum.

1. Review what you already do

Designing research-informed teaching involves linking learning outcomes and research activity. Research undertaken at the UoP suggests academics intuitively use research to enhance their teaching but that this happens in different ways (Winter and Cotton 2010). 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 could usefully review the way in which they currently embed research-teaching links and consider embedding different approaches. Use QAA benchmarks, local approval documentation and teaching staff expertise to undertake an audit of current research-teaching links in your module or programme. Identify where the links are explicit and working well and postulate why this is. Use the literature highlighted in this document, the [UoP web-resources](#) and peer review to identify opportunities to introduce research-informed activities. Consider a variety of approaches and deliver using active learning pedagogies.

2. Teach research methods using real-world examples

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. However, students can find learning how to use research methods difficult when data is disaggregated from context. This can render data generation a technical exercise which students struggle to see as relevant for their future career paths (Murnot, 2005; MacInnes, 2012). 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 students to collect small amounts of data themselves, involve them in current research projects by providing data you have collected for them to analyse, or develop longitudinal data sets that students add to each year.

3. Get students to undertake inquiry throughout their time at University

Most higher education programmes require students to work towards a research-based assessment such as a dissertation. However, the literature suggests that the sooner and more frequently students are exposed to research-based experiences, the better they can participate (Walkington, 2015). There is a range of inquiry, problem, project and team-based teaching approaches that enable students to practice research skills throughout their degree and help prepare them for their dissertation type assessment. Introduce opportunities for students to undertake inquiry-based learning throughout their degree programme. Re-design learning outcomes and assessments to include inquiry, problem-based learning and small projects.

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4. Make students partners in the research community

Research demonstrates that students often see themselves as 'recipients of research, rather than actors in its production' (Healey 2005:194). This can be mitigated by engaging students in the academic research community, where students participate in scholarly activities and even work in partnership with academics. For example, Harland (2016) extols the benefits of teaching in which students learn through inquiry that informs staff research, and are acknowledged in that process. Student research can provide valuable teaching material with outputs feeding back into the curriculum. Make sure students are aware of the research expertise and current projects/publications in your department by disseminating these with students. Encourage students to get involved with departmental research seminars/local conferences and promote undergraduate conferences and submissions to student journals. Acknowledge cases where student ideas and work have influenced research and work with students on research where possible. Promote examples of student research and display examples of students' research relevant visual media in department spaces.

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. 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. Create opportunities to link research and employability directly e.g. through the [UoP mentoring scheme](#), local [work-placements and internships](#), and the [Plymouth Compass](#) (Linn et al, 2015).

6. Use appropriate assessment

Assessment is a powerful motivator for student learning, so it is important to develop modes of assessment that emulate and support research activity. It can take students some time to gain confidence when learning about and through research so creating opportunities for formative and low risk assessment is a good idea (Boud and Falchikov 2007). Assessment of research-based work varies depending on context but can include blogs, podcasts, research projects, group work, posters, peer review, briefing documents, conferences, publication in student journals and student-led seminars (Walkington, 2015). Design assessment by identifying appropriate points for assessment of research skills, process and outcome. Use a range of methods which promote inclusivity and employability by assessment which reflects real-world practice. Build in opportunities for students to reflect on participation in research as this develops their metacognitive capacity and can express learning in cases where outcomes have failed. Check out the Connected Curriculum resource for theoretical and practical ideas on how to do this (Fung 2016).

7. Evaluate

Evaluating the student experience of research-informed teaching is critical to progressing your expertise in developing research-informed learning experiences. Module evaluation does not normally provide a coherent account of how well students have responded to specific activities which prompts educators to experiment with other evaluation models. It may therefore be useful to identify the desired soft (confidence, articulation, communication) and hard (knowledge, skill, behaviour change) outcomes of your research-informed activity and evaluate for these. Check out student engagement evaluation literature (Advance HE, ND; Trowler 2010) and off-the-shelf evaluation tools specifically designed for undergraduate research activities (Singer and Monk, ND) and consider using these.

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