

A discussion paper on *research-informed learning* at Keele: Research Skills in the Undergraduate Curriculum

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1. Summary: The main value to the institution of the research abilities and activities of its staff depends upon how well we use them in our core business of education.
2. Keele has moved from a position where the great majority of staff were regarded as research active to one where a minority are entered for RAE. This does not mean the others do no research but it requires a new perspective on research: why are they doing it if it generates no income? This brings us to a crossroads. If we continue to separate teaching and research we will impoverish both the role of teaching and the student learning experience. We must recognize the fundamental place of research (in a broad sense) to the quality and value of the education we provide: to the undergraduate experience of our courses, to our graduates' skills and employability, and to our teaching, as well as its obvious (but economically secondary) importance for research-generated income and for institutional status.
3. The significance of research ability in undergraduates has changed from being the (almost natural) ability of the best students, who would filter into the next level of education - postgraduate work, to 'research skills' being one of the nine employability skills we promise that all our graduates have the opportunity to develop.
4. 'Research skills' at undergraduate level means something more varied and often simpler than PGR activity or the abilities of professional academic researchers. It includes evidence-based practice, problem-based learning, and the apprenticeship model - learning to think like an historian, chemist, etc.
5. Undergraduate research capability means being able to generate new knowledge and to communicate it – key skills for professional employment and a knowledge economy. The knowledge may be new to the individual (learning), to a group (collaborative learning), or worthy of wider dissemination or publication (research in the public sphere). This emphasis turns the traditional content-based curriculum upside down: the starting point is, How would we do research in X?
6. This is consistent with parts of the QAA descriptor for honours degrees (HE3), roughly:
 - Being able to apply methods and techniques to review, consolidate and apply their knowledge, to initiate and carry out projects;
 - Being able to critically evaluate arguments, concepts and incomplete data, make judgements, frame questions, identify solutions;
 - Appreciate the uncertainty, ambiguity and limits to knowledge;
 - Communicate ideas to various audiences.
7. The nine Keele employability skills have research skills at their apex, underpinned by the others in layers (*italics identify the 9 employability skills*):
 - Foundation skills: *IT* and *numeracy* (as relevant to discipline) – reading, listening and watching skills are taken 'as read'
 - Process skills: *Problem solving* and *Information handling*
 - Managing learning: *Team working* and *Learning to learn*
 - *Research skills*: generating new knowledge
 - Communication skills: *written communication*; *oral and verbal communication* – communicating the new knowledge

This structural relationship does *not* mean that the skills should best be learned in this or any particular sequence.

8. Research-informed teaching, research-informed learning, research-based teaching, and other phrases must not be understood in terms of curriculum content, of research-generated facts or knowledge being learned passively by students. Research in the curriculum should be primarily about student learning activities being progressively research-like as they develop research skills and its underpinning skills.
9. If research skills are the focus of curriculum and student learning activities, clearly teachers have to teach the skills. **To teach research skills teachers must be researchers** in some sense. The idea of wholly research-inactive teachers is nonsensical.
 - For RAE submitted teaching staff we must ask, What does this research activity add to their teaching, or that of their colleagues, and how does it add value to student learning and student research skills in particular?
 - For RAE non-submitted staff who have been regarded as research active (e.g. most 'Lecturers') we must ask, How can they continue and develop their research activity in ways most valuable to their teaching? (Where it has a business value in maintaining the quality of our degrees.)
 - For staff whose posts were never intended to generate research income (e.g. Teaching Fellows) we need to ask, How can they develop their discipline research skills and make best use in teaching of the research activities of colleagues?
10. 'Scholarship' must not be used to cloak and confuse the issue. Scholarship in the sense of being up-to-date, factually, in one's subject is so obviously necessary for HE teaching that it hardly needs mentioning. But this is inadequate to teach research skills.
11. Pedagogical research is important but not the issue here. All Keele teachers should be scholarly in their approach to their teaching (one of the aims of TLHEP and other professional development activity at Keele). For example, they must be aware of research into student learning and apply this to their discipline and their own teaching. Some may be more systematic and conduct action research into their practice. A few may take this further and disseminate in discipline or generic educational conferences or publications. This reflexive teaching activity is necessary for the continuing development of practice, including the research-based curriculum. But it is not an alternative to refocusing the curriculum and the student learning experience on research.
12. In what areas are actions required? (In addition to the L&T Strategy)
 - Mission statements and similar should stress not just the equality of education and research (implying their distinctiveness and separation) but their close relationships within this academic community
 - Course promotion and marketing should emphasize research and other employability skills but in terms understandable to the audience
 - Module and programme development and approval processes should stress research links (e.g. of individual research interests and those of RIs), the Employability Skills as outcomes, and assessments aligned with them.
 - Curriculum development projects should be funded in all faculties developing pilot courses with research-based curricula, and templates for re-use based on them. Many will include blended learning and the added value to research-based curricula of our investment in e-learning
 - We should engage expert support in developing the project of Research Skills in the Curriculum.