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Research-informed teaching?

Introduction – Research and Teaching

One major theme is emerging in discussions of pedagogy in higher education: teaching should now demonstrate its attachment to the teaching-research nexus. This grim phrase is interpreted as:

- research-led teaching – where students are mainly told about research content through the interests and findings of their teachers, whilst the main teaching approach is the didactic lecture. This is learning about the research that others carry out.
- research-oriented teaching – where students are encouraged to understand research processes as well as research content, especially through learning inquiry skills and sharing a research ethos. This is mainly learning about research methods and learning how to do research.
- research-based teaching – where students and teachers undertake inquiry-based activities rather than acquire subject content, as such, by using and sharing their teachers' own experiences as researchers. This is learning in a research mode using inquiry-based methods.
- research-informed teaching – where students and teachers explicitly and systematically inquire into the teaching-learning process. This is meant to be pedagogic research, with inquiries into and reflections on learning and teaching.

(adapted from Jenkins & Healey, 2005, p. 21)

This bold attempt at producing a clear typology, however, is not one which is generally accepted, since most academics would not see these categories as clearly separable: research-led is often treated as the same as research-based, for example. And what about the claim that research-informed teaching generally means pedagogic research? That is highly controversial. These terms are roughly synonymous. Can we be bothered with such fine distinctions, distinctions without a difference?

A further suggestion category is 'research-tutored teaching', where students are expected to learn through writing their own essays and papers in order to discuss them in tutor-led groups (see Healey, 2005, p. 70). This is the traditional Oxbridge model of teaching and learning, a model which usually depends on a richness of resources that humble modern universities can seldom afford. Also, it is doubtful that the term research-tutored teaching would ever, in ordinary language use, be generally interpreted in the way that Healey suggests. Personally, I find 'researcher-tutored learning' an approximation for the processes undertaken in university writing groups for postgraduates and academics (see Badley, 2006). But how different is this from mentoring?

However, any attempt which tries to connect teaching and research deserves wide support, since such a link has usually been neglected in higher education. Indeed, institutions rarely mention links between their research strategies and their teaching strategies and thus fail to examine the possible advantages and disadvantages of so-doing (see Gibbs, 2001, p. 17). Generally, undergraduates see themselves as passive receivers of research rather than as active producers (see Zamorski, 2002, p. 417). Also, in the USA, where examples of students as researchers are regularly found, these are often in elite institutions for the most able students (see Boyer Commission, 2002, p. 29). And, in the UK, the Research Assessment Exercise (RAE) has led to research becoming more separated from teaching, as researchers spend more time researching and less time teaching. Much of the teaching is now left to part-timers and postgraduates (see McNay, 1998, pp. 196-198).

What kind of research should our teaching be led by, oriented to, based on, informed or tutored by?

The favoured model of research is that of science. Science is still the dominant paradigm. It is to science, apparently, that we must look as academics and researchers. It is science which has the best and most effective methods to help us discover and understand the world and ourselves. We must learn, as academics and researchers, to think scientifically. So the argument goes. This was clearly the authorized message at the Higher Education Academy's recent conference on 'Bringing Research and Teaching Together' (HEA, 2006). The two keynote speakers were both scientists: Professor Ian Diamond, Chair of the Research Councils UK Executive Group and Dr. Rosemary Haggett from the National Science Foundation (NSF), Washington, DC, USA.

Professor Diamond promoted his view of research-informed teaching as that which reflects the state of the art (cliché number one), where students read and question cutting-edge (tired old cliché number two) literature, and where teaching raises awareness of research. This account of research-informed teaching contrasts markedly with the earlier definition adapted from Jenkins & Healey. Diamond's account is more to do with informing students about research content than with using research processes to enliven teaching and stimulate learning. This is teaching as the transmission of research findings. It is almost a spectator theory of research-informed teaching where students are expected to admire and applaud the research performance of leading research actors. And are undergraduate students likely to question critically research which is presented to them as cutting edge? Isn't cutting edge, as a description of the latest research, meant to disarm criticism? If research is introduced as cutting edge, isn't it meant to be so firmly at the frontier of knowledge (typical cliché number three) as to be beyond sensible criticism?

In this research-informed model, professors, with their cutting-edge knowledge, should profess (a comment made by Diamond and later strongly endorsed by Professor Paul Ramsden, Chief Executive Officer of the Higher Education Academy). This brings to mind the famous reaction of Henry Adams when he was appointed to teach at Harvard. He was a professor who refused to profess since he didn't want to tell his students what he himself didn't really know. Instead, he and his students jointly tried to find out all they could about the topics and questions that interested them. Such teaching, such pedagogy, was, he thought, triumphant (see Adams, 1918). How often does professors professing degenerate into students suffering from tedious telling and tortuous transmission? Instead of endorsing professing as a pedagogy, Adams supported what we now would call problem-based or inquiry-based learning. Adams was a Deweyan teacher even before Dewey. But professors professing need not be regarded negatively. It could be used to mean a process whereby researchers help their students, even their undergraduates, to become researchers themselves. That is beginning to happen throughout higher education.

In comments from the floor, first of all, Healey pointed out that there were wide variations in the meaning of research-informed teaching in the UK. For him, it is inquiry and learning which connect research and teaching. In effect, he argued for research-informed teaching and teaching-informed research, as well as inquiry-based research and teaching. Second, Elton then informed Diamond that he had learned more in Healey's brief contribution than he had in 45 minutes of Diamond's presentation. For him, research should be regarded as learning whilst teaching should be viewed as research-like. Third, Gibbs pointed out that there were 'huge differences' between disciplines (and often within disciplines) in their approaches to research, implying that a scientific view would not always be appropriate across the range. For him, research was a matter of 'asking questions in a more informed way'. I am not sure that Professor Diamond was chastened by or interested in any of these criticisms (HEA, 2006).

Dr. Haggett's presentation was firmly based on the USA's needs for 'ensuring high quality, cutting edge research', for educating scientists and engineers, and for improving public understanding of science. (The cutting-edge platitude leaps over the pond.) Her agenda was research as science and, we could assume, she was brought over (by the HEA) to promote the cause effectively so that we could learn from the American experience. Education and science were directly in the service of American competitiveness, with the inference that in the UK, too, they should also serve ours. After all, the government paymaster in every country calls the tune and that tune had better have a performative ring to it. The emphasis in the USA, she said, was on 'technical workforce development', especially through improving mathematics and science education. Teaching and research were about 'advancing discovery, innovation and education

beyond the frontiers of current knowledge' (I told you). The NSF's mission was 'to promote the progress of science; to advance the national health, prosperity, and welfare; to secure the national defense'. It was specifically directed towards preparing 'a diverse, globally-engaged STEM workforce' and using investment to create 'a rich environment for encouraging future scientists, engineers and educators' (HEA, 2006). (STEM is the current acronym for Science, Technology, Engineering and Medicine, which are, therefore, the stem disciplines. All others lack the right stemness. They are merely subsidiary branches of the higher learning.)

The NSF does fund what it calls transformational initiatives to 'expand student participation in all kinds of research – whether disciplinary, interdisciplinary, or educational in focus'. However, despite sounding like a broad programme, these transformations were inclined specifically, again, towards 'developing a diverse, internationally competitive, and globally engaged science and engineering workforce'. Encouragingly, the NSF also funds ten internships for minority students to promote them as young researchers with interdisciplinary approaches to problem-solving. This sounds like a welcome Deweyan approach to science education but for a rather small (and perhaps token?) group of underprivileged students. Another example of NSF funding is an undergraduate programme using inquiry-learning to study phenomena in physics. Here 'lecture and lab are integrated and taught as one' in a process which promotes teamwork, problem-solving, communication skills, synthesis and evaluation. Teachers 'utilize a semi-Socratic dialogue method' and their students 'out-performed passive lecture students' (HEA, 2006). This sounds interestingly interactive and developmental but just what is 'semi-Socratic'? Not quite Socratic enough?

So, teaching should be, according to these speakers, led by, oriented to, based on, or informed by a scientific approach to research. If this means adopting a flexible Deweyan or Khunian problem-solving approach to both research and teaching, then so much the better. If it means that research and teaching should both be conducted according to some narrow scientific model, then we enter into problematic territory.

Problematizing research and research-based, informed, led and oriented teaching

What we are often presented with is an un-problematical view of science and of its importance to teaching in higher education. Science, we are led to believe, should be our model because science is already sorted. Other softer disciplines – ethnography, history, literature, philosophy, sociology – cannot match the hard certainty and objectivity of science. They are, therefore, much less reliable than science. Science is valid and clear whilst they are irredeemably fuzzy, despite attempts, especially by some ethnographers and sociologists, to turn themselves into scientists, albeit social ones. Science is (unproblematically?) defined as 'a collection of objective knowledge that was derived through systematic investigations that are well-described and can be repeated' (Hengl & Gould, 2006, p. 1). The key terms here are 'objective', 'systematic' and 'can be repeated'.

But is science objective? What does 'objective' mean? Is 'objective' just used as a contrast with 'subjective'? Does the objective/subjective distinction mean anything any more in these postmodern days? Shouldn't we be critical of those who claim an ontological privilege and authority for science, who claim that science is the measure of all things, based on their view that science is objective? Can't we be critical about these claims even if, at the same time, we gratefully accept that science has provided us with so many modern benefits, so much modern technology and lots of modern comfort? Should we differentiate science from non-science by using such notions as 'objectivity', 'rigour', 'rationality' and 'method'? Aren't these terms, which are often presented to us as clear and precise, what philosophers call 'essentially contested concepts'? Shouldn't we see science as just one human activity amongst many and not just as the privileged one or the only one which reveals the truth (another contested concept) about a hard reality? Shouldn't science be regarded as having a vocabulary or set of tools for pursuing certain human purposes (especially those of prediction and control), but which are not the tools and vocabularies to put us directly in touch with things as they really are? Indeed, can science or any other subject-discipline offer us vocabularies and tools to reveal the true nature of things? Don't all disciplines, including science, with their different vocabularies, just equip us with beliefs and tools that are more or less useful in helping us cope with the world as we see it?

Perhaps we should give up the attempt to provide a god's-eye view of things and the desire for objectivity for an approach to research which is a 'picture of inquiry as the continual reweaving of a web of beliefs' (see Rorty, 1991, pp. 24-26). This is to see research and inquiry as a search for consensus, for intersubjective agreement within a community of fellow-inquirers, rather than as a search for some pre-existing truth as such. Inquiry, as the search for communal consensus, is conducted through a continuing conversation of those seriously interested in chosen topics (such as learning, teaching and research). As Rorty puts it: There is only the dialogue, only us (see Rorty, 1991, p. 32). This is also to agree with Barnett (2000) that the false certainty of traditional positivist scientific research needs to be weakened.

A more eclectic approach to learning and teaching in higher education?

All of this suggests that we should be wary of claims to make our teaching more research-informed, especially if by this is meant being dominated by a scientific approach to understanding the world. Perhaps what we need in higher education is a more eclectic approach to teaching and learning. This should mean using different approaches at different times with different students to suit different purposes. There is clearly, still, a job to be done to make teaching across the disciplines more amenable to active and eclectic, project or inquiry-based approaches to learning. This seems to me a more important task for centres of learning and teaching than advocating research-informed teaching or science-led teaching as such. I prefer to see both teaching and research as different forms of inquiry (see Badley, 2002).

Graham Badley, INSPIRE

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