

Teaching vs Research: Moving the Debate Forward (Part 2)

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The previous Newsletter concluded that for research to be seen to contribute to higher quality teaching faculty should provide students with a research-active syllabus where they are expected to engage with the very process of carrying out research. It is thus that the research/teaching nexus will enhance quality teaching. Given that extensive pedagogic research confirms the benefits to be derived from such a strategy let us consider the implications of (i) bringing research into the classroom and (ii) involving students in research activities. Thus, the rest of this newsletter will consider each of these activities on its own and draw some conclusions that may be of interest to faculty who are keen to enhance both their teaching and research.

There is considerable pedagogic research (Colbeck, 1998 and Jenkins et al, 1998) that indicates that bringing research into the classroom can benefit students in that it generates enthusiasm for knowledge and adds credibility and institutional reputation, but it also skews the focus of teaching, especially in the “hard” sciences where hierarchical knowledge structures put most research beyond the capability of undergraduates to absorb. Thus, although bringing research into the classroom *may* be beneficial it has yet to be shown to be so by pedagogic research. It is thus preferable for faculty to introduce students to the research *process* itself rather than transmit research *content* as such. Faculty as researchers “*routinely confront open-ended and imperfectly defined problems, figure out what they need to know and how to find it out; search out sources of missing information; hypothesize and test possible solutions; arrive at final results; and defend them.*” (Prince, Felder and Brent, 2007: 287) This, of course differs dramatically from the traditional lecture-based teaching strategy which relies often upon PowerPoints in order to present findings or research that students are expected to either reproduce in answering examination questions or at best apply to assignments. The research process as outlined above however presents students with an intellectual challenge that they are expected to solve and as such active learning does take place.

The introduction of a research-active syllabus, however requires faculty themselves to be active researchers in their respective field and thus to be able to assist students to engage with the intellectual challenges. Research active faculty are more likely to be familiar with the relevant literature to be considered by the students as well as the research strategies and skills required to respond to such an intellectual challenge. Similarly the faculty’s knowledge of the research environment from their own active research will facilitate the students’ path towards seeking solutions to intellectual problems. Thus, students will also develop critical thinking and problem-solving skills and enhance their knowledge retention as well as their research skills which will certainly benefit them in whatever career they chose to follow. In this respect the teaching/research nexus is enhanced for the benefit of teaching students and the educational benefits far surpass that of just introducing students to research content.

Pedagogic research has recognized the benefits of such an inductive teaching strategy for some time and called upon research-oriented institutions to take advantage of their research profile in order to enhance teaching practice. In fact a major study of education at research universities which was commissioned in 1995 by the Carnegie Foundation for the Advancement of Teaching, and chaired by its President Ernest L. Boyer, concluded that such institutions should move to an inquiry-based approach to teaching. (Prince, Felder and Brent, 2007: 288)

It goes without saying that if such a strategy is adopted across the curriculum in Universities it would also bring about a cultural change which would not only enhance teaching quality for undergraduates but also prepare them to function as citizens and professionals in their future lives. Extensive empirical pedagogic research has shown that such a research-active curriculum is to the benefit of all concerned. It is for us as faculty to take on the challenge and adapt our teaching strategies accordingly.

The adoption of a research-active syllabus may appear daunting for some faculty who have accustomed themselves to the traditional lecture approach in which students are spoon-fed content. Modern pedagogy and instructional technologies, however, have highlighted numerous teaching strategies that enable us to engage with a research-active approach which do not constitute a major burden and which are currently used by many of our colleagues. It is beyond the scope of a short newsletter to discuss them all or for that matter to spell out the strategies in any detail. Faculty who are interested are invited to visit CLT where these strategies can be discussed and support provided for their implementation. Nevertheless, it is appropriate to indicate a few examples in brief.

The first point that needs noting is that a research-active syllabus needs to include four basic elements:

- **research-led:** *learning about current research in the discipline;*
- **research-oriented:** *developing research skills and techniques;*
- **research-based:** *undertaking research and inquiry;*
- **research-tutored:** *engaging in research discussions.*

In effect this implies re-writing our respective syllabi with the above four elements in mind. In other words, the content that we wish to ensure is delivered can be done by reference to the four elements above. Our reading list, for example should include the basic texts students need as well as electronic data-base sources that enable students to seek additional material which will help them solve intellectual problems given to them as assignments. The library is, of course, more than willing to provide such sources from our extensive electronic holdings and thus minimize the effort for faculty. Similarly, the syllabus should make room for a brief introduction of basic research skills currently used in the discipline and a discussion of new research techniques that may have emerged since some of the textbooks were published. Furthermore, we can make use of the case-study approach, for example, as a means of enhancing inquiry-based teaching while also covering content. Finally, it is appropriate to devote time in the syllabus for research discussion of the projects students are asked to do as part of their assignments.

For faculty actively engaged in research the above elements are but an extension of their active research and will not constitute a burden as such. Thus, our research activity will be integrated into our teaching in a manner that enhances student learning and benefits from our research profile. Thus, the teaching/research nexus can be enhanced across the institution for the benefit of all concerned.

Colbeck, C.L. (1998) *Merging in a Seamless Blend: How Faculty Integrate Teaching and Research*, ***Journal of Higher Education***, 69: 647-671.

Jenkins, A., T. Blackman, R. Lindsay, and R. Patton-Saltzberg, (1998) *Teaching and Research: Student Perspectives and Policy Implications*, ***Studies in Higher Education***, 23: 127-141.

Prince, M J, Felder, R M and Brent, R (2007) *Does faculty research improve undergraduate teaching? An analysis of existing and potential synergies*, ***Journal of Engineering Education***, 96 (4), 283-294.