



THE TEACHING-RESEARCH NEXUS

JOHN HODDINOTT & BRAD WUETHERICK

"The most important obligation now confronting the nation's colleges and universities is to break out of the tired old teaching versus research debate." — Ernest Boyer, 1990¹

A university is where research findings are communicated and new research results are generated. This concept is embedded in most institutional mission statements, but how is each new generation of learners to become an integral part of the learning and discovery processes? Are the goals of a research-intensive university at odds with an optimal undergraduate learning environment? How does the nexus of research and teaching relate to the overall quality of engagement of learners with their institutions?

Since Ernest Boyer's admonition above, we rarely hear people espousing the simplistic notion that good researchers make good teachers. Extensive meta-analyses of voluminous research data have shown that the two activities have little correlation; researchers are not necessarily good teachers, but at the same time there is no indication that engaging in research makes for less effective teaching.

In North America, Europe and Australasia, much has been written recently about the place of research in the undergraduate learning experience.

What might constitute research-based teaching and learning and why it is important that institutions around the world move forward with an agenda to integrate research into the undergraduate learning environment? Could we visualize a continuum between teacher-focused research-based course content and a student-focused research-based process of learning? To explore these questions and to examine the situation in Canada, the University of Alberta recently hosted the first Canadian Summit on the Integration of Teaching and Research.

The purpose of the Summit was to bring together representatives from Canadian universities to discuss the value of integrating teaching and research in providing an enhanced undergraduate learning experience and ensuring that students graduate not only with a comprehensive understanding of one or more disciplines, but also with an appropriate set of attributes to prepare them for work and life.

There were five primary objectives for the Summit:

1. To engage Canadian Post-Secondary

Education (PSE) administrators, faculty, and students in a dialogue about the importance of integrating teaching and research;

2. To bring together champions from each major university in Canada to share best practices and to encourage ongoing dialogue and debate about the integration of teaching and research;
3. To raise awareness in the wider Canadian public of the importance of integrating teaching and research at PSE institutions;
4. To explore future directions for Canadian PSE institutions regarding the integration of teaching and research;
5. To establish a Canadian framework to benchmark progress towards integrating teaching and research in the undergraduate learning environment.

To meet these objectives six internationally known speakers and 120 delegates gathered in Edmonton last August. A significant proportion of delegates were either senior university administrators or student leaders from across Canada.

Globally, higher education has been experiencing a reduction of govern-

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EN BREF L'Université de l'Alberta a récemment été l'hôte du premier Sommet canadien sur l'intégration de l'enseignement et de la recherche où les participants se sont posé des questions telles : « Est-ce que les objectifs poursuivis par un système universitaire axé sur la recherche nuisent à la création de meilleurs milieux d'apprentissage pour les étudiants de premier cycle ? » « De quelle manière le lien entre la recherche et l'enseignement affecte-t-il l'engagement général des étudiants à l'égard de leur établissement ? » Or, pour que les universités supportent effectivement un apprentissage fondé sur la recherche, elles doivent réexaminer leur conception de la recherche, de l'enseignement, de l'apprentissage, du savoir et des bourses d'études. À cette fin, nous leur proposons de se pencher en premier lieu sur les quatre points suivants : l'apprentissage des recherches d'autrui ; l'apprentissage du processus de recherche ; l'apprentissage fondé sur la recherche et l'enquête ; et la recherche pédagogique.

ment funding for operating budgets and an increase in government and industry sponsored research revenue. At the same time many national governments have implemented evaluation systems to examine the quality of university research and teaching. How might those systems influence the extent to which the integration of teaching and research is included in evaluation practices? Have they altered the organization of academic work, and impacted on the organization and structure of the higher education sector?

With increased emphasis by governments and funding bodies on research as an engine of economic growth, it is easy to forget that university research encompasses a diverse range of activities. Discoveries and new applications in biomedical and engineering labs contribute important advances, but the scholarship pursued in Humanities, Social Sciences and Fine Arts Faculties are equally vital to the health of universities and the communities where they are located.

Given these questions and considerations, before institutions can successfully manage change to support research-based learning, the university

community needs to discuss its general understanding of the concepts of research, teaching, learning, scholarship, and knowledge; identify what is understood by research-based teaching and learning; and articulate what students are intended to learn. How can research-based learning support the goal of creating inclusive scholarly knowledge-building academic communities of practice that include all parts of the university community – from first year undergraduate students through senior academic staff?

Research funding and evaluation policies can and should have a positive impact on how universities, in general, and academic staff, in particular, might further integrate teaching and research to the benefit of student learning. In several countries, research funding patterns and mandated evaluation systems have instead led to an intensification of the management and organization of research activities, the differentiation of academics within departments based on status and workload, struggles over classification of staff as research-active or research-inactive, a lack of perceived value for teaching and associated work, and a questioning of academic identity.

If Canada is to move forward with an agenda to integrate teaching and research, what factors should we be considering? How might we define research and scholarship? Do we want to differentiate between research and non-research universities? What is the potential detrimental impact integration might have on the teaching mandate of universities? And how will we answer these questions within the context of our provincially-mandated systems?

The potential dangers posed by faculty research activities for undergraduate teaching was the basis of a recent

critical work by Tom Pocklington and Alan Tupper.² Their work led to three conclusions: current models of integration are inadequate philosophically; they are naïve politically; and they ignore reforms essential to integrating research and teaching. Although Pocklington and Tupper consider such integration essential in the undergraduate learning environment, they propose an alternative understanding of what it ought to entail.

They argue that there is a need to explore the purpose of higher education before delving into reforms focused on the teaching-research nexus. Without the grounding of a theoretical framework illustrating why the integration is important, faculty in all disciplines will be skeptical. When students are recruited into the academy, every step of their ascent up the academic hierarchy, through graduate school and the professoriate, is based on research potential and productivity. The end results are a perception that faculty tenure and promotion processes are skewed towards research, under-funding of core operating budgets, increasing reliance on both larger classes and sessional lecturers, and reward mechanisms that often allow researchers to not teach. To emphasize their point they ask, "How many people get 'rewarded' by not having to research and only getting to teach?"

If universities want to integrate teaching and research effectively, they need to ensure that graduate students are adequately educated about their possible future educational role while they are completing their doctoral studies. According to Pocklington and Tupper, the focus of institutional professional development initiatives needs to be on the broadening of reflective inquiry rather than on guiding under-

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graduate students into the increasing specialization of research. Institutions need to place an emphasis on recreating public spaces for undergraduate students to interact with other undergraduates, graduate students, and faculty to facilitate learning by enhancing engagement.

Current knowledge about the nature of student learning should frame the discussion about how to improve teaching and learning in a research-based university environment, including an understanding of the ways that intrinsic and extrinsic motivation for learning lead undergraduate students to adopt, respectively, deep and surface approaches to learning. A substantial literature explores the factors that promote deep learning. They include: good teaching, openness to students, free-

dom in learning, clear goals and standards, vocational relevance, social climate, workload, and formal teaching. Such findings have animated the ongoing debate about moving our institutions along the continuum from a teacher-centered, content-oriented curriculum to a student-centered process-oriented one.

We all accept that what we read on student transcripts tells us something about what they know. However, it tells us very little about what they can do or the values they have developed. Some institutions encourage their faculties to acknowledge what attributes are developed by learners during a degree program. For example, at the University of Sydney in Australia, each faculty identifies suites of attributes based on research and inquiry; information literacy; personal and intellec-

tual autonomy; ethical, social and professional understanding; and communication. Can we capture this disciplinary and generic skill development in student e-portfolios?

The best way for learners to develop such attributes is to be actively engaged in activities where they can practice them and receive feedback on their progress. As they move toward graduation they are then increasingly prepared for a future that may lead to doctoral studies, a rewarding career, or, at least, good citizenship. At its best, the process of learning engages the students in the process of discovery.

The "scholarship" aspect of teaching and learning and a research-based approach to the teaching and learning process are both necessary to the effective integration of teaching and research. We need to be able to articulate the conceptual underpinnings of why we teach in the manner we do, and at the same time be able to justify with evidence why we employ the model we do. The learning potential of research-intensive environments can be improved by implementing teaching methods that stress student activity and task performance, providing meaningful opportunities for professor-student interaction, providing opportunities for collaborative team learning, utilizing more authentic and meaningful forms of assessment, making learning processes more explicit, encouraging the integration and application of knowledge from different disciplines, and focusing curriculum planning on realistic and meaningful student learning outcomes rather than on disciplinary tradition and faculty preferences.

The current interest in the integration of research and teaching was generated in part by recommendations by the Boyer Commission in the United States in 1998.³ A key recommendation of that commission was that "beginning in the freshman (sic) year, students should be able to engage in research in as many courses as possible." The impact of the report on research and teaching integration in the United States varies according to how faculty develop their academic identities, which in turn shape their work lives. Two models seem to frame academic work and help define faculty identity. A fragmented bureaucratic approach divides activities into differ-

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ent components which can then be prioritized, and discourages integration. An integrated professional approach recognizes synergies between different aspects of what is expected and finds ways to bring activities together, which encourages integration of research and teaching. Will the next generation of faculty develop fragmented or integrated professional identities?

The graduate education received by the majority of students teaches them about their future academic identity. New academics are told repeatedly that research is more important for their career progression, particularly within a research-intensive institution, but many faculty also report that they find synergies between their research and teaching activities, particularly through the mentoring of graduate students. Most faculty are actively engaged in integrating teaching and research by teaching up-to-date disciplinary research results and also by teaching how to engage in disciplinary research. Others, however, engage in teaching as research in itself, while still others integrate teaching and research for a considerable proportion of their working time. Might we encourage such practice by using a reporting mechanism in faculty evaluation that highlighted integration? (Changing the faculty reward system is another of the Boyer Commission recommendations, and many institutions now reward participation in the scholarship of teaching and learning.)

In a learning-centered institution everyone – administrators, faculty, and students – can implement changes to integrate teaching and research more effectively and efficiently. As a starting point for any serious discussion about effective integration, though, we must establish a common language or set of terms that will help us move forward as a community. We propose four areas for initial consideration: learning about other's research, learning to do research, learning in a research or inquiry mode, and pedagogic research.

Different strategies may be implemented across the higher education sector that can help to facilitate integration. Some help provincial, national, and international agencies/governments in assisting higher edu-

cation institutions to move forward with this initiative, for example, building integration into the statutory or legal definitions of higher education institutions and their degrees, and implementing provincial, national, or international projects to support the link. Strategies at the institutional level might include, organizing institutional awareness through publications and events, and developing curriculum requirements that can be audited through regular strategic/operational planning processes.

Paul Ramsden, the CEO of the Higher Education Academy in the UK, said recently when discussing the future of higher education, "I believe that the main hope for realizing a genuinely student centered undergraduate education lies in re-engineering the teaching-research nexus."⁴ An active debate among academics, like the one that took place at the Canadian Summit on the Integration of Teaching and Research, promises to move the Canadian higher education system one small step towards realizing that goal.

More information about the Sum-

mit, including copies of the majority of the presentations, can be found at: <http://www.ualberta.ca/summit> |

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Notes

- 1 Ernest Boyer, *Scholarship Reconsidered: Priorities of the Professoriate*. (New Jersey: Carnegie Foundation for the Advancement of Teaching, 1990).
- 2 T. Pocklington. and A. Tupper, *No Place to Learn* (Vancouver: UBC Press, 2002).
- 3 Boyer Commission, *Reinventing Undergraduate Education: A blueprint for America's Research universities* (New York: Stony Brook, 1998).
- 4 Ramsden, P. (2001). Strategic Management of Teaching and learning. In C. Rust, ed., *Improving Student Learning Strategically* (Oxford: OCSLD, 2001): 1- 10.



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