

Roundtable on Research, Teaching and Learning

University of Guelph

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Executive Summary

The Roundtable on Research, Teaching and Learning took place at the University of Guelph on April 18-19th, 2006. It represented an unprecedented opportunity for exploring the challenges and opportunities associated with the research/teaching/learning nexus in Canadian post-secondary education (PSE) and for identifying potential strategies for creating national, provincial and institutional contexts in which all of these essential activities might thrive.

The event featured international expert Dr. Mick Healey who underscored the considerable financial investments and policy initiatives that are being undertaken by other western governments in support of PSE. These included the introduction of legislation that calls for the integration of research and teaching (within institutions, programs, courses and the skill set of the faculty), the establishment of Centres of Excellence for studying and supporting inquiry based learning, and funding top research scientists for studying how to best reform undergraduate education in their disciplines.

Participants emphasized the timeliness of the Roundtable. Concern was expressed about the increasing polarization of research and teaching in Canada, as well as the desire of colleges to become more involved in research, and the need to provide more support for the scholarship of teaching and learning. There was also a significant amount of comment regarding the overall quality of the educational experience including concern with the extent to which students are being engaged and developing essential skills, as well as the ability of the system to meet the needs of students from traditionally underrepresented groups (e.g., Aboriginal students, students of immigrant families, students with disabilities and non-high school completers). The issue of Canada's competitiveness on the world stage for dealing with these issues was also raised.

Key opportunities identified by Roundtable participants for addressing the expressed challenges included:

- building consensus around the need to strengthen Canada as a learning society;
- working with multiple stakeholders in articulating a new, more comprehensive, national vision for PSE;
- developing a comprehensive and coordinated effort to market Canadian PSE domestically and internationally; and,
- developing a stronger nexus between research/teaching and learning.

Participants identified a number of potential governmental and institutional barriers—some relatively complex, widespread, and ingrained—that may constrain the achievement of these opportunities. Governmental barriers include the problematic divide between federal and provincial mandates, as well as the need to make a strong, evidentiary-based case for increased government investment and to involve other key stakeholders in doing so. Institutional barriers include institutional cultures that value research over teaching, the lack of preparation of faculty and teaching assistants for their teaching and curriculum development roles; selection, promotion and merit-based pay decisions that favour research output over teaching; ineffective curriculum development and assessment processes that fail to articulate program level learning outcomes and ensure their integration across the curriculum; the growing shortage of faculty time; and the increasing number of sessional and contractually limited faculty who are actively discouraged from participating in research.

Regardless of these barriers, there was a strong sense amongst the participants that change is required and a combination of national, provincial and institutional strategies was proposed. Specific national and provincial strategies included:

1. Build consensus amongst stakeholder groups (i.e., government, granting councils, national associations, disciplinary societies, universities, colleges, community groups, the private sector, students and parents) around the need to strengthen Canada as a learning society.
2. Work with stakeholder groups in articulating a new, more comprehensive, national vision for PSE (i.e., in keeping with the characteristics of a learning society and the research/teaching/learning nexus). Ensure that this vision supports an appropriate level of differentiation across the system (i.e., that not all colleges and universities are motivated to pursue identical mandates).
3. Ensure any new performance standards or quality assurance processes are consistent with this new vision, and will contribute to its achievement.
4. Make the case for further investment by the government in PSE by amassing evidence in at least three areas:
 - a. Current versus desired learning experiences and outcomes.
 - b. Current versus desired participation rates in PSE, including those of under-represented groups (Aboriginals, immigrants, the disabled, and high school dropouts).
 - c. The potential to market an improved Canadian PSE system internationally.
5. Establish sources of funding and communities of practice to amass this evidence.
6. Clarify areas of government interest and responsibility for fostering the research/teaching/learning nexus (within the federal government and the granting councils, and between the federal and provincial governments).
7. Develop a comprehensive and coordinated effort to market Canadian PSE domestically and internationally.
8. Make use of the “Centres of Excellence” model or establish a national “Research, Teaching and Learning Centre” to support research on best practices, dissemination and uptake.
9. Extend the funding available through the granting councils and the Canada Research Chairs program (CRC) to explicitly support the scholarship of teaching and learning and innovative curriculum reform.
10. Ensure government programs that support undergraduate student research projects have scalability (i.e., are designed to support a large number of students).
11. Facilitate the mobility of students between and within university and college.
12. Explicitly acknowledge (make more visible and valued) the role of colleges in PSE - recognize and learn from their inquiry-based approach to learning, establish opportunities for colleges to participate in research, facilitate collaboration between colleges and universities.

Specific institutional-level strategies included:

1. Establish an institutional vision that includes the research/teaching/learning nexus and the institution’s contribution to a learning society.
2. Implement curricular development and assessment approaches that explicitly support the development of critical inquiry skills and citizenship behaviours and encourage the integration of these learning outcomes across the curriculum.

3. Commit to the use of innovative and active pedagogical approaches that support the achievement of these learning outcomes (e.g., critical inquiry, problem-based learning, community service learning) in both domestic and international contexts.
4. Develop a connected community of faculty, educational developers, learning and writing specialists, librarians, and learning technology staff etc. to support course development and the implementation of effective pedagogies.
5. Encourage greater collaboration and/or integration between teaching support departments and offices of research (i.e., both should be perceived as core services, and have similar prestige and focus).
6. Ensure tenure, promotion, merit-based pay policies adopt a broad definition of scholarship, value teaching, and reinforce the integration of research, teaching and learning. Reward departments whose faculty achieve success in these areas.
7. Establish institutes or other formal structures to support faculty interested in pursuing the scholarship of teaching and learning.
8. Provide professional development opportunities for faculty and graduate students; encourage and/or require their participation in courses on pedagogical theory and practice.
9. Profile and celebrate teaching and learning successes and its scholarship in institutional publications and events, and through awards programs (for individuals, programs and departments).
10. Foster collaboration between university and college researchers.

Finally, it was suggested that before any comprehensive action plans are implemented, further discourse and consensus building is needed, particularly within and between the individual constituencies that were represented at the Roundtable. It is hoped that this report will help facilitate such discourse.

Introduction

The Roundtable on Research, Teaching and Learning took place at the University of Guelph April 18-19th, 2006. It represented an unprecedented opportunity for exploring the challenges and opportunities associated with the research/teaching/learning nexus in Canadian post-secondary education (PSE) and for identifying potential strategies for creating national, provincial and institutional contexts in which all of these essential activities might thrive.

The impetus for the Roundtable included the recognition that since their inception, universities have struggled with balancing their dual mandate of research and teaching. Writing on PSE in the US, Larry Cuban argued (1999, 5):

Amid repeated presidential and faculty claims for the signal importance of teaching and affirmations that harmony, not conflict, characterizes teaching and research, critics and scholars have noted the research imperative as dominating academic work again and again.

Within Canada, the Smith Report (1991) on higher education similarly concluded that “teaching is seriously undervalued in Canadian universities and nothing less than a total recommitment to it is required” (p. 63).

Increasingly, it is being recognized that even more important than balancing research and teaching amongst faculty and institutional priorities, is the need to integrate them in intentional and meaningful ways. This is being driven in part by research that suggests teaching and research have the potential to benefit considerably from one another, but that this rarely happens in the absence of supportive institutional environments (Smith, 1997). For example, student learning has the potential to be enriched when faculty incorporate their research findings into the curriculum; help students develop critical inquiry skills through active, problem-based learning experiences; or involve them directly in faculty research projects. In addition, when faculty discuss their research ideas and findings with their students and apply them to novel contexts, enhanced understanding on the part of the researcher can result. Becker and Kennedy (2005) support this contention. In their interviews with faculty on the ways in which teaching might inform research, one faculty member suggested (2):

[Teaching] stimulates ideas for research. Whenever you have to explain something to someone...you have to think it through more thoroughly than you otherwise would. [It]...reveals holes in one's understanding...[and] gives us ideas for research.

Yet another commented (6):

There are a number of occasions when my teaching lead to research, particularly when I made statements to my class, confident of my assertion, only to discover that it did not hold up (to scrutiny), and needed full rethinking.

Similarly, Scarfe (2005, 16/17) argued that:

It is through research: critical inquiry, investigation, and/or scientific experimentation that new knowledge is discovered, gained or learned, and it is through learning that new possibilities for research arise such that learning and research involve one another and are fundamentally inter-linked.

The importance of linking research, teaching and learning has more recently been posited as a significant national concern. Specifically, it has been associated with the need to become a “knowledge economy” or more appropriately, as noted by roundtable participants, a “learning society.” In a US-based report by the Kellogg Commission (Returning to our Roots: A Learning Society, 1999) it was argued that becoming a learning society is essential for economic competitiveness and prosperity as well as social well-being. Characteristics of a learning society identified in the report included a commitment to lifelong

learning, knowledge creation through discovery-based research, and their effective integration. The report concluded (xi):

We must renew our commitment to making conscious connections between knowledge and action, and between theory and practice as we formulate research priorities in support of a learning society. We need to increase our research activity in all of the areas that contribute to the creation, retrieval, delivery, and preservation of knowledge of value to that society. In addition, it will be important to understand the pedagogies that are most effective in encouraging the application of critical thinking, problem-solving, and analytical skills in a technologically sophisticated environment, one rich in information resources.

Among the report's key recommendations were: making lifelong learning a core part of the mission of universities, supporting faculty in the adoption of active and technology-enriched pedagogies, and providing support for the scholarship of teaching and learning (i.e., "competitive peer-reviewed grants for research in effective learning methodologies, including methods used in distance learning and technology-based learning") (Returning to our Roots: A Learning Society, 1999, xiii).

Within Canada the lack of integration between research, teaching and learning has been exacerbated by the funding structures of PSE, both in terms of the division of responsibilities between the federal and provincial governments, and substantial declines over the past several years in core base funding alongside much needed increases in research funding. This has resulted in an additional premium being placed on certain types of research activity; research that has the potential to bring in new revenue to cash-strapped institutions.

This focus has resulted in the further devaluing of teaching and learning. Many primarily undergraduate universities and colleges, which have long prided themselves on their teaching missions, are in the process of embracing "research intensive" mandates. If research and teaching continue to be treated as competing (as opposed to integrated) activities, this has the potential to undermine student learning and lead to reduced differentiation within PSE.

In exploring these important issues, the Roundtable sought to build on several other recent national events including: the National Forum on the Scholarship of Teaching (Toronto, April, 2005), the Canadian Summit on the Integration of Research, Teaching and Learning (Edmonton, August, 2005), the National Dialogue on Higher Education (Ottawa, November, 2005), and Innovations in Quality Measurement in Post-Secondary Education (Hamilton, April, 2006). At these events, various calls for change to the PSE system were heard including the need for:

- the establishment of a more inclusive vision for the role of higher education in Canadian society, one that explicitly values the development of a learning society¹;
- the development of a national framework in support for the scholarship of teaching and learning, including research on signature pedagogies²;

1 This is in contrast to a vision that focuses almost exclusively on the economic contributions of PSE to the "knowledge economy," through the commercialization of research and improved employment rates of its graduates.

2 Signature pedagogies are teaching approaches that are commonly found within particular disciplines, such as seminars in the arts and humanities, labs in the sciences, case studies in business and law, and problem based learning in medicine and engineering. These pedagogies remain largely unexamined in terms of their effect on student learning.

- the need to integrate teaching and research as a fundamental pillar of the undergraduate learning environment³;
- educating students on the nature and importance of faculty research, in order to have a public that values such work;
- the recognition that the extent to which these outcomes are achieved will depend in large part on the quality of student learning experiences;
- the development of more effective measures for assessing teaching and learning processes and outcomes; and
- the improved preparation of teaching assistants and the professoriate for their teaching responsibilities (e.g., requiring courses on pedagogical theory and practice as part of graduate education and/or new faculty orientation).

Co-hosted by the University of Guelph and Human Resources and Social Development Canada (HRSDC), in partnership with the Society for Teaching and Learning in Higher Education (STLHE), the Roundtable brought together 33 leaders from various stakeholder groups including universities and colleges; the federal and provincial governments; funding agencies; and national societies, associations, and councils (for a list of participants please see Appendix 1).

This report provides an overview of the Roundtable discussions and recommendations. It begins with an overview of the presentation by Dr. Mick Healey, from the University of Gloucestershire, England, an international expert on the integration of research, teaching and learning in PSE.

3 The University of Alberta (October, 2004) has developed a multi-part plan for integrating research and teaching. The plan requires students to develop an understanding of the research being conducted in their disciplines, along with the necessary research skills (e.g., critical thinking, problem solving, information and computer literacy, and oral and written communication skills), through such activities as inquiry based learning and participating in research opportunities, beginning in their first year.

Research and Learning: Opportunities and Challenges From an International Perspective

Dr. Healey provided an overview of the reasons why the research/teaching/learning nexus is important, pedagogical approaches for supporting this nexus, and national and institutional strategies that have been found to be effective at creating supportive contexts in other western countries.

There have been various calls for the enhanced integration of research, teaching and learning, such as that by Ernest Boyer, past president of the Carnegie Foundation who suggested that “the time has come to move beyond the tired old teaching versus research debate” (Boyer, 1990, xii). Reasons presented for doing so included (Healey & Jenkins, 2006):

- teaching has suffered from an imbalance in status and rewards (in comparison to research);
- the desire to avoid the unintended consequences of focussing on either research or teaching in isolation; and,
- in an age of ‘supercomplexity’ (Barnett, 2005), and given the increased significance of the knowledge economy and the growth of interdisciplinarity, “all students – certainly all graduates – have to be researchers” (Scott, 2002, 13).

There are myriad approaches for linking research and teaching in the undergraduate curriculum, including (Healey & Jenkins, 2006):

- course content is informed by faculty research;
- students learn about research methods;
- faculty use teaching methods which adopt a research-based approach (e.g., inquiry-based learning, problem-based learning, community service learning);
- students undertake their own research projects, whether individually or in teams;
- students assist faculty with their research projects;
- students gain experience of applied research/consultancy through work-based placements;
- faculty undertake pedagogic research, which benefits the quality of their teaching; and
- students are introduced to the research of faculty during orientation or through “Teaching and Research Awareness Weeks.”

In order for these approaches to become more common within PSE, it is imperative that supportive contexts be developed. Examples of national systems (i.e., in Australia, New Zealand, the United Kingdom and the United States) that have recently emerged in support of the research/teaching/learning nexus include (Healey and Jenkins, 2006):

- the implementation of national legislation (e.g., New Zealand) and/or standards (e.g., Australia, UK) that specifically call for the integration of research and teaching (i.e., within institutions, programs, courses, and/or the skill set and activities of the faculty);
- calling for a broadened understanding or reconceptualization of scholarship (i.e., explicitly valuing the scholarship of integration, application and teaching, in addition to

the scholarship of discovery) (Boyer, 1990);

- the establishment of national commissions for investigating the quality of teaching and learning and making recommendations for its improvement;
- the establishment of national councils, centres, institutes, societies and/or foundations focused on promoting, supporting and studying inquiry and research-based learning (e.g., in England the federal government has created 73 Centres for Excellence, which have each received up to £2m capital and £0.5m operating for five years to support this work);
- granting programs that require plans for dissemination to students, through such activities as the development of course material, curricular and pedagogical innovation, and improved opportunities for learning by traditionally underrepresented groups;
- granting programs that require the involvement of undergraduate students and include the potential for students to produce publishable work;
- granting programs and foundations that support broad-based summer research internship programs; and,
- national awards to support the scholarship of teaching and learning (e.g., in the US the Howard Hughes Medical Institute has provided \$1 million to each of 20 top research scientists to support their work in reforming undergraduate science education; in England £40 million has been allocated to a Teaching Quality Enhancement Fund, in support of evidenced based teaching practice).

Dr. Healey also identified several institutional systems being used to support the research/teaching/learning nexus including:

- the use of performance indicators or audits which provide financial incentives at the departmental level;
- benchmarking processes and progress against other similar institutions;
- offering designated faculty awards; and,
- ensuring curricular assessment, development and approval processes are aligned with the integration of research, teaching and learning.

Finally, he identified several challenges for making progress on this issue with the Canadian context. These challenges included the need to reconceptualize academic work as well as to develop supportive “national, provincial, and institutional structures and policies” including accreditation and tenure and promotion processes.

Following Dr. Healey’s presentation, roundtable participants turned their attention to discussing the issues raised including their perceptions of the associated challenges and opportunities, potential barriers to addressing the identified opportunities, and possible actions that might be taken.

Challenges

Participants underscored the timeliness and importance of the Roundtable. Concern was expressed about the increasing polarization of research and teaching, as well as the desire of colleges to become more involved in research and the need to provide more support for the scholarship of teaching and learning. There was also a significant amount of comment regarding the overall quality of the educational experience including concern with the extent to which students are being engaged and developing essential skills, as well as the ability of the system to meet the needs of students from underrepresented demographic groups (e.g., Aboriginal students, students of immigrant families, students with disabilities, and non-high school completers). The issue of Canada's competitiveness on the world stage for dealing with these issues was also raised. Each of these issues is elaborated below.

Polarization of Research and Teaching

Participants suggested that far from being integrated, the past several years have seen the increasing polarization of research and teaching in Canadian PSE, with research being given increasing prominence. One explanation provided for this is that research is largely perceived as a revenue generating activity and due to reductions in core funding, PSE is in desperate need of additional revenue. This perception appears to have taken hold, despite the fact that research also generates significant indirect costs. According to the AUCC (Indirect Costs of Federally-Funded University Research, 2006), "universities incur at least 40 cents in indirect costs for each dollar of direct support provided through the granting agencies."

In keeping with this focus on revenue generation, one VP Research commented that at his institution a clear distinction is now being made between "research" and "scholarship," with "research" being treated synonymously with "scholarly work that brings in revenue." A Provost at another institution similarly observed that scholarly work that doesn't bring in funding would not be as highly valued in promotion and tenure decisions as work that did, regardless of its societal or disciplinary significance. Roundtable participants also observed that the current focus on revenue generation is being further reinforced by society in general. In recent years PSE has come under increasing pressure to strengthen its economic contribution through the commercialization of scientific research. And, according to Industry Canada, universities have responded; "Invention disclosures and patent applications more than doubled between 1991 and 1997" (Special Report, 1999, 15).

In contrast, teaching is often perceived as a cost producing activity. This perception exists despite the fact that students generate substantial revenues in both tuition and core funding, and well-educated graduates contribute much to the quality of society, including its economic health. Consistent with this cost orientation, however, many institutions are focused on minimizing the costs of teaching and learning through such means as increasing class sizes, returning to computer graded multiple choice exams, and increasing the proportion of sessional and contractually limited faculty.

Another explanation for the polarization of research and teaching is institutional selection, promotion and tenure processes. One participant suggested that there is little variability in the assessment of faculty with respect to their teaching performance, whereas there is considerable variability in the assessment of faculty with respect to their research output. As a result, research performance tends to be the key determinant of faculty selection, career progression and merit pay decisions. Many faculty fear jeopardizing their careers if they focus too much on teaching and junior faculty are often actively discouraged by senior faculty from doing so.

Given this situation it is no wonder that many primarily undergraduate universities and colleges have increased their focus on research activity over the past several years. While some participants expressed concern with the increasing homogenization of PSE (i.e., with many institutions now declaring themselves to be "research intensive") others suggested that faculty from these institutions have been actively involved in major research projects for years and have much to contribute in this arena, particularly in applied research and with respect to the scholarship of teaching and learning. An acknowledged challenge was the extent to which a research intensive mandate can and should be

supported within all institutions, and where this is the case, how to do so without detracting from the teaching and learning mission. Another concern was the extent to which some faculty may lack the requisite experience required by the granting councils. It was suggested that applied research may be an ideal opportunity for university/college collaboration and one way in which faculty new to research might learn the necessary skills or develop a track-record. It was also pointed out that many existing granting programs encourage collaboration between various types of partners (e.g., university, college, community groups, the private sector).

In response to these challenges it was suggested that emerging assumptions concerning revenues and costs in PSE need to be critically examined. It was also suggested that the current research momentum should continue, but that we need to embrace a more inclusive understanding of research, particularly from an interdisciplinary and international/global perspective. Ernest Boyer's (1990) four scholarships (i.e., the scholarship of discovery, integration, application, and teaching) should all be valued and university and college faculty alike should be encouraged to bring a scholarly approach to all of their endeavours.

In support of this broader conception of scholarship, it was noted that at some institutions separate research and teaching streams have been created and that faculty in teaching streams are being encouraged to specialize in the scholarship of teaching and learning in their disciplines. At others, faculty are being encouraged to pursue scholarship in all of its forms. Regardless of approach, it was suggested that much more needs to be done to support the scholarship of teaching and learning. It was noted that Canada lacks a solid research base with respect to teaching and learning in higher education and that we need to identify best practices in pedagogy and curriculum development and develop more effective strategies for dissemination and uptake across disciplines and across institutions. It was suggested that there is the opportunity to use existing structures and models for this purpose. At the national level this could include national associations, societies, federations and centres of excellence. At the institutional level this could include departmental meetings, newsletters, seminars and colloquia.

It was also noted that at several Canadian institutions institutes for the scholarship of teaching and learning now exist. While initially participants suggested the creation of teaching and learning centres within institutions as a strategy to enhance the profile of teaching and learning relative to research, upon further consideration, it was noted that by establishing centres for teaching and learning separately from centres for research within institutions, such a structure would encourage competition and operation in silos rather than fostering integration. Thus, participants noted the desirability of creating centres for teaching, research and learning, under one umbrella.

Quality of the Educational Experience in PSE

Participants expressed concern with the quality of education in PSE with respect to both pedagogical practice and learning outcomes. Within universities in particular it was suggested that while there are a growing number of exceptions, didactic lecture-based teaching methods continue to predominate, learning outcomes remain largely focused on the memorization of facts, and due to increasing class sizes multiple-choice exams are becoming increasingly common. As a result, many undergraduate students have little opportunity to become involved in research or to develop critical inquiry skills and have little understanding of where knowledge comes from. One participant suggested that within this approach two false paradigms are reinforced: 1) that a finite body of knowledge exists and 2) ideas can be mastered in disciplinary silos.

It was suggested that much needs to change in this regard. In particular, it was recommended that research needs to be incorporated into every undergraduate student's experience as early as possible (i.e., ideally in the first year). While some programs do encourage research at the undergraduate level (e.g., offer undergraduate research awards), they are typically only available to a limited population of undergraduate students. Participants noted the need for a national student award program that has scalability (i.e., the ability to provide the majority of students with such an experience). Participants also acknowledged that universities have much to learn from the college system, which was characterized as

having smaller class sizes, well-structured curricula around competency based learning outcomes, and applied learning opportunities including inquiry-based learning.

Within PSE in general, there was agreement that much more emphasis needs to be placed on inquiry/problem/and community based learning experiences, in both domestic and international contexts. Several participants suggested that such experiences would help develop transferable research skills; “rather than focus on teaching students scientific facts we need to teach students how to think and act like scientists – how scientists identify important questions, how they locate information, how they solve problems, and how they create new knowledge.” It was also noted that community based learning experiences can help develop important citizenship behaviours and attitudes.

In his remarks, Dr. Alastair Summerlee, President of the University of Guelph also suggested that developments in technology need to be better integrated into student learning experiences. He argued that today’s students are “net generation students”, “information intense”, and focused on “global citizenship and connectedness”. He pointed out that Canada boasts the largest proportion of citizens connected to the internet of any country and argued that we need to capitalize on this potential.

Also linked to the quality of the educational experience was the issue of performance standards and quality assurance processes. Concern was expressed that the implementation of such standards can lead to heavy administrative burdens without any positive impact on quality; therefore, meaningful measures and processes focused on continuous improvement and learning outcomes are of paramount importance.

Graduation Rates and Accessibility

A related concern to the quality of the educational experience arose over current graduation rates and Canada’s future needs for an educated workforce. According to one participant, approximately 25 percent of Canadian students do not complete high school, 25 percent complete high school but do not pursue PSE, 25 percent complete college, and 25 percent complete university.

Further research on this point found that of the approximately 24 million Canadians aged 15 or higher, approximately 8 million (33 percent) had not earned an educational degree, certificate or diploma of any kind (Statistics Canada, 2001). For those who had, approximately 33 percent had attained a high school diploma or trade certificate as their highest educational designation and another 33 percent had at least some involvement with college or university, with approximately 3.6 million (15 percent) having received a college certificate or diploma and approximately 3.6 million (15 percent) having received a university degree.

Both of these sets of figures contrast to the suggestion of one Roundtable participant that up to 90 percent of jobs by the year 2016 are expected to require at least some PSE participation. This projected shortfall presents a large national problem which participants suggested requires a nationally coordinated strategy to address. Participants observed that we need to recognize that most jobs already require research skills - “you can’t do much in many jobs without some kind of research ability.”

Concern was also expressed about the lack of participation in PSE of students from particular demographic groups such as aboriginals, new immigrants, the disabled, and increasingly, young males who fail to complete high school. It was suggested that there is a need to more effectively promote PSE participation, better understand accessibility and retention issues, respond to the needs of diverse learners, and to create multiple re-entry points for drop-outs.

Canadian Competitiveness

Finally, concern was expressed that Canada may be losing ground to other western countries which have introduced extensive national programs in support of the integration of research, teaching and learning, including the preparation of the professoriate for their teaching and curricular responsibilities and encouragement for engaging in the scholarship of teaching and learning.

In summary, key challenges identified by Roundtable participants included:

- the increasing polarization of research and teaching (i.e., through financial pressures, the redefinition of research as “scholarly work that brings in revenue”, and institutional selection, promotion and tenure processes);
- concern with the quality of pedagogical practice (i.e., the continued prominence of didactic teaching methods) and the appropriateness of learning outcomes (i.e., the lack of opportunity to develop critical inquiry skills or citizenship behaviours);
- the shortfall in the percentage of people participating in PSE (including the under-representation of students from particular demographic groups), compared to the projected needs for a highly educated workforce; and,
- Canada’s lack of competitiveness on the world stage for dealing with these issues.

Opportunities

Opportunities identified for addressing these various challenges centred around four main themes, including the need for Canada to strengthen its position as a learning society, to clearly articulate the essential role of PSE within a learning society, to develop and market Canadian PSE, and to develop a stronger nexus between research, teaching and learning. Each of these themes is now elaborated.

Strengthening Canada as a Learning Society

One theme that emerged throughout the Roundtable was the opportunity (indeed the need) for Canada to develop as a “learning society”. This theme represented a shift in focus from a “knowledge-based economy” to a more inclusive view of society in which the ability to identify and solve complex social problems, articulate and resolve disparate points of view, and contribute to the overall quality of life are also recognized as important outcomes. As stated by the undergraduate student representative at the Roundtable, the “hallmark of a learning society is engaged citizens.” To move forward with this vision, it was noted that we need to build consensus around the characteristics of a Canadian learning society and the potential implications for PSE.

Articulating the Role and Value of Canadian PSE

As previously suggested, participants observed that over the past several years an increasingly narrow and economic vision of PSE has predominated. According to one participant, it is clear that “the national vision has been lost.” It was suggested that a new, more comprehensive, national vision and framework for PSE needs to be articulated, one that includes PSE’s potential contributions to a learning society. As one participant remarked “We can’t compete globally without creating a strong learning culture...PSE has a key role to play in creating a learning culture in which a knowledge economy rests and allows us to position ourselves in the world.”

Once this vision is articulated, research will be needed on the extent to which it is being achieved. Strategies will also need to be formulated for addressing any identified shortfalls. Participants noted that research is badly needed on the outcomes of PSE as it is not generally known what students are learning (i.e., beyond discipline specific knowledge outcomes), and how they are applying this learning for the betterment of society. Research is also needed to better understand associated pedagogical issues, such as best practices with respect to achieving the desired outcomes.

Roundtable participants acknowledged the importance of involving multiple stakeholders in developing this vision for Canadian PSE; the perceptions of the university and college community, the federal and provincial governments, industry/business, the general public, and students and their parents need to be garnered. Participants noted that it is particularly important to empower the student voice. It was reported by one participant that in a recent three-day forum, students were asked what kind of Canada they wanted. With regards to learning, students indicated a desire for “lifelong learning, accessibility, an equitable environment that values different ways of learning, a mix of learning modes and places, a learning culture that focuses on the student, and mobility – a national system that creates easy transferability.”

Drawing on this last point, the need to improve mobility between colleges and universities was noted by Roundtable participants as a particularly important concern; one if appropriately addressed, that would help integrate students’ research and applied learning experiences.

It was also strongly argued, however, that in general, parents and students are primarily concerned with issues of cost or “accessibility.” It was suggested that increasing tuition costs have focused student attention on financial factors and on the commodification of the learning experience, not the learning itself. It was strongly recommended that discussions with students and their parents need to move beyond costs to include issues of quality (e.g., class size, engagement, learning outcomes).

Marketing Canadian PSE

Another related issue was that of developing a marketing strategy for the Canadian PSE system so that it is recognized for its unique value both domestically and on the world stage. It was suggested that research is needed to help identify the distinctive strengths or competitive advantage of Canadian PSE. We also need to develop a plan to market these strengths and improve our ability to compete for students internationally. A comprehensive and coordinated effort to market Canadian PSE both domestically and internationally was identified as an untapped opportunity and important oversight.

It was suggested that Canadian PSE is already recognized for innovative pedagogy. For example, McMaster University's pioneering work in problem-based learning has been adopted at medical schools throughout the world. We are also known for supporting a lifelong learning orientation, particularly through the growth of continuing education. Strengthening the nexus between research, teaching, and learning was seen as one way for further supporting the development of, and hence the potential to market, the Canadian PSE system.

Developing a Stronger Nexus between Research, Teaching and Learning

The fourth theme, in line with the first three, was that the Canadian PSE system could strengthen its contribution to a learning society and its potential to be marketed internationally if it were to develop a *stronger nexus between research, teaching and learning*. It was suggested that faculty in general are committed to both research and teaching and that many recognize and value the reciprocal benefits that can be derived from integrating their various activities. One participant centered on the idea that "PSE is research" and that the "process of learning is the process of research". It was also suggested that there is growing interest in evidence-based teaching amongst faculty. However, it was also argued that in order for the research, teaching, learning nexus to be strengthened, substantial changes are needed in how faculty work is defined, supported and rewarded.

In summary, key opportunities identified by the Roundtable participants included:

- building consensus around the need to strengthen Canada as a learning society;
- working with multiple stakeholders in articulating a new, more comprehensive, national vision for PSE;
- developing a comprehensive and coordinated effort to market Canadian PSE domestically and internationally; and,
- developing a stronger nexus between research, teaching and learning.

Barriers to Change

Participants also identified a number of governmental and institutional barriers – some relatively complex, widespread, and ingrained – that have the potential to challenge the achievement of the identified opportunities. Strategies for dealing with some of these barriers were also identified.

Governmental

The current divide between federal and provincial mandates and associated funding strategies, presents a key barrier to the research/teaching/learning nexus. Addressing this barrier will be problematic given historical tensions between the federal and provincial governments, and the diversity of perspectives and priorities within federal departments and within the provinces. In addition, PSE does not appear to be a major priority with the current federal government. It was noted that there may be opportunities to capitalize on issues arising from the Roundtable during the next federal election.

Despite this situation, Alan Nymark, Deputy Minister HRSDC, remarked that given a strong case, his department would be interested in offering support. He reinforced the importance of PSE to society - "PSE has to be at the top of our agenda in a global economy and is fundamental for citizenship development" – and noted that HRSDC is prepared to "step up to the plate." However, he cautioned that any recommendations would need to include a "clear case" for action, identify step-by-step strategies, and demonstrate the return on investment in a manner consistent with the federal government's mandate. It was noted that the current government is focused on managing for results and value for money, so issues that focus on large populations will be more likely to get attention.

Participants agreed that the "problem" in PSE needs to be more clearly defined along with its consequences to society. Suggestions for making the case included: comparing current versus desired student learning experiences and outcomes; comparing current versus desired participation rates, particularly the participation rates of under-represented groups (Aboriginals, immigrants, the disabled, and high school dropouts); and the potential benefits from marketing an improved Canadian PSE system internationally. It was also suggested that we examine previous successes in "building the case". For example, child care has received increased attention and funding, due in part to a strong evidentiary base which included direct linkages to the standard of living and establishing Canada's place in a knowledge-based economy.

One participant noted that it in making the case for change, it would be particularly important for the government to hear from stakeholders (students, parents, employers) in terms of their concerns. Undergraduate students, for example, could undertake a massive letter writing campaign. Participants also recognized, however, a number of challenges in engaging these stakeholders. For example, the general public may not recognize the need for change (beyond their concerns with tuition levels). We will have to develop compelling arguments for the need for a learning society, the role of PSE, and the importance of better integrating research, teaching and learning. We will also need to argue why doing so is equally or more important than other priorities such as health care or child care. Participants also cautioned that the need for change has to be carefully developed because we don't want the public to lose confidence in PSE or to have enhanced expectations on which we can't deliver. Thus, it was noted that we must ensure that there is commitment among ourselves for change before moving forward with this agenda.

Institutional

Several important barriers were also identified at the institutional level. As previously suggested, one important cultural barrier is the imbalance in status between research and teaching. This cultural barrier is reinforced through the lack of preparation of faculty and teaching assistants for their teaching and curriculum development roles. It is also reflected in the fact that faculty are largely hired, promoted and granted merit-based pay increases on the basis of their research output.

An additional systemic barrier includes the use of curriculum and assessment processes that fail to articulate program level learning outcomes and ensure their integration across the curriculum. Within universities in particular, there is often little integration between courses, with faculty having considerable discretion in what is taught and how it is taught and assessed. The concept of academic freedom is often used to reinforce a course development and delivery approach in which "every course is an island" onto itself.

Participants also spoke at length about the lack of time and other resources for engaging in faculty development activities, exploring new pedagogical approaches, and the scholarship of teaching and learning. It was acknowledged that this lack of time is being driven in part by growing workloads and the increased complexity of faculty work (i.e., due to increasing student/faculty ratios, student diversity, the use of learning technologies, and involvement in institutional service and community work). It was also recognized, however, that the shortage of faculty time can be exacerbated by the nature of university governance. The collegial culture results in a significant amount of committee work which is often ineffective. In order to free up faculty time it was suggested that we need to make use of smaller committees in which members consult with others from representative groups.

Time was perceived as being in particularly short supply for those on teaching contracts, who tend to have higher teaching loads. In addition, it was pointed out that teaching contracts are also barriers to the research/teaching/learning nexus, as research grants often require faculty to have tenure track positions. As a result, research by contractually limited faculty is typically not encouraged or rewarded institutionally. Further, as sessional and contractually limited teaching appointments appear to be on the increase, this may become an increasingly significant barrier.

In summary, significant government and institutional barriers were identified by the roundtable participants.

Governmental barriers included:

- the problematic divide between federal and provincial mandates;
- the need to make a strong, evidentiary-based case for increased government investment; and
- the need to involve other key stakeholders in doing so.

Institutional barriers included:

- institutional cultures that value research over teaching, the lack of preparation of faculty and teaching assistants for their teaching and curriculum development roles;
- selection, promotion and merit-based pay decisions that favour research output over teaching;
- ineffective curriculum development and assessment processes that fail to articulate program level learning outcomes and ensure their integration across the curriculum;
- the growing shortage of faculty time; and
- the increasing number of sessional and contractually limited faculty who are actively discouraged from participating in research.

Suggestions for Moving Forward

Regardless of the barriers identified during the roundtable, there was a strong sense amongst the participants that change in PSE is required in order to address current challenges, and capitalize on the opportunities identified. However, questions concerning the extent of change that might be feasible arose. According to one participant: “There is a tension between building momentum versus looking at transformational change...we didn’t get onto a transformational agenda.”

Some argued that in order to have impact, we need to create a highly coordinated national initiative that includes strong incentives to bring institutions and disciplinary societies on board. Some participants suggested that the federal government should play the leadership role in such an endeavour. Others suggested that national organizations such as the AUCC, ACCC, CAUT, CLC, the Federation, and STLHE, should do so, ideally as a consortium. Yet, other participants argued that we need to “keep it simple” and focus on what individual associations and institutions might do on their own. Some specific examples suggested included:

- HRSDC and/or the CCL could identify key research questions that need to be answered (including research that would support “making the case” and the identification of “best practices”) and provide funding for their investigation;
- the granting councils could place more emphasis on dissemination and uptake with respect to the undergraduate curriculum and extend existing programs to include the scholarship of teaching and learning;
- the Federation could make the “scholarship of teaching in the disciplines” a focus at its 2008 conference;
- STLHE could promote best practice in inquiry/problem and community-based learning; and,

- CIHR could work at developing profiles of excellent teachers/researchers.

In addition to these important individual efforts, a combination of national, provincial and institutional strategies was proposed. Specific national and provincial strategies included:

1. Build consensus amongst stakeholder groups (i.e., government, granting councils, national associations, disciplinary societies, universities, colleges, community groups, the private sector, students and parents) around the need to strengthen Canada as a learning society.
2. Work with stakeholder groups in articulating a new, more comprehensive, national vision for PSE (i.e., in keeping with the characteristics of a learning society and the research/teaching/learning nexus). Ensure that this vision supports an appropriate level of differentiation across the system (i.e., that not all colleges and universities are motivated to pursue identical mandates).
3. Ensure any new performance standards or quality assurance processes are consistent with this new vision, and will contribute to its achievement.
4. Make the case for further investment by the government in PSE by amassing evidence in at least three areas:
 - a. Current versus desired learning experiences and outcomes
 - b. Current versus desired participation rates in PSE, including those of under-represented groups (Aboriginals, immigrants, the disabled, and high school dropouts)
 - c. The potential to market an improved Canadian PSE system internationally
5. Establish sources of funding and communities of practice to amass this evidence.
6. Clarify areas of government interest and responsibility for fostering the research/teaching/learning nexus (within the federal government and the granting councils, and between the federal and provincial governments).
7. Develop a comprehensive and coordinated effort to market Canadian PSE domestically and internationally.
8. Make use of the “Centres of Excellence” model or establish a national “Research, Teaching and Learning Centre” to support research on best practices, dissemination and uptake.
9. Extend the funding available through the granting councils and the Canada Research Chairs program (CRC) to explicitly support the scholarship of teaching and learning and innovative curriculum reform.
10. Ensure government programs that support undergraduate student research projects have scalability (i.e., are designed to support a large number of students).
11. Facilitate the mobility of students between and within university and college.
12. Explicitly acknowledge (make more visible and valued) the role of colleges in PSE - recognize and learn from their inquiry-based approach to learning, establish opportunities for colleges to participate in research, facilitate collaboration between colleges and universities.

Specific institutional-level strategies included:

1. Establish an institutional vision that includes the research/teaching/learning nexus and the institution’s contribution to a learning society.

2. Implement curricular development and assessment approaches that explicitly support the development of critical inquiry skills and citizenship behaviours and encourage the integration of these learning outcomes across the curriculum.
3. Commit to the use of innovative and active pedagogical approaches that support the achievement of these learning outcomes (e.g., critical inquiry, problem-based learning, community service learning) in both domestic and international contexts.
4. Develop a connected community of faculty, educational developers, learning and writing specialists, librarians, and learning technology staff etc. to support course development and the implementation of effective pedagogies.
5. Encourage greater collaboration and/or integration between teaching support departments and offices of research (i.e., both should be perceived as core services, and have similar prestige and focus).
6. Ensure tenure, promotion, merit-based pay policies adopt a broad definition of scholarship, value teaching, and reinforce the integration of research, teaching and learning. Reward departments whose faculty achieve success in these areas.
7. Establish institutes or other formal structures to support faculty interested in pursuing the scholarship of teaching and learning.
8. Provide professional development opportunities for faculty and require graduate students to participate in courses on pedagogical theory and practice.
9. Profile and celebrate teaching and learning successes and its scholarship in institutional publications and events, and through awards programs (for individuals, programs and departments).
10. Foster collaboration between university and college researchers.

Finally, it was suggested that before any comprehensive action plans are implemented, further discourse and consensus building is needed, particularly within and between the individual constituencies that were represented at the Roundtable. It is hoped that this report will help facilitate such discourse.

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Appendix A

**Roundtable on Research, Teaching and Learning
University of Guelph – April 18 & 19, 2006**

PARTICIPANT LIST

Name	Position	Dept/Institution/ Org
John ApSimon	Executive Director	Canada Research Chairs
Mark Bisby	Vice President, Research Portfolio	Canadian Institutes of Health Research
Neil Bouwer	Director General, Learning Policy Directorate	Human Resources and Social Development
Paul Brennan	Director, Corporate and Community Relations	Association of Canadian Community Colleges
Sheila Brown	President	Mount St Vincent University
Paul Cappon	President and CEO	Canadian Council on Learning
Julia Christensen Hughes	President	Society for Teaching and Learning in Higher Education
Fiona Deller	Coordinator, Post-secondary Education	Council of Ministers of Education, Canada
Steven Franklin	Vice President, Research	University of Saskatchewan
Neil Gold	Provost and Vice President, Academic	University of Windsor
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Anna Kindler	Associate Vice President, Academic Programs	University of British Columbia
David Kirby	Director	Centre for Higher Education Research & Development, University of Manitoba
Paul Ledwell	Executive Director	Canadian Federation of Humanities & Social Sciences
John Linn	Policy Analyst, Knowledge Infrastructure, Innovation Policy	Industry Canada
Nigel Lloyd	Executive Vice President	Natural Sciences and Engineering Research Council
John Mallea	President Emeritus	Brandon University
Rick Miner	President	Seneca College
Shirley Neuman	Vice President (retired)	University of Toronto
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Name	Position	Dept/Institution/ Org
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Iain Stewart	Director General, Innovation Policy Branch	Industry Canada
Alastair Summerlee	President	University of Guelph
Christine Tausig Ford	Director, Communications	Association of Universities and Colleges of Canada
Lynn Taylor	Director	Centre for Learning & Teaching, Dalhousie University
David Thomas	Vice President, Academic	Malaspina University-College
Jim Turk	Executive Director	Canadian Association of University Teachers
Alan Wildeman	VP, Research	University of Guelph