



February 2, 2009

The Honourable John Milloy  
Minister of Training, Colleges and Universities  
Mowat Block, 3<sup>rd</sup> Floor  
900 Bay Street  
Toronto, Ontario M7A 1L2

Dear Minister:

When we last met, you asked the Council to provide advice on whether Ontario should establish polytechnic institutions.

The Council considered this matter at its meeting on December 11, 2008.

The Council considered three options:

### ***Option 1***

Advise the Minister to proceed to designate several colleges as polytechnics, subject to these provisions:

1. The institutions should have an expanded role in offering baccalaureate degrees that combine academic and applied education and that are comparable in quality to those offered by universities, preparing students for the workforce or for graduate studies;
2. The institutions should continue to have the majority of their enrolments in diploma and certificate programs and in apprenticeships;
3. The number and geographic distribution of the polytechnics should align with projected growth in demand for degree-level programming;
4. The research role of these institutions should continue to be limited to applied research necessary to support their teaching role; and
5. The statute governing these institutions, and their nomenclature, should recognize their distinct status as a third option for students and should discourage mission expansion.

### ***Option 2***

Advise the Minister to defer any decision on this matter until the proponent colleges submit satisfactory business plans that address, *inter alia*:

1. Their planned future enrolments, by level of study;
2. Their expectations for capital and operating grants and tuition fees;

3. Their expectations for faculty research, including impacts on teaching loads;
4. Any statutory or regulatory changes they will require, including any changes to collective bargaining; and
5. Their proposals for validating the quality of their degrees (including any changes to academic governance) and for ensuring that polytechnic courses and degrees are recognized for purposes of transfer or entry to graduate studies.

### ***Option 3***

Advise the Minister not to designate any college as a polytechnic at this time, but instead investigate ways to encourage existing universities and colleges, individually and collaboratively, to expand their commitment to providing high-quality education that combines theoretical and applied learning and that is directed at meeting current and future labour market needs.

After due deliberation, the Council chose option 3. We reached this conclusion for three reasons.

- First, we found no clear definition of a polytechnic, no indication of how a new class of institutions would relate to colleges and universities, and no discussion of potential new resource and other needs.
- Second, assuming the major driving force is to provide a new type of applied education oriented to labour market needs, the evidence available to the Council from the research we commissioned and the consultations we held does not make the case for the creation of polytechnics. On the demand side, we saw no compelling evidence of an emerging excess demand for polytechnic education. On the supply side, we note that Ontario does not have colleges that are differentiated from the others in the same way as are institutes of technology in other provinces or countries.
- Third, we do not feel sufficient consideration has been given to the obvious alternative to polytechnics, namely finding ways to encourage colleges and universities, individually and collaboratively, to develop innovative new educational programs as labour market and other conditions warrant. We recognize that this approach has its own challenges, but we feel that it needs to be considered seriously as an alternative to creating a new institutional form.

### **A FURTHER RECOMMENDATION**

Our research and consultations on the polytechnic issue reinforced our belief that the postsecondary education sector in Ontario faces some significant challenges, and that system re-design will almost certainly be required as part of the response.

The obvious short-run challenge is to find ways to accommodate the projected sharp increase in the demand for baccalaureate degrees in the next decade, particularly in the GTA region. Long-

range forecasts are always fraught with uncertainty, but it seems reasonably certain that 60,000-100,000 net new PSE spaces will be required in the period to 2021. The bulk of these will be for university degrees, and the bulk of these will be in the GTA region.

The current economic and fiscal challenges make it especially important that the PSE system be aligned with labour market and human capital needs.

The Council noted that a variety of institutional models are available to meet the projected enrolment, including:

1. creating satellite campuses of existing universities;
2. creating new universities that are of the same type as existing universities;
3. creating technical universities;
4. creating new universities of a new type focusing on undergraduate study and with a limited role in research;
5. providing selected colleges with a new substantial role in baccalaureate programming;
6. providing colleges with a greater role in transfer programs in basic university subjects, such as arts and science; and
7. creating an open university.

Given the magnitude and complexity of the challenge, we recommend the development of a comprehensive plan to deal with the projected enrolment demand and with labour market alignment challenges in light of economic and fiscal circumstances. We are mindful, however, that the longer-run objectives for the PSE sector as set out in *Reaching Higher* and other documents must be kept firmly in sight when framing the plan.

A reasonable approach would be to identify the challenges, identify the types of system design adaptations that would be helpful in addressing these challenges, and compare the options based on an established list of criteria.

A list of major challenges might include these:

1. To provide spaces for an estimated 60,000-100,000 or more new students in the period to 2021, with a large share of these new spaces in the GTA, recognizing that some GTA students will continue to choose to attend universities outside the GTA.
2. To identify and then implement ways to enhance learning quality in colleges and universities, particularly at the undergraduate level.
3. To ensure that Ontario's overall human capital needs are met, and to enhance the ability of the system to respond to changes in labour market conditions.
4. To attract proportionately more students from traditionally under-represented groups and meet their unique needs with respect to academic learning and student services.
5. To continue to offer to the French-language population a range of institutions and programs.

6. To reduce the incidence of involuntary stop-outs and drop-outs from college and university programs.
7. To operate within available capital and operating budgets and in a way that is affordable to students.
8. To encourage harmonious labour relations.
9. To maintain and enhance universities' capacity to undertake high-quality research that contributes to economic needs, and to enhance colleges' capacity to undertake high-quality applied research that contributes to economic needs.

There may be a case for creating polytechnics as a way of addressing some of these challenges; however, as noted above, the evidence available to the Council from its research and consultations does not make such a case. In any event, this case should be compared with the merits of other ways of meeting future needs.

The Council views this as a matter of some urgency. In developing such a plan, the government should consult broadly and should compare alternative approaches as proposed by postsecondary stakeholders, academic researchers, and other sources.

Many elements of the Council's research plan are pertinent to addressing these issues. The Council would be pleased to work with the government and others in a coordinated way to assemble the information and research required to develop a plan to address projected enrolment growth and other needs.

I am attaching a report that provides greater detail on the Council's research on polytechnics, the options we considered, and the rationale for our advice.

Yours sincerely,



Frank Iacobucci  
Chair

Attachment

cc: Council members

## REPORT TO THE MINISTER: POLYTECHNICS

### ISSUE

Should the Ontario government take steps to promote polytechnic education? If so, should this involve creating a new class of postsecondary institutions, expanding polytechnic programs at existing institutions, or other measures?

### PROCESS

To support the development of this advice, the Council commissioned two research studies:

*“Polytechnics” in Higher Education Systems: A Comparative Review and Policy Implications for Ontario*, by Bruce Doern (published July 25, 2008)

*Degrees of Opportunity: Broadening Student Access by Increasing Institutional Differentiation in Ontario Higher Education*, by Glen A. Jones and Michael L. Skolnik (received; being prepared for publication)

In addition, the Council’s President has consulted with the presidents of 16 postsecondary institutions with a potential interest in this issue.

### BACKGROUND

#### Defining “polytechnic”

The term polytechnic does not have a single widely-accepted meaning.

Doern’s definition is “an institution of higher education, the majority of whose programs or degrees focus on education regarding applied technology.” He also says that polytechnic may be a form of education rather than an institution.

Jones and Skolnik say the term polytechnic is ambiguous and subject to many definitions. They identify “some characteristics of polytechnic education that are common to most uses of the term in Canada in recent years. This would include the notion that polytechnic education: (a) is employment or career focused; (b) involves a blend of theoretical and applied learning; and (c) is at a fairly high level of study, i.e., that of a baccalaureate or close to a baccalaureate.”

Jones and Skolnik go on to say that one could designate an institution as being a polytechnic by virtue of the proportion of its programs that involve polytechnic education, but there are different views on whether this calculation should include baccalaureate programs only or programs at all levels. They also note that “some views of a polytechnic institution assume a concentration on



programs related to technology or of a technical nature,” including degrees such as Bachelor of Engineering, Bachelor of Engineering Technology and/or Bachelor of Technology.

Polytechnics Canada, a national lobby group formed in 2005, says that polytechnics are the third pillar of Canadian postsecondary education, along with universities and colleges. Polytechnics are defined as institutions that “develop the highly qualified skilled people essential to the Canadian economy by:

- providing career-focused and community responsive education developed in partnership with employers.
- committing to a wide range of credentials including bachelor degrees, diplomas, apprenticeships, certificates, post-graduate offerings, continuing education and corporate training, spanning many fields.
- combining theoretical and applied learning, relevant work experience, and the opportunity to participate in applied research and commercialization projects.
- offering pathways that allow students to build on their credentials; and recognizing previous learning.”

The recent report of the New Brunswick Commission on Postsecondary Education found that:

Polytechnic is coming to have a broader connotation than institute of technology. It connotes a comprehensive approach to post-secondary education, one that embraces many aspects of a traditional university but grounds it in a more practical approach that is quite easily meshed with college programs.

The commission argued that polytechnics should be community-focused and should have a limited research mission. (The New Brunswick government ultimately did not accept the Commission’s recommendation to create polytechnics.)

These definitions agree that polytechnic education is applied and that it includes degree-level and non-degree level education. A significant difference is that Doern’s definition focuses on applied technology, while the other definitions do not have this restriction.

The variations in these definitions, and the fact that the word polytechnic is not commonly used in Ontario, suggests that significant explanation would be required to gain acceptance from Ontario employers and students. Secondary school students in particular are accustomed to choosing their courses based on their plans to seek admission to college or to university (“C” or “U” courses), so the creation of a third option would require adaptation in the secondary schools.

### **Polytechnics in other jurisdictions**

Doern finds that polytechnic education exists in many jurisdictions, but that its place in the structure of higher education differs in each jurisdiction.

In *England*, polytechnics existed from 1965 to 1992. In 1992 they were all converted to universities, although they continue to offer non-degree instruction as well.

In *Finland*, there is a binary system of higher education, composed of the polytechnic sector and the university sector.

The *U.S.* has a highly diverse higher education system. A number of institutions focus on technology education, ranging from small local colleges to advanced research universities such as MIT and Caltech.

In *Australia*, some universities have a significant focus on polytechnic education. Prior to 1988, Australia had a binary system of colleges and universities, with some colleges having a major focus on technology.

*Alberta* has adopted a typology of six types of postsecondary institutions:

1. Comprehensive Academic and Research Institutions (Alberta, Calgary, Lethbridge, Athabasca) (baccalaureate and graduate degrees, comprehensive research activity)
2. Baccalaureate and Applied Studies Institutions (Mount Royal, Grant McEwan) (baccalaureate degrees in specified areas, certificate, diploma, and applied degree programs; limited role in applied research and scholarly research)
3. Polytechnical Institutions (NAIT and SAIT) (apprenticeship, certificate, and diploma programs geared predominantly to technical careers, and some applied and baccalaureate degrees in specified areas; limited role in applied research and scholarly research)
4. Comprehensive Community Institutions (12 colleges ) (apprenticeship where demand warrants, certificate, diploma, foundational learning, and upgrading; may provide university transfer (years one and two) and applied degrees; may grant baccalaureate degrees in highly restricted circumstances; limited role in applied research and scholarly research)
5. Independent Academic Institutions (8 religious-based institutions)
6. Specialized Arts and Culture Institutions (ACAD, Banff Centre)

Alberta's description of its typology suggests how a polytechnic can be distinguished from a college by virtue of its focus on technology. In practice, the difference between a polytechnic and a college in Alberta may be the proportion of students enrolled in degree programs, rather than the focus on technology.

*British Columbia's* Kwantlen University College was renamed as Kwantlen Polytechnic University this year. By statute Kwantlen is now a special-purpose teaching university, with bicameral governance, and with authority to grant degrees at the bachelor's and master's levels and "so far as and to the extent that its resources from time to time permit, undertake and maintain applied research and scholarly activities to support the programs of the special purpose, teaching university."

B.C. has one other institution – BCIT, in Burnaby – that calls itself a polytechnic and has a role similar to SAIT and NAIT.

## **Requests to create polytechnics**

Five Ontario Colleges of Applied Arts and Technology (Conestoga Institute, George Brown College, Humber Institute, Seneca College, and Sheridan Institute) have been seeking designation as polytechnics. According to MTCU staff, these colleges have not asked for any additional powers or funding to go with this designation.

These five Ontario colleges, plus SAIT and BCIT, are the members of Polytechnics Canada. The national agenda of Polytechnics Canada is to seek funding for applied research and commercialization, to promote a national credentials framework that would allow postsecondary credits to be transferred across Canada, and to address national skills shortages.

According to MTCU staff, the five colleges have not proposed criteria to separate polytechnics from colleges. At present these five colleges offer more applied degree programs than any other colleges (ranging from 13 at Humber to 4 at George Brown). However, several colleges offer 3 applied degree programs, so drawing the line at 4 may seem arbitrary.

## **How polytechnic education is offered in Ontario today**

Ontario does not have any institution with the word “polytechnic” in its name. At Ryerson University’s request, “polytechnic” was deleted from its legal name in 2002.

Jones and Skolnik find that polytechnic education is offered in Ontario in four ways: (1) by colleges on their own; (2) by universities on their own; (3) by students creating a polytechnic experience on their own by attending a college (university) and university (college) in sequence, or less often simultaneously; and (4) by colleges and universities collaborating in concurrent, joint, and integrated programs.

### ***Universities***

Many universities offer degree programs of an applied nature. Some of these are widely offered and are more than a century old (e.g. Engineering). Some universities, by virtue of their history and legislation, have a high concentration of career-related degree programs. Almost all universities offer co-op or other forms of career-related learning.

Jones and Skolnik say that “not all such programs [with a career orientation] may include sufficient hands-on experience for students to warrant the polytechnic label. Perhaps, the programs of only those universities that refer in their missions to the value of applied or experiential learning (e.g., Ryerson, UOIT, and Waterloo) should be included in a list of polytechnic programs.”

### ***Colleges***

Since 1966, the primary mission of Ontario’s colleges has been to offer career-related instruction at the diploma and certificate level.

The *Postsecondary Education Choice and Excellence Act, 2000*, authorized colleges to extend their mission by offering “baccalaureate degree[s] in an applied area of study”, subject to the



approval of the Minister on the advice of the Postsecondary Education Quality Assessment Board (PEQAB).

According to Jones and Skolnik, “51 degree programs are being offered by 15 colleges. Over 40 per cent of the programs were being offered by two institutions (Humber 12 and Seneca 10). The five Ontario members of Polytechnics Canada accounted for about 70 per cent of the programs. Data obtained from the Ontario College Applications Service revealed that in 2007 there were 1,450 registrants in these programs.”

Colleges may have up to 5 per cent of program activity in applied degrees.

However, in response to requests from some colleges, the Minister of Training, Colleges and Universities has designated five colleges as “Institutes of Technology and Advanced Learning,” and these may offer degrees for up to 15 per cent of program activity.

Colleges have found that student demand for applied degrees has been mixed. Jones and Skolnik report that “[p]rograms in some institutions have had to turn away students, while programs in some institutions could not attract sufficient numbers of students.” Some colleges believe that the programs are unduly narrow and that PEQAB requirements prevent them from being broadened. Applications from applied degree-holders for university graduate studies are considered on a case-by-case basis, creating uncertainty. The term “applied” has created confusion because in the secondary school curriculum the “applied” stream is for students who do not wish to attend college or university.

#### ***Polytechnic education created by student choices***

Jones and Skolnik find that “of those who graduated from Ontario colleges in 2004, over seven per cent were attending a university within six months, and that percentage had been rising since 2000. This percentage corresponds to over four thousand college graduates moving on to a university within six months, about 85 per cent attending university full-time.” They note that some of this activity may not meet the definition of polytechnic education, i.e. some student may take unrelated programs at the two institutions.

Jones and Skolnik also cite estimates that “over seven per cent of university graduates in the class of 2002 enrolled in a college within two years. Data from the MTCU Student Satisfaction Survey indicated that of students enrolled in the colleges in 2006-07, 8.2% had a university degree. In response to the demand from university graduates for career focused programs that would build on their university experience, several colleges have developed programs that are specifically designed for university graduates.”

#### ***Joint programs***

Career-related degrees are also available through college-university partnerships. The Ontario College-University Transfer Guide records 298 college-university transfer agreements, including 233 that permit a college student to transfer credits to a university for degree completion, and 14 that permit a student to transfer credits from a university to a college. In addition, 37 agreements allow students to take some courses in both types of institution before completing their program(s) of study. Some of these agreements are widely used by eligible students; others are much less so.

## **MAJOR FINDINGS FROM THE RESEARCH PAPERS BY DOERN AND BY JONES AND SKOLNIK**

Doern does not make any findings about whether Ontario needs more polytechnic education or polytechnic institutions, because his research focuses on the experience of jurisdictions outside Ontario. Based on his study of other jurisdictions, Doern suggests that Ontario would have these options:

1. Take steps to convert the entire CAAT sector into a polytechnic institutional sector (as in the UK and Finland), accompanied by some systemic effort to improve and enhance their quality.
2. Take steps to encourage and “incentivise” a smaller subset of existing CAATs to “bid” to become formally designated/named polytechnic institutions, the majority of whose programs relate to applied technology.
3. Maintain the status quo allowing all existing CAATs to individually offer polytechnic education as a smaller of particular element in their program or structure partly to meet regional or local needs.
4. Take steps to develop joint university-CAAT programs that would deliver high quality polytechnic education.

Jones and Skolnik conclude that “we simply do not find sufficient evidence of an emerging excess demand for polytechnic education of such magnitude as to warrant creating new institutions called polytechnics.” They say this conclusion is reinforced by (1) the likelihood that much of the future increase in demand for degrees will be in social sciences and humanities, and (2) “Ontario does not have colleges that are differentiated from the others in the same way as are the institutes of technology in BC and Alberta. This difference, plus the ambiguity of the term, makes the polytechnic designation for any Ontario colleges inappropriate.”

## **OBSERVATIONS FROM CONSULTATIONS WITH COLLEGE AND UNIVERSITY PRESIDENTS**

As noted in the introduction, President Downey consulted widely with college and university presidents. There was some understandable divergence of views, although nothing in these conversations caused us to question our interpretation of evidence presented in the research reports and other relevant material.

## OPTIONS

The Council considered three options:

### *Option 1*

Advise the Minister to proceed to designate several colleges as polytechnics, subject to these provisions:

1. The institutions should have an expanded role in offering baccalaureate degrees that combine academic and applied education and that are comparable in quality to those offered by universities, preparing students for the workforce or for graduate studies
2. The institutions should continue to have the majority of their enrolments in diploma and certificate programs and in apprenticeships
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4. The research role of these institutions should continue to be limited to applied research necessary to support their teaching role
5. The statute governing these institutions, and their nomenclature, should recognize their distinct status as a third option for students and should discourage mission expansion.

### *Option 2*

Advise the Minister to defer any decision on this matter until the proponent colleges submit satisfactory business plans that address, *inter alia*:

1. Their planned future enrolments, by level of study
2. Their expectations for capital and operating grants and tuition fees
3. Their expectations for faculty research, including impacts on teaching loads
4. Any statutory or regulatory changes they will require, including any changes to collective bargaining
5. Their proposals for validating the quality of their degrees (including any changes to academic governance) and for ensuring that polytechnic courses and degrees are recognized for purposes of transfer or entry to graduate studies.

### *Option 3*

Advise the Minister not to designate any college as a polytechnic at this time, but instead investigate ways to encourage existing universities and colleges, individually and collaboratively, to expand their commitment to providing high-quality education that combines theoretical and applied learning and that is directed at meeting current and future labour market needs.

After due deliberation, the Council chose option 3. We reached this conclusion for three reasons.

First, we found no clear definition of a polytechnic, no indication of how a new class of institutions would relate to colleges and universities, and no discussion of potential new resource and other needs.

Second, assuming the major driving force is to provide a new type of applied education oriented to labour market needs, the evidence available to the Council from the research we commissioned and the consultations we held does not make the case for the creation of polytechnics. On the demand side, we saw no compelling evidence of an emerging excess demand for polytechnic education. On the supply side, we note that Ontario does not have colleges that are differentiated from the others in the same way as are institutes of technology in other provinces or countries.

Third, we do not feel sufficient consideration has been given to the obvious alternative to polytechnics, namely finding ways to encourage colleges and universities, individually and collaboratively, to develop innovative new educational programs as labour market and other conditions warrant. We recognize that this approach has its own challenges, but we do feel that it needs to be considered seriously as an alternative to creating a new institutional form.

## **A FURTHER RECOMMENDATION**

Our research and consultations on the polytechnic issue reinforced our belief that the postsecondary education sector in Ontario faces some significant challenges, and that system re-design will almost certainly be required as part of the response.

The obvious short-run challenge is to find ways to accommodate the projected sharp increase in the demand for baccalaureate degrees in the next decade, particularly in the GTA region. Long-range forecasts are always fraught with uncertainty, but it seems reasonably certain that 60,000-100,000 net new PSE spaces will be required in the period to 2021. The bulk of these will be for university degrees, and the bulk of these will be in the GTA region.

The Council noted that a variety of institutional models are available to meet the projected enrolment, including:

1. creating satellite campuses of existing universities;
2. creating new universities that are of the same type as existing universities;
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4. creating new universities of a new type focusing on undergraduate study and with a limited role in research;
5. providing selected colleges with a new substantial role in baccalaureate programming;
6. providing colleges with a greater role in transfer programs in basic university subjects, such as arts and science; and
7. creating an open university.

Given the magnitude and complexity of the challenge, we recommend the development of a comprehensive plan to deal with the projected enrolment demand. We are mindful, however, that the longer-run objectives for the PSE sector as set out in *Reaching Higher* and other documents must be kept firmly in sight when framing the plan.

A reasonable approach would be to identify the challenges, identify the types of system design adaptations that would be helpful in addressing these challenges, and compare the options based on an established list of criteria.

A list of major challenges might include these:

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3. To ensure that Ontario's overall human capital needs are met, and to enhance the ability of the system to respond to changes in labour market conditions.
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8. To encourage harmonious labour relations.
9. To maintain and enhance universities' capacity to undertake high-quality research that contributes to economic needs, and to enhance colleges' capacity to undertake high-quality applied research that contributes to economic needs.

There may be a case for creating polytechnics as a way of addressing some of these challenges; however, the evidence available to the Council from its research and consultations does not make such a case. In any event, this case should be compared with the merits of other ways of meeting future needs.

The Council views this as a matter of some urgency. In developing such a plan, the government should consult broadly and should compare alternative approaches as proposed by postsecondary stakeholders, academic researchers, and other sources.

Many elements of the Council's research plan are pertinent to addressing these issues. The Council would be pleased to work with the government and others in a coordinated way to assemble the information and research required to develop a plan to address projected enrolment growth and other needs.