Higher Education Quality Council of Ontario
Conseil ontarien de la qualité de l'enseignement supérieur
An agency of the government of Ontario

PERFORMANCE INDICATORS FOR THE PUBLIC POSTSECONDARY SYSTEM IN ONTARIO

A Consultation Paper Prepared by the Higher Education Quality Council of Ontario (HEQCO)

The purpose of this Consultation Paper is to seek your comments, feedback, and advice on a HEQCO-led project to develop a set of performance indicators to monitor, evaluate, and improve Ontario's public postsecondary system.

For clarity, this project is designed to allow HEQCO to better fulfill its legislated mandate to provide an evaluation of the overall state of Ontario's postsecondary system. This project is not designed to evaluate the performance of, or rank, individual institutions. As such, this project is not related to any data collection exercise HEQCO may be asked to initiate by the Ministry of Training, Colleges and Universities in light of its recently-announced consultation process around transformation of Ontario's postsecondary sector.

The thinking offered in this paper is based upon advice and guidance we have already received from a diverse group of experts in the fields of higher education, performance measurement, and policy analysis, as well as research we have conducted examining performance measurement exercises in other jurisdictions.

This paper provides the context for the *Performance Indicators for the Public Postsecondary System in Ontario* project, herein known as the *Performance Indicators Project* and our preliminary thinking on a slate of indicators to assess Ontario's postsecondary system. The first section of this paper (page 2) outlines the purpose of this project, the guiding principles, and proposed timelines we used to frame the initial discussion. The second section (page 4) summarizes many of the points that were made during our preliminary conversations with our group of experts (see Appendix 1), and gives a sense of the discussions and debates that led to this draft list of indicators. The third section (page 10) lists the draft set of indicators that resulted from those discussions.

We are sending this paper to all Ontario colleges and universities, student and faculty groups, government, and others who can contribute to the development of a better set of system indicators than we have managed to contemplate to date. In addition, we are using our website to solicit input from a broad audience knowledgeable about higher education who may wish to contribute to the discussion.

Ce rapport est actuellement en cours de traduction. Nous le mettrons en ligne dès que c'est disponible le 11 juillet 2012.

There are several ways to provide your input. You can send written submissions to us via email at: Indicators@heqco.ca (please use HEQCO Performance Indicators Project as the subject line) or regular

mail at: HEQCO Performance Indicators Project, 1 Yonge Street, Suite 2402, Toronto, ON M5E 1E5. In addition, if there is sufficient demand from a sufficient critical mass in an area, we are prepared to travel to you for an in-person conversation. We would appreciate your feedback by August 31, 2012.

We thank you in advance for your contribution to this important project.

SECTION 1: PURPOSE, PRINCIPLES, AND TIMELINES

Why did HEQCO initiate this project?

Two of the legislated functions of HEQCO[1] are:

- "to make recommendations to the Minister on performance measures to be used to evaluate the postsecondary education sector", and
- "to evaluate the postsecondary education sector, report to the Minister on the results of the evaluation and make the report available to the public".

To help us improve how we fulfill these required mandates, we initiated a *Performance Indicators Project* to generate a set of informative and useful indicators to assess the performance of Ontario's postsecondary system. The primary purposes of the *Performance Indicators Project* are to inform public debate, discussion, and understanding of the Ontario postsecondary system, and to provide relevant information to government and institutions to allow them to better manage and help improve postsecondary education in Ontario.

To inform this exercise, we reviewed higher education performance measurement regimes in other provinces and countries. In addition, we solicited the advice of a group of individuals who are not only informed about issues relevant to postsecondary education and performance measurement exercises but who are also passionate about the purposes and importance of education. These individuals, listed in Appendix 1, have provided their time and expertise on a *pro bono* basis and we thank them for their support and advice. We take the willingness of this group to devote time and attention to this project as testament of their sense of the importance of this exercise to the advancement of postsecondary education in Ontario.

Principles guiding the project and the selection of indicators

The following are a list of principles, strategies, and key points that framed this exercise and that helped guide the selection of appropriate performance indicators:

1. Our task is to develop indicators to evaluate the performance of the overall system, not the performance of individual institutions within the system.[2]

2. A useful system-wide performance matrix is one that can serve as a framework within which individual institutions create and/or align their own performance assessments. However, given

[1] HEQCO Act, 2005. http://heqco.ca/SiteCollectionDocuments/heqco_act_2005_EN.pdf

[2] In consultations to date, some have questioned whether Ontario really treats and manages its 44 public higher education institutions (20 universities and 24 colleges) as a system or whether it really operates as a collection of distinct sectors, the largest two being the college and university sectors. We understand the distinction. We prefer the term system, however, because our task, to the extent possible, is to assess the whole Ontario public postsecondary system, both colleges and universities and because there are important linkages between different sectors in the system.

the realities of the differences between the college and university sectors in Ontario, it may make sense to report on these two sectors separately.

3. The best system performance regimes cover the range of activities and contributions expected of postsecondary institutions. In Ontario, this means that an ideal slate of indicators should cover the broad areas of education, research and innovation, and community support and impact.

4. Four domains of performance indicators appear to capture most of the interest and relevant information desired in postsecondary system evaluations. These four broad domains include: access, quality, social and economic impact, and sustainability/efficiency. The difficult task is to populate these four domains with relevant and useful performance indicators.

5. The best indicators measure outcomes or what actually happens to students in postsecondary institutions. That said, some performance measurement of inputs may be unavoidable.

6. If something cannot be measured it cannot be an indicator. While some might suggest that this principle is self-evident, we are struck by how much time is spent considering factors that people believe are important but for which no one has been able to generate an acceptable measure. There may be aspects of postsecondary system performance that are critical to measure and for which we do not now have a readily available measure. In such cases it behooves us to articulate what information must be gathered or what research must be done to make these critical measurements.

7. Not all performance indicators are quantitative. Rather, some can be as simple as a yes-no answer on whether a particular attribute or process is present or absent, or even a summary of information obtained from questions in a survey instrument.

8. To the extent possible, and because the primary purpose of a system-wide performance matrix is improvement, indicators should focus on the future, i.e. where the postsecondary sector should be going, rather than simply cataloguing what has happened in the past.

9. The suite of performance indicators not only reports on the current state of the system but also permits comparisons of Ontario's performance to other relevant jurisdictions.

10. Not every performance measure is perfect and no performance matrix is either, especially at its introduction. However, performance measurement is key to improvement and to advancing the Ontario postsecondary system. The strategy then is to come up with the best set of performance measurements possible at the time, to apply this assessment device and, most importantly, to continually monitor, assess, and refine the instrument.

The purpose of the *Performance Indicators Project* is to assess the overall Ontario postsecondary sector. Ideally, this performance assessment matrix can then serve as the framework within which individual institutions generate their own performance assessment devices. The way that Ontario monitors performance of its health care sector provides a useful model and exemplar of this approach. Initially, discussions organized by the Ontario Hospital Association suggested a set of system-wide indicators. Over the course of many years, these were developed and then released at the institutional level. More recently, using these indicators as a framework, and motivated by the Excellent Care for All Act, all hospitals in the province have developed quality improvement plans based on performance measurements tailored to their hospital, taking into account their priorities and situation. On an annual basis, the Ontario Health Quality Council assesses these plans and reports on an overall assessment of health care in Ontario.

Our hope is that *the Performance Indicators Project* will provide the first step in this process, i.e. identification of a sensible and relevant set of indicators to monitor and assess the performance of the overall postsecondary system. Then, ideally, institutions would use this framework to develop a performance measurement device consistent with their mission, circumstances, and aspirations. For completeness, this means that after the slate of system indicators is developed, each college and university should consider carefully whether a system performance measure is applicable to it and to what degree. Similarly, government should not insist that all of the system indicators are applicable for every institution in the system and even if relevant, that each institution demonstrate the same level of performance on that indicator. In this manner, the existence of a set of system-wide performance indicators can support discussions of a more differentiated Ontario postsecondary system in which the achievement of the system is optimized because each institution contributes more, and is rewarded, for what it aspires to do and does best.

Timelines

Our intention is to finalize the slate of performance indicators in early September and to release an evaluation of the Ontario postsecondary sector using these indicators in Fall 2012. Therefore, we would appreciate your input by August 31, 2012.

SECTION 2: DISCUSSION OF INDICATORS

As noted above, examination of system performance regimes in other jurisdictions and the consultations we have held to date suggest that four domains of indicators likely capture most of what appears to be of greatest interest in exercises like this. These domains are: access, quality, social and economic impact, and sustainability/efficiency.

Access

Access – ensuring that there are enough spots for all qualified students seeking a postsecondary education – is a predominant concern of students, public, and governments. In Ontario, in particular, increasing capacity has been the dominant policy objective over the last decade or so and the evidence

suggests that the Ontario postsecondary system has accommodated significant growth.[3] The government has set a policy objective of achieving a 70% postsecondary attainment rate[4] and has established funding incentives to promote higher enrolments. It is difficult to imagine an Ontario system-wide performance matrix that did not include measurements of access.

Access to postsecondary education is measured in different ways.

Postsecondary ***participation*** measures the percentage of a population within a defined age cohort who attend postsecondary education. The numerator in participation measures is the number of students in that age group who are in postsecondary studies and the denominator is the total number of people in that age cohort. Although any age cohort could be selected to determine a participation rate, the one that receives the greatest attention is that of those completing, or within several years of completing, high school – usually 18-24 year olds – since this is the major feeder of postsecondary students. These measures do not necessarily capture older students or other life-long learners who may enter postsecondary studies at an older age or through non-traditional pathways. It is also important to note that participation measures just that – those enrolled – and not necessarily whether they graduated.

Postsecondary ***attainment*** measures the percentage of those of a defined ago cohort in the population who hold a postsecondary credential. The postsecondary attainment in Ontario for those between the ages of 25-64 in 2011 was 64% according to the Labour Force Survey, meaning that this percentage of Ontarians in that age range held some postsecondary credential.[5] However, this does not necessarily reflect the efforts of the Ontario postsecondary system as attainment captures educational achievement regardless of where that education was received. It is clear that the high attainment rate in Ontario is assisted by the high numbers of Ontarians who received their postsecondary credential in other provinces or countries; however it is also diminished by those who attained a credential in Ontario and then moved out of province.

Aside from measuring overall participation or attainment, there is considerable interest in understanding the postsecondary achievements and engagement of specific targeted groups. This focus has been shaped by the recognition that some segments of the population are underrepresented in access to postsecondary education in spite of the generally high overall participation and attainment scores in Ontario (and Canada) relative to other OECD countries.[6] Since a postsecondary credential is recognized as being important to future economic and social success, recent attention has been focussed on the participation of these currently under-represented groups (e.g., Aboriginals, students from economically disadvantaged families). Therefore, an important measure of access could capture the engagement of these under-represented groups in postsecondary education.

---

[3] HEQCO Quick Stats: http://heqco.ca/en-CA/Research/quickstats/Pages/default.aspx
[4] Ontario Throne Speech. (2010). http://www.premier.gov.on.ca/news/event.php?ItemID=11282&Lang=EN
[5] Norrie, K. and Lin, S. (2009). *Postsecondary Educational Attainment and Participation in Ontario*. Toronto: Higher Education Quality Council of Ontario. http://heqco.ca/SiteCollectionDocuments/AttainmentENG.pdf
[6] Norrie, K. and Zhao, H. (2011). *An Overview of PSE Accessibility in Ontario*. Toronto: Higher Education Quality Council of Ontario http://heqco.ca/SiteCollectionDocuments/At-Issue-8-Accessibility-ENG.pdf

As we have argued in other papers,[7] it is impossible to speak about access without also bringing in the issue of student financial aid and student debt load. There are some who argue that an assessment of a postsecondary system must incorporate a measure of the financial burden on the student, in terms of either tuition levels or debt load. Even if one argues that student debt is an important measure, the capacity of students in the system to repay their loans, measured perhaps by default rates, might be the more relevant measure than debt accrued. We do not minimize the importance of these variables. But, ultimately, these variables should be reflected in access measures. If tuitions are unaffordable, or if the financial aid system is inadequate to mitigate these tuition levels, then one would expect to see decreased postsecondary participation.

Quality

The quality of education students receive is the currency by which postsecondary systems are evaluated; and if it is not, it should be.

The difficulty is that while quality is acknowledged by many to be among the most important performance indicators, it generates much controversy and has been the most difficult to measure. Part of the conceptual difficulty has been the lack of agreement over what constitutes a "quality" measure. This problem is exacerbated by the fact that we expect our colleges and universities to perform in a number of domains so "quality" measures for education, for example, are obviously going to differ from a measure of research quality.

We will not rehearse here the substantial literature on "quality" measures in higher education. However, our review of this literature and our consultations to date have led us to the following conclusions about quality measures in a provincial postsecondary performance matrix.

First, it is inconceivable to have a postsecondary performance report card that does not attempt to assess the quality of postsecondary education in the Ontario system. We can take comfort from the observation that the higher education world has come to peace with "quality" assessments in other areas relevant to higher education even though similar concerns and controversies exist about the validity and adequacy of the specific measures selected. For example, we routinely and repeatedly make judgements about the quality of a professor's or institution's research even though we have concerns about the validity, relevance, and meaning of some of the specific measures used – such as publication counts, sponsored research funding, citation counts, or even the peer review system itself.

Second, going back to the principles identified above, measurements of quality of the Ontario postsecondary system must cover, as a minimum, quality considerations in the domains of both the education we provide to the students in the system and the research/innovation contributions of the system. And, better indicators are those that permit relevant comparison of Ontario to other jurisdictions, and hopefully over time to allow judgment of the success of macro policy measures.

[7] Norrie, K. and Lennon, M.C. (2011). *Tuition Fee Policy Options for Ontario*. Toronto: Higher Education Quality Council of Ontario http://heqco.ca/SiteCollectionDocuments/AtIssueTuitionENG.pdf

So, how is quality of postsecondary education measured? In the area of education, some promote the importance of student satisfaction scores. Many jurisdictions assess student satisfaction but it is understood and often argued that there are many variables that influence student satisfaction, only some of which may relate to how much or how well students have learned during their postsecondary education.[8]

Others argue that the best measures of educational quality are derived from standardized tests. One of the great advantages of standardized tests is that they permit "apples-to-apples" comparisons across jurisdictions, as well as a longitudinal assessment of the system over time. The trick here, of course, is to develop consensus around which things should be measured and then agreement as to which measures should be standardized. So, for example, few would argue that the acquisition of better critical thinking skills is a "quality" goal of a postsecondary education. But, even with this consensus, there is some question over how to measure critical thinking ability. For example, there is considerable controversy whether the Collegiate Learning Assessment, an instrument some tout as the current gold standard for measuring critical thinking, is a valid measure of this desired quality outcome.[9]

Within the domain of quality measures, some point out that the dominant reason students offer for seeking a postsecondary credential, and a dominant reason governments support a public higher education system, is to graduate students with the skills and education to fill or create jobs in a knowledge-based economy. This observation leads some to promote the necessity of quality measures that capture how well a postsecondary system graduates students with the right skill sets to succeed in current labour markets. It is unclear how this assessment would be made, although the use of survey instruments that ask employers about the preparedness of students for work are used.[10] Some have argued for extending these measures by asking employers (using a simple survey instrument) of the quality and preparedness of their new employees who hold postsecondary credentials.[11]

In our discussions, some have noted the possibility that no consensus will emerge around specific indicators to examine quality. This suggestion leads some to recommend that in lieu of presumed quality measures, a proxy is to inquire whether the postsecondary system has embedded processes and practices that would allow for quality measurements and assurance. This was the philosophy behind the

[8] Some will argue that student satisfaction with their educational experiences, by itself, is an important measure regardless of its correlation with the quality – amount or depth – of learning. Others argue that a combination of employment and educational satisfaction influences overall graduate satisfaction. See McCloy, U. and Liu, S. (2010). *What are the Influencers of Graduate Satisfaction and Labour Market Outcomes of Ontario College Graduates? An Analysis of Ontario's College Graduate Satisfaction Survey Results.* Toronto: Higher Education Quality Council of Ontario.

[9] Arum, R. and Roksa, J. (2011). *Academically Adrift: Limited Learning on College Campuses*. University of Chicago Press. USA

[10] The Ministry of Training, Colleges and Universities captures annual employer satisfaction rates of recent Ontario college graduates as a component of their overall employment profile. For the most current report see: http://www.tcu.gov.on.ca/pepg/audiences/colleges/serials/eprofile09-10/profile10.pdf

[11] Usher, A. (2012). *Measuring Graduate Quality*. Higher Education Strategy Associates. http://higheredstrategy.com/measuring-graduate-quality/

original UPRAC process used by the Council of Ontario Universities for quality measurement in the Ontario university sector and the many learning outcome mapping exercises in the province.[12]

Given societal expectations of postsecondary education, however, one also wants to measure the quality, or at least the competitiveness, of a sector in research and innovation. The research competitiveness of individual institutions is often measured and it is not difficult to think how one could aggregate these data to come up with some system measure. Measurements of "innovation", and how much a postsecondary system contributes to the innovation of a jurisdiction, are more controversial.[13] These attempts have tended to rely on measurements such as spin-off companies or licensing/royalty revenue from postsecondary institutions, although the limitations of these indices are also acknowledged.

Social and economic impact

Many higher education institutions speak eloquently and forcefully about how they support and underpin the social and economic well-being of their communities and regions. It is clear that the willingness of governments and the public to support a public higher education system is motivated by its understood contribution to a better quality of life and healthier economy. It seems sensible, therefore, to try to incorporate some measures of social and economic impact in an assessment of the contribution of a postsecondary system.

We have received many anecdotes of how postsecondary institutions uplift the social fabric of a jurisdiction. For example, we have been directed to indices that purport to measure the quality of life or liveability of cities or regions,[14] but it is unclear how much of this measure can be attributed to the contribution of the postsecondary system. There is some research that finds links between certain types of political activity and years of education.[15]

Monitoring economic impact appears easier because so much of the discussion about the economic impact of postsecondary systems has to do with jobs and job creation. We are also aware that students,

[12] See for example, Ontario Universities Council on Quality Assurance. (2012). *Quality Assurance Framework* http://www.cou.on.ca/related-sites/the-ontario-universities-council-on-quality-assura/pdfs-(1)/quality-assurance-framework---guide-may-2012

[13] See for example, Government of Canada. (2010). *State of the Nation 2010 — Canada's Science, Technology and Innovation System: Imagination to Innovation — Building Canadian Paths to Prosperity* *http://www.stic-csti.ca/eic/site/stic-csti.nsf/vwapj/10-059_IC_SotN_Rapport_EN_WEB_INTERACTIVE-good.pdf/$FILE/10-059_IC_SotN_Rapport_EN_WEB_INTERACTIVE-good.pdf*

[14] See for example, The Economist Intelligence Unit's Livability Index http://www.eiu.com/site_info.asp?info_name=The_Global_Liveability_Report, and Mercer Quality of Life Survey http://www.mercer.com/qualityoflivingpr#city-rankings

[15] See Riddell, C. (2006). *The Impact of Education on Economic and Social Outcomes: An Overview of Recent Advances in Economics.* CPRN's Skills and Knowledge for Canada's Future: Seven Perspectives - Towards an Integrated Approach to Human Capital Development project. http://www.cprn.org/doc.cfm?doc=1490&l=en; and Curtis, J., Grabb, E., Perks, E., and Chui, T. (2004). "Political Involvement, Civic Engagement, and Social inequality." In *Social Inequality in Canada: Patterns, Problems, and Policies*, 4th ed., eds. J. Curtis, N. Guppy, and E. Grabb. Toronto: Pearson Education Canada.

when asked to identify the single most important reason for pursuing postsecondary education, invariably identify the desire to get a good job as the dominant motivator.

Sustainability/efficiency

Many postsecondary performance regimes include assessments of the financial state of the institutions that constitute the system. The reasons for this are obvious – financially sustainable and appropriately resourced institutions are considered prerequisite to a sustainable robust system. Currently, Ontario's allocation to postsecondary education, $7.3B in 2012-13,[16] is among the highest of ministry expenditures, topped by health and K-12 education. Tuitions in Ontario universities are among the highest in Canada.[17]

Aside from the issue of how much money institutions receive to operate, there are now greater calls by the public and government to hold the public sector accountable for how it deploys the funds it receives and whether they are being allocated in an efficient manner to achieve desired outcomes. These "efficiency" considerations are motivated by the desire of many governments to support an educational system that delivers a high quality education to more students with no more, or even less, money. The recent Drummond Report[18] focusses the attention of the Ontario government and Ontarians on the amount of money a public sector has to deliver its services and what structural or process reforms may increase its ability to offer services within tight financial constraints.

One might think it easy to identify some number from the extensive financial statements of institutions that would attest to the financial health and sustainability of the institution and by aggregation, therefore, of the sector. If there is such an obvious number, we are not sure what it is. Postsecondary institutions are complex creatures, with multiple sources of revenue that have complex relationships with one another and nontrivial constraints on their use (e.g., capital versus operating; research funds versus general operating; all the restricted trust funds, etc.). Furthermore, the audited financial statements of postsecondary institutions are constructed to conform to accounting rules and regulations that often make it difficult to interpret the relevance or meaning of the numbers contained in them. Institutions also carry some serious financial liabilities affecting sustainability that are not easily observable in their financial statements, such as their ongoing pension liabilities and the future costs of salaries and benefits of the tenured faculty complement.

Considerations of sustainability can go beyond the money available to support the faculty, staff, and students within the system. Postsecondary systems also require a substantial and expensive physical plant to support extensive teaching and research programs. Some argue, therefore, for examination of the sustainability of a system's capital infrastructure and assets.

---

[16] Ministry of Finance. (2012). *Ontario Budget.* Toronto: Queen's Printer for Ontario, p. 174. http://www.fin.gov.on.ca/en/budget/ontariobudgets/2012/papers_all.pdf

[17] Norrie and Lennon, 2011, p. 5

[18] Drummond, D. (2012). *Commission on the Reform of Ontario's Public Services: Public Services for Ontarians: A Path to Sustainability and Excellence*. Toronto: Queen's Printer for Ontario. www.fin.gov.on.ca/en/reformcommission/

In our discussion to date, some have suggested that these considerations will make it difficult to identify quantitatively the financial health of organizations. Rather, they argue, a better approach is to see whether institutions engage in practices that are the foundation of "sustainability" thinking or that allow them to plan properly for the long term. In this context, the suggestion that has come up most often is to inquire whether institutions engage in multi-year budgeting.

Finally, for the reasons identified above, many governments are examining the efficiency or productivity of their postsecondary systems. This typically involves an examination of the amount of output of the system relative to the resources made available to them.[19] The outputs could be the number of graduates relative to funding level or the teaching load per faculty member.

SECTION 3: RECOMMENDED INDICATORS

Access

1. *Percentage of Ontario students within an 18-24 (or so) age range that attend postsecondary.*

A quintessential participation measure of the dominant and leading cohort pursuing postsecondary studies.

Possible data source(s): Statistics Canada Labour Force Survey: the percentage of 20-24 year olds who have attended (currently or previously) college, trades, or university. Allows for comparisons to other provinces and possibly other countries.

2. *Differential participation rate of 18-24 year old (or so) students from families within the highest income quartile and lowest family income quartile.*

To identify the degree to which a postsecondary system is capturing currently under-represented students. Family income does not correlate perfectly with all under-represented groups of interest but it is probably the variable that captures the majority of them.

Possible data source(s): Statistics Canada Survey of Labour and Income Dynamics. Allows for comparisons to other regions in Canada.

3. *Percentage of students entering postsecondary education who graduate in a defined and reasonable period of time given the length of their programs.*

A fundamental measurement that gets beyond enrolment and assesses whether students actually graduate.

Possible data source(s): Ministry of Training, Colleges and Universities Key Performance Indicators (KPI) for graduation rate. Allows for comparison to the United States.

[19] See for example, Lumina Foundation. (2011). *Strategic Plan Goal 2025*. http://www.luminafoundation.org/wp-content/uploads/2011/02/Lumina_Strategic_Plan.pdf

Quality

4. *Number of Ontario institutions adjusted for population in the Top 100 of world rankings.*

An assessment of global competitiveness of the system.

Possible data source(s): Times Higher Education World Rankings of Universities; Shanghai Jiao Tong rankings. Allows for comparison to other provinces, states, and countries.

5. *Literacy and numeracy levels of students in the Ontario postsecondary system.*

Literacy and numeracy are fundamental skills expected of postsecondary students. Many well developed internationally recognized measurement devices.

Possible data source(s): Canada participates in the Adult Literacy and Life Skills Survey (ALL) and the Programme for International Assessment of Adult Competencies (PIACC), both of which allow for comparison to other provinces and countries.

6. *Employer satisfaction with postsecondary hires.*

Possible data source(s): The results from the Employer Satisfaction Survey are published by the Ministry of Training, Colleges and Universities. The annual survey captures employer satisfaction of recent Ontario college graduates across skill sets such as communication, numeracy, and job preparation. Currently these results only exist for Ontario colleges.

7. *Ontario's share of Tri-Council (NSERC, SSHRC, CIHR) funding.*

Measures competitiveness of the Ontario postsecondary system in research.

Possible data source(s): Federal granting councils.

Social and economic impact

8. *Percentage of individuals with a postsecondary credential who vote relative to the voting rate of those without a postsecondary credential.*

There is a strong view that a postsecondary education should produce engaged citizens. If so, they should have a higher voting rate than the population without a postsecondary experience. This is also one of the few social impacts for which we hope we can get reliable and reasonable data to assess some contribution of postsecondary education.

9. *Employment rate of holders of a postsecondary credential relative to employment rate of those without a postsecondary credential.*

A usual measure of postsecondary contribution to the economy but one that controls for economic cycles where the overall rate of employment may change due to fiscal and economic circumstances. Allows for comparisons to other provinces and countries.

Possible data source(s): Statistics Canada General Social Survey or Labour Force Survey, Ministry of Training, Colleges and Universities annual survey of graduates for KPIs relating to employment rate and relevance of program to employment.

10. *Number of new jobs created in the past year relative to the total number of jobs in the province at the beginning of the year.*

If the postsecondary system is supposed to fuel the knowledge-based economy, then proportionally more jobs should be created in jurisdictions with better postsecondary systems. Allows for provincial and international comparisons.

Sustainability/efficiency

11. *Grant + tuition as a % of provincial GDP.*

Measures degree of operating resources provided to the system adjusted for size of the economy. Institutions require reasonable funding if they are to deliver on the public goals expected of them. It is also important to be able to compare the operating resources available to Ontario system institutions relative to their competitor institutions in other jurisdictions. Grant + tuition represent the great majority of operating revenues to public institutions in the system.

Possible data source(s): Data used to measure public and private expenditures on educational institutions as a percentage of GDP within Canada are combined for the Pan-Canadian Education Indicators Program (PCEIP) and are published in the report, *Education Indicators in Canada: An International Perspective*. These data can be used to make comparisons between Canadian provinces and other countries.

12. *Number of institutions where annual operating revenue exceeds annual operating expenses.*

Measures whether institutions have the revenue they need to meet their ongoing annual expenses.

13. *Annual grant + tuition per credential awarded.*

Provides one measure of productivity by calculating the relationship between the ongoing operating resources provided to the system and the most significant output of the system – graduates.

APPENDIX 1: EXPERT ADVISORY GROUP

David Trick, David Trick & Associates

Kevin Lynch, Vice-Chair, BMO Financial Group

Ken Snowdon, Ken Snowdon & Associates

Rob MacIsaac, President, Mohawk College

Vivek Goel, President & CEO, Public Health Ontario

Ministry of Training, Colleges and Universities

Alex Usher, Higher Education Strategy Associates

Sam Andrey, former Executive Director, Ontario Undergraduate Student Alliance

Peter Gooch, Senior Director, Policy & Analysis, Council of Ontario Universities

Chaviva Hosek, President Emeritus, Canadian Institute for Advanced Research (CIFAR)

Michael Fullan, Professor Emeritus, Ontario Institute for Studies in Education, University of Toronto

Howard Alper, Chair, Science, Technology and Innovation Council (STIC) of Canada