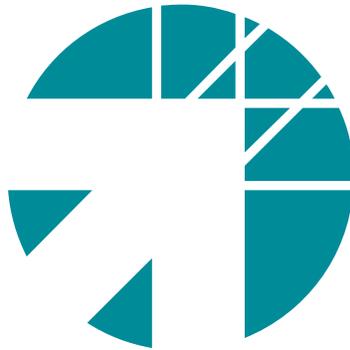


# **Performance Indicators Workshop for Universities**

## **Report**



Higher Education Quality Council of Ontario

Ken Norrie, Vice-President (Research)



## Introduction

A key element of the Higher Education Quality Council of Ontario's (HEQCO's) mandate is to advise the Ontario Ministry of Training, Colleges and Universities on accountability within the post-secondary education (PSE) sector in general, and on the format and content of Multi-Year Accountability Agreements (MYAAs) in particular. Thus, we welcomed the opportunity to discuss the challenges posed by the current MYAA system with university administrators and staff responsible for compiling and using performance indicators (PIs) for academic planning. The occasion was a workshop organized in collaboration with the Council of Ontario Universities (COU) and held at Ryerson University on November 23, 2007.

The workshop had three objectives. The first was to compile and circulate an inventory of all PIs universities currently produce and make public, and to address any issues around data availability and reliability. The second was to discuss how PIs were used in academic planning by individual institutions. The third was to seek advice on constructing a framework for MYAAs in Ontario.

This report serves two purposes: to provide a summary of the proceedings and to report on what HEQCO took away from the day/

and Analysis (CUPA) representatives at each university prepared an inventory of PIs used by their respective institutions. That information was aggregated by the COU's Vice President of Policy and Analysis, Jamie Mackay, into an inventory officially titled *Ontario Universities Performance Indicators Matrix*. For reasons that will quickly become apparent, this document was informally dubbed the "giant matrix". Hard copies of the matrix are available from HEQCO upon request. To obtain a copy please e-mail [info@heqco.ca](mailto:info@heqco.ca) or call 416-212-5248.

The matrix presents PIs by institution, organized into four categories that correspond to HEQCO's research mandate – accessibility, quality, accountability and inter-institutional relations. The document contains an overall summary of PIs, a summary by major theme and a detailed reporting of PIs by theme and institution. From the matrix it is clear Ontario universities compile and publish a huge amount of performance indicator information. The table below provides a summary. All told, there are 882 pieces of data in the inventory, or an average of 49 PIs per institution. There is considerable variation among institutions in reliance on PIs. The fewest number of indicators reported by any institution is nine, while the largest number is ninety-six.

## The Performance Indicator Inventory

To help HEQCO understand the current performance indicators used by Ontario universities, Council on University Planning

## Summary of the Giant Matrix

	Number of PIs	Percent of Total	Institutions Reporting	Average PIs per Reporting	Fewest PIs Reported	Most PIs Reported
Total	882	100	18	49	9	96
Accessibility	205	23.2	18	11	3	20
Quality	504	57.1	17	30	10	65
Accountability	153	17.3	16	10	3	21
Inter-institutional Relations	20	2.3	9	2	1	4

There is also considerable variation in reporting by major theme. Quality is the largest category, accounting for 504 of the 882 entries, or 57%. All but one of the institutions report quality indicators, with the range of those reporting running from 10 to 65.

Just under one-quarter of the entries, 205 in total, relate to accessibility. All universities report PIs in this category, with the range running from 3 to 20.

Accountability is the third largest category, consisting of 153 indicators or over 17% of the total. All but two institutions are represented in the matrix, with the range running from 3 to 21 data points. One of the universities not represented in the matrix directs readers instead to its website.

Inter-institutional relations is the smallest category by far with only 20 indicators, or 2.3% of the total. Only nine universities report in this category, with the range running from one to four.

## Case Studies in PIs and Academic Planning

The second part of the agenda, titled *Case Studies in Using PIs for Academic Planning: Progress, Pitfalls and Potential*, featured presentations by institutions chosen to reflect a variety of sizes and missions and visions. To obtain copies of these PowerPoint presentations please e-mail [info@heqco.ca](mailto:info@heqco.ca) or call 416-212-5248.

The first presentation was by Pierre Mercier from the University of Ottawa. Ottawa employs an explicit balanced scorecard approach to academic planning with performance indicators, drawing on the framework developed by Robert Kaplan and David Norton<sup>1</sup>. The starting point for their scorecard, as with all such ventures, is the University of Ottawa's mission statement as outlined in the document *Vision 2010*. Kaplan and Norton's balanced scorecard elements are adapted for an academic setting by equating clientele with students and community; processes with academic excellence; organizational health with employee quality and commitment; and financial viability with resources.

The University of Ottawa distinguishes between two broad types of indicators: general (e.g., learning quality) and mission specific (e.g., linguistic balance). Actual indicators were selected by a team led by the university's Provost and involving senior representatives from all relevant organizational units.

With indicators chosen and data requirements met, the scorecard aspect of the planning process is introduced. For each indicator, there is a base value, a current value and a target value. This allows the actual value to be compared to the base

value -- are we making progress from where we started? -- and the target value -- how close are we to where we want to be? A 'traffic light' approach is used as a visual aid to assist the planning staff: green means satisfactory, yellow means caution and red means alert. The scorecard is updated annually in the early fall, and serves as a context for budget requests and decisions.

Paul Stenton provided an overview of Ryerson University's practices in the workshop's second presentation. Ryerson groups its indicators into three types, and distinguishes between formative and summative measures. Performance indicators are used as the first indicator, and are intended to enable the Board of Governors to monitor its areas of oversight and governance. There are four categories within this group: strategic direction indicators, such as retention and graduation rates; management indicators, such as student to faculty ratios; financial indicators, such as deficit/surplus; and university profile indicators, such as the percentage of alumni making donations.

The second type, progress indicators, informs academic planning and decision-making at the departmental, faculty and institutional level. These measures are made interactive using the data management software, *Beyond 20/20*. This program allows administrators to trace the performance of their units over time and in a comparative context.

The final category, decision-support indicators, is developed for the Provost and Deans to support evaluation of academic change. They are grouped generally into

three sub-categories: quality, responsiveness and efficiency, effectiveness and affordability.

The scorecard aspect is primarily used when considering core performance measures. The current values of key variables are compared to target levels, with a graphical key as to where improvement or maintenance is required. Ryerson makes interesting use of its National Survey of Student Engagement (NSSE) data in this context. Core NSSE questions are identified according to their alignment with the institution's mission statement, and performance evaluated against key comparison groups. Again, a graphical technique is used to identify where scores meet or exceed expectations and where they fall below strategic expectations.

Performance indicators are an explicit component of academic planning at Ryerson as departments and faculties are asked to set objectives consistent with the overall institutional plan and to report on progress.

Phil Wood introduced McMaster University's strategy map, recently developed to facilitate and support academic planning at that institution. Again, the university's mission and vision is the starting point for the planning process, particularly the statement of general goals and targets. With general goals specified, the strategy map asks three questions:

1. To achieve our vision, what must we deliver to students, faculty, staff and partners, and what financial results must we deliver to ensure sustainability?

2. To deliver on these outcomes, at what internal processes must we excel?
3. To excel at these processes, how must we develop our human, information and organizational capital?

For each question, appropriate indicators are selected. Then, McMaster compares the current value for this indicator with a benchmark or target figure. The result is rated as exceeding, achieving or falling below the defined targets. The results are intended to reveal the university's performance and, ultimately, to facilitate improvement as necessary and appropriate.

McMaster's strategy map is relatively new and is still being implemented. Wood indicated that the next steps in the implementation process are to formally adopt the strategy map, further develop the specific indicators and targets and use them to transform education, research and support services at McMaster.

Provost and Vice-President Academic Susan Silverton presented for Laurentian University. She began by emphasizing the need to link indicators with institutional mission. Laurentian is a bilingual and tri-cultural environment with a relatively high population of traditionally under-represented students, such as aboriginal and francophone students. The university consequently puts considerable effort into recruitment and retention policies, and this emphasis informs performance indicator selection and reporting. Silverton underlined the need to choose indicators that enable the university

to gauge the impact of key policy interventions.

Laurentian does not use a scorecard approach to PIs and academic planning, although it compiles and reports on all the standard categories such as NSSE, GPSS, CUDO and Key Performance Indicators (KPIs) specified by the Provincial Government. Silverton outlined ambitious plans for PIs and their use in academic planning at Laurentian, but was appropriately cautious about the institutional commitment and resources required to do it properly.

York University's presentation was handled by George Fallis, a faculty member and chair of the university's Academic Policy and Planning Committee. His presentation reflected how faculty members in particular approach PIs and academic planning in a university setting.

He noted that enhancing research culture is York's highest priority in its current academic plan. The key question in this process, as always, is how to properly gauge the success of the enhancement strategy. Fallis noted that York wishes to go beyond standard funding measures to include quantity indicators such as the number of publications and citations, with particular attention to the prestige of the publisher. Further, the impact of research on teaching, learning and society should be taken into account. However difficult performance measures relevant to research might be for individual faculties to implement, Fallis noted that they pose special challenges for humanities and fine arts. He ended with what may be a crucial question in all

attempts to introduce performance indicators into academic planning: what affects the behaviours and decisions of professors?

### Invited Presentations

The workshop also featured two invited presentations on topics directly related to PIs and academic planning. The first was by Vivek Goel, Provost at the University of Toronto, on lessons from health services research.

Drawing on his experiences as a researcher with the Institute for Clinical Evaluative Sciences, Goel described a research case study on breast cancer surgery that illustrated how seemingly objective performance measures can be misinterpreted. He advised HEQCO to be acutely conscious of the public relations aspect of any performance evaluation exercise, particularly where it involves or facilitates institutional ranking. Important nuances and qualifications acknowledged and understood by a particular sector may be glossed over or ignored by the media.

The health sector was a pioneer in developing balanced scorecards for non-profit institutions. In his presentation, Goel provided an example of a hospital performance indicator scorecard. The hospital's performance indicators were chosen to reflect clinical utilization and outcomes, and the institution's scores were compared to system-wide values. A graphical technique was then used for each measure to indicate whether the hospital's performance was above, equal to, or below

average. The scorecard thus provides an easily understood snapshot of areas in need of institutional attention.

There is an understandable interest in comparing the performances of individual hospitals. The concern, however, is that ranking can be seriously misleading. For example, a hospital that took a disproportionate number of relatively high-risk cases would fare poorly if death rates were the sole performance indicator. The solution is to use statistical techniques to standardize for patient and other hospital characteristics. The result is a measure that allows for comparisons among hospitals, providing an opportunity to examine why variations in outcomes exist after controlling for spurious characteristics.

The relevance of this latter point for universities and colleges is obvious. For example, if graduation rates and average completion times are to be used as performance measures, it is essential to standardize the relevant data for differences in student characteristics at each institution. A university which, as part of its mission, accepts traditionally under-represented students will almost certainly have longer times to completion and lower graduation rates than one that admits primarily or solely on the basis of traditional academic merit. Only after these differences are taken into account can we begin to analyze relative performances appropriately.

The second invited presentation was by Alan Harrison, Provost of the University of Calgary, presenting an overview of performance indicator developments in the rest of Canada. He began by describing the

G-13 data exchange, a project initiated some years ago by the major research universities in Canada<sup>2</sup> to define and develop input and output measures that can be used to make valid comparisons among institutions. In doing this, the group has done much of the difficult work needed to arrive at common definitions and data requirements for key measures. There is obviously much to learn from this exercise. Unfortunately, at this time the G-13 data is not publicly available.

Harrison then turned his attention briefly to Common University Data Ontario (CUDO). CUDO is a collaborative venture by Ontario universities, administered by the COU. It features a common template for reporting data on a range of indicators including admission figures, NSSE results and research records. It is an on-line tool (available at [www.cou.on.ca](http://www.cou.on.ca)) that allows users to access and compare information and performance indicators for all Ontario universities. A steering committee with representatives from the four regions is currently investigating using CUDO as a model for Common University Data Canada (CUDC).

Harrison also presented a quick survey of the state of accountability and planning by province. There is too much detail to summarize here, but it is clear that accountability requirements and planning and reporting practices vary substantially among provinces. Next to Ontario, British Columbia and Alberta have the most comprehensive frameworks, with other provinces in various stages of development. The structure, content and format of the accountability system in British Columbia

resemble those in Ontario, and are, therefore, of particular interest<sup>3</sup>.

The upshot is that Ontario fares rather well in the attention paid to accountability at both the institutional and the system-wide level when compared to the rest of Canada. Nevertheless, there is more to learn from experiences in other provinces and select international case studies.

### General Discussion

The title for the last session was *Advising HEQCO on Advising the Ministry on MYAAs*. A key part of HEQCO's mandate, as already noted, is to advise the Ministry on the content and format of the Multi-Year Accountability Agreements (MYAAs). The goal of this session was to ask how accountability and planning experiences at the individual institutional level can inform HEQCO's advice to the ministry. Specifically, are there any performance indicators that individual institutions compile and find useful in academic planning that could map to the sector level?

The giant matrix might have provided an answer to this question if it had revealed that there were a handful of indicators that most or all institutions compiled and published regularly. Such was not the case, however, as demonstrated by the huge range and variety of PIs captured by the matrix. It may be possible to reduce the number of indicators by grouping similar measures, but this refinement is unlikely to produce a manageable set for common use.

The advice to HEQCO in this final session was wide-ranging and interesting, but not conclusive. However, there was definite consensus around several points. First, the MYAAs should be structured in a manner that permits and supports diversity in institutional mission and vision. Participants agreed that neither individual universities nor the sector are well served by performance indicators and incentives that privilege specific behaviours and outcomes.

Second, universities already face a large number of reporting requirements. Adding new ones will put additional strain on already over-extended support staff. Participants indicated a need for recognition that producing reliable performance indicators requires considerable time and institutional resources. Some institutions, the smaller ones in particular, find it increasingly difficult to comply with government requirements.

### **So Where Does This Leave HEQCO?**

The Workshop revealed many important insights to guide HEQCO's work. First, Ontario universities already devote considerable effort and resources to compiling and reporting on their activities. Accountability *per se* is not at issue; universities have embraced the concept, and have worked hard at implementation. However, this commitment is not always acknowledged or understood. There may thus be a role for HEQCO to assist in raising the profile of university accountability efforts.

Additionally, it was observed that institutions are at very different stages in developing and using PIs for academic planning purposes. Thus there could be a role for HEQCO in assisting with information sharing on techniques and practices, and in undertaking research to identify potential "best practices".

It was also observed that compiling and reporting performance indicators is a time-consuming and expensive process, involving considerable efforts by senior administrators and institutional analysis staff. Even the larger institutions are constrained in what they can produce, not to mention the particular resource challenges faced by smaller institutions. HEQCO's advice to the Ministry should take explicit account of the burden of existing reporting requirements as well as the incremental resource burden of implementing new performance indicators.

The final message refers to the challenge that HEQCO faces in understanding and providing advice on Ontario's performance indicator system. The giant matrix, the presentations and the general discussion all made clear the considerable variation in how institutions compile, publish and use PIs in academic planning. Performance indicators typically, and appropriately, proceed from the mission and visions statements of individual institutions. Their use in academic planning depends on each institution's culture and leadership style.

This suggests that there is no one accountability format that will work for all universities. Certainly, there is a concern among institutions that attempts to come up with a common set of indicators will

inevitably lead to spurious ranking exercises, with all the perverse incentive effects therein.

One solution is to structure MYAAs individually. Each institution would agree to a set of goals and PIs reflecting its unique mission and vision. It would then set targets for achieving these goals, and agree to be evaluated on actual performance relative to targets. Some indicators might be common to all MYAAs, but they would be calibrated differently for each institution. For example, a university with a mission to recruit students from traditionally under-represented groups would likely have a lower time-to-completion target than peers without this focus.

However, there are two problems with this approach aside from significant design and operations issues. The first is that it assumes all variation in learning and research outcomes among institutions relates back to differences in mission and vision statements. It leaves unexamined the possibility that some of the variation may flow from the resources and effort that institutions put into pursuing their missions.

Goel's hospital scorecard example is also highly relevant here. It was clearly inappropriate to use a few standard PIs to compare hospital performances given the obvious differences in missions, patient characteristics, and other factors between individual institutions. The solution was to use statistical techniques to control for variables such as patient characteristics that are known to affect performance outcomes. If done properly -- no mean feat -- it

becomes easier to make meaningful comparisons between disparate institutions.

The lessons learned in the health sector may be applicable to Ontario universities. There is a precedent for this type of statistical analysis in the Documenting Effective Education Practice (DEEP) project. This project, based at the Centre for Postsecondary Research at Indiana University, used modeling and statistical analysis techniques to identify colleges and universities that reported learning outcomes significantly higher than predicted by their student and institutional characteristics. DEEP then sought to determine what these institutions had in common that explained their performances.<sup>4</sup> We are currently exploring this option for possible application in the Ontario context.

The second problem with solely bilateral MYAAs is the so-called "adding up problem". What happens, for example, if the Ministry wishes to see a specific increase in Aboriginal participation in universities, yet the sum of the targets set by individual universities falls short of this figure? This challenge is easily recognized as one of how to align the actions of agents (the universities) with the interests of the principal (the Ministry), and will figure prominently in HEQCO's further research.

## Acknowledgements

HEQCO wishes to thank workshop participants for making time in busy schedules to assist us in our efforts to better understand the performance indicator

framework in Ontario. We thank in particular all those involved in producing the giant matrix, and to those who agreed to make presentations. Finally, a personal note of thanks goes to Rick Harari and Ainsley Matthews of the HEQCO staff for their work in organizing the day and making it run so smoothly.

---

<sup>1</sup> See Robert S. Kaplan and David P. Norton *The Balanced Scorecard: Translating Strategy Into Action* (Cambridge, Harvard University Press, 1996).

<sup>2</sup> The G-13 project initially included the University of British Columbia, The University of Alberta, The University of Western Ontario, McMaster University, The University of Waterloo, the University of Toronto, Queen's University, the University of Montreal, McGill University and the University of Laval. Participants now also include the University of Calgary, the University of Ottawa and Dalhousie University.

<sup>3</sup> See [www.aved.gov.bc.ca/framework/](http://www.aved.gov.bc.ca/framework/).

<sup>4</sup> See George D. Kuh, Jillian Kinzie, John H. Schuh, Elizabeth Whitt and Associates *Student Success in College: Creating Conditions That Matter* (Jossey-Bass, Washington, D.C., 2005).