Improving the Quality and Cost-effectiveness of Undergraduate Education in Ontario

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The Future of Public Services in an Age of Restraint
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Global forces and international trends in PSE

• Globalization forces governments to focus on competitiveness (and fiscal sustainability)
• Universities are seen as instruments of state economic development
  – “knowledge society”
  – “innovation agenda”
  – “brain gain”
  – elite to mass education
  – emphasis on research
  – rankings and resources
• Greater competition for best faculty and best students
• Rankings and performance measurement
Research universities and undergraduate teaching
Surprisingly (?) stable university revenues

Ontario universities’ CPI-adjusted annual $ per student has been relatively stable at about $13,000 ($2007) since the 1980s.
Paradox of stable revenues and budget squeeze

• University inflation (4-5%) more than twice CPI inflation
  – Faculty compensation: across-the-board increases, progress through the ranks, market adjustments, benefits
  – Administrative compensation and non-salary costs (e.g., energy)
  – Cost pressures from competition: fundraising, student recruitment
• Teaching loads for full-time faculty have declined
  – across-the-board, and through special arrangements for research and administrative responsibilities
  – 4 one-semester courses per year is most common, down from about 6
• This cost-driven funding gap means more reliance every year on:
  – Larger class sizes
  – Part-time, teaching-only faculty to do a large and growing proportion of undergraduate teaching
Impact of university inflation and higher enrolments on operating costs (to be paid by government and students)

- University inflation (~5%)
- University inflation + enrolment growth (low and high scenarios)
- CPI inflation (2%)
How students are affected

Larger class sizes
- Most students are at a university where more than 30% of first-year classes offered have 100+ students

More part-time faculty
- Part-timers teach more than half the classes in some large faculties

Shorter semesters
- Some universities moving from 13 weeks to 12 (vs. 15 weeks in US)

Impact on student learning?
- We don’t directly measure student learning on a system-wide basis (unlike K-12 system)
Student demand for baccalaureate education

Projection based on the continuing rise in participation rates
  – Low scenario assumes participation rates grow at half the rate of the past decade
  – High scenario assumes participation rates grow at the same rate as the past decade

At present 44 per cent of university-bound GTA secondary school students go to a university outside the GTA
Lessons and observations from other jurisdictions

- We looked at many other systems in Europe, England, Australia, several US states and several provinces.
- Most of these jurisdictions have recently undertaken significant systemic reviews and instituted significant changes.
- Every system has more than one type of degree granting institution.
  - Only Australia has a system comparable to Ontario: vast majority of degrees from research intensive publicly financed universities.
- Many make extensive use of undergraduate teaching institutions.
  - Wherever they exist they are considered highly successful.
- Transfer pathways are often well developed and carefully managed. Some systems (e.g., Calif. and New York) highly dependent on them.
- Most commonly use transfer pathway in US, BC, Alberta is Associate Degree or equivalent.
  - Lower costs of associate degree passed on to students as lower tuition.
The “enduring myth”

...that teaching effectiveness needs research productivity

**Conclusion**

...need to focus on each, but almost independently

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**The Relation Between Research Productivity and Teaching Effectiveness**

Complementary, Antagonistic, or Independent Constructs?

The major responsibilities of academics in the modern university are teaching and research as well as, to lesser extents, administration and community service. Indeed, some (Critenden, 1997) consider that one of the defining characteristics of a university is that all academics are expected to be active researchers and active teachers (while noting the rationale for teachers who are not expected to pursue research in non-University tertiary institutions). Senior academics often contend that this mutually reinforcing, symbiotic relation between teaching and research is what distinguished universities from other research and educational institutions (Neumann, 1992). Conventional wisdom—typically not based on empirical research—is that teaching and research are mutually supporting if not inseparable (Webster, 1986). Ideally, teaching effectiveness and research productivity are complementary. Much of the rationale for the existence of research universities is that these two activities are so mutually reinforcing that they must coexist in the same institutions. Marsh (1987), Hattie and Marsh (1996), Braxton (1996), and others, however, argue that plausible arguments can be made as to why teaching and research activities should be complementary, conflicting, or unrelated to each other.

This research was funded in part by a grant from the Australian Research Council. Requests for further information about this investigation should be directed to the first author. E-mail: h.marsh@uws.edu.au. Tel: (61)-2-97726633 FAX: (61)-2-97726432.

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Enrolment growth in graduate and professional programs

Ontario residents aged 25–64 holding an earned doctorate (as a share of the population aged 25–64)

- Doctoral programs
  - No general shortage of PhDs
  - Watch for shortages in selected disciplines

- Need to focus on
  - Quality
  - Completion rates (withhold last year of operating grant until student actual graduates)
  - Professionally-oriented masters degrees
One set of Policy Options

Twenty-eight Recommendations
1. The Ontario government, in consultation with higher education stakeholders, should develop and publish a higher education demand projection from 2012 to 2025 by region. This plan should include, for each region in the province:
   a. demand for undergraduate spaces
   b. demand for spaces in the Colleges of Applied Arts and Technology, and
   c. demand for graduate and professional spaces.
Options for accommodating baccalaureate enrolment growth

Create up to 5 new teaching-oriented universities

Introduce a 2-year credential at colleges that prepares students to enter 3rd-year of university

Encourage high-quality 3-year baccalaureates
Teaching-oriented universities

2. The government should announce its intention to create up to five new teaching-oriented universities and should introduce a bill in the legislature entitled *Ontario Teaching-Oriented Universities Act* that incorporates the features described in Chapter 5. The government should not encourage for-profit entities to enter this field.

3. The government should issue a request for proposals to enter into 20-year agreements with not-for-profit entities to operate a teaching-oriented university with features along the lines of those described in Chapter 5.
# The financial case for teaching-oriented universities

Operating costs per baccalaureate student, campus with 10,000 students (2011 $)

<table>
<thead>
<tr>
<th></th>
<th>Teaching-oriented university</th>
<th>Traditional university</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teaching and related</td>
<td>$5,500</td>
<td>$9,100</td>
</tr>
<tr>
<td>(including academic administration, classroom support, clerical support, curriculum development, distance education)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Academic services</td>
<td>$2,200</td>
<td>$2,200</td>
</tr>
<tr>
<td>(including library, student services, recruitment, bursaries, and information technology)</td>
<td></td>
<td></td>
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<tr>
<td>Institutional services</td>
<td>$2,200</td>
<td>$3,000*</td>
</tr>
<tr>
<td>(including administration, facilities, capital equipment, renovation, debt interest, and contribution to capital costs)</td>
<td></td>
<td></td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>$9,800</strong></td>
<td><strong>$14,200</strong></td>
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<tr>
<td>Memoranda:</td>
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<tr>
<td>Cumulative surplus/debt after seven years</td>
<td>$27 million surplus</td>
<td>$167 million debt</td>
</tr>
<tr>
<td>Annual undergraduate enrolments at maturity</td>
<td>10,000</td>
<td>10,000</td>
</tr>
<tr>
<td>Student tuition per year</td>
<td>$5,300</td>
<td>$5,300</td>
</tr>
<tr>
<td>Average class size</td>
<td>44</td>
<td>44</td>
</tr>
<tr>
<td>Share of teaching performed by full-time faculty</td>
<td>70%</td>
<td>70%</td>
</tr>
<tr>
<td>Teaching load of full-time faculty (1-semester courses per year)</td>
<td>8</td>
<td>4</td>
</tr>
</tbody>
</table>

Note: Numbers may not add due to rounding.

*Includes debt interest of $600.
Smaller classes, lower tuition...

Comparison of teaching-oriented university with traditional university (balanced budget scenarios)

<table>
<thead>
<tr>
<th></th>
<th>Teaching-oriented university</th>
<th>Traditional university</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Strategy for reaching a balanced budget</strong></td>
<td>Preferred strategy: offer small classes and lower tuition for students</td>
<td>Alternative strategy: offer very low tuition and allow class sizes to increase</td>
</tr>
<tr>
<td>Cumulative surplus/debt after seven years</td>
<td>none</td>
<td>none</td>
</tr>
<tr>
<td>Annual undergraduate enrolments at maturity</td>
<td>10,000</td>
<td>10,000</td>
</tr>
<tr>
<td>Student tuition per year</td>
<td>$4,800</td>
<td>$2,900</td>
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<tr>
<td>Average class size</td>
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<tr>
<td>Teaching load of full-time faculty</td>
<td>8</td>
<td>8</td>
</tr>
</tbody>
</table>
Better teaching quality...

- Classes will be smaller
- Curriculum will be designed around learning objectives (not around areas of faculty research interest)
- Faculty will be focussed on teaching and on research on teaching improvement
- Administration will be focussed on undergraduate education
  - It’s not necessary to be a research powerhouse to be an excellent undergraduate university
Recruiting great faculty...

• Campus in the GTA
• Attractive working conditions
  – 4 x 3 = 12 hours per week in classroom for 26 weeks/year is demanding
  – but there are 26 more paid weeks in the year to prepare courses, mark exams, conduct research, take vacation and write books
• Supply and demand
  – 5 PhD holders in Ontario for every full-time faculty
  – 2,100 new PhD graduates and 1,400 PhDs coming to Ontario every year (4.4 times the 800 full-time faculty reaching retirement age)
  – Labour market for faculty in the US makes Ontario attractive
• Novelty and opportunity for innovation

AUCC membership criteria built into design
Recruiting great students...

- Campus in the GTA
- Graduate/professional school entrance requirements built into design
- Attention to teaching, small size and high faculty-student ratio are attractive to students and parents
- NSSE and CLA results will soon demonstrate the advantages
- Lower tuition
New teaching-oriented universities will...

• Provide better quality and more cost-effective undergraduate education with enough space to handle most of the 30,000 - 74,000 increased enrolment in the GTA over the next 15 years

• Through example and competitive pressure, encourage traditional universities to improve the quality and cost-effectiveness of their undergraduate education
  – Higher priority on teaching
  – Better control of costs
  – More teaching by full-time faculty, including more use of teaching-stream appointments
Two-year academic credential

4. The government should announce its intention to create a new two-year college credential that will prepare students to enter the third year of university, modeled after the associate degree found in most North American jurisdictions.

5. The government should convene a working group on a two-year academic credential, which includes representatives from the Council of Ontario Universities and Colleges Ontario, to develop a model curriculum for the credential.
Three-year baccalaureate

6. The government should announce its support in principle for a substantial increase in the enrolment in three-year degree programs, and it should equalize the per-student funding for three- and four-year programs.

7. The government should request universities to include their target enrolments in three-year degree programs as an explicit element in each university’s MYAA.
8. The government should introduce a new formula for the distribution of the operating grant for all of the existing universities, funding teaching and research separately and be phased in over a five-year period.

9. The teaching grant should be allocated such that, when combined with students’ tuition revenues, every university will have equal funding per student, weighted by program and level of study, and divided into sub-envelopes including separate envelopes for:
   a. spaces for first- and second-year students
   b. spaces for third- and fourth-year students
   c. spaces for research-based master’s and doctoral students, with maximum funding based on a target time for completion and funding for the final year of PhD provided upon completion
   d. spaces for professional programs
New formula for operating grant: research

10. The research grant should be based on the following:
   a. Every university should receive a basic amount of research funding to support the time that faculty spend on research, without regard to discipline of study, in the form of a flat amount per full-time faculty member
   b. Every university should receive Research Top Up funding to contribute to the additional costs associated with external research grants with Research Top Up funding allocated to universities in proportion to their receipts from the national granting councils and other performance-based criteria
   c. A portion of the research grant should be used to support special-purpose missions in the area of research and innovation in fields, such as fine arts and technology, that are not well supported by the national research granting councils
New formula for operating grant: 3\textsuperscript{rd} envelope

11. A third envelope should provide funding to support differentiated missions and special priorities. This envelope would include funding to support northern universities and bilingual universities as well as special priorities that the government may negotiate with one or more universities.
Teaching enhancement funding tied to MYAAs

12. A Teaching Enhancement Fund, initially equal to 5 percent of the total teaching grant, to fund strategic initiatives that promote system improvement objectives, and these initiatives should be negotiated as part of the MYAA process, such that:

a. Initiatives are accompanied by a detailed implementation plan that has verifiable milestones and that relates the initiative to the institution’s overall strategic plan

b. Each institution would be eligible to receive a portion of the fund up to its portion of the total operating grant

c. Funding would be contingent on signing a MYAA, and funds for specific initiatives would flow in accordance with achievement of objectives.
Tuition policy

13. A multi-year, regulated tuition policy, with the aim that per-student funding from tuition and government operating grants should grow in line with a negotiated target for inflation.
Reducing university inflation and improving quality

The bargain: Government and universities negotiate an acceptable annual rate of inflation

**Government responsibilities**
- Provide full funding for inflation each year (from government grants and/or tuition)
- Fund enrolment growth separately

**University responsibilities**
- Stop the deterioration: class sizes, reliance on part-time faculty, and semester lengths
- In the medium term, introduce system-wide testing of actual student learning
Negotiated target for university inflation

14. The government should announce its intention to establish target institutional inflation guidelines for higher education institutions and begin a process of consultation about what target should be.

15. The government should commit that the combination of grants and fees will fund universities up to the target level of inflation.

16. The government should require that, in return for receiving inflation funding, universities commit to having no deterioration in:
   a. the share of courses taught by full-time faculty
   b. average class sizes
   c. average instructional hours in courses
17. The government should announce its intention to withhold its grants for teaching during a strike in proportion to the number of classes that are not being taught as well as its intention to facilitate a process whereby students receive refunds on their tuition, with a portion of these funds being restored to the university if the lost classes are actually made up before the end of the semester.
18. The government should ask HEQCO to create a Higher Education Statistics Branch that would be responsible for gathering and analyzing university data and, through its Web site and research papers, disseminating information on Ontario universities.

19. The Branch should oversee an *Ontario University Statistics* Web site, modeled on the *My University* site under development in Australia, to allow students to compare universities on a variety of statistics and performance indicators, including:
   a. information currently available on *Common University Data Ontario*, plus
   b. for each broad course of study (e.g., economics), class size information, as experienced by the average student and for each year in the course of study
   c. learning outcomes data, such as CLA results.
If the Australians can publish crucial data...
So can we (e.g., full- and part-time faculty FTEs)

Table 1.6: FTE for Full-time, Fractional Full-time and Estimated Casual Staff by State, Higher Education Provider, Work Contract and Gender, 2010

<table>
<thead>
<tr>
<th>State/Provider</th>
<th>Full-time Males</th>
<th>Full-time Females</th>
<th>Full-time Persons</th>
<th>Fractional Full-time Males</th>
<th>Fractional Full-time Females</th>
<th>Fractional Full-time Persons</th>
<th>Full-time plus Fractional Full-time Males</th>
<th>Full-time plus Fractional Full-time Females</th>
<th>Full-time plus Fractional Full-time Persons</th>
<th>Estimated Casual Full-time Males</th>
<th>Estimated Casual Full-time Females</th>
<th>Estimated Casual Full-time Persons</th>
<th>Total FTE</th>
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<tbody>
<tr>
<td>New South Wales</td>
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<tr>
<td>6 Avondale College</td>
<td>81</td>
<td>55</td>
<td>116</td>
<td>5</td>
<td>22</td>
<td>28</td>
<td>66</td>
<td>77</td>
<td>144</td>
<td>73</td>
<td>217</td>
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<tr>
<td>7 Charles Sturt University</td>
<td>753</td>
<td>82</td>
<td>1,615</td>
<td>42</td>
<td>148</td>
<td>190</td>
<td>795</td>
<td>1,010</td>
<td>1,805</td>
<td>260</td>
<td>2,095</td>
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<td>8 Macquarie University</td>
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<td>879</td>
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<td>51</td>
<td>160</td>
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<td>949</td>
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<td>1,988</td>
<td>480</td>
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<td>9 Southern Cross University</td>
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<td>430</td>
<td>739</td>
<td>34</td>
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<td>147</td>
<td>343</td>
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<td>336</td>
<td>244</td>
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<td>431</td>
<td>926</td>
<td>40</td>
<td>107</td>
<td>147</td>
<td>535</td>
<td>598</td>
<td>1,123</td>
<td>80</td>
<td>1,203</td>
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<td>483</td>
<td>807</td>
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<td>2,718</td>
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<td>15 University of Western Sydney</td>
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<td>125</td>
<td>153</td>
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<td>722</td>
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<td>61</td>
<td>206</td>
<td>266</td>
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<td>1,820</td>
<td>400</td>
<td>2,220</td>
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<td>Total New South Wales</td>
<td>10,913</td>
<td>11,202</td>
<td>22,205</td>
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<td>2,446</td>
<td>3,357</td>
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<td>25,562</td>
<td>6,239</td>
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<td>Victoria</td>
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<td>19 Deakin University</td>
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<td>1,479</td>
<td>2,539</td>
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<td>3,149</td>
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<tr>
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<td>1,053</td>
<td>2,013</td>
<td>124</td>
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<td>2,541</td>
<td>660</td>
<td>3,101</td>
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<td>36</td>
<td>55</td>
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<td>105</td>
<td>20</td>
<td>125</td>
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<td>22 Monash University</td>
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<td>2,085</td>
<td>3,563</td>
<td>6,648</td>
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<td>1,201</td>
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<td>3,476</td>
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<td>24 Swinburne University</td>
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<td>465</td>
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<td>40</td>
<td>119</td>
<td>159</td>
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<td>225</td>
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<td>753</td>
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<td>26 University of Ballarat</td>
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<td>Total Victoria</td>
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20. The government should assign to HEQCO the responsibility for conducting the annual graduate survey and refine the survey to include the following components:
    a. a course satisfaction survey similar to that in Australia, and
    b. a graduate employment survey similar to that in the UK that assigns a “university degree required” to specific occupations

21. HEQCO should specify and gather any additional information it would require on a regularly basis from Ontario universities in order to provide the performance information needed to implement its recommended accountability framework, that which includes system accountability, institution accountability, and planning

22. The government should ask universities and HEQCO to develop a plan to introduce the CLA or an equivalent learning assessment tool, for the majority of undergraduates
Encouraging teaching improvement

23. The government should ask HEQCO to develop an Ontario Teaching Quality Indicator, adapted from that in Australian teaching quality indicator currently under development.

24. The government should ask universities to develop detailed commitments for strengthening the teaching support activities to be included in their MYAA, including teacher training for new faculty and for graduate students with teaching responsibilities as well as the identification of current and proposed policies for course evaluation and for faculty performance review.

25. The government should ask the Ministry of Training, Colleges and Universities to lead an initiative that uses the proposals from the MYAA process to develop a description of best practices that could benefit other universities.
Strengthening quality assurance

26. The government should ask the Council of Ontario Universities to transfer its responsibilities for selecting members and providing administrative support for the Ontario Universities Council on Quality Assurance and its processes to HEQCO

27. The government should update and refine the Ontario Qualifications Framework to give it the level of specificity of the US Degree Qualifications Profile

Strengthening higher education expertise

28. Using funds from the university operating grant, the government should increase HEQCO’s research budget by $5 million per year
Challenges comparable to the 1960s: daunting, but manageable

“The majority of young people who found a place in higher education in Ontario in the 1960s and 1970s did so because these leaders – John Robarts, Bill Davis, Ed Stewart, and the university presidents – identified the need and acted without delay.

“As we have made clear in this book (with a half-century of hindsight), we do not think these leaders got everything right.

“But they had the courage to begin.”

Murray Ross at his desk in the field that was to become York University, 1962
Thank you

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