

The Affordability of Lifelong Learning

in the Knowledge Economy:

A Canadian University Perspective

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Lifelong Learning as an Affordable Investment
An international conference hosted by OECD and Canada
Ottawa, December 7, 2000

1. Introduction

Universities occupy that part of the lifelong learning continuum which begins after high school, generally dealing with students who are 17 years and older. Primary and secondary school are critical to what goes on in university: they lay the ground work not only for university study but also for lifelong learning. Colleges in Canada provide an important alternative to universities at the post-secondary level. While in what follows I focus universities, I wish to stress from the outset the importance of the other components of education in Canada.¹

Funding for lifelong learning in Canadian universities comes from three fundamental sources: public support, including both the federal and provincial levels of government; the private resources of the student and her family; and private charitable support for learning from individuals and companies. We seek a sufficient level of **total** funding to ensure **accessibility** to lifelong learning for all who wish to undertake it in areas for which they are academically qualified. The total funding necessary will depend in large part on the level of **quality** of education to which students, parents, and society aspire. Identifying a sufficient total funding

also requires that we find a proper **balance** among the three sources: public support, the student, and other private support. The issues of student accessibility, educational quality, and funding balance are the theme of the paper that follows.

2. The Challenge of Accessibility and Quality

Canadian universities face an extraordinary challenge of accessibility and quality over the next decade. The children of the postwar baby boomers will enrol in university during that time, and will produce the third great surge in university enrolments since 1945, after those involving the returning veterans in the late 1940s and early 1950s and the baby boom surge itself in the 1960s. The data in Chart 1 for the Province of Ontario may be used to illustrate the challenge. During the ten years from 1961 to 1971, university enrolments increased by nearly 100,000.² For the period 1998 to 2010, current forecasts indicate an increase of some 80,000. The increase in the 1960s was associated with a significant investment of public funds, much of it associated with massive increases in faculty and staff, believed to be essential to maintaining quality as enrolments rose. Are we ready to maintain quality in the same fashion in Canada during the coming decade?

If we judge the next decade by the policy of the past one, there is no reason for confidence in our ability to meet the challenge of accessibility and quality. During the past decade Canada has systematically cut its real public funding per student, with the result that student-faculty ratios have risen steadily. As Chart 2 shows, during the last two decades, real per student public funding in public universities has been **reduced** by 30% in Canada, while it has been **increased** in the US state universities by 20%. These cuts have led to a growing student-faculty ratio in Canadian universities. Chart 3 shows the situation in Ontario, where the student-faculty ratio has increased by some 25% since 1987-88, an extraordinary change in just over a

decade. The result has been larger class sizes, reduced contact between faculty and students, and what both students and faculty believe is a decline in educational quality.

The results of the dramatic difference in public funding trends shown in Chart 2 are evident in Chart 4, which shows that in 1997/98, revenue per student in US public universities was about 40% greater than that in Canada; the comparison is done with a purchasing power parity rate for the Canadian dollar of 82 cents US, well above the official exchange rate. A large differential exists for core public funding, tuition and fees, and all other sources of funding. These funding differences are reflected in a student-faculty ratio which is 25% lower in the US than in Ontario, as Chart 5 shows. Superior funding in US public universities allows for a higher quality of education and contributes to the brain drain of outstanding academics to the US.³

One approach to the accessibility challenge in Canada over the coming decade would be to simply allow the student-faculty ratio to continue to increase. In Ontario, for example, where it has increased by 25%, there has been no great public outcry. Larger class sizes do not create the dramatic crowds at emergency wards or growing waiting lists for surgery which dominate our political debates today and often provide leading stories for the evening news or the morning paper. Who really cares if the student-faculty ratio goes up another 25% in the next decade? We could adopt in Canada what might be termed the “barn model” of university accessibility—as long as you get in the barn, and eventually get a degree, you will receive all the benefits of university education. What goes on in the barn really is not very important. We take the position here that the barn model is wrong: wrong for students and wrong for society. To see why, we need to review the role of university education in the knowledge economy.

3. University Education and the Knowledge Economy

One of the striking attributes of the advanced economies during the last three decades has been a strong growth in demand from outside universities for university graduates and university research.⁴ While there may be some who see this as a short-term fluctuation which will soon be reversed, my view is that we are witnessing a long-term increase in the demand for university graduates and research which reflects the transition in the advanced economies toward a *knowledge economy*.⁵ Formal education, life-long learning, and fundamental research are central to economic progress in the new economy.⁶ There can be no cause for complacency in Canada on our performance in these areas. One element in superior US productivity performance as compared to Canada (Chart 6) is arguably the greater investment in university teaching and research in the US; the productivity difference is reflected in a standard of living some 25% higher in the US than in Canada (Chart 7). Since we are involved in the transition to the knowledge economy, describing it is a difficult and uncertain enterprise. Nonetheless, we know enough about the new economy to set out some of its basic attributes, and to show the role that university graduates are likely to play in it.

Too often, reference to the knowledge economy is given a technological definition, as meaning that the economy is now almost entirely driven by the changes in information technology which have occurred during the last three decades.⁷ I do not hold that view, although I think that changes in such technology have been crucial to the development of the knowledge economy. Rather, I believe that to understand the knowledge economy, we must focus first on people and organizations, not on technology, still less on a particular technology. Learning in organizations has two fundamental characteristics: it involves *people* who are acting in *teams*.

The ability to learn and to interact with others, to learn from others, is at the heart of individual success in the knowledge economy.

With regard to teaching and learning, the knowledge economy generates a strong demand for university graduates because of the very nature of scholarly activity in a university.

Universities are special places because learning takes place in an environment of research and scholarly innovation. Non-university institutions may well play a growing role in conveying facts and basic skills to young people after high school. As important as facts and basic skills are, however, the knowledge economy is setting a higher premium on the ability to learn continuously, to reason critically, and to work in teams—the very abilities our universities cultivate, because of their special position of teaching in a research setting.

For a decade, the Conference Board of Canada has asked its members to describe the skills they seek in university graduates. The skills identified did not focus on information technology, but are instead those of the knowledge economy. Canadian companies are looking for graduates with the ability to: communicate clearly both orally and in writing; work effectively in teams; think critically and creatively; solve problems; exercise leadership. Learning these skills requires the debate and discussion typical of small classes; students who spend virtually all their time in very large classes will be short-changed on this crucial part of their learning experience. The “barn model” of accessibility involving a steadily increasing student-faculty ratio does not work because students need a reasonable number of smaller classes with full-time professors. Nor can we imagine replacing the barn model with nothing but distance education, and for the same reason: many of the skills required in the knowledge economy are best taught and learned in face to face groups. Thus as we discuss *affordability* for

university education, we need at the same time to ensure *quality*, and that must involve stopping the steady climb in the student-faculty ratio.

4. Keeping University Affordable

To keep this exposition simple, we will take the Ontario case and present a model of affordable university education that allows some improvement in the student-faculty ratio and accommodates the rapidly growing demand of the next decade. We consider the balance among the three funding sources--public grants, tuition, and private giving—along with the important role of student aid.⁸

Public grants must provide the bulk of new funding for the next decade. Tuition fees alone will not allow us to meet the accessibility challenge without sacrificing affordability, quality, or both. Grants should be increased in Canada sufficiently to achieve two objectives: (1) provide funding to accommodate the additional students while bringing down the student-faculty ratio to levels competitive with the average for public universities in the United States; (2) ensure that Canadian faculty salaries do not become less competitive with those in public universities in the US. The challenge will be a great one, because the additional faculty required will come at a time of record numbers of retirements.

In Ontario, for example, it is estimated that over the next decade, the Province's universities will need to hire 7,500 faculty to replace retirements and other departures, 4,200 to meet the enrolment expansion, and 1,800 to reduce the student-faculty ratio.⁹ The total required of 13,500 new hires is greater than the current level of full-time faculty of 12,000. Our graduate programs in Canada have not been expanding at a rate sufficient to meet this challenge, and we can expect severe competition, both in hiring and in salary levels, from the US, which will also be experiencing massive retirements and the echo of the baby boom enrolment increase.¹⁰ The

cost in Ontario to fund additional students over the next five years alone will be some \$600 million.¹¹ Without such a commitment of public funds, we will not maintain an affordable university system of high quality.

While public monies must play the major role in funding the coming enrolment expansion, **tuition fees** will also play an important part. Fees have gone up rapidly over the last decade in Canada. In Ontario, fees accounted for about 10% of university operating revenues ten years ago and are now above 30%. The Province of Ontario announced last spring that those fees regulated by the Government would be limited to increases of 2% per year for the next ten years. While I believe that all fees at any university should be set by Board of Governors (as they are in the Atlantic Provinces and Saskatchewan), the government regulation simply underscores the fact that the bulk of funding for the enrolment expansion must come from government. If full-time enrolment increases from 238,000 to 298,000 over the next five years, and tuition fees increase by 10% from \$4,000 to \$4,400, gross tuition revenue will increase by about \$360 million; of that about \$95 million will be set aside for student aid, leaving some \$265 million for operating expenditures, about 44% of the increase in government funding called for above.¹² This is a very different scenario from the last five years, when government operating grants actually fell (see Chart 8) while tuition rose rapidly. Preserving affordability requires that public funding increase dramatically both for operating grants and student aid; the latter is considered below.

Private giving has increased dramatically in most Canadian universities over the last two decades, but it still provides only a small proportion of operating funding net of student aid. At the University of Western Ontario, annual tax-receipted gifts have increased from about \$3 million in the early 1980s to over \$30 million in the late 1990s. Much of this annual flow,

however, is for student aid or research equipment and renovations which are not part of the base operating budget. Another part of private giving is endowed, so that its full impact on the operating budget is reduced (endowments are paid out annually to the operating budget at 5% of the capital value). Government operating grants plus tuition fees are about \$260 million at Western, so that while private giving is extremely important to the University, such giving will not fund the operating costs of the enrolment increases on the horizon.

A final and critical component of affordability in university education is funding for **student aid**. Rising tuition has led to growing debt loads for students and concern about default on the loans, a concern which may be magnified by a misunderstanding of the relative earnings of university graduates. No less an authority than Diane Francis has asserted the poor value of a university degree, “The public is beginning to realize a technical education at a college or vocational school is considerably more valuable than more university degrees.”¹³ Ms. Francis refers to an opinion survey conducted in Ontario in 1998, but does not examine any real data on employment and income, and with good reason: all the official data we have for decades shows the superior labour market performance of university graduates. Using her comparison of college and university graduates, university graduates have lower unemployment rates (Chart 9), higher incomes (Chart 10), and lower default rates (Chart 11). As Chart 11 shows, the default rate in 1999 of Ontario private vocational schools (endorsed above by Ms. Francis) was 31%, nearly four times the university rate of 8%.

The fact is that university graduates do very well on the labour market¹⁴ and the overwhelming majority pay back their student loans.¹⁵ The default rate for university graduates in Ontario actually fell slightly from 1996 to 1999 (Chart 11). A paper by Ross Finnie examines loan repayment based on data from the most recent National Graduates Survey (NGS) for the

year 1995.¹⁶ For males who graduate in 1990 or 1995, the following changes are observed in the data from 1990 to 1995:

- the incidence of borrowing rose slightly, from about 42% to 44%.
- the mean amount borrowed, for those with loans, rose from about \$10,000 to \$13,400.
- the proportion of debt repaid two years after graduation fell from 49% to 46%.

In 1995, then, slightly fewer than half the graduates had loans and nearly half of the amount borrowed was paid back in the first two years after graduation. The mean amount borrowed rose significantly and presumably continued to do so from 1995 to 2000. While the NGS does not measure default rates, Finnie finds that those graduates who had “difficulties with loan repayment” were about 13% of all graduates in 1995.¹⁷ This seems consistent with the default rate for university OSAP loans in Ontario of 11% in 1996 and 8% in 1999 (Chart 11).

During the later 1990s the federal and Ontario governments increased support for student aid significantly, with programs for interest relief, interest deductibility, and new scholarships, as loans outstanding increased steadily. There is a central policy which while discussed at length in recent years in Canada, has yet to be implemented: a full-fledged income-contingent loan repayment plan coordinated between the two levels of government, involving both interest relief and debt reduction. Such a comprehensive plan would involve society sharing the risk involved in student borrowing, and providing help to those with very limited incomes sufficient to keep them out of default. This increases accessibility, especially in the case of those from low income families who may fear taking out a student loan because of the potential for default. Such a plan is also beneficial to society as a whole, which reaps the productivity and tax benefits of the majority of university graduates who are very successful on the labour market at the relatively minor cost of helping those who are not.

5. Lifelong Learning after Graduation from University

The knowledge economy requires up-to-date skills and creates a demand for lifelong learning. Universities will have an important role on the supply side. The various professions will encourage or require regular courses of study over a practitioner's lifetime. Other adults will want to return to university to pursue interests in the liberal arts. A 1996 OECD study identified three fundamental objectives with regard to lifelong learning: personal development, social cohesion, and economic growth.¹⁸

In terms of affordability, financial aid may be critical for adults in low-income families; such aid should be available without discrimination on the basis of age. For many full-time workers a key issue is the ability of employers and universities to arrange work loads and class schedules so that attendance at a course is possible without giving up one's job. This can be far more important than student aid for a full-time employee. This is an area of lifelong learning where informational technology may be particularly important.

We may consider an example of the Faculty of Education at The University of Western Ontario, which has long offered Additional Qualification (AQ) courses to Ontario school teachers. Three years ago the Faculty began offering the courses in a web-based format and had 40 registrants. Today there are over 2,000 registrants. Those designing the courses have placed great emphasis on the creation of chat rooms and bulletin boards which encourage students and faculty to discuss and interact over the net, almost as if they were in the same room together.¹⁹ While not all education can be delivered in a web format, for some courses, like the AQ, it can greatly increase accessibility and affordability, by allowing students to live at home and continue to work.

6. Conclusion: Ensuring Affordability

While Canada lags behind the US in the percentage of the labour force with a university degree, our country is ahead of major European countries by that measure (Chart 12).²⁰ We have thus been doing a fairly good job in the number of people attending university, but that accessibility has been bought at an unacceptable rate of increase in the student-faculty ratio. As we look ahead to the echo of the baby boom, we need a commitment to increase public funding in a manner which will accept large numbers of additional students at a declining student-faculty ratio. With sufficient public funding for operating budgets and student aid, we can increase the quality of our universities and keep them affordable.

Notes

¹ For example, literacy, as taught in primary and secondary school, is critical to citizenship and labour market performance. See Centre for Educational Research and Innovation, *Education Policy Analysis 1997* (OECD, 1997), Chapter 3, “Literacy Skills: Use Them or Lose Them,” pp. 45-62.

² The chart numbers are in the lower right hand corner of the charts.

³ The US comparison is chosen because of our close economic and academic links with that country, and not because the situation in their public universities is considered ideal. While US funding has improved over the last two decades, class sizes are still much larger than they were in the 1960s. Murray Sperber, who teaches freshman English at Indiana University to classes of 150 students, recalls in a recent article his freshman English class at Purdue around 1960 of 15 students. Murray Sperber, “End the Mediocrity of our Public Universities,” *The Chronicle of Higher Education*, October 20, 2000, p. B24.

⁴ See *Employment and Growth in the Knowledge-based Economy*, OECD Documents (OECD, 1996), especially chapters 1, 14-18, and the concluding essay by Luc Soete. The trend in favor highly educated human capital over the last century is described by Moses Abramovitz and Paul A. David, “Technological Change and the Rise of Intangible Investments: The US Economy’s Growth-path in the Twentieth Century,” pp. 35-60.

⁵ While I focus on the demand for university graduates, technological change is increasing the demand for highly skilled workers generally, including those who learn their skills in institutions other than universities; see *Technology, Productivity, and Job Creation*, The OECD Jobs Strategy, Vol. 2 Analytical Report (OECD, 1996).

⁶ There are a several other terms used to capture the same economic transition: knowledge-based economy, knowledge society, learning economy, learning society.

⁷ I use the term information technology to include communications; others prefer the term information and communications technology, with the abbreviation, ICT. Economists sometimes fear that those describing the knowledge economy have an ultimate policy objective with regard to encouraging or controlling information technology, such as subsidies, or trade barriers, or greater regulations. I have no such policies to suggest. I have, however, written on the limitations of non-market regulation in the telecommunications industry: Paul Davenport, “Strategy and Structure in Telecommunications Regulation,” **Adapting to New Realities: Canadian Telecommunications Policy Conference** (London: Richard Ivey School of Business, 1998), pp. 9-18.

⁸ For some international comparisons of the total and balance among these three sources, see *Redefining Tertiary Education* (OECD, 1998), Chapter 8, “Costs and Financing,” pp. 85-100.

⁹ Council of Ontario Universities, “Access to Excellence,” (Fall, 2000).

¹⁰ David C. Smith, “Will There be Enough Excellent Profs?—Report on Prospective Demand and Supply Conditions for University Faculty in Ontario (Council of Ontario Universities, March, 2000).

¹¹ Council of Ontario Universities, “Access to Excellence,” (Fall, 2000), p. 15. My total consists of the \$456 million shown in the COU document, and an additional \$144 million to recruit 1,800 additional faculty to bring down the student-faculty ratio.

¹² This calculation may understate the increase in fee revenue if the deregulated fees (in areas like medicine, dentistry, law, and business) rise more rapidly than the regulated fees. These professional schools, however, are a small part of total university enrolment in the Province.

¹³ Diane Francis, “Universities grabbing too big a slice of the education pie,” *The Financial Post*, September 22, 1998.

¹⁴ For an international perspective on the high returns to university education, see Centre for Educational Research and Innovation, *Education Policy Analysis* (OECD, 1997), Chapter 2, “Lifelong Investment in Human Capital,” pp. 29-44; and Centre for Educational Research and Innovation, *Human Capital Investment: An International Comparison*, Chapter 4, “Returns to Investment in Human Capital,” pp. 53-80.

¹⁵ College students do well also: they have significantly higher incomes and lower unemployment rates (Chart 9) than high school graduates.

¹⁶ Ross Finnie, “Student Loans: Empirical Evidence and Policy Implications” (mimeo, July 2000).

¹⁷ Finnie, p. 8.

¹⁸ *Lifelong Learning for All*, Meeting of the Education Committee at Ministerial Level (OECD, 1996).

¹⁹ The “as if” in this last clause is important: the learning here is asynchronous, so the learner dials in at her convenience, not that of the teacher or the school. This is an example of the maxim of Dolence and Norris, “The Information Age will be learner-driven,” Michael Dolence and Donald Norris, *Transforming Higher Education: A Vision for Learning in the 21st Century* (Ann Arbor: The Society for College and University Planning, 1995), pp. 5-12.

²⁰ Chart 10 shows also that our rate of non-university college diplomas and certificates is the highest among major countries.