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# Education Quarterly Review

2003, Vol. 9, no. 2

- Changing patterns of university finance
- Profile of young graduates
- Measuring school engagement



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From the

# Editor-in-Chief

## Mission

*Education Quarterly Review* analyses and reports on current issues and trends in education using information from a variety of statistical sources. It serves as a focal point for education statistics and provides a forum for communication with stakeholders and the public. Our goal is to present information and analysis that are relevant, authoritative, timely and accessible.

Some of the research questions examined in two papers in this issue are: Have universities responded to fiscal restraint in ways other than increasing tuition fees?; Does size of university matter when it comes to differences in operating revenue and expenditure?; How well do college and university graduates fare in both salary and field of employment?; How big a burden do increasing debt loads place on postsecondary students?

The third paper looks at effective ways of defining school engagement, based on information from the education component of the National Longitudinal Survey of Children and Youth (NLSCY). This survey represents a rich source of data that are being exploited by a growing number of researchers examining the impacts of parents, schools and communities on early childhood education.

Check out other sections of EQR as well, including “Data releases” from the many surveys conducted by the Centre for Education Statistics, and “Education at a glance”, a comprehensive set of social, economic and education indicators for Canada, its provinces and territories.

The **Cumulative index** at the back of the report lists, by title, all articles that have appeared in *EQR* since 1994. These articles are grouped under 12 categories, including ‘Enrolment,’ ‘Flows and transition’ and ‘Training.’ These categories are based on education policy issues that were identified in the Centre for Education Statistics’ *Strategic Plan*, a review of the Centre’s statistical program, its objectives and priorities. The *Strategic Plan* is available free of charge at [www.statcan.ca/cgi-bin/downpub/freepub.cgi](http://www.statcan.ca/cgi-bin/downpub/freepub.cgi) on the Internet.



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# Highlights

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## Changing patterns of university finance

- Over the past 15 years, all sources of private revenue have risen to compensate for a reduction in government funding of university operating revenue. While students, through tuition and miscellaneous fees, have contributed most to offset the decreases in government funding, the relative increases in all the other private revenue sources exceeded the increase in student fees.
- Over the same period, the proportion of operating expenditures allocated to academic salaries declined. The amount that universities spent on scholarships increased significantly to help offset the increases in tuition fees.
- Financial patterns varied by university size, with large and small institutions experiencing differences in operating revenue and expenditure trends over the past 15 years. Large universities experienced a more modest per student decrease in government funding than small universities.
- On the expenditure side, the large universities exhibited a greater change in each of four broad expenditure categories per full-time equivalent student. The national trend of decreasing expenditures on salaries and benefits coupled with marked increases in scholarship expenditures appears more applicable to the large universities.

## Good jobs, more debt: a profile of young graduates

- Overall, the mainstream graduates of the class of 1995 fared well in the labour market both two and five years after graduation. College graduates had good employment prospects regardless of their discipline.
- In spite of economic change and restructuring, and changes in the programs offered by postsecondary institutions, the labour market outcomes of young university graduates remained relatively stable between 1986 and 2001.
- University graduates with bachelor's degrees were better able to withstand the recessionary pressures of the early 1990s than were youth with only a high school education. At the same time, the cost of a postsecondary education increased and most students left school with increasing student debt loads.

## Measuring school engagement

- School engagement is a complex, multifaceted concept. Conceptually, it may be broken down into academic engagement and social engagement. Academic and social engagement each comprise participation and identification.
- Indications based on this study are that the questions from the first cycle of the *National Longitudinal Survey of Children and Youth* can be used to create a one-dimensional measure of academic engagement that assesses the academic participation portion of academic engagement.

**EQR**

# Articles



## Changing patterns of university finance

### Introduction

Universities play a central role in Canada's capacity to grow both socially and economically (HRDC 2001). Changes in revenue and expenditure patterns in Canadian universities can affect the quantity and quality of the services they provide and thus influence growth. In practical terms, the amount of revenue a university receives affects expenditures on many essential items such as buildings, scholarships, furniture, equipment, operational expenditures and salaries and benefits.

Universities draw revenue from both private and public sources, the latter in the form of government grants. Enrolment is one factor that determines how much government funding universities receive. University enrolment fell in the 1990s, although the level of enrolment in the late 1990s was still higher than it had been in the mid-1980s (Statistics Canada 2001).

Private revenue is obtained from sources such as student fees, bequests, donations, investments, non-government grants and contracts and the sale of services and products.

Traditionally, governments have been the major source of funding for postsecondary education in Canada (Sale 1992). While this remains the case, Canadian universities are relying increasingly on private funds from tuition fees and other sources and less on public funds (Little 1997). During the 1990s, as the federal government and most provincial governments introduced fiscal restraints, postsecondary education funding was reduced (Martin 1995). Provincial governments tended to shift in the direction of a user-pay philosophy, by increasing the share of funding for universities and colleges that came from student tuition fees (OMET 1996).

Currently, Canadian universities are planning for an enrolment increase of 20% to 25% by 2010 (Giroux, 2001). The projected enrolment increases translate into rising operating costs as universities strive to provide education to more students. An understanding of past responses to financial change may provide clues as to how universities will face this

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new challenge. The objective of this study is to examine patterns of operating revenue and expenditure for Canadian universities in an attempt to answer the following questions:

- Have universities responded to fiscal restraint in ways other than tuition fee increases?
- Have institutions changed their expenditure patterns in response to decreases in government funding?
- Are there differences in operating revenue and operating expenditure patterns related to university size?

## What you should know about ...

### ... the data

This study covers a 15-year period, 1986-1987 to 2000-2001, and draws on two sources of information: university enrolment data and university finance data.

#### Enrolment

The enrolment data are from the University Student Information System (USIS). Enrolment is measured in “full-time equivalent” (FTE) terms; each full-time enrolment counts as one and the number of part-time enrolments is divided by 3.5. Therefore, one full-time enrolment is equivalent to 3.5 part-time enrolments.

Enrolment data were based on 1986-1987 and on the most recent year available at the time of the study. For most universities, the most recent data were for 1999-2000. For the Maritime provinces, the most recent data were for 1998-1999. In order to compare to finance statistics for the same period the most recent data were used to estimate enrolment for 2000-2001.

#### Finance

The finance data are from the Financial Information of Universities and Colleges (FIUC) survey. FIUC data are available for all degree-granting institutions in Canada, including member institutions of the Canadian Association of University Business Officers (CAUBO). The survey is often referred to as the ‘CAUBO survey’ since Statistics Canada conducts it in co-operation with CAUBO. Data from CAUBO members only are used in this study. The institutions covered in the non-CAUBO database have varied somewhat over the years and their exclusion from this study is intended to ensure coverage consistency across the years. Nevertheless, 98% of the total revenue reported by institutions in the FIUC for 2000-2001 was accounted for by CAUBO schools. Therefore, focussing on data from CAUBO members removes only a small portion of the FIUC survey data.

A further restriction applies: over the 15 years covered by this study, there have been changes in the institutions included in the CAUBO survey. Institutions not in the CAUBO database throughout the 15-year period were dropped from the study, leaving 79 CAUBO institutions from 1986-1987 to 2000-2001. Of these 79 institutions, 24 are affiliates of parent institutions that are also included in the database. Information for these 24 institutions is consolidated into results for the parent institutions. This leaves 55 institutions that are included in the study.

Within the FIUC survey, revenue and expenditures are reported in six different funds: ancillary, capital, endowment, sponsored research, special purpose and trust and general operating expenditures.

### ... the analysis

In this study, only revenue and expenditures within the general operating fund are examined. This fund accounts for teaching and non-sponsored research, the primary activities of universities. General operating revenue is classified under five main sources:

- government funding—federal, provincial, municipal and foreign government funding
- student fees—credit, non-credit and miscellaneous student fees
- bequests, donations, non-government grants and contracts
- investment
- miscellaneous revenue—commissions, royalties, rentals, library and similar fines.

Revenue from the sale of products and service is not included in this analysis, since institutions did not begin reporting this source of operating revenue until the 1999-2000 FIUC survey cycle. It should be noted that governments contribute a large amount to the sponsored research fund, but because this fund is not used to provide instruction and non-sponsored research it is not considered in this analysis.

As with operating revenue, the types of operating expenditures are grouped into broad categories to facilitate the observation of general patterns. The four categories of general operating expenditures are:

- salaries and benefits—academic salaries, other instruction salaries (for instructional staff who do not hold academic rank), other salaries (for non-instructional staff) and benefits
- scholarships and bursaries
- operational expenditures—travel, printing and duplicating, materials and supplies, communications, space rental, insurance, property taxes and institutional membership fees

- other expenditures—furniture and equipment purchase, rental and maintenance, utilities, renovations and alterations, externally contracted services, professional fees, interest, buildings and land and site services, and internal and external cost recoveries.

Expenditures on goods sold as well as lump sum payments are not included in this analysis since institutions have been able to report these expenditure items in the 1999–2000 and 2000–2001 FIUC survey cycles only.

**Size of institution**

Institutions were ranked from largest to smallest based on total operating revenue in 2000–2001. The top 15 universities make up the group of ‘large universities’, and the last 15 universities in the rankings are the ‘small universities’ group. Enrolment data are available by institution and can thus be examined in the light of institution size defined on the basis of total operating revenue.

All reported dollar amounts in this study are in 2000–2001 constant dollars. The Consumer Price Index (CPI) over the fiscal year is used as the deflator.

**What we found**

**Revenue**

From 1986–1987 to 2000–2001, the operating revenue of the 55 universities covered in the study increased 28% to just under \$8.5 billion. Government revenue decreased over this period, but all private revenue sources grew.

**Decrease in government funding**

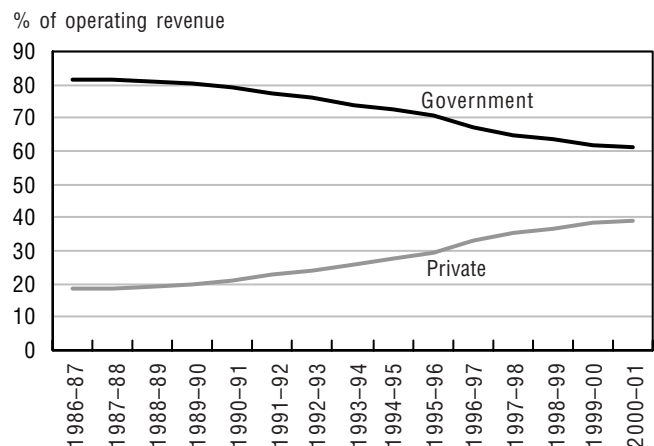
Previous research indicates that universities increased tuition and miscellaneous fees to compensate for the reduction in government funding (Little 1997). From a student’s perspective, evidence of this reduction appears in the 135% increase in undergraduate tuition fees in the 1990s (Statistics Canada 2002a).

Government support to universities’ operating funds decreased by 4.5% from 1986–1987 to 2000–2001. In 1986–1987, governments contributed 81% of the operating revenue. By 2000–2001, this proportion had fallen to 61% (Graph 1). The government would have had to increase funding by

over \$1.7 billion to maintain the share of operating revenue in 2000–2001 at the level observed in 1986–1987.

Government contributions to universities operating funds reached their highest level in 1992–1993, the peak year for university enrolment (Statistics Canada 2001). Most of the decrease in government funding occurred between 1992–1993 and 1999–2000. In that seven-year period the proportion of government-provided operating revenues fell from 76% to 62%.

Graph 1  
**Government is accounting for a smaller porportion of universities’ operating revenue over time**

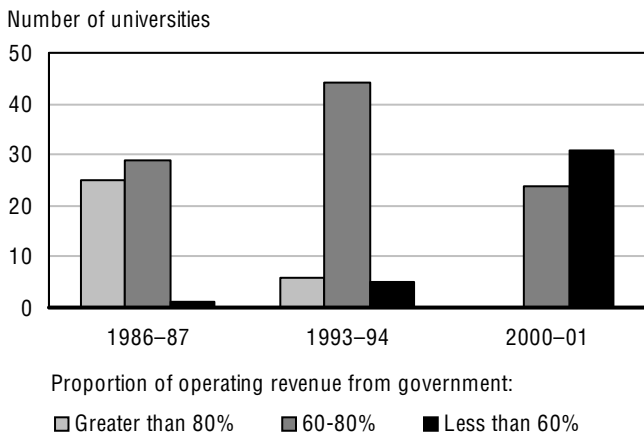


Source: Statistics Canada, Centre for Education Statistics, Financial Information of Universities and Colleges Survey.

All but one of the 55 universities experienced a drop in the share of government funding in operating revenues. The number of institutions receiving more than 80% of their operating revenue from the government fell from 25 in 1986–1987 to none in 2000–2001. The number receiving less than 60% of operating revenue from government rose from 1 to 31 over the same period (Graph 2). After accounting for inflation, 30 of the 55 institutions experienced a net decrease in government support for operating revenues over the 15-year period.

Based on full-time equivalent (FTE) numbers, these universities also experienced an enrolment increase of 18% from 1986–1987 to 2000–2001. In that time, the government support to operating revenues per FTE fell from \$10,091 in 1986–1987 to \$8,190 in 2000–2001 (Table 1).

**Graph 2**  
Universities are relying less on government funding over time



Source: Statistics Canada, Centre for Education Statistics, Financial Information of Universities and Colleges Survey.

**Table 1**  
Operating revenue by source per full-time equivalent, 1986-1987 and 2000-2001

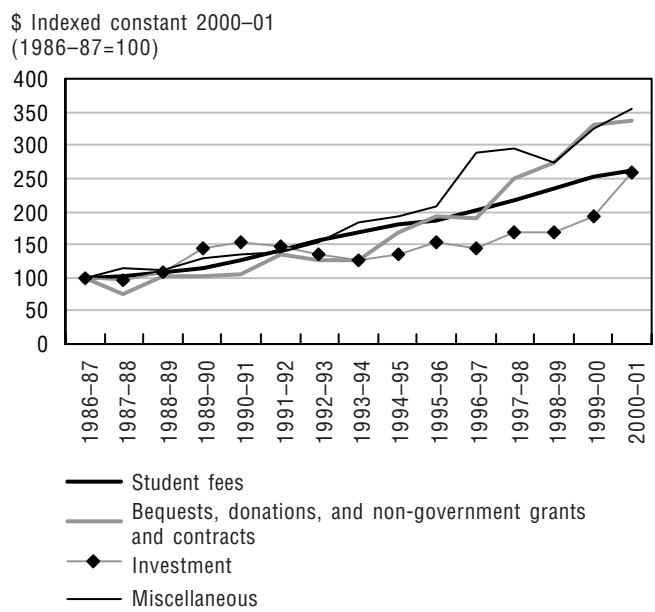
	1986-1987	2000-2001	Change
\$ constant 2000-2001 per FTE			
Government	10,091	8,190	-1,902
Student fees	2,029	4,525	2,497
Bequests, etc. <sup>1</sup>	47	135	88
Investment	156	343	187
Miscellaneous <sup>2</sup>	83	251	168
Total private revenue	2,315	5,255	2,940
Total operating revenue	12,406	13,444	1,038

1. Includes bequests, donations, and non-government grants and contracts.  
 2. Includes commissions, royalties, rentals, and library and other similar fines.  
 Sources: Statistics Canada, Centre for Education Statistics, Financial Information of Universities and Colleges Survey; University Student Information System.

**Increase in private revenue sources**

Universities responded to the reduction in public funding by increasing the amount of private revenues, which rose 167% from 1986-1987 to 2000-2001. Private revenue per FTE increased \$2,940 over the 15-year period (Table 1). As a proportion of operating revenue, private revenue more than doubled, from 19% in 1986-1987 to 39% in 2000-2001.

**Graph 3**  
All sources of private revenue are increasing



Source: Statistics Canada, Centre for Education Statistics, Financial Information of Universities and Colleges Survey.


While the majority of the increase in private revenue stems from higher student fees, revenue from all private sources increased (Graph 3). After accounting for inflation, universities received 163% more in student fees in 2000-2001 than in 1986-1987. Student fees accounted for 34% of operating revenue in 2000-2001, up from 16% in 1986-1987.

However, the relative increases in bequests, donations, and non-government grants and contracts (237%) and in miscellaneous revenues (255%) are even larger than the increase in student fee revenue. Also, revenue from investments increased 159% over the 15-year period. In fact, the proportion of private revenue accounted for by student fees decreased slightly, from 88% in 1986-1987 to 86% in 2000-2001.

While Graph 3 shows that increases observed in student fees were matched or exceeded by other private revenue sources, student fees contributed to the bulk of the increase seen in total private revenue from 1986-1987 to 2000-2001. In fact, student fee revenue per FTE more than doubled, from \$2,029 in 1986-1987 to \$4,525 in 2000-2001 (Table 1). Therefore, while universities successfully increased all private revenue sources over the 15-year period, higher student fees accounted for most of the gains.

## Differences in revenue patterns by size of university

Over the same 15-year period, small universities experienced an increase of 48% in operating revenues, double the 24% recorded increase for large universities. However, enrolment for the small universities increased by 51%, compared with 14% for the large universities.

 Table 2  
**Operating revenue by source per FTE as a function of university size, 1986–1987 and 2000–2001**

	1986– 1987	2000– 2001	Change
\$ constant 2000–2001 per FTE			
<b>Large universities<sup>1</sup></b>			
Government	10,590	8,616	-1,974
Student fees	1,970	4,558	2,588
Bequests, etc. <sup>2</sup>	46	164	117
Investment	180	449	269
Miscellaneous <sup>3</sup>	80	235	155
Total private revenue	2,275	5,404	3,129
Total operating revenue	12,865	14,020	1,155
<b>Small universities<sup>4</sup></b>			
Government	8,966	6,056	-2,910
Student fees	2,504	4,942	2,438
Bequests, etc. <sup>2</sup>	155	157	2
Investment	93	268	175
Miscellaneous <sup>3</sup>	169	235	67
Total private revenue	2,920	5,602	2,682
Total operating revenue	11,886	11,658	-228

1. The large universities category represents the 15 largest institutions in the Canadian Association of University Business Officers (CAUBO), with institution size measured by operating revenue in 2000–2001.

2. Includes bequests, donations, and non-government grants and contracts.

3. Includes commissions, royalties, rentals, and library and other similar fines.

4. The small universities category represents the 15 smallest CAUBO institutions, with institution size measured by operating revenue in 2000–2001.

Sources: Statistics Canada, Centre for Education Statistics, Financial Information of Universities and Colleges Survey and the University Student Information System.

From 1986–1987 to 2000–2001, the small universities experienced a greater decline per FTE in government support for operating revenue than the large universities. While both large and small universities showed increases in private revenue per FTE over the 15-year period, large universities experienced greater growth. In fact, the large universities exhibited more substantial increases per FTE in all the private revenue sources—student fees,

bequests, donations, non-government grants and contracts, investment and miscellaneous (Table 2). For small universities, the greater decline in government funding, coupled with the more modest increase in private revenue, resulted in a drop of \$228 in the operating revenue per FTE over the 15-year period.

## Expenditures

From 1986–1987 to 2000–2001, the operating expenditures of the 55 universities increased 28%, to just under \$8.6 billion. These institutions increased expenditures on scholarships and bursaries and, when compared to other expenditure types, decreased expenditures on salaries and benefits.

## Expenditures on salaries and benefits decreased

Of the four broad expenditure categories (salaries and benefits, operational expenditures, scholarships and other), only salaries and benefits lost ground in relative terms. From 1986–1987 to 2000–2001, the share of salaries and benefits within overall expenditures dropped 6.2 percentage points, whereas operational expenditures increased 0.8 of a percentage point, scholarships increased 2.5 percentage points and other expenditures increased 2.9 percentage points.

Spending on scholarships accounted for the largest percentage increase (393%) compared with 37% for operational expenditures and 80% for other expenditures. Growth in spending on salaries and benefits (18%) just kept pace with the growth in enrolments.

In terms of the proportion of expenditures accounted for, not all components of salaries and benefits decreased at the same rate. Academic salaries have decreased by 7.6 percentage points while other salaries have decreased by 0.5 percentage points; other instruction salaries have increased 0.7 of a percentage point, and benefits have increased by 1.2 percentage points. In fact, apart from academic salaries and other salaries, utilities is the only other expenditure type to show a decrease in the proportion of operating expenditures accounted for since 1986–1987. In terms of expenditures per FTE, only academic salaries decreased per FTE (–\$611) over the 15-year period. Universities have increased academic salaries by 3.4% since 1986–1987,

compared with the 27.5% increase in general operating expenditures. When compared with increases seen in other expenditure types, universities have essentially decreased their expenditures on academic salaries. One possible explanation of this relative decrease in academic salary expenditures is the trend during the 1990s for universities to employ more part-time and less full-time faculty (Statistics Canada 2002b).

Expenditures on scholarships increased markedly during the period, suggesting that universities are attempting to relieve students of some financial pressure. Scholarship expenditures were equivalent to 5.4% of student fee revenue in 1986-1987. By 2000-2001 this rose to 10.1%.


### Expenditure patterns by size of university

Differences exist in each broad expenditure category between large and small universities. For example, expenditures per FTE on salaries and benefits increased in small universities but decreased in large universities. In contrast, operational expenditures per FTE increased in large universities whereas small universities experienced a slight decline. The marked rise in scholarship expenditures appears to be more applicable to the large universities, as small universities experienced only a slight increase in scholarship expenditures per FTE. For other expenditures per FTE, the increase of the large universities was seven times greater than that of the small universities (Table 3).

### Comparing revenue and expenditure patterns

Within the 15-year period under study, most of the change in operating revenue and expenditure patterns actually occurred after 1992-1993. The recessions of the early 1990s peaked around that time and it is possible that governments and universities were forced to adjust their finances in

response. All sources of operating revenue and expenditures experienced larger changes from 1992-1993 to 2000-2001 than they did from 1986-1987 to 1992-1993 (Table 4). Public revenue peaked in 1992-1993 and declined by 15% from 1992-1993 to 2000-2001. Correspondingly, all sources of private revenue showed larger increases in their share of operating revenue after 1992-1993.

 Table 3  
**Operating expenditures by type per FTE as a function of university size, 1986-1987 and 2000-2001**

	1986-1987	2000-2001	Change
\$ constant 2000-2001 per FTE			
<b>Large universities<sup>1</sup></b>			
Salaries and benefits <sup>2</sup>	6,515	6,281	-234
Operational expenditures <sup>3</sup>	853	1,041	188
Scholarships	70	324	254
Other <sup>4</sup>	534	801	268
Total operating expenditures	7,972	8,447	475
<b>Small universities<sup>5</sup></b>			
Salaries and benefits <sup>2</sup>	325	397	72
Operational expenditures <sup>3</sup>	87	84	-3
Scholarships	8	10	2
Other <sup>4</sup>	30	64	35
Total operating expenditures	449	555	106

1. The large universities category represents the 15 largest institutions in the Canadian Association of University Business Officers (CAUBO), with institution size measured by operating revenue in 2000-2001.
  2. Includes academic salaries, other instruction salaries, other salaries, and benefits.
  3. Includes travel; printing and duplicating; materials and supplies; communications; space rental; insurance; property taxes; and institutional membership fees.
  4. Includes furniture and equipment purchase, rental and maintenance; utilities; renovations and alterations; externally contracted services; professional fees; interest; buildings and land and site services; and internal and external cost recoveries.
  5. The small universities category represents the 15 smallest CAUBO institutions, with institution size measured by operating revenue in 2000-2001.
- Sources: Statistics Canada, Centre for Education Statistics, Financial Information of Universities and Colleges Survey and the University Student Information System.





Table 4  
**Changes in the proportion of universities' operating revenue and expenditures accounted for, prior to and after 1992–1993**

	Change from 1986–1987 to 1992–1993	Change from 1992–1993 to 2000–2001
	percentage points	
<b>Operating revenue</b>		
Government	-5.3	-15.1
Student fees	5	12.3
Bequests, etc. <sup>1</sup>	0	0.6
Investment	0.2	1.1
Miscellaneous <sup>2</sup>	0.2	1
<b>Operating expenditures</b>		
Salaries and benefits <sup>3</sup>	1.3	-7.5
Operational expenditures <sup>4</sup>	0.3	0.5
Scholarships	0.2	2.3
Other <sup>5</sup>	-1.8	4.7

1. Includes bequests, donations, and non-government grants and contracts.

2. Includes commissions, royalties, rentals, and library and other similar fines.

3. Includes academic salaries, other instruction salaries, other salaries, and benefits.

4. Includes travel; printing and duplicating; materials and supplies; communications; space rental; insurance; property taxes; and institutional membership fees.

5. Includes furniture and equipment purchase, rental and maintenance; utilities; renovations and alterations; externally contracted services; professional fees; interest; buildings and land and site services; and internal and external cost recoveries.

Source: Statistics Canada, Centre for Education Statistics, *Financial Information of Universities and Colleges Survey*.

## Conclusion

Over the past 15 years, all sources of private revenue have risen to compensate for a reduction in government funding of university operating revenue. While students, through tuition and miscellaneous fees, have contributed most to offset the decreases in government funding the relative increases in all the other private revenue sources exceeded the increase in student fees.

Over the same period, the proportion of operating expenditures allocated to academic salaries declined. The amount that universities have spent on scholarships increased significantly, seemingly to help offset the increases in tuition fees. Despite rising tuition fees, the relative increase in expenditures on scholarships exceeded the increase in student fee revenue.

Financial patterns varied by university size, with large and small institutions experiencing differences in operating revenue and expenditure trends over past 15 years. Large universities experienced a more modest per student decrease in government funding than small universities. At the same time, large universities gained more in private revenue sources per FTE. In fact, small universities showed a decrease in operating revenue per FTE.

On the expenditure side, the large universities exhibited a greater change in each of four broad expenditure categories per FTE. Of particular note, the national trend of decreasing expenditures on salaries and benefits coupled with marked increases in scholarship expenditures appears more applicable to the large universities. The small universities experienced an increase in salaries and benefits expenditures per FTE, and only a slight increase in scholarship expenditures per FTE.

Most of the changes in operating revenue and expenditure patterns occurred between 1992–1993 and 2000–2001. After government-provided revenues peaked in 1992–1993, institutions changed their revenue patterns by increasing the contributions from all private sources. As operating revenue patterns changed after 1992–1993, so did operating expenditure patterns. The recession during the early 1990s may have also contributed to the altered revenue and expenditure patterns following 1992–1993.

This study examined general operating revenue and expenditure patterns over 15 years. To determine whether the delivery of a postsecondary education has been affected by the changes in operating revenue and operating expenditures, other factors have to be researched. For example, a detailed examination of enrolment and faculty composition over the 15-year period would be useful in examining possible changes in the supply of postsecondary education. Also, FIUC survey results could be further examined for changes in ancillary funds, capital, endowment, sponsored research, and special purpose and trust funds. This analysis would provide a broader understanding of how university finance in Canada has changed over time.

## Appendix

### Institutions included in dataset:

Acadia University	Université de Moncton
Athabasca University	Université de Montréal
Bishop's University	Université de Sherbrooke
Brandon University	Université du Québec
Brock University	Université Laval
Carleton University	Université Sainte-Anne
Concordia University	University College of Cape Breton
Dalhousie University	University of Alberta
École Polytechnique	University of British Columbia
École des Hautes Études Commerciales	University of Calgary
Lakehead University	University of Guelph
Laurentian University	University of King's College
McGill University	University of Lethbridge
McMaster University	University of Manitoba
Memorial University of Newfoundland	University of New Brunswick
Mount Allison University	University of Ottawa
Mount St. Vincent University	University of Prince Edward Island
Nipissing University	University of Regina
Nova Scotia College of Art and Design	University of Saskatchewan
Nova Scotia Agricultural College	University of Toronto
Queen's University	University of Victoria
Redeemer University College	University of Waterloo
Ryerson Polytechnic University	University of Western Ontario
St. Mary's University	University of Windsor
Simon Fraser University	University of Winnipeg
St. Francis Xavier University	Wilfrid Laurier University
St. Thomas University	York University
Trent University	

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## Good jobs, more debt: a profile of young graduates<sup>1</sup>

### Introduction

This study uses data from the National Graduates Survey to paint a portrait of university and college graduates who are traditionally seen as the mainstream student population. It examines the labour market outcomes of three different cohorts of young graduates starting their transition into the work force at three very different points of the economic cycle: 1986, 1990 and 1995.

The paper looks at graduates from the mainstream of the student population, using results from the National Graduates Survey. More specifically, they are young bachelors and college graduates who entered university or college directly from high school. The study paints a portrait of the labour market outcomes and earnings of three graduating classes: 1986, 1990 and 1995. Older students, who tend to have different characteristics and work experience, are not included in this study, although they are covered by the survey. Future analysis of the experiences of older students would address such issues as lifelong learning and continuing education.

The study looks at young college and university graduates who entered their programs directly from high school; it excludes older graduates. Young university graduates with bachelor's degrees represent close to half of each graduating class. Young college graduates who make the transition directly from high school to college account for a smaller share of each graduating class because colleges tend to attract large numbers of adult learners.

This article was adapted from the report *Finding their way: a profile of young Canadian graduates* (Catalogue no. 81-595-MIE) and is available free-of-charge on Statistics Canada's website ([www.statcan.ca](http://www.statcan.ca)). From the *Our products and services* page, under *Browse our Internet publications*, choose *Free*, then *Education*.

## The National Graduates Survey

The National Graduates Survey (NGS) is designed to measure short- and medium-term labour market outcomes of graduates from university, college and trade–vocational programs by interviewing them two and five years after graduation. To date, five graduating classes have been surveyed: 1982, 1986, 1990, 1995 and 2000. Results for the class of 2000, interviewed for the first time in May 2002, are not yet available but will be released in 2003.

The NGS offers insights into how well different graduating classes fared in their early labour market experiences. Some samples are also sufficiently large to permit examination of the different pathways pursued by graduates, such as going on to further studies rather than moving immediately into the work force. For the class of 1995, the sample of 29,000 for the five-year interviews, conducted in 2000, was 10% of the total graduating class (294,000). The sample was stratified by province, level of certification and field of study to provide a good representation of the graduating class.

This study covers the 1986, 1990 and 1995 graduating classes. For the purposes of this analysis, bachelor's graduates include Quebec graduates who began their studies in a *collège d'enseignement général et professionnel* (CEGEP).

## Findings

### Pathways to work and school

Graduates can follow many pathways through work, school and non-labour-market activities before obtaining their postsecondary degree or diploma. The pathways taken by the study population in this report were restricted in order to control across and within cohorts for differences that would be linked to age and previous work experience.

For all three university graduating classes covered in this study (1986, 1990 and 1995), over 60% of all graduates with bachelor's degrees were under 25 years of age at the time of graduation. Close to 90% of these young graduates had only a high school education when they entered university and more than 90% were going to school 12 months prior to starting university. Thus, young graduates who moved straight from high school into university account for about half of all bachelors' graduates, a proportion that has been stable through time (Table 1).



Table 1  
Target population of this study

	1986 graduates	1990 graduates	1995 graduates
number of graduates			
<b>College</b>			
All college graduates in Canada <sup>1</sup>	62,000	55,600	80,300
Under 25 years old	46,400	37,400	48,600
With no education beyond high school prior to entering program	38,100	29,400	37,000
In school 12 months prior to entering program	28,800	21,800	26,900
Without additional degrees or diplomas	27,100	21,300	26,000
<b>University</b>			
All university graduates with bachelor's degrees in Canada <sup>1</sup>	102,700	102,400	128,000
Under 25 years old	61,700	62,800	76,800
With no education beyond high school prior to entering program	54,500	56,600	65,800
In school 12 months prior to entering program	49,500	52,400	61,400
Without additional degrees or diplomas	44,800	49,300	57,000

1. Refers to graduates who were living in Canada 12 months prior to starting their program. In other words, it excludes students from other countries who came to Canada to study.

Source: Statistics Canada, National Graduate Surveys.

On the other hand, the average age of community college graduates has been steadily rising. While 75% of the graduating class of 1986 was under the age of 25 years, the proportion dropped to 60% for the class of 1995. Similarly, the proportion of young college graduates who had high school completion or less before entering their program declined from 82% in 1986 to 76% in 1995. Only about three-quarters of these young graduates were in school 12 months before entering their program. Therefore, the young graduates who made the transition directly from high school to community college account for a smaller—and shrinking—proportion of all college graduates: 46% in 1986, 39% in 1990 and 34% in 1995.

Another notable shift is the time taken by graduates to complete their program. At the college level, the proportion of graduates completing in less than one year rose from 6% for the class of 1990 to

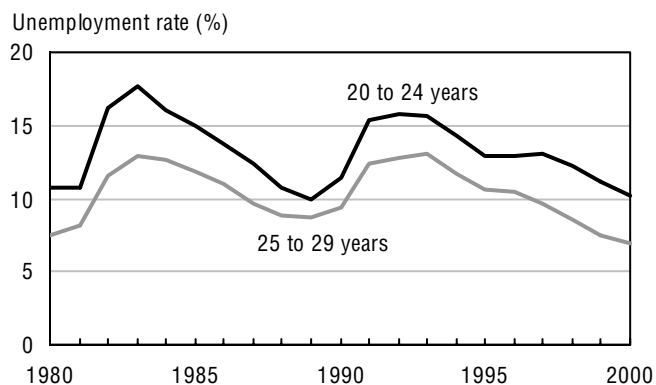
11% for the class of 1995. Some of the increase may be the result of changes in the reporting of trade–vocational programs. Many one-year pre-employment or pre-apprenticeship programs now require high school completion, an upgrading that may shift these types of educational programs from trade–vocational to college-level. Close to three-quarters of students enrolled full time in college took one or two years to complete their program.

At the bachelor's level at university, the proportion of full-time students who had completed their degree within three years decreased from 79% for the class of 1990 to 74% for the class of 1995, while those taking four years or more rose from 21% to 26%. There are several possible explanations for this shift. During this period, universities reduced the number of three-year bachelor's programs they offered. Also, some programs might have taken longer to complete because work terms were embedded in them. As well, some students may have taken longer to finish their degrees because they had to take time off in order to raise money to cover the costs of their education, as a result of increases in postsecondary tuition costs.

### Labour market impact

A graduate's success in securing a job quickly and at a good rate of pay is affected by the labour market climate. The three graduating classes studied in this paper faced very different labour market conditions as they completed their studies. Graph 1 shows the unemployment rate for young adults for 1980 to 2000. This rate is an important indicator of labour market conditions.

 Graph 1  
**Unemployment rates of young adults,  
1980 to 2000**



The class of 1986 was interviewed in 1988 and again in 1991. The unemployment rate for young adults was relatively low in the years immediately following graduation. But four years after graduation, the Canadian economy entered a recession and, by 1991, the unemployment rate had climbed to 15.4% for 20- to 24-year-olds and to 12.4% for 25- to 29-year-olds.

The class of 1990 entered the labour market as unemployment rates were beginning to climb. By 1992, they were facing the trough of the business cycle, with unemployment at 15.8% for 20- to 24-year-olds. In 1995, the next time the class of 1990 was interviewed, unemployment rates were falling again but were still at higher levels than when they had graduated.

When the class of 1995 was interviewed in 1997 for the first time, the unemployment rate was hovering around 13% for 20- to 24-year-olds. But in 2000, five years after graduation, the class of 1995 found itself in much more favourable labour market conditions: the unemployment rate for 25- to 29-year-olds reached the lowest level experienced by any of the three cohorts.

### Engineering and applied sciences earned the best pay

Young 1995 university graduates working full time had median annual earnings of \$32,000 in 1997, well above the \$25,000 of their college counterparts. (Half the population earned more than the median and half earned less.) This absolute gap of \$7,000 persisted five years after graduation, when median earnings for the two groups had risen to \$40,000 and \$33,000, respectively.

Both male and female university graduates with bachelor's degrees tended to earn more than college graduates, but the university–college earnings difference was larger for women.

The best-paid disciplines for 1995 college graduates included engineering and applied sciences, with median annual earnings in 2000 of \$40,000, followed by health sciences at \$34,000. The lowest-paid field of study for college graduates was business and commerce. For 1995 university graduates, the best-paying disciplines in 2000 were engineering and applied sciences (median earnings of \$56,000) and mathematics and physical sciences (\$54,000). Only one field of study at the college level—engineering and applied sciences—resulted in salaries within the same range as the university disciplines.

### High tuition, more debt

Between 1986 and 1995, average university tuition fees increased 118% (in current dollars).<sup>2</sup> Since university programs are generally longer and tuition is higher, it is not surprising that student debt levels for university graduates exceeded those of college graduates.

For the class of 1990, community college graduates owed an average of \$5,300 to federal and provincial loan programs upon graduation, compared with \$8,800 for university graduates with bachelor's degrees (Table 2).

		1990 graduates	1995 graduates
		\$ constant 2000	
<b>College</b>			
At graduation		5,300	8,300
Two years later		3,200	5,900
Five years later		2,100	3,800
<b>University</b>			
At graduation		8,800	11,800
Two years later		5,800	8,500
Five years later		3,800	5,400

Source: Statistics Canada, National Graduate Surveys.

The 1990 community college graduates had paid off 40% of their loan two years after graduation and 60% after five years. University graduates from the 1990 cohort had paid off 34% and 57%, respectively. In short, five years after graduation, the pattern was nearly identical for college and university graduates, with both groups having paid off roughly 60% of their student loans.

When compared with the 1990 graduates, the class of 1995 owed more at graduation than graduates in the class of 1990 did, but they had paid off almost as much of that loan by five years after graduation.

At graduation in 1995, community college graduates owed on average \$8,300 in government loans, nearly 60% more than their 1990 counterparts. University graduates in 1995 owed \$11,800, up 34% from 1990. Both community college and university graduates had paid off just over a quarter of the loan by two years after graduation—considerably less

than the 1990 graduates had paid off. Five years after graduation, however, both community college and university graduates had paid back 55% of their original loan and had almost caught up to the class of 1990.

At two and five years after graduation, graduates were asked whether they were experiencing any difficulty in paying back their student loans. While the overwhelming majority of young graduates did not report any difficulties, the 1995 graduates were more likely to report difficulties than the young graduates of the class of 1990 were.

Among the 1990 university graduates, 15% reported difficulty in paying back their student loans two years after graduation and 13% reported difficulty five years after. In the case of the 1995 university graduates, 20% were experiencing problems two years after graduation, but this dropped to 16% five years after graduation.

Of the 1990 college graduates, 8% reported difficulties two years after graduation, and this increased slightly to 11% five years after graduation. The 1995 college graduates were more likely than the class of 1990 to report difficulties in repaying their loans both two and five years after graduation: 13% were experiencing problems two years after graduating; this increased to 16% at the five-year mark.

### Conclusion

Overall, the mainstream graduates of the class of 1995 fared well in the labour market both two and five years after graduation. College graduates had good employment prospects regardless of their discipline. In fact, young mainstream graduates from all college fields of study had employment rates exceeding 90% five years after graduation.

In spite of economic change and restructuring, and changes in the programs offered by postsecondary institutions, the labour market outcomes of young university graduates remained relatively stable over the 15 years covered by this study (1986 to 2001). University graduates with bachelor's degrees were better able to withstand the recessionary pressures of the early 1990s than were youth with only a high school education.



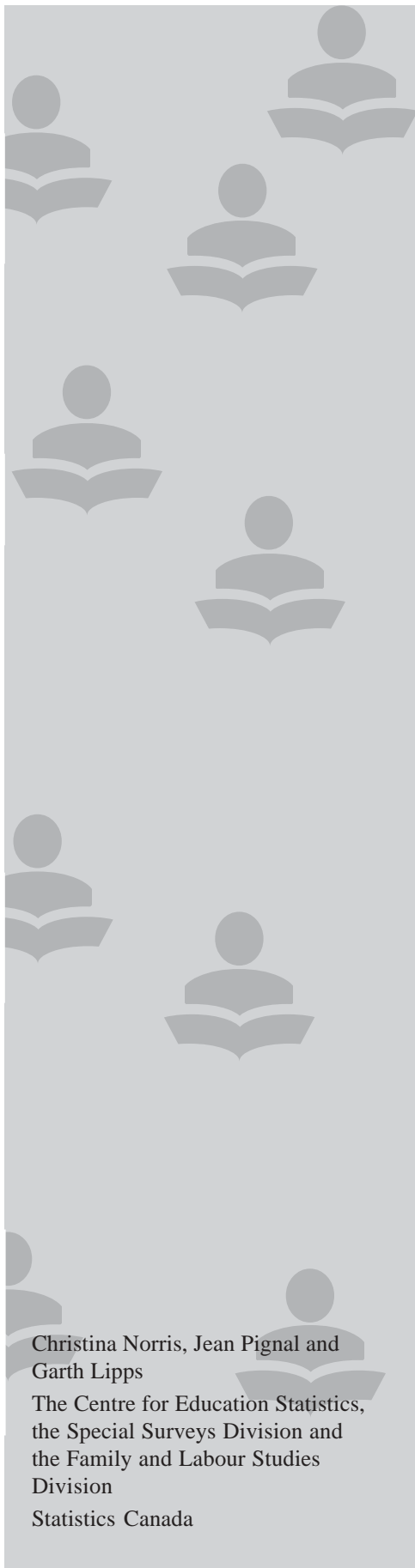
At the same time, however, the cost of a postsecondary education increased, and most students left school with increasing student debt loads. Between 1990 and 1995, student debt upon graduation increased 57% for college graduates and 34% for university graduates. Nevertheless, while the number of graduates who reported difficulties in paying off their student loans increased, the majority of graduates did not report any difficulties in paying off their loans. EQR

## Endnotes

1. This article was adapted from the research paper *Finding their way: a profile of young Canadian graduates* (Statistics Canada Catalogue no. 81-595-MIE2003003), available free on the Internet at [www.statcan.ca/cgi-bin/downpub/studiesfree.cgi](http://www.statcan.ca/cgi-bin/downpub/studiesfree.cgi).
2. Statistics Canada, Tuition and Living Accommodations Costs Survey.

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Division  
Statistics Canada

## Measuring school engagement

### Introduction

A widespread problem facing educators today is the emotional, intellectual and physical withdrawal of students from school (Voelkl 1996). Students who do not participate in or identify with school are more likely to experience academic failure or drop out of school. According to Finn, Folger and Cox (1991), disengagement from school begins to appear in the early grades as a lack of attentiveness or interest in school and develops over time. As children grow, this social, emotional and intellectual withdrawal, when accompanied by low grades, can become associated with serious problems such as truancy, juvenile delinquency, and dropping out of school.

Recent research suggests that children who are engaged with school are more likely to do well in school and to graduate from high school. Voelkl (1995, 1997) found that elementary students who participated in school activities perceived their school environment to be warm and that those who identified with their school had higher levels of academic achievement. Studies with high school students have shown that students with increased engagement with school or learning are less alienated from their school and have higher levels of academic achievement (Ainley 1993; Finn and Rock 1997; Trusty and Dooley-Dickey 1993).

Ensuring that Canadian children not only stay in school but also meet high academic standards and reach their full potential are high priorities for parents, educators and governments alike. To compete in the national and international labour market, children need to complete their education with high academic achievement, especially given the trend towards globalization and a knowledge-based economy.

A Canadian survey is beginning to address some of these issues. The National Longitudinal Survey of Children and Youth (NLSCY), initiated in 1994–1995, is a joint project of

Human Resources Development Canada (HRDC) and Statistics Canada. The education portion of this survey uses standardized achievement tests and questions asked of children, their parents and their teachers to examine the educational development of children.

As members of the content team that developed the teacher's questionnaire for the school component of the NLSCY, we included several items that were intended to measure various facets of students' school engagement. The intention was to derive a global measure of students' school engagement. However, since the initial content development, our conceptualization of school engagement has changed to differentiate academic engagement from social engagement. In this study, we assessed whether our new definition of school engagement was adequately measured by the NLSCY. In this report, we define school engagement, describe the NLSCY, discuss our methodology for the development of two school engagement scales using items from the NLSCY teacher's questionnaire, and suggest further work needed to capture school engagement effectively.

### Assessing the overall quality of the NLSCY academic and social engagement measures

We assessed the quality of the measure of academic and social engagement by considering three principal elements:

- **Measurement** (Did the items individually and as a group reflect all features of academic engagement and social engagement?)
- **Reliability** (Were responses to the items that made up the measures of academic and social engagement consistent—within the measures, at different points in time, or across respondents?)
- **Validity** (Did the items that made up the intended measures of academic and social engagement accurately reflect academic and social engagement?)

We assessed **measurement** by examining how the items we expected to represent academic and social engagement, respectively, naturally formed intercorrelated clusters that appeared to represent each type of engagement. Ideally, a single cluster of items would result for each type of school engagement: one reflecting the participation aspect of academic engagement, and another one reflecting the belonging

aspect of social engagement. We used principal components analysis (PCA), a statistical technique, to examine the number of unrelated or reasonably uncorrelated clusterings or sets of items that could be formed from the original items. The goal was to find sets of items that were highly correlated within the set but not strongly correlated across sets. For example, in an effective measure, all of the items that measured academic engagement should be strongly correlated with each other but should be only weakly correlated with items measuring social engagement. These sets of items are called components. PCA identifies these components in descending order of the amount of total variability in respondents' answers to the set of items: the first component accounts for the greatest amount of total variability, the second accounts for the second greatest amount, and so on (see next Text Box).

Next, we assessed the **reliability** of the components by examining the stability of respondents' answers across the set of items used to form each of the two measures (academic engagement and social engagement). The statistical measure we used to assess this stability was Cronbach's Alpha—the average correlation between all possible methods of splitting the set of items into halves. For example, it could be split between even-numbered and odd-numbered answers to the social engagement items, or between answers to the first half and answers to the last half of the academic engagement items.

Finally, we assessed **validity** by examining the degree to which respondents' scores on the constructed measures of academic engagement and social engagement agreed or correlated with their scores on measures of similar and logically related concepts (concurrent and predictive validity). We also examined the extent to which the responses disagreed or were uncorrelated with the respondents' scores on measures of conceptually similar but unrelated constructs (discriminant validity). For example, we expected that respondents' scores on the measures of social engagement and academic engagement would be related to each other (concurrent validity) and that each would be related individually to the respondent's mathematics computation scale score, the teacher's rating of academic achievement, and the parent's rating of academic achievement (predictive validity). Further, we expected that scores on measures assessing the student's physical appearance self-concept, the student's feelings of depression, the teacher's engagement with work, and the parental report of family functioning would have little or no correlation with respondents' scores on either the academic engagement or the social engagement measures (discriminant validity).

## Principal components analysis criteria

The goal of principal components analysis (PCA) is to find an efficient method of summarizing respondents' answers to a series of questions. For example, 13 items on the 1994–1995 NLSCY questionnaire measured academic engagement. The total variability in respondents' answers to these questions could be considered as representing 13 units of variability: theoretically, 13 principal components could be constructed from these 13 items. However, there would be no advantage in interpreting the same number of components as items. For this reason, we needed an approach to reduce the number of components without losing too much information. Statistical textbooks, such as Tabachnick and Fidell (1996), suggested several criteria that could be used to achieve this goal. In this project, we applied four criteria to identify the components to consider for our analysis:

- First, we considered only those components with an eigenvalue greater than or equal to 1. (An eigenvalue indicates how much of the total variability in respondents' answers to the school engagement items can be accounted for by the component.) In general, components with eigenvalues equal to or greater than 1.00 account for as much (or more) variability in respondents' answers to all of the school engagement items as a single school engagement item does. Such a component is as efficient (or more efficient) in summarizing respondents' answers to all of the school engagement items as a single school engagement item is.
- The second criterion was the scree plot—a graph in which all components' eigenvalues are plotted in descending order of size. We considered only components plotted at or above the first levelling point in the graph.
- The third criterion was whether or not a component had 'simple structure,' that is, whether it contained only items that correlated substantially with the component. For example, an item such as "Most other kids like me" may correlate strongly with a component where all of the items appear to represent social engagement, but only weakly with a component where all the items appear to represent academic engagement. A component that consists of items that correlate strongly with only one component has simple structure.

The final criterion we used was the total amount of variability in respondents' answers that was accounted for by the components that were identified. These

components should, in combination, account for at least 30% of the total variability in respondents' answers to the items. In our case, where 19 items were thought to measure academic and social engagement, the sum of the eigenvalues for all of the components identified had to be greater than or equal to 5.7 (30% of 19).

## Definition of 'school engagement'

School engagement is not a one-dimensional construct: it has many components (Newmann 1989). Conceptually, school engagement involves both children's behaviour at school and their psychological or emotional attachment to school. It refers not only to events taking place within the classroom, but also to those that occur outside the classroom (Finn 1993; Voelkl 1995, 1997). School engagement can also refer to children's behaviour or feelings toward classroom materials, school rules, teachers and peers (Finn 1993; Newmann 1989).

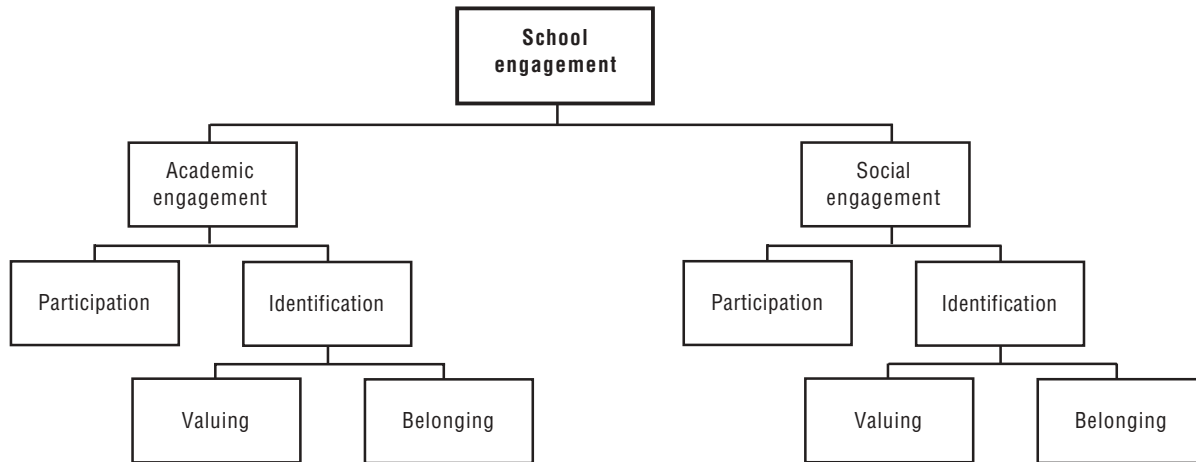
Accordingly, we have created the following definition of school engagement: children's behavioural involvement in and emotional identification with the social and academic realms of school. This definition distinguishes academic engagement, which occurs in the classroom, from social engagement, which occurs outside the classroom. It also includes both behavioural and cognitive–perceptual aspects of school engagement (see Graph 1 for a conceptual framework of school engagement).<sup>1</sup>

### Academic engagement

Academic engagement is defined as the identification with and behavioural involvement in the academic aspects of school. These aspects include students' dealings with teachers, curriculum and school governance. Identification in the academic aspect can be further subdivided into belonging and valuing. 'Belonging' refers to a close correspondence between students' perceived needs and the offerings of the school. It also refers to students' perception that they are in an environment where they are cared about and respected. 'Valuing' refers to students' endorsement of the general goals of education, especially those goals associated with academic achievement. For example, valuing includes students' interest and belief in the importance and relevance of academic achievement.



Graph 1  
A conceptual framework for school engagement



### Social engagement

Social engagement is defined as identification with and behavioural involvement in the social aspects of school: the informal, out-of-classroom interests and activities associated with school. Some examples of the social aspects of school are students’ relationships with peers, extracurricular activities, and contacts with teachers outside the classroom. Identification with the social aspects of school involves a feeling of belonging and a sense of fit between the individual and the school’s social environment. It also involves valuing, the belief that being socially involved in school and interested in the social life of the school is important.

newborn to 11 years. The survey covered the following aspects of the children:

- behaviour
- child health and development
- child-care arrangements
- demographics
- education
- family custody
- family functioning
- leisure activities
- literacy
- parenting
- relationships
- socio-economic background.

### The National Longitudinal Survey of Children and Youth

The National Longitudinal Survey of Children and Youth (NLSCY) is a comprehensive survey that examines a wide variety of factors thought to influence children’s development.<sup>2</sup> Every two years, the survey collects information on children as they grow, as well as on the critical environments in which they live, learn and play.

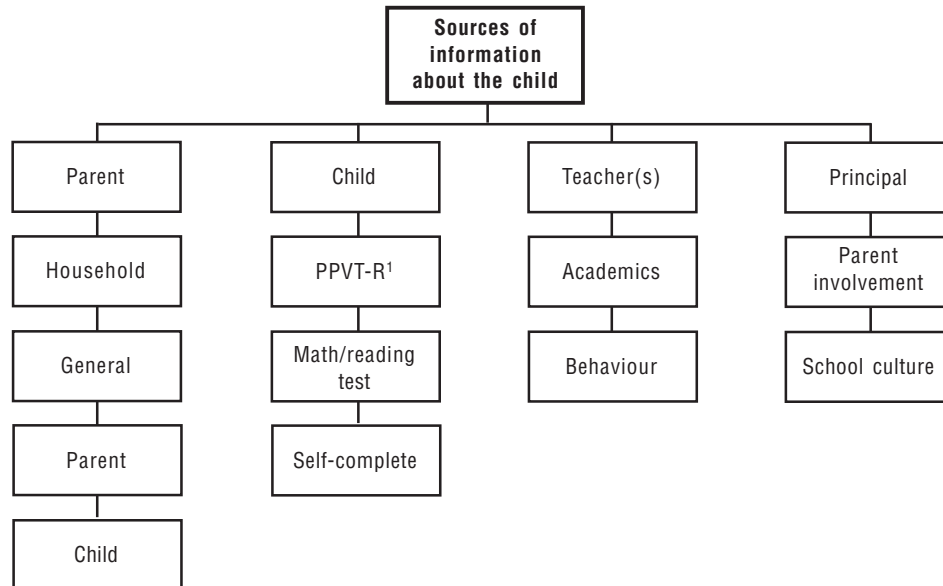
The first cycle of the NLSCY, which was conducted in 1994–1995, collected information on nearly 23,000 children who ranged in age from

In addition to a household-based interview with the person most knowledgeable about the child (usually the child’s mother), the NLSCY used a variety of methods to collect information on child development and functioning (Graph 2). Data collection methods included standardized tests (mathematics computation and vocabulary), self-completed questionnaires for children aged 10 years and older, and questionnaires completed by the child’s teacher and school principal. The teacher and principal questionnaires provided unique information about the child’s education and behaviour in classroom and school environments.



Graph 2

## Survey instruments for the first cycle of the NLSCY (1994–1995)



1. PPVT-R : Peabody Picture Vocabulary Test – Revised

As noted above, our definition of school engagement changed after the first cycle of the NLSCY was conducted. The new definition differentiated between students' academic engagement and social engagement. We needed to find out whether the existing survey content measured this new definition adequately or whether content changes were needed for subsequent cycles in order to measure it more effectively.

To do this, we used 1994–1995 NLSCY data on the behaviour and educational functioning of approximately 3,400 children aged 10 and 11 years to create separate measures of students' academic engagement and social engagement. By using information from the questionnaires completed by the teacher and by the child, we were able to obtain the most comprehensive picture of school engagement. We then used statistical methods to assess the effectiveness of the measure.

## School engagement measurement methodology

We randomly divided the complete sample of students in half. We used the first half, our 'exploratory sample,' to develop and assess our updated measure of school engagement. The second

half, our 'confirmatory sample,' served to confirm the general pattern of results obtained using the first half.

To measure our new definition of school engagement, we used NLSCY survey items to develop separate scales for its two constructs: social engagement and academic engagement. After identifying from the 1994–1995 NLSCY questionnaires all items that could potentially be used to measure each concept (13 for academic engagement and 6 for social engagement), we used a three-step process (Text Box 1) to develop the two scales:

1. We used principal components analysis (PCA) to examine the interrelationship of the items composing each scale and to assess the independence of the scales from each other.
2. We used Cronbach's Alpha to assess the reliability of each scale.
3. We assessed the construct validity of each scale to make sure it measured the concept thought to underlie it but not concepts that were similar but unrelated.

Operationally, we expected that social engagement and academic engagement would be related to each other and that each would be related

individually to math scores, teacher ratings of student achievement, and parental ratings of academic achievement. Further, we expected that the family functioning of the children, the level of depression of the parents, the teachers' engagement with their work, and the students' ratings of their own physical appearance would have little or no correlation with either measure of school engagement.

We performed this process—PCA followed by assessments of internal consistency reliability and construct validity—on the exploratory sample of students using respondents' answers to the various survey items. We then repeated it using the confirmatory sample. Replicating our findings on a unique sample added a measure of confidence to our findings.

## School engagement measure results

### Academic engagement measure

From the 1994–1995 cycle of the NLSCY, 13 survey items assessing compliance behaviours and overall attentiveness formed the academic engagement measure (Table 1). Multiple criteria were used to determine the number of components that underlie the items (Text Box 2). The PCA of the exploratory sample revealed that the proposed measure of academic engagement had only one component. This first component had an eigenvalue greater than 1.00, accounting for 59.6% of the total variance among the survey items. Further, all 13 items had correlations of 0.68 or greater with the component. Cronbach's Alpha for the 13 items making up this measure was 0.93, indicating that the measure had an acceptable degree of internal consistency reliability.


To examine the concurrent and predictive validity of the measure, we calculated its correlations with the social engagement measure and with three measures of academic achievement: the mathematics computation scale score, the teacher's rating of academic achievement, and the parent's rating of academic achievement. We assessed the discriminant validity<sup>3</sup> of the measure by examining its correlation with four similar but conceptually distinct measures: the student's physical appearance self-concept, the student's feelings of depression, the teacher's engagement with work, and the parental report of family functioning. As expected, the academic engagement measure had a reasonable degree of predictive and concurrent validity, correlating

moderately with the measures of academic achievement and social engagement. This measure also had an acceptable degree of discriminant validity, as seen by the small correlations with measures of conceptually similar but unrelated constructs (Table 2).

 **Table 1**  
**Principal components analysis for academic engagement measure, exploratory sample**

NLSCY academic engagement items	Factor loadings <sup>1</sup>
Student works well with other students	0.68
Student follows rules	0.80
Student follows instructions	0.85
Student listens attentively	0.84
Student follows directions	0.85
Student completes work on time	0.79
Student takes care of materials	0.84
Student works neatly and carefully	0.74
Student gives up easily	0.69
Student is inattentive	0.74
Student fails to complete homework	0.74
Student is disobedient at school	0.68
Student can't concentrate for long	0.77

1. Correlations between item and component.

 **Table 2**  
**Predictive, concurrent and discriminant validity of the academic engagement measure, exploratory sample**

Concurrent and predictive validity	Correlation
Social engagement	0.27
Math scores	0.31
Teacher's rating of achievement	0.51
Parent's rating of achievement	0.39
Discriminant validity	Correlation
Physical appearance	0.17
Teacher's engagement	0.11
Family functioning	0.19
Student's depression score	0.09

Results of the analyses using the confirmatory half of the sample paralleled those of the exploratory analyses (Tables 3 and 4). The PCA that we conducted using the confirmatory sample suggested that only one component underlay the items making up the academic engagement measure, accounting for 58.6% of the total variance among the 13 survey items. Further, all items had correlations of 0.59 or greater with the component. Cronbach's Alpha for the academic engagement measure in the




confirmatory sample was 0.94. Similarly, the examinations of predictive, concurrent and discriminant validity replicated the results found using the exploratory sample.

 **Table 3**  
**Principal components analysis for academic engagement measure, confirmatory sample**

Academic engagement items	Factor loadings <sup>1</sup>
Student works well with other students	0.69
Student follows rules	0.78
Student follows instructions	0.84
Student listens attentively	0.80
Student follows directions	0.84
Student completes work on time	0.83
Student takes care of materials	0.81
Student works neatly and carefully	0.78
Student gives up easily	0.69
Student is inattentive	0.71
Student fails to complete homework	0.77
Student is disobedient at school	0.59
Student can't concentrate for long	0.78

1. Correlations between item and component.

 **Table 4**  
**Predictive, concurrent and discriminant validity of the academic engagement scale, confirmatory sample**

Concurrent and predictive validity	Correlation
Social engagement	0.23
Math scores	0.32
Teacher's rating of achievement	0.60
Parent's rating of achievement	0.52
Discriminant validity	Correlation
Physical appearance	0.09
Teacher's engagement	0.17
Family functioning	0.18
Student's depression score	0.20

### Social engagement measure

Six questions assessing children's feelings of social belonging and social value formed the social engagement measure. Scores on this measure were calculated by summing children's responses to the six questions.<sup>4</sup> All negative items (i.e., the last five items listed in tables 1 and 3) were reversed before they were summed. High scores on the social engagement measure are thought to reflect increased social and emotional attachment to the school.

Results of the PCA using the exploratory half of the sample suggested that one component underlay the six items (Text Box 2). Only the first component had an eigenvalue greater than 1.00, accounting for 51.2% of the total variability in the six items. In addition, all the items had correlations of 0.61 or greater with the first component. None of the six items showed significant cross-correlations on other components. The Cronbach's Alpha score for the measure was 0.81, suggesting that the measure had an acceptable level of internal consistency reliability (Table 5).


 **Table 5**  
**Principal components analysis of the social engagement items, exploratory sample**

Social engagement items	Factor loadings <sup>1</sup>
I have a lot of friends	0.75
I get along with kids easily	0.70
Other kids want me to be their friend	0.76
Most other kids like me	0.80
I feel like an outsider (or left out of things) at my school	0.61
During the past six months, how well have you gotten along with other young people such as friends or classmates?	0.66

1. Correlations between item and component.

To examine the predictive validity of the social engagement measure, we correlated it with three measures of academic achievement: the mathematics computation scale score, the teacher's rating of academic achievement, and the parent's rating of academic achievement. To assess its concurrent validity, we correlated its scores with a measure of academic engagement. We assessed its discriminant validity by examining its correlation with four similar but conceptually distinct measures: the student's physical appearance self-concept, the student's feelings of depression, the teacher's engagement with work, and the parental report of family functioning. Contrary to expectations, the social engagement measure did not have a reasonable degree of predictive validity, as evidenced by low correlations with measures of academic achievement (Table 6). As well, we could find only weak evidence for concurrent validity. The examination of discriminant validity revealed that the social engagement measure had a moderate correlation with the measure of

physical appearance, suggesting that within the exploratory sample the social engagement measure lacked discriminant validity.

 **Table 6**  
**Predictive, concurrent and discriminant validity of the social engagement measure, exploratory sample**

Concurrent and predictive validity	Correlation
Academic engagement	0.27
Math scores	0.05
Teacher's rating of achievement	0.12
Parent's rating of achievement	0.16
Discriminant validity	Correlation
Physical appearance	0.46
Teacher's engagement	0.01
Family functioning	0.15
Student's depression score	0.12

The results of the PCA using the confirmatory sample paralleled those using the exploratory sample (Table 7). Again, only one component had an eigenvalue greater than 1.00, accounting for 50.5% of the total variability among the six social engagement items. All six items correlated on this component with correlations of 0.61 or greater and did not cross-correlate on any other component. Cronbach's Alpha for social engagement items was 0.80.


 **Table 7**  
**Principal components analysis of the social engagement items, confirmatory sample**

Social engagement items	Factor loadings <sup>1</sup>
I have a lot of friends	0.73
I get along with kids easily	0.72
Other kids want me to be their friend	0.73
Most other kids like me	0.78
I feel like an outsider (or left out of things) at my school	0.61
During the past six months, how well have you gotten along with other young people such as friends or classmates?	0.69

1. Correlations between item and component.

We examined the validity of the social engagement measure using the confirmatory sample. Consistent with the results for the exploratory sample, this measure did not correlate with constructs we predicted (except for the academic engagement measure) but did have moderate correlations with unrelated constructs (Table 8). Thus, it appeared that

the social engagement measure did not have adequate levels of predictive, concurrent or discriminant validity.

 **Table 8**  
**Predictive, concurrent and discriminant validity of the social engagement measure, confirmatory sample**

Concurrent and predictive validity	Correlation
Academic engagement	0.23
Math scores	0.10
Teacher's rating of achievement	0.07
Parent's rating of achievement	0.11
Discriminant validity	Correlation
Physical appearance	0.42
Teacher's engagement	0.07
Family functioning	0.19
Student's depression score	0.15

## Summary and implications for NLSCY content development

Analyses of the academic engagement measure showed that a single component underlay the 13 items. Therefore, these items could be used to form a measure of academic engagement with an acceptable level of internal consistency reliability. Examination of the validity of this measure suggested that it had adequate levels of predictive, concurrent and discriminant validity. Based on this information, it appeared that the 13 items composing academic engagement could be used as a one-dimensional measure of academic engagement. Past research suggested that school engagement was, in fact, correlated with academic achievement, albeit to a lesser extent than with measures of academic engagement (Voelkl 1995).

Investigation of the component structure, reliability and validity of the proposed social engagement measure provided a less encouraging picture. These analyses suggested that the proposed items could not be used as a measure of social engagement. While the results of the PCA indicated that a single component underlay the six social engagement items, checks on the validity of the proposed scale indicated that such a measure would lack adequate levels of predictive, concurrent and discriminant validity.

Considering the content of the social engagement measure, only one of the six items appeared to measure peer relationships in school.

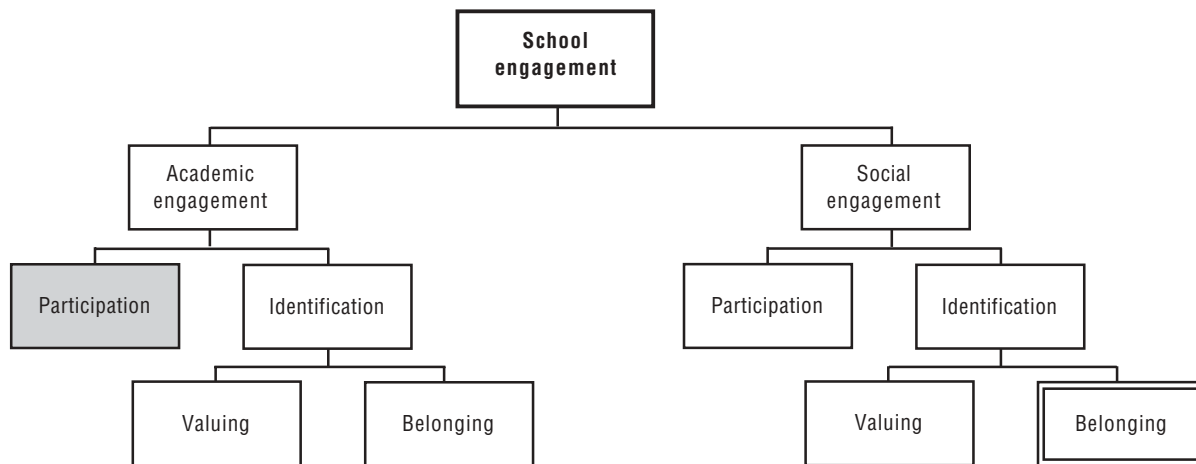
The other five items provided a global assessment of social relationships (Tables 5 and 7) and seemed to measure social support inside or outside school. Therefore, it appeared that the social engagement measure did not, in fact, measure school engagement but may have been a measure of social support or social belonging.

School engagement is a complex, multifaceted concept (Graph 3). Conceptually, it may be broken down into academic engagement and social engagement. In turn, academic and social engagement each comprise participation and identification. The identification aspect of each can be further disaggregated into valuing and belonging. Considering the questions that form our measure of academic engagement, it appears that this measure best operationalized the participation aspect of academic engagement. Based on our results, it appeared that these questions from the first cycle of

the NLSCY could be used to create a one-dimensional measure of academic engagement that assessed the academic participation portion of academic engagement. In contrast, our results suggested that further work was needed to develop a valid measure of social engagement.

The implications for content development for future cycles of the NLSCY were that further items measuring academic identification (valuing and belonging), social participation, and social identification (valuing and belonging) needed to be included in order to fully measure all aspects of academic and social engagement. The NLSCY content development team took these results into consideration in making their decisions about the addition of school engagement items for the third cycle of the NLSCY, which was conducted in 1999–2000. EOR

Graph 3  
**Conceptual framework for school engagement showing that academic participation is measured by the first cycle of the NLSCY**



**Note:** Shaded box indicates that the academic participation facet of school engagement can be measured using survey items from the first cycle of the NLSCY. The double-bordered box indicates that the social identification facet of school engagement cannot be measured using items from the NLSCY.

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## Endnotes

1. The definition and constructs of school engagement presented in this paper were created by L. Barr-Telford and C. Norris (1997) at Statistics Canada and are based on the work of J. Finn (1993), K. Voelkl (1995), and the Atlantic Centre for Policy Research in Education, University of New Brunswick, Canada (1997).
2. A collection of analyses using the NLSCY was released in 1996 in the HRDC / Statistics Canada publication *Growing Up in Canada* (Statistics Canada Catalogue no. 89-550-MPE).
3. Discriminant validity is the extent to which the measure does not assess conceptually similar but logically distinct concepts. Thus, low correlations of the academic engagement measure with the measures of student's physical appearance self-concept, teacher's academic engagement, family functioning, and student's depression are evidence of acceptable discriminant validity.
4. For the items "I have a lot of friends," "I get along with kids easily," "Other kids want me to be their friend," and "Most other kids like me," children reported that the statement was *false* (0), *mostly false* (1), *sometimes false/sometimes true* (2), *mostly true* (3), or *true* (4). To the statement "I feel like an outsider (or left out of things) at my school," children were asked if they felt this way *all of the time* (0), *most of the time* (1), *some of the time* (2), *rarely* (3) or *never* (4). To the question "During the past six months how well have you gotten along with other young people such as friends or classmates?" students could choose from the following responses: *very well, no problems* (0); *quite well, hardly any problems* (1); *pretty well, occasional problems* (2); *not too well, frequent problems* (3); or *not well at all, constant problems* (4).

# announcements

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## Data releases

In the section “Data releases” we provide the titles of data released by the Centre for Education Statistics since the publication of the previous issue of *Education Quarterly Review*. Details on each release can be accessed free-of-charge from Statistics Canada’s website [www.statcan.ca](http://www.statcan.ca). Click on “The Daily” and “Previous issues”.

- Full-time enrolment in trade/vocational and preparatory training 1999/2000  
(released March 27, 2003)
- University enrolment by field of study 2000/2001  
(preliminary)  
(released March 31, 2003)
- University enrolment by age groups 2000/2001  
(preliminary)  
(released April 17, 2003)

**EQR**



## Current data

Data series	Most recent data	
	Final <sup>1</sup>	Preliminary or estimate <sup>2</sup>
<b>A. Elementary/secondary</b>		
Enrolment in public schools	1999–2000	2000–2001 <sup>e</sup> 2001–2002 <sup>e</sup>
Enrolment in private schools	1999–2000	
Enrolment in minority and second language education programs	1999–2000	
Secondary school graduation	1999–2000	
Educators in public schools	1999–2000	2000–2001 <sup>e</sup> 2001–2002 <sup>e</sup>
Educators in private schools	1999–2000	
Elementary/secondary school characteristics	1999–2000	
Financial statistics of school boards	1999	
Financial statistics of private academic schools	1998–1999	1999–2000 <sup>e</sup> 2000–2001 <sup>e</sup> 2001–2002 <sup>e</sup>
Federal government expenditures on elementary/secondary education	1999–2000	2000–2001 <sup>e</sup> 2001–2002 <sup>e</sup>
Consolidated expenditures on elementary/secondary education	1998–1999	1999–2000 <sup>p</sup> 2000–2001 <sup>e</sup> 2001–2002 <sup>e</sup>
Education Price Index	2000	
<b>B. Postsecondary</b>		
University enrolments	1999–2000	2000–2001 <sup>p</sup>
University degrees granted	1998	discontinued
University continuing education enrolment	1996–1997	discontinued
Educators in universities	1999–2000	
Salaries and salary scales of full-time teaching staff at Canadian universities	1999–2000	
Tuition and living accommodation costs at Canadian universities	2002–2003	
University finance	2000–2001	
College finance	1999–2000	2000–2001 <sup>e</sup>
Federal government expenditures on postsecondary education	1999–2000	2000–2001 <sup>e</sup>
Consolidated expenditures on postsecondary education	1999–2000	2000–2001 <sup>e</sup>
Community colleges and related institutions: enrolment and graduates	1998–1999	1999–2001 <sup>e</sup>
Trade/vocational enrolment	1999–2000	
College/trade teaching staff	1997–1998	1998–1999 <sup>p</sup> 1999–2000 <sup>p</sup>
International student participation in Canadian universities	1998–1999	

<sup>1</sup> See notes at end of this table.



## Current data (concluded)

### Data series

#### C. Publications<sup>3</sup>

- Education in Canada* (2000)
- South of the Border: Graduates from the class of '95 who moved to the United States* (1999)
- After High School, the First Years* (1996)
- Participation in postsecondary education and family income* (1998)
- A report on adult education and training in Canada: Learning a living* (1998)
- Education Price Index – methodological report*
- A Guide to Statistics Canada Information and Data Sources on Adult Education and Training* (1996)
- A Statistical Portrait of Elementary and Secondary Education in Canada – Third edition* (1996)
- A Statistical Portrait of Education at the University Level in Canada – First edition* (1996)
- The Class of '90: A compendium of findings* (1996)
- The Class of '90 Revisited* (1997)
- The Class of '95: Report of the 1997 National Survey of 1995 Graduates* (1999)
- Education indicators in Canada: Report of the Pan-Canadian Indicators Program* (1999)
- Education at a Glance: OECD Indicators* (2000)
- In Pursuit of Equity in Education: Using International Indicators to Compare Equity Policies* (2001)
- Literacy Skills for the Knowledge Society* (1997)
- Literacy in the Information Age* (2000)
- International Adult Literacy Survey Monograph Series*
- Benchmarking Adult Literacy in North America: An International Comparative Study* (2001)
- Measuring up: The performance of Canada's youth in reading, mathematics and science* (2000)
- Growing Up in Canada: National Longitudinal Survey of Children and Youth* (1996)
- Children and youth at risk: Symposium report*
- At a crossroads: First results for the 18- to 20-year-old cohort of the Youth in Transition Survey* (2000)
- Current trends in teacher education and training: A symposium report* (2001)
- Canadian education and training services abroad: the role of contracts funded by international financial institutions* (2003, no. 2)
- National Graduates Survey: A profile of young Canadian graduates* (2000)
- Education in Canada: Raising the standard* (2001 Census)

#### Notes:

1. Indicates the most recent calendar year (e.g., 2000) or academic/fiscal year (e.g., 2000–2001) for which final data are available for all provinces and territories.
2. Indicates the most recent calendar year (e.g., 2000) or academic/fiscal year (e.g., 2000–2001) for which any data are available. The data may be preliminary (e.g., 2000<sup>p</sup>), estimated (e.g., 2000<sup>e</sup>) or partial (e.g., data not available for all provinces and territories).
3. The year indicated in parentheses denotes the year of publication. Some of these publications are prepared in co-operation with other departments or organizations. For information on acquiring copies of these reports, please contact Client Services, Culture, Tourism and the Centre for Education Statistics. Telephone: (613) 951-7608, toll free 1 800 307-3382; Fax: (613) 951-9040 or E-mail: educationstats@statcan.ca.

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# Education at a glance

*This section provides a series of social, economic and education indicators for Canada and the provinces/territories. Included are key statistics on the characteristics of the student and staff populations, educational attainment, public expenditures on education, labour force employed in education, and educational outcomes.*

Table 1 Education indicators, Canada, 1986 to 2001												
Indicator <sup>1</sup>	1986	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
	thousands											
<b>Social context</b>												
Population aged 0–3	1,475.0	1,573.4	1,601.7	1,610.6	1,596.1	1,595.1	1,578.6	1,560.7	1,550.7	1,453.9	1,390.6	1,366.8
Population aged 4–17	5,204.7	5,395.4	5,437.7	5,484.7	5,536.4	5,620.7	5,691.4	5,754.0	5,795.7	5,725.6	5,723.7	5,723.2
Population aged 18–24	3,286.3	2,886.1	2,869.2	2,869.6	2,852.0	2,823.4	2,816.8	2,833.0	2,865.4	2,895.9	2,921.2	2,948.7
Total population	26,203.8	28,120.1	28,542.2	28,940.6	29,248.1	29,562.5	29,963.7	30,358.5	30,747.0	30,553.8	30,769.6	31,081.9
Youth immigration <sup>f</sup>	25.9	61.2	61.2	73.1	68.3	65.9	66.3	70.4	61.2	..	..	..
	%											
Lone-parent families	18.8	15.3	14.4	14.8	14.9	15.1	14.8	14.9	15.4	15.7	..	..
<b>Economic context</b>												
GDP: Real annual percentage change	3.1	-1.8	-0.6	2.2	4.1	2.3	1.5	..	..	..	..	..
CPI: Annual percentage change	4.2	5.6	1.5	1.8	0.2	2.2	1.7	1.7	1.0	1.9	..	..
Employment rate	59.6	59.7	58.4	58.0	58.4	58.8	58.5	59.0	59.7	60.6	..	..
Unemployment rate	9.7	10.3	11.2	11.4	10.4	9.4	9.7	9.1	8.3	7.6	6.8	7.2
Student employment rate	34.4	38.0	35.1	34.0	34.2	33.3	34.8	32.5 <sup>2</sup>	..	..	..	..
Families below low income cut-offs:												
Two-parent families	10.9	10.8	10.6	12.2	11.5	12.8	11.8	12.0	..	..	..	..
Lone-parent families	52.5	55.4	52.3	55.0	53.0	53.0	56.8	51.1	..	..	..	..
<b>Enrolments</b>												
	thousands											
Elementary/secondary schools	4,938.0	5,218.2	5,284.1	5,327.8	5,362.8	5,430.8	5,414.6	5,386.3	5,369.7	5,397.1	5,389.3 <sup>e</sup>	5,385.2 <sup>e</sup>
	%											
Percentage in private schools	4.6	4.7	4.9	5.0	5.1	5.1	5.2	5.3	5.5	5.6	..	..
	thousands											
College/trade/vocational, full-time <sup>3</sup>	238.1	275.9	266.7	306.5	298.8	269.1	261.4	250.0	240.3 <sup>r</sup>	234.3	..	..
College/postsecondary, full-time	321.5	349.1	364.6	369.2	380.0	391.3	397.3	398.6	403.5	407.0 <sup>e</sup>	..	..

See notes at end of this table.





Table 2  
Education indicators, provinces and territories

Indicator <sup>1</sup>	Canada	Newfound- land and Labrador	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario
	%						
<b>Social and economic context</b>							
<b>Educational attainment<sup>2</sup>, 2001</b>							
Less than secondary diploma	24.4	35.7	30.9	27.4	30.6	31.4	21.5
Graduated from high school	19.6	15.0	15.3	13.6	19.4	15.7	21.7
Some postsecondary	7.0	4.8	6.4	7.1	5.2	5.6	6.8
Postsecondary certificate, diploma or university degree	48.9	44.6	47.4	51.9	44.8	47.2	50.0
<b>Labour force participation rates by educational attainment, 2001</b>							
<b>Total</b>	<b>66.3</b>	<b>58.7</b>	<b>67.5</b>	<b>62.1</b>	<b>61.8</b>	<b>63.8</b>	<b>67.6</b>
Less than secondary diploma	38.8	33.7	46.4	35.2	37.0	37.0	39.0
Graduated from high school	69.1	60.8	77.0	66.4	69.0	70.9	68.3
Some postsecondary	69.9	64.2	74.1	65.1	65.3	67.5	71.1
Postsecondary certificate, diploma or university degree	78.3	77.4	77.4	74.7	75.3	78.8	79.2
Unemployment rate, 2001	6.1	14.5	10.9	8.1	10.0	7.8	5.1
<b>Costs</b>							
Public and private expenditures on education as a percentage of GDP, 1994–1995	7.0	9.9	7.6	7.6	7.4	7.6	6.8
Public expenditures on education as a percentage of total public expenditures, 1994–1995	13.6	16.9	10.8	9.7	11.2	13.8	14.2
Elementary/secondary pupil–educator ratio, 1998–1999	15.9 <sup>a</sup>	14.5	16.6	16.5	16.9	14.4	16.4
<b>Educational outcomes</b>							
Secondary school graduation rates, 1999	76.7	79.5	81.3	80.4	84.8	84.2 <sup>3,4</sup>	77.3 <sup>5</sup>
University graduation rate, 1998–1999	35.0	32.2	21.8	53.5	33.7	41.7	36.8
<b>Unemployment rate by level of educational attainment, 2001</b>							
Less than secondary diploma	10.1	27.6	20.0	11.7	19.6	13.0	6.9
Graduated from high school	5.8	14.3	13.1	8.1	9.6	7.5	5.2
Some postsecondary	6.7	14.4	11.6	8.7	9.2	9.5	5.6
Postsecondary certificate, diploma or university degree	5.1	10.0	6.6	7.1	7.0	6.1	4.7

See notes at end of this table.



Table 2  
Education indicators, provinces and territories (concluded)

Indicator <sup>1</sup>	Manitoba	Saskatchewan	Alberta	British Columbia	Yukon	Northwest Territories
	%					
<b>Social and economic context</b>						
<b>Educational attainment<sup>2</sup>, 2001</b>						
Less than secondary diploma	27.8	28.6	19.3	18.5	..	..
Graduated from high school	21.0	20.6	19.2	22.5	..	..
Some postsecondary	6.6	7.0	9.1	9.8	..	..
Postsecondary certificate, diploma or university degree	44.6	43.9	52.3	49.2	..	..
<b>Labour force participation rates by educational attainment, 2001</b>						
<b>Total</b>	<b>67.2</b>	<b>66.0</b>	<b>72.7</b>	<b>64.8</b>	..	..
Less than secondary diploma	42.1	40.3	47.1	38.2	..	..
Graduated from high school	74.0	74.5	75.5	63.8	..	..
Some postsecondary	75.7	73.0	75.0	66.9	..	..
Postsecondary certificate, diploma or university degree	78.5	77.7	80.8	74.7	..	..
Unemployment rate, 2001	3.9	4.5	3.6	6.6	..	..
<b>Costs</b>						
Public and private expenditures on education as a percentage of GDP, 1994–1995	7.8	7.4	5.4	6.5	11.3	16.6
Public expenditures on education as a percentage of total public expenditures, 1994–1995	12.9	13.8	13.2	12.2	10.4	12.0
Elementary/secondary pupil–educator ratio, 1998–1999	15.6	16.2	16.8	16.9	12.7	13.5 <sup>e</sup>
<b>Educational outcomes</b>						
Secondary school graduation rates, 1999	74.3	75.0	63.3	73.4	60.4	40.1 <sup>6</sup>
University graduation rate, 1998–1999	31.5	33.1	25.2	24.6	..	..
<b>Unemployment rate by level of educational attainment, 2001</b>						
Less than secondary diploma	6.3	7.7	5.2	11.5	..	..
Graduated from high school	3.2	3.9	3.4	6.5	..	..
Some postsecondary	4.2	6.4	4.1	7.3	..	..
Postsecondary certificate, diploma or university degree	3.4	3.5	3.2	5.5	..	..

**Notes:**

.. Figures not available.

<sup>r</sup> Revised figures.<sup>e</sup> Estimated figures.

1. See 'Definitions' following Table 2.

2. Parts may not add up to 100% due to rounding.

3. Starting in 1995, Quebec graduate data for regular day programs include individuals over the age of 20 who graduated from regular day programs.

4. Excludes "Formation professionnelle."

5. Excludes night school and correspondence courses for Ontario adults.

6. Includes graduates from Nunavut.

# Definitions

## Education indicators, Canada Table 1.

Year references are as follows: (1) *population* refers to July of the given year; (2) *enrolment* and *staff* refer to the academic year beginning in September of the given year; (3) *graduates* refers to number of persons graduating in the spring or summer of the given year; (4) *expenditures* refers to the fiscal year beginning in April of the given year.

### 1. Youth immigration

The number of persons aged 0 to 19 who are, or have been, landed immigrants in Canada. A landed immigrant is a person who is not a Canadian citizen by birth, but who has been granted the right to live in Canada permanently by Canadian immigration authorities.

### 2. Lone-parent families

The number of lone-parent families expressed as a percentage of the total number of families with children. A lone parent refers to a mother or a father, with no spouse or common-law partner present, living in a dwelling with one or more never-married sons and/or daughters. Sources: Statistics Canada, 1971 to 1986: *Lone-parent families in Canada*, Catalogue no. 89-522-XPE; 1991 to present: Small Area and Administrative Data Division.

### 3. Gross domestic product

The unduplicated value of production originating within the boundaries of Canada, regardless of the ownership of the factors of production. GDP can be calculated three ways: as total incomes earned in current production; as total final sales of current production; or as total net values added in current production. It can be valued either at factor cost or at market prices. Source: Statistics Canada, Industry, Measures and Analysis Division.

### 4. Consumer Price Index

An indicator of changes in consumer prices. It is defined as a measure of price change obtained by comparing, over time, the cost of a specific basket of commodities. Figures are annual averages.

### 5. Employment rate

The number of persons employed expressed as a percentage of the population 15 years of age and over, excluding institutional residents. Figures are annual averages.

### 6. Unemployment rate

The number of unemployed persons expressed as a percentage of the labour force.

### 7. Student employment rate

The number of persons aged 15 to 24 attending school on a full-time basis who were employed during the calendar year (excluding May through August), expressed as a percentage of the total number of full-time students 15 to 24 years of age.

### 8. Families below low income cut-offs

Low income cut-offs are a relative measure of the income adequacy of families. A family that earns less than one-half of the median adjusted family unit income is considered to be in difficult circumstances. The set of low income cut-offs is adjusted for the size of the area of residence and for family size. Source: Statistics Canada, *Low Income Persons, 1980 to 1995*, December 1996, Catalogue no. 13-569-XPB/XIB.

### 9. Adult education participation rate

The number of persons 17 years of age or over participating in adult education or training activities, expressed as a percentage of the total population 17 years of age or over. Excludes regular full-time students who are completing their initial schooling.

### 10. Elementary/secondary pupil-educator ratio

Full-time equivalent enrolment (enrolment in grades 1 to 12 [including Ontario Academic Credits] and ungraded programs, pre-elementary enrolment in provinces where attendance is full time, and half of the pre-elementary enrolment in other provinces) divided by the full-time equivalent number of educators.

## 11. Education expenditures

Includes expenditures of governments and of all institutions providing elementary/secondary and postsecondary education, and vocational training programs offered by public and private trade/vocational schools and community colleges.

### Education indicators, provinces and territories Table 2.

The methodologies used to derive the indicators in Table 2 may differ from those used in other statistical tables of this section.

## 12. Educational attainment and labour force participation rates

Refers to the population aged 25 and over. Source: Statistics Canada, Labour Statistics Division.

## 13. Secondary school graduation rate

Source: Statistics Canada, 2001, Centre for Education Statistics, *Education in Canada 2000*, Catalogue no. 81-229-XPB.

## 14. University graduation rate

Number of degrees awarded at the undergraduate level, as a percentage of the population aged 22.

## 15. Unemployment rate by level of educational attainment

The number unemployed with a given level of education expressed as a percentage of the labour force with the same education for the population aged 25 and over. Upper secondary includes the final grade of secondary school.

**EOR**



In upcoming  
**ISSUES**

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The following articles are scheduled to appear in upcoming issues of *Education Quarterly Review*:

### **A profile of linguistic school systems**

This study profiles students in English- and French-language school systems. The analysis includes the following variables from PISA (2000) : province, performance in reading and science, family socio-economic status and wealth, educational attainment of parents, rural/urban breakdown, and time spent on homework and reading.

### **Adult immigrants how well are they trained?**

Using data from the *Adult Education and Training Survey*, this report examines incidence and duration of training for immigrants, and compares their circumstances to Canadians in general.

### **Profiling postsecondary faculty: hiring of part-time increases**

This paper provides an overview of part-time university and college academic staff, including issues relating to the collection and processing of information from the *Part-time University and College Academic Staff Survey*. Variables examined include field of study, gender, age, qualifications and sources of income other than teaching.



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This index lists, by major subject area, the analytical articles published in *Education Quarterly Review*. Included are descriptions of education and education-related surveys conducted by Statistics Canada, provincial governments and institutions.

## **Enrolment**

Increases in university enrolment: Increased access or increased retention?

*Vol. 1, No. 1 (April 1994)*

Enrolment changes in trade/vocational and preparatory programs, 1983–84 to 1990–91

*Vol. 1, No. 1 (April 1994)*

Two decades of change: College postsecondary enrolments, 1971 to 1991

*Vol. 1, No. 2 (July 1994)*

University enrolment trends

*Vol. 2, No. 1 (March 1995)*

International students in Canada

*Vol. 3, No. 3 (October 1996)*

## **Graduates**

Predicting school leavers and graduates

*Vol. 1, No. 2 (July 1994)*

Attitudes of Bachelor's Graduates towards their Programs

*Vol. 1, No. 2 (July 1994)*

Male-female earnings gap among postsecondary graduates

*Vol. 2, No. 1 (March 1995)*

College and related institutions postsecondary enrolment and graduates survey

*Vol. 2, No. 4 (January 1996)*

Employment prospects for high school graduates

*Vol. 3, No. 1 (May 1996)*

Graduation rates and times to completion for doctoral programs in Canada

*Vol. 3, No. 2 (July 1996)*

Relationship between postsecondary graduates' education and employment

*Vol. 3, No. 2 (July 1996)*

Science and technology careers in Canada:

Analysis of recent university graduates

*Vol. 4, No. 3 (February 1998)*

The class of '90 revisited: 1995 follow-up of 1990 graduates

*Vol. 4, No. 4 (May 1998)*

Who are the disappearing youth? An analysis of non-respondents to the School Leavers Follow-up Survey, 1995

*Vol. 6, No. 4 (August 2000)*

Determinants of university and community college leaving

*Vol. 6, No. 4 (August 2000)*

Overqualified? Recent graduates and the needs of their employers

*Vol. 7, No. 1 (November 2000)*

Holding their own: Employment and earnings of postsecondary graduates

*Vol. 7, No. 1 (November 2000)*

Graduates' earnings and the job skills-education match

*Vol. 7, No. 2 (February 2001)*

Bachelor's graduates who pursue further postsecondary education

*Vol. 7, No. 2 (February 2001)*

School-to-work transition: A focus on arts and culture graduates

*Vol. 7, No. 3 (May 2001)*

Student loans: Borrowing and burden

*Vol. 8, No. 4 (October 2002)*

Relative earnings of British Columbia university graduates

*Vol. 9, No. 1 (February 2003)*

Good jobs, more debt: a profile of young graduates

*Vol. 9, No. 2 (May 2003)*

## Teachers

Part-time university teachers: A growing group

*Vol. 1, No. 3 (October 1994)*

Teacher workload in elementary and secondary schools

*Vol. 1, No. 3 (October 1994)*

Employment income of elementary and secondary teachers and other selected occupations

*Vol. 2, No. 2 (June 1995)*

Renewal, costs and university faculty demographics

*Vol. 2, No. 3 (September 1995)*

Teacher workload and work life in Saskatchewan

*Vol. 2, No. 4 (January 1996)*

Are we headed toward a teacher surplus or a teacher shortage?

*Vol. 4, No. 1 (May 1997)*

Status of women faculty in Canadian universities

*Vol. 5, No. 2 (December 1998)*

Teacher workload and stress: A British Columbia perspective

*Vol. 8, No. 3 (June 2002)*

## Finance

Education Price Index: Selected inputs, elementary and secondary level

*Vol. 1, No. 3 (October 1994)*

Does Canada invest enough in education? An insight into the cost structure of education in Canada

*Vol. 1, No. 4 (April 1994)*

School transportation costs

*Vol. 2, No. 4 (January 1996)*

Federal participation in Canadian education

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Funding public school systems: A 25-year review

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Changing patterns of university finance

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## Flows and transition

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*Vol. 2, No. 2 (June 1995)*

Educational outcome measures of knowledge, skills and values

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