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Education Quarterly Review

2000, Vol. 6, no. 4

- University and college leavers
- University education: Recent trends
- Who are the disappearing youth?

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Culture, Tourism and the Centre for Education Statistics

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Symbols

The following standard symbols are used in Statistics Canada publications:

.. figures not available

... figures not appropriate or not applicable.

– nil or zero

-- amount too small to be expressed.

p preliminary figures

e estimate

r revised figures

x confidential to meet secrecy requirements of the *Statistics Act*

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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.

The past several decades have seen marked increases in the educational attainment of Canada's population, with corresponding benefits accruing to individuals and society in general. Fifty years ago, more than half the population aged 15 and over had fewer than nine years of formal education. Today, nearly 9 out of 10 youths of high school age are completing their secondary schooling. And bachelor's degree graduates—who are more likely to be employed in full-time jobs than are high school graduates—are earning significantly higher salaries than those with only a secondary diploma. Clearly, employees are responding to the demands of a more sophisticated work environment where knowledge must not only 'get the job done' but must also add value and innovation to our technologically-driven workplaces.

However, the pursuit of higher education comes at a price—to society and even more directly to students. In this edition of *EQR*, we examine two issues of increasing concern to educators, government, employers and employees alike. The first is the concern about the number of students leaving the postsecondary system before graduating. The second is the related concern about rising tuition fees and increasing student debt. The question must be asked: is a postsecondary degree or diploma worth the investment?

The third paper in this issue examines the nature and degree of non-response to the 1995 School Leavers Follow-up Survey. School leaver and follow-up surveys gather important data on the school experiences of graduates and leavers. The design of the leavers surveys allows researchers to follow students from high school into their postsecondary schooling. The longitudinal aspect of the surveys provides valuable information used to gauge the odds of a student leaving either a community college or a university program.

Please refer to the **Cumulative Index** at the back of the report, where we list, by title, all articles that have appeared in *EQR* since

1994. The articles have been grouped into 11 categories, including funding, technology and learning, and accessibility. These categories are based on education policy issues that were identified in *Strategic Plan (1997)*, a report released in November 1997, one year after the creation of the Centre for Education Statistics. The *Strategic Plan* reviews the Centre's statistical program and identifies objectives and priorities to strengthen the program and better address information needs. *Strategic Plan (1997)* is available free of charge at www.statcan.ca/cgi-bin/downpub/freepub.cgi.

Highlights

University and college leavers

- Social–demographic factors were important predictors of community college leaving, but this was not the case for university leaving. However, high school-related factors were important predictors of both university and community college leaving.

- Students from the Atlantic region, the Prairie provinces, and British Columbia had higher odds of university leaving than Ontario students, while Quebec students were not at any higher risk of university leaving when compared to Ontario students. Similar regional differences were found at the community college level.

- Students who left high school at some point, but returned and graduated, had higher odds of both community college and university leaving, compared to students who never left high school. In addition, students who failed a grade during elementary school had higher odds of community college and university leaving than those who did not fail a grade. High grades in high school decreased the odds of both university and community college leaving.

University education: Recent trends

- Between 1986–87 and 1996–97, tuition rose faster than other costs, increasing its share from 29% to 47% of the total costs. Room and board remained the largest portion of the costs, but from over two-thirds of the costs in 1986–87, it represented just over half in 1996–97.

- Over this period, tuition nearly doubled while gross family incomes remained unchanged (in constant 1997 dollars). However, considering only undergraduate arts students living on campus, the annual total costs have increased only slightly, from 8.9% of gross family income to 9.9%.

- While the overall proportion of university graduates indebted to student loan programs decreased slightly, 1995 graduates owed at least 60% more than their 1990 counterparts two years after graduation. The trend in tuition and other costs, together with the increasing debt load carried after graduation, reveals a picture of heavier burden.

- There was a widening gap in university participation by family socio-economic status (SES) as revealed in the 1986 and 1994 General Social Surveys. While the university participation rates for young people from low and middle SES background were quite similar in 1986—13.7% and 14.5%, respectively—by 1994, a wide gap had occurred between these two groups, with the rates standing at 18.3% and 25.3%, respectively.

- In 1997, bachelor's graduates of the class of 1995 earned an estimated $32,000, compared with $25,700 at the career or technical college level and $23,400 at the trade or vocational level. Master's and PhD graduates earned even greater amounts, at an average of $47,000 in 1997 for the 1995 graduating class. Clearly, university graduates enjoy higher earnings.

Who are the disappearing youth?

- This paper examines the characteristics of young people who responded to the 1991 School Leavers Survey (SLS), but who subsequently failed to respond to the 1995 School Leavers Follow-up Survey (SLF).

- Overall, 28% of those who completed interviews for the 1991 SLS failed to respond to the 1995 follow-up survey. With a non-response rate of 43%, youth who were leavers in 1991 were much more likely than other youth to not respond to the 1995 SLF.

- Leavers were more likely to report negative school experiences: they did not enjoy school, participated less in class than other students, and skipped classes.

- Leavers were more likely to be married, to have more dependent children, and to come from single and no-parent families. EQR

Articles

Determinants of university and community college leaving

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Introduction

The successful completion of postsecondary education is recognized as an important vehicle for the labour market success of Canadian youth in the current economic climate, which emphasizes knowledge-based skills and lifelong learning. The issue of students leaving the postsecondary system without completing their programs (postsecondary leaving) is a concern for both government and educators (Gilbert 1991).

Very few studies of university and community college[1] leaving have been done in Canada (Dietsche 1990; Gilbert 1991; Corman, Barr and Caputo 1992). In the United States, however, there is a large body of research on postsecondary leaving (Tinto 1975; Pantages and Creedon 1978). Most of these studies prior to the 1970s attempted to find out whether students left postsecondary institutions because of personal or financial reasons rather than factors related to the postsecondary institution (size, location, prestige). During the 1970s the American research changed focus to examine how 'pre-enrolment' characteristics of students (gender, parent's socio-economic status, high school performance, aptitudes, commitment) and 'post-enrolment' experiences (academic and social integration)[2] influence students' decisions to stay in or withdraw from their postsecondary programs.

The American research literature shows that the importance of pre-enrolment factors and post-enrolment experiences depends upon whether the postsecondary institution is primarily a 'residential' or 'commuter' institution. The latter are institutions in which most students do not live on campus, while the former institutions are ones where the majority of students live on campus. Numerous studies (Munro 1981; Pascarella and Chapman 1983; Pascarella, Dub and Iverson 1983) have shown that in residential institutions, the influence of pre-enrolment factors is indirect, in that they are mediated by social integration variables. In commuter institutions the pre-enrolment variables such as high school achievement and commitment and other social-demographic variables have direct effects on postsecondary leaving, and are only partially mediated by post-enrolment factors, notably academic integration rather than social integration (Dietsche 1990).

In a discussion of the different institutional contexts for American and Canadian studies of postsecondary leaving, Corman, Barr and Caputo (1992) remind Canadian researchers that unlike the situation in the United States, Canadian postsecondary institutions consist primarily of commuter institutions, implying that the link between pre-enrolment factors and post-enrolment factors may not be the same as in the studies of American residential universities and colleges.[3]

Canadian studies of postsecondary leaving typically focus on an in-depth examination of students at one university or community college (Lam 1984; Dietsche 1990; Pyke and Sheridan 1993; Johnson 1994; Montmarquette, Mahseredjian and Houle 1996). This approach has the advantage of gathering detailed information on the reasons that students gave for leaving university or community college, and various aspects of their postsecondary experiences. It provides useful institutional research for university and community college administrators to develop effective student-retention strategies. However, it is difficult to generalize the results to the Canadian population of university and community college students. Postsecondary leaving experiences at one institution are not necessarily the same for other institutions.

The 1995 School Leavers Follow-up (SLF)[4] provides an opportunity to examine how pre-enrolment factors such as the educational attainment of parents, gender, region, family type, high school achievement, high school leaving, employment during high school, peer influences, and high school involvement affect the odds of both university and community college leaving. The School Leavers Survey (SLS) targeted the population of Canadian youth aged 18 to 20 in 1991, gathering information about various aspects of high school experience and background factors to study high school leaving. The SLF gathered information on the same young persons from the SLS in 1995, focusing on activities pursued after high school. The SLF design allows us to follow the same cohort of students from high school into the university or community college system and then to see which students remain or leave. Unfortunately, the SLF does not have any information on postsecondary experiences.

Methodological Overview of the School Leavers Follow-up Survey, 1995[5]

Survey objectives

The primary objectives of the 1991 School Leavers Survey (SLS) were to establish high school leaving rates and to compare secondary school students who had successfully completed high school (**graduates**) with those who were still attending (**continuers**) and those who had left school before graduating (**leavers**). The SLS was conducted between April and June 1991. For a more detailed description of the methodology of the 1991 survey, see Appendix A in *Leaving School* (Human Resources Development Canada and Statistics Canada, HRDC Catalogue Number no. LM-294-07-93E).

The 1995 School Leavers Follow-up Survey (SLF), conducted between September and December 1995, gathered information on school-work transitions of these young adults by focusing on education and work activities beyond high school. Human Resources Development Canada commissioned Statistics Canada to conduct both surveys.

Target population

The SLS target populations consisted of young people aged 18 to 20 (as of April 1, 1991) from the 10 provinces (the Yukon and Northwest Territories were excluded). Respondents to the 1991 survey were contacted four years later for the SLF.

The 1995 SLF was conducted in the fall rather than in the spring, as activities of individuals (going back to high school, pursuing postsecondary education, working, etc.) would be more easily discernible in the fall. In addition, a more accurate count of the number of graduates would be possible, as many individuals complete the requirements for a high school diploma in June or during the summer.

SLS sampling frame

The original SLS sampling frame was formed from five years (1986 to 1990) of family allowance (FA) files. The FA files were believed to provide the most complete listing of young persons under 15 in Canada available at the time of the survey.

These files provided indicators used to create a derived variable, 'payment status,' that could identify potential leavers—youth for whom FA payments had stopped because they had left the household or had become employed and would thus be at higher risk of leaving school. The frame was stratified using province of residence, age and payment status (the latter to help ensure an adequate number of leavers for analysis).

Sample size

The SLS sample consisted of 18,000 individuals from the 10 provinces who were selected using the stratified design described above. The sample was selected to provide national and provincial leaver rates for 20-year-olds with a maximum coefficient of variation (CV) of 16.5%, and to allow

estimation of some characteristics for continuers, leavers and graduates, each considered separately, with a CV no greater than 16.5%.

Of the original 18,000 individuals identified, 40% were untraceable. Out of the 10,782 individuals who were traceable, SLS interviews were completed for 9,460 individuals aged 18 to 20 years. Attempts were made to contact all these respondents for the follow-up, with the exception of 11 individuals who indicated in 1991 that they did not wish to participate in further surveys. In addition, 18 individuals who participated in a pretest of the SLF were not contacted again for the actual follow-up survey. Thus, 9,431 people were contacted for the SLF. Information was gathered on high school-to-work transitions and high school-to-postsecondary transitions from 6,284 respondents. For the current study of postsecondary leaving, only high school graduates who had participated in community college/CEGEP (1,448) and university (1,700) were selected for analysis.

Definition of postsecondary leavers

In 1995, respondents were asked:

(1) Have you taken any education or training toward a college or CEGEP diploma or certificate? (yes/no)
(2) Have you taken any education or training toward a bachelor's degree? (yes/no)

This question is repeated for all other levels of university degrees, certificates or diplomas.

(3) Have you completed a college or CEGEP diploma or certificate? (yes/no)
(4) Have you completed the requirements of a bachelor's degree? (yes/no)

This question is repeated for all other levels of university degrees, certificates or diplomas.

(5) Last week were you taking courses from:

A community college, CEGEP or institute of applied arts and technology? (yes/no)
A university? (yes/no)

A college/CEGEP leaver is defined as a respondent who has taken any education leading toward a college/CEGEP diploma or certificate, but who has not completed the diploma or certificate requirements, and is not taking courses at a community college, CEGEP or institute of applied arts and technology during the week in which the survey was conducted.

A university leaver is defined as a respondent who has taken any education leading to any university certificate or diploma, but who has not completed the requirements of any university program, and is not taking courses from a university during the week in which the survey was conducted.

One possible weakness with this measure is that some students who are in the continuer group (taking courses from a postsecondary institution) may, over a period of one or two years, become postsecondary leavers. The 1995 SLF does not provide a start date for people who are continuers. This issue is discussed further in the section dealing with leaver rates. In addition, students who are in the completer or continuer group may have been leavers for a period of time and then returned to university or college by 1995. This potential movement cannot be captured with the above measure. A key strength of this measure is that it captures university students who have transferred to other universities or community college students who have transferred to other community colleges. The issue of student transfers being counted as leavers is a major problem with Canadian counts of university and community college leavers carried out in specific institutions (Gilbert, Evers and Auger 1989).

Social–demographic and high school-related factors affect the odds of postsecondary leaving

A binary logistic regression model[6] was used to assess how social–demographic and high school-related factors affect the odds of leaving university or community college/CEGEP versus not leaving. Two separate logistic regression models were constructed for university and college/CEGEP students. These models assess how each of the predictors affects the odds of leaving postsecondary education, while holding constant the effect of all the other predictors (see Table 2 for a list of predictors). All predictors were captured in 1991 and postsecondary leaving was captured in 1995. Only students who were high school graduates by 1995 were selected for this analysis.

For each predictor variable, one category was chosen as the reference group, against which all other categories were compared. For example, high school was chosen as the reference category for parent's educational attainment: therefore all other levels of parent's education were compared with high school on the odds of postsecondary

Table 1
Proportion of university and community college graduates/continuers and leavers, by social–demographic and school-related variables[1]

	University graduates/ continuers	University leavers	Community College graduates/ continuers	Community College leavers
	%			
Social–demographic variables:				
Parental educational attainment				
Less than high school	81	19*	75	25
High school	80	20*	81	19
Trade/vocational or community college/CEGEP	84	16*	86	14*
University	85	15	85	15*
Province where last attended high school				
Atlantic provinces	76	24*	75	…
Quebec	89	...	86	14
Ontario	87	13	82	18
Prairie provinces	77	23	73	27*
British Columbia	68	32*	64	36*
Living arrangement 1991				
Two-parent family	83	17	82	18
Lone-parent family	79	21*	74	26*
Other	68*	…	65*	…
Sex				
Women	85	15	76	16
Men	79	21	84	24
Birthplace				
Canada	83	17	81	19
Outside Canada	82	...	72*	...
Dependent children				
One or more dependent children	...	...	74	...
No dependent children	83	17	81	20
School-related variables:				
Leaver status in 1991				
Had left high school at some point	…	…	65	35*
Had never left high school	83	17	82	18
Elementary school academic experience				
Failed a grade	45	55	68	32*
Did not fail a grade	79	21	82	18
Drug use in high school				
Used drugs	74	26	69	31*
Did not use drugs	84	16*	82	18
High school math experience				
Problems with math	78	22	78	22
No problems with math	84	15	82	18

Table 1
Proportion of university and community college graduates/continuers and leavers, by social–demographic and school-related variables[1] (concluded)

	University graduates/ continuers	University leavers	Community College graduates/ continuers	Community College leavers
	%			
High school English or French literature experience				
Problems with literature	76	24*	78	22*
No problems with literature	83	17	81	19
High school science experience				
Problems with science	75	25	73	27
No problems with science	84	16	83	17
Average grade in last term of high school				
A	89	11	90	10*
B	82	18	81	19
C or D	58	42	70	30
Skipping classes				
Skipped classes	78	22	77	23
Did not skip classes	87	13	85	15
Participation in extracurricular activities				
Participated	83	17	80	20
Did not participate	81	19*	81	19
Friends in school				
Close friends did not attend school	79	21	76	24
Close friends attended school	85	15	84	16
Friends' attitudes toward completing high school				
Considered it very important	85	15	82	18
Considered it somewhat or not important	69	32*	76	24
Job in last year of high school				
Worked less than 20 hours per week	83	17	82	18
Worked more than 20 hours per week	72	28	77	23
Did not work	85	15*	81	19*

Notes:
1. This table represents the proportion of high school graduates who completed or who are continuing university- or college-level education, or who left before completion.
** High sampling variability.*
... Not for release.
Source: *1995 School Leavers Follow-Up Survey.*

Table 2
Odds ratios from the logistic regression model of postsecondary leaving with social–demographic and school-related predictors[1]

	Postsecondary leaving			
	Left university versus completed or continuing		Left community college/CEGEP versus completed or continuing	
	Bivariate[2]	Multivariate	Bivariate	Multivariate
	Odds ratio			
Predictors[3]				
Social–demographic predictors:				
Parental educational attainment				
Less than high school	0.854[ns]	0.979[ns]	1.186[ns]	1.509*
High school[4]	1.000	1.000	1.000	1.000
Trade/vocational or community college/CEGEP	0.711**	0.898[ns]	0.583	0.722[ns]
University	0.656	0.851[ns]	0.618	0.689**
Province where last attended high school				
Atlantic provinces	2.033	2.185	1.513[ns]	1.643**
Quebec	0.848[ns]	1.130[ns]	0.727*	1.164[ns]
Ontario	1.000	1.000	1.000	1.000
Prairie provinces	1.924	1.904	1.615*	1.982
British Columbia	3.118	2.861	2.458	3.314
Living arrangement 1991				
Two-parent family	0.774[ns]	0.936[ns]	0.570	0.601
Lone-parent family	1.000	1.000	1.000	1.000
Other	1.807**	1.273[ns]	1.455[ns]	1.517[ns]
Sex				
Women	1.000	1.000	1.000	1.000
Men	1.567	1.200[ns]	1.610	1.627
Birthplace				
Born in Canada	0.946[ns]	1.095[ns]	0.618*	0.619**
Born outside Canada	1.000	1.000	1.000	1.000
Dependent children				
One or more dependent children	4.950	2.233[ns]	1.468[ns]	0.870[ns]
No dependent children	1.000	1.000	1.000	1.000
School-related predictors:				
Leaver status in 1991				
Had left high school at some point	4.636	2.090*	2.392	1.766*
Had never left high school	1.000	1.000	1.000	1.000
Elementary school academic experience				
Failed a grade	2.910	1.827**	2.095	1.744
Did not fail a grade	1.000	1.000	1.000	1.000
Drug use in high school				
Used drugs	1.774	1.023[ns]	2.096	1.789
Did not use drugs	1.000	1.000	1.000	1.000
High school math experience				
Problems with math	1.534	0.946[ns]	1.304*	0.918[ns]
No problems with math	1.000	1.000	1.000	1.000

Table 2
Odds ratios from the logistic regression model of postsecondary leaving with social–demographic and school-related predictors[1] (concluded)

	Postsecondary leaving			
	Left university versus completed or continuing		Left community college/CEGEP versus completed or continuing	
	Bivariate[2]	Multivariate	Bivariate	Multivariate
	Odds ratio			
High school English or French literature experience				
Problems with literature	1.544	1.138[ns]	1.206[ns]	0.915[ns]
No problems with literature	1.000	1.000	1.000	1.000
High school science experience				
Problems with science	1.829	1.619	1.723	1.450*
No problems with science	1.000	1.000	1.000	1.000
Average grade in last term of high school				
A	0.526	0.614	0.451	0.599
B	1.000	1.000	1.000	1.000
C or D	3.199	2.065	1.821	1.167[ns]
Skipping classes				
Skipped classes	1.872	1.539	1.641	1.222[ns]
Did not skip classes	1.000	1.000	1.000	1.000
Participation in extracurricular activities				
Participated	0.908[ns]	1.082[ns]	1.010[ns]	1.051[ns]
Did not participate	1.000	1.000	1.000	1.000
Friends in school				
Close friends did not attend school	1.469	1.119[ns]	1.648	1.371*
Close friends attended school	1.000	1.000	1.000	1.000
Friends' attitudes toward completing high school				
Considered it very important	0.385	0.588	0.699*	1.167[ns]
Considered it somewhat or not important	1.000	1.000	1.000	1.000
Job in last year of high school				
Worked less than 20 hours per week	1.126[ns]	1.080[ns]	0.921[ns]	1.062[ns]
Worked more than 20 hours per week	2.185	1.643*	1.251[ns]	1.042[ns]
Did not work	1.000	1.000	1.000	1.000

Notes:
1. The global logistic regression model is significant at p=.0001.
2. Bivariate odds ratios refer to odds ratios without controls for the other variables in the model. Multivariate odds ratios refer to odds ratios calculated after controlling for all other variables in the model.
3. The data for the logistic regression model come from the 1995 School Leavers Follow-Up Survey. The sample weight from this survey takes into account unequal probabilities of selection. The adjustment was made by dividing the weight variable by the average of the population included in the model. This adjustment does not correct for possible bias resulting from stratification or clustering in the sample design.
4. The contrast groups are indicated by a value of 1.000. Odds ratios greater than 1 indicate an increase in the odds of postsecondary leaving. Odds ratios less than 1 indicate a decrease in the odds of leaving. Odds ratios equal to 1 indicate no effect on the odds of leaving.
* *Difference with reference group at .01<p<=.05.*
** *Difference with reference group at .05<p<=.10.*
[ns] *Difference with reference group is not statistically significant*
Note: *For the model presented above, the odds ratios reported are significant at p<=.01 unless otherwise noted.*
Source: *1995 School Leavers Follow-up Survey.*

leaving. The estimated odds of leaving college versus not leaving college were 1.5 times, or 50%,[7] higher for students whose parents had less than high school education compared to students whose parents had high school education, holding constant the effects of all other predictors in the model. In comparison with the reference group, odds ratios greater than 1 indicate an increase in the odds, while odds ratios less than 1 indicate a decrease in the odds. For instance, an odds ratio of .60 indicates that the odds are decreased by .60 times or are 40% lower than the comparison group.

Nearly a quarter of high school graduates are postsecondary leavers

The proportion of students who were postsecondary leavers was very similar at the community college level (20%) and the university level (18%). However, students at the university level were more likely to be continuers (26%) compared to community college students (13%). Given the longer program requirements of most university programs, this is not surprising. It is likely that not all students who were continuers in 1995 will complete their programs, and hence would eventually be counted as leavers if the same students were surveyed a few years later. This is less of a problem at the community college level than for university students, since the proportion of continuers is considerably smaller. However, Chen and Oderkirk (1997) provide evidence from linked university administrative records for Ontario which serves as a comparative context for the university leaver rate. Chen and Oderkirk looked at linked records for all students who started university in Ontario before age 21. They examined five cohorts of students who entered Ontario universities between 1980 and 1984. By 1993, 23% of these students were classified as university leavers. Students who left their program at some point, but returned to complete would not be counted as leavers in this study. Given the differences in the time period and population coverage of the Ontario record-linkage study and the SLF study, the university leaver rates are remarkably close.

It is important to bear in mind that the population for the SLF is Canadian youth aged 18 to 20 in 1991 and 22 to 24 in 1995. Postsecondary leaver rates are usually much lower for younger students. Chen and Oderkirk (1997) found that almost half of students who were 25 years of age or older when they entered Ontario universities in the early 1980s were university leavers by 1993.

The Logistic Regression Model

Logistic regression: this model expresses the conditional log odds of postsecondary leaving versus not leaving as a linear function of a set of explanatory or predictor variables.

The binary logistic regression model:

Log (Pi/1-Pi)=LogPPi=alpha+b1 (gender) + b2(failgrade) ...+bk (K)

Definition of terms for logistic regression model above:

Log: natural logarithm
Odds: the relative probability of falling into one of two categories of interest
Pi: the conditional probability of postsecondary leaving
1-Pi: the conditional probability of not leaving postsecondary education, given the predictors in the model
Alpha: a constant term
b1..bk: logistic regression coefficients
LogPPi: the conditional odds of postsecondary leaving versus no postsecondary leaving, given the predictor variables
Gender: predictor variable
Failgrade: failed or did not fail a grade in elementary school = predictor variable
K: all other predictor variables in the model

Odds ratios are obtained by exponentiating the logistic regression parameters.

See Hosmer and Lemeshow (1989) for further information on the logistic regression model.

Parent's level of education affects the odds of community college leaving (controlling for other factors)

Around 15% of students whose parents had postsecondary[8] education were university leavers compared to about 20% for those whose parents had high school or less education. Close to 15% of students whose parents had a post-secondary education were community college leavers, compared to 19% for those with high school educated parents and 25% for students whose parents had less than high school education.

Students whose parents had less than a high school education had higher odds (1.5) of community college leaving than those with high school-educated parents. Also, having at least one university-educated parent lowered the odds by .69 of community college leaving compared to students with high school educated parents.

Parent's level of educational attainment did not affect the odds of university leaving, after controlling for the effects of other predictors such as high school marks, high school leaving and failing a grade in elementary school. However, without controls for social–demographic and high school-related variables, students with university-educated parents had lower odds (.66) of university leaving compared to students with high school-educated parents.

In contrast to the situation for university leaving, Gilbert's (1994) study of high school leaving, using the SLS, found that parent's level of education was an important predictor of high school leaving, controlling for other social–demographic and high school-related variables. High school students whose parents had postsecondary education had lower high school-leaver rates than those with less than postsecondary education.[9] One possible explanation for the finding about parent's educational attainment and university leaving is that a series of selection processes take place from high school entrance to university entrance. Davies (1999) notes that since parent's education is an important predictor of high school leaving, the proportion of high school graduates whose parents have low levels of education is smaller compared to high school entrants. Another transition occurs after graduation, since only around 40% of high school graduates participate in university (Frank 1996). There is a selection process occurring here, since the latter group of students have higher grades in high school than high school graduates who do not participate in university. Butlin (1999), using the SLF, found that students with university-educated parents had higher odds (3.5) of participating in university education than students whose parents had high school education, controlling for social–demographic and high school-related variables. Students with high school-educated parents who participated in university education were more likely to have an A average in high school than those who did not go to university.

High school graduates in British Columbia more likely to be postsecondary leavers (controlling for other factors)

Nearly a quarter of students from the Atlantic region and Prairie provinces were university leavers compared to 13% for Ontario students. A third of high school graduates from British Columbia were university leavers. Around a quarter of students from the Prairie provinces were community college leavers, compared to 18% for Ontario students, and 14% for Quebec students. Over a third of students from British Columbia were community college leavers.

The odds of university leaving were nearly twice as high for students from both the Atlantic and Prairie provinces compared to Ontario students. There was no difference between Quebec and Ontario students in the odds of university leaving. Graduates from British Columbia had higher odds (2.9) of university leaving compared to Ontario students.

Graduates from the Atlantic region and Prairie provinces had odds nearly 2 times higher for community college leaving compared to Ontario students. There were no differences in the odds of community college leaving for students from Quebec compared to Ontario students. The odds of community college leaving were 3.3 times higher for British Columbia students compared to Ontario students.

The higher odds of university and community college leaving in British Columbia may have something to do with the university transfer system in this province. British Columbia has a highly developed university transfer system in which students can transfer to a university without earning a community college/CEGEP diploma. Quebec students are required to complete a diploma in the university stream of the CEGEP programs before being admitted to a Quebec university. In addition, British Columbia has a relatively high number of part-time students at both the community college and university levels. Part-time students are more likely to leave without completing their programs than full-time students (Chen and Oderkirk 1997).

High school graduates from two-parent families had lower odds of community college leaving (controlling for other factors)

Around 20% of students from two-parent and lone-parent families were university leavers. A higher proportion (26%) of community college leavers came from lone-parent families compared to two-parent families (18%).

There was no difference in the odds of university leaving for students from two-parent families compared to those from lone-parent families. However, high school graduates from two-parent families had lower odds (.60) of community college leaving compared to students from lone-parent families.

Men more likely to leave community college (controlling for other factors)

A higher proportion of men (21%) than women (15%) were university leavers. Similarly, nearly a quarter of men were community college leavers compared to 16% for women.

Men had higher odds (1.6) of community college leaving compared to women. There was no difference in the odds of university leaving for men compared to women, when the effects of the other predictors were held constant. However, without controls for social–demographic and high school-related variables, men had higher odds (1.6) of university leaving compared to women.

The above findings, which show that women do not have higher odds of postsecondary leaving than men, may not hold for older students in the postsecondary system. The combined effect of work and family responsibilities plays a larger role in the lives of older postsecondary students. These factors may affect postsecondary leaver rates, which are usually higher for older students.

Social–demographic factors affect odds of community college leaving (controlling for other factors)

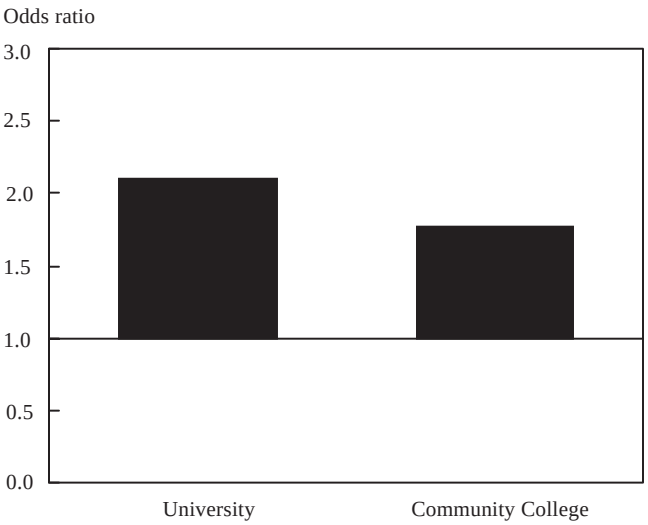
Parent's educational attainment, province of high school attendance, family living arrangement, gender and nativity are all related to community college leaving. However, only province of high school attendance is related to university leaving. Parent's educational attainment and gender of the student affected the odds of university leaving, without controls for other predictors in the model. However, these effects disappeared when other controls were introduced.

An additional analysis for university students was conducted to further examine this issue. A logistic regression model containing only the social–demographic variables was constructed. This model looks at the effect of specific social–demographic variables on the odds of university leaving, while holding constant the effect of other social–demographic variables. The results show that men had higher odds (1.5) of leaving university than women, while students whose parents had university education had lower odds (.74) of leaving university compared to students with high school-educated parents. When the high school-related variables were added to the model, these effects disappeared. This suggests that the high school-related variables, such as marks and high school leaving, may mediate the effects of gender and parental education on university leaving. This is not the case for community college students, since there is very little difference between the odds ratios without controls and the odds ratios with controls for all predictors in the model.

High school graduates who left high school at some point by 1991 had higher odds of university and community college leaving (controlling for other factors)

The odds of university and community college leaving were twice as high for high school graduates or continuers in 1991 who left high school at some point compared to students who never left high school in 1991. The strong effect of high school leaving on the odds of postsecondary leaving is important to note. Students who left high school at some point, but subsequently completed high school, were still at greater risk of university and community college leaving than high school graduates who did not leave high school, despite controlling for a range of factors, including high school grades.

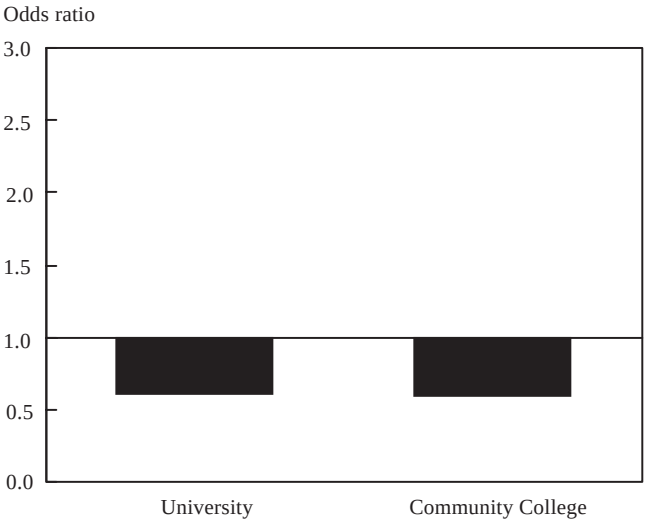
Graph 1
Odds of postsecondary leaving for students who left high school at some point



Notes: *Holding constant for all other predictors in the logistic regression model.*
Odds ratios greater than 1 indicate an increase in the odds of postsecondary participation.
Odds ratios less than 1 indicate a decrease in the odds of participation.
Odds ratios equal to 1 indicate no effect on the odds of participation.

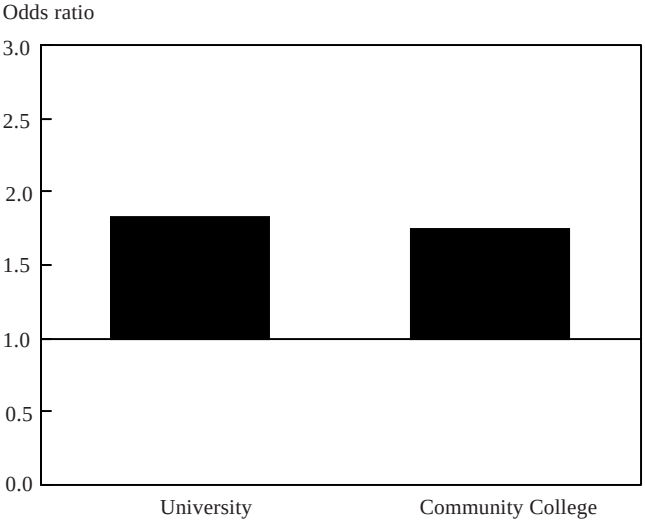
Source: *1995 School Leavers Follow-Up Survey.*

Graph 2
Odds of postsecondary leaving for students with an A average in high school



Notes: *Holding constant for all other predictors in the logistic regression model.*
Odds ratios greater than 1 indicate an increase in the odds of postsecondary participation.
Odds ratios less than 1 indicate a decrease in the odds of participation.
Odds ratios equal to 1 indicate no effect on the odds of participation.
Source: *1995 School Leavers Follow-Up Survey.*

Graph 3
Odds of postsecondary leaving for students who failed a grade in elementary school



Notes: *Holding constant for all other predictors in the logistic regression model.*
Odds ratios greater than 1 indicate an increase in the odds of postsecondary participation.
Odds ratios less than 1 indicate a decrease in the odds of participation.
Odds ratios equal to 1 indicate no effect on the odds of participation.
Source: *1995 School Leavers Follow-Up Survey.*

Failing a grade in elementary school increased the odds of university and community college leaving (controlling for other factors)

Over half of high school graduates who failed a grade in elementary school were university leavers, compared to 21% for those who did not fail a grade. Similarly nearly a third of students who failed a grade in elementary school were community college leavers compared to 18% for those who did not fail a grade.

The odds of university leaving were twice as high for high school graduates who failed a grade in elementary school compared to graduates who did not fail an elementary grade. The odds of community college leaving were nearly twice as high for graduates who failed a grade in elementary school compared to graduates who did not fail an elementary grade.

Failing a grade in elementary school may be an indicator of a range of difficulties beyond academic problems—family problems, behaviour problems, psychological problems, language problems and so forth. Despite controlling for other social–demographic and high school-related variables, this effect remains. This illustrates how problems at the elementary level may impact on successful life transitions after high school.

High school graduates who used drugs in high school had higher odds of community college leaving (controlling for other factors)

Just over a quarter of high school graduates who used drugs[10] in high school were university leavers, compared to 16% for those who did not use drugs. Nearly a third of students who used drugs in high school were community college leavers, contrasted to 18% for those who did not use drugs.

The odds of community college leaving were nearly 2 times higher for students who used drugs in high school than for those who did not use drugs. There were no differences in the odds of university leaving for students who used drugs compared to those who did not use drugs, when controlling for the effect of the other predictors in the model. However, without controls for social–demographic and high school-related variables, the odds

of university leaving were nearly twice as high for students who used drugs in high school than for those who did not use drugs.

Problems with high school math or English/French literature did not affect the odds of university or community college leaving (controlling for other factors)

Nearly a quarter of students who reported having problems with high school math or English/French literature[11] were university leavers, compared to 15% for those reporting no math problems and 17% for those reporting no problems with English/French literature.

There were no differences in the odds of university and community college leaving for students with or without math or English/French literature problems, when the effect of predictors in the model were held constant. However, without controls for social–demographic and high school-related variables, students who reported having problems with high school math or English/French literature had higher odds (1.5) of leaving university compared to students who reported no problems with these subjects in high school. Similarly, students reporting problems with high school math had slightly higher odds (1.3), without controls, of leaving community college than students not reporting these problems.

This finding showing that reported problems with math and English/French literature did not affect the odds of postsecondary leaving, controlling for social–demographic and high school-related variables, is somewhat surprising since problems with math and reading and writing skills can affect academic performance in university and community college. However, initial academic success in the first year of university or community college is only one factor behind postsecondary leaving. Also, the SLF does not permit a distinction between university and community college students who left because of poor academic performance and those who were academically successful, but left for other reasons.

Problems with high school science increase the odds of university or community college leaving (controlling for other factors)

Around a quarter of students who reported problems with high school science were university and community college leavers compared to about 16% for those who did not report problems with high school science.

High school graduates reporting problems with high school science had higher odds of university leaving (1.6) and community college leaving (1.5) compared to students who did not report problems with high school science.

Graduates with high average grades in high school had lower odds of university and community college leaving (controlling for other factors)

Only 11% of students with A averages in high school were university leavers, compared to 18% for those with B averages and 42% for students with mainly C's and D's. Similarly, only 10% of graduates with A averages in high school were community college leavers, compared to 19% for those with B averages and 30% for students with mainly C's and D's.

Graduates with A averages in high school had lower odds (.61) of leaving university compared to students with B averages. The odds of university leaving were twice as high for students with mainly C's and D's than for those with B averages. Students with A averages in high school also had lower odds (.60) of leaving community college compared to students with B averages.

Dietsche (1990) found that students with high grades in high school were less likely to be leavers at a college of applied arts and technology in Ontario. Similarly, Johnson (1994) found that students who performed well in high school were less likely to be university leavers. Academic achievement in high school is influenced by a number of factors, such as student ability, commitment, scholastic attitudes, and effort invested in studying and preparation for examinations. All of these factors would likely affect academic achievement and academic experiences in university and community college.

Graduates who skipped classes in high school had higher odds of university leaving (controlling for other factors)

Nearly a quarter of students who skipped classes in high school were university and community college leavers. Only 13% of students who did not skip classes in high school were university leavers, while 15% were community college leavers.

Students who skipped classes in high school had odds 1.5 times higher for university leaving compared to students who did not skip classes. However, students who skipped class in high school did not have higher odds of community college leaving, with other predictors in the model held constant. However, without controls for social–demographic and high school-related variables, students who skipped class in high school had odds 1.6 times higher for community college leaving than students who did not skip classes. Skipping classes in high school may be a partial indicator of academic involvement and commitment to academic achievement.

Graduates with close friends outside the school system had higher odds of community college leaving (controlling for other factors)

Nearly a quarter of students who had close friends outside the school system when they were attending high school were university and community college leavers compared to around 15% for those who had no close friends outside the school system.

Students who had close friends outside the school system when they were attending high school had odds 1.4 times higher for college leaving compared to those without close friends outside the school system. The odds for university leaving were no higher for those with or without close friends outside the school system, with other predictors in the model held constant. However, without controls for social–demographic and high school-related variables, students who had close friends outside the school system when they were in high school had odds 1.5 times higher for university leaving compared to those without close friends outside the school system.

Having friends who think completing high school is very important lowered the odds of university leaving (controlling for other factors)

Nearly a third of students whose high school friends thought it was somewhat or not important to complete high school were university leavers compared to only 15% for those whose friends thought it was very important to complete high school. Almost a quarter of students whose high school friends thought it was somewhat or not important to complete high school were community college leavers, while only 18% of students whose friends thought it was very important to complete high school were community college leavers.

Students whose friends thought it was very important to complete high school had lower odds (.60) of university leaving compared to those whose friends thought it was somewhat or not important to complete high school. Friends' evaluation of high school completion did not affect the odds of community college leaving, when controlling for other factors in the model. However, without controls for social–demographic and high school-related variables, students whose friends thought it was very important to complete high school had lower odds (.70) of community college leaving compared to those who thought it was somewhat or not important to complete high school. Thinking that completing high school is very important may be an indicator of academic involvement and concern with academic achievement.

Working more than 20 hours per week at a job in high school increased the odds of university leaving (controlling for other factors)

Nearly 30% of students who worked more than 20 hours a week at a job during high school were university leavers, compared to around 16% for students who either did not work during high school or worked less than 20 hours per week. For college leavers there were no marked differences by hours worked at a job during high school.

The odds of university leaving were nearly twice as high for students who worked more than 20 hours a week at a job during high school than for those who did not work at a job during high school. Different patterns of work in high school did not affect the odds of community college leaving.

Conclusion

This study showed that social–demographic factors are important predictors of community college leaving, but this is not the case for university leaving. However, high school-related factors were important predictors of both university and community college leaving. Among the notable findings are the regional differences in the odds of university and community college leaving. Students from the Atlantic region, the Prairie provinces and British Columbia had higher odds of university leaving compared to Ontario students, while Quebec students were not at any higher risk of university leaving compared to Ontario students. Similar regional differences were found at the community college level.

Students who left high school at some point, but returned and graduated, had higher odds of both community college and university leaving, compared to students who never left high school. In addition, students who failed a grade during elementary school had higher odds of community college and university leaving than those who did not fail a grade. Finally, high grades in high school decreased the odds of both university and community college leaving.

It is important that future research address the link between social–demographic factors, high school-related variables and postsecondary experiences at the national level. A survey that follows a graduating cohort of high school students into their first year of postsecondary studies would be able to capture the social–demographic and high school factors as well as those initial experiences at university and community college, when leaving is most likely to occur.[12] Longitudinal databases constructed from university and community college administrative data are also useful for establishing rates of leaving and completion,

and capturing the phenomena of 'stopping-out' from postsecondary studies and returning. The problem with the information in these databases is that they lack the relevant social background, high school-related variables and postsecondary experience variables, which are crucial for an examination of causal linkages.

This study was directed at the population of Canadian youth. Other studies of postsecondary leaving[13] are needed to examine the adult postsecondary population, in the context of lifelong learning, and particularly the population of adults in the labour force, or who are seeking employment and are taking courses at Canadian universities and community colleges, on a full-time or part-time basis. EQR

Notes

1. Community college includes the CEGEP system in Quebec.

2. Academic integration refers to grade performance and intellectual development. Social integration refers to campus social interaction, such as participation in organized student extracurricular activities, participation in social events (e.g., athletic or entertainment), and having friends on campus.

3. Also, the vast majority of American studies of postsecondary leaving do not include students who left university or community college because of poor academic performance. The School Leavers Follow-up Survey does not permit a distinction between voluntary and involuntary leaving.

4. See the methodology box in this paper for more detail on the 1995 School Leavers Follow-up Survey and the 1991 School Leavers Survey.

5. The information in this methodology box was provided by Jeffrey Frank and taken from Gilbert et al. (1993), *Leaving school: Results from a national survey comparing school leavers and high school graduates 18 to 20 years of age.*

6. This model was estimated using the SAS LOGISTIC procedure. Further information on logistic regression can be found in Hosmer and Lemeshow (1989).

7. Odds ratios can be expressed as percentages 100(odds ratio-1). For example, 100(1.65-1) = a 65% increase in the odds.

8. The highest level of education of either the mother or father was used as the measure of parental education.

9. See Gilbert et al. (1993).

10. Drugs refer to any of the following: hash, marijuana, crack, cocaine, LSD, misuse of prescription drugs, and misuse of glue or solvents.

11. High school English and French refer to English literature and French literature not to second language training in English or French.

12. The Youth in Transition Survey (YITS) funded by Human Resources Development Canada and conducted by Statistics Canada started in January 2000. For Canadian youth aged 18 to 20, this survey will capture the postsecondary education history, including information about institutions attended, programs taken, and specializations with accompanying start and end dates. Factors which may explain postsecondary leaving such as first year experiences, perceived barriers to reaching educational goals, reasons for starting/stopping, financing, achievement, part-time status, breaks in study, and social–demographic variables are included in YITS.

13. A postsecondary non-graduates survey is currently in the planning stage. This survey will be funded by Human Resources Development Canada and conducted by Statistics Canada. This survey is designed to expand upon the National Graduates Survey by looking at postsecondary students who do not complete their postsecondary programs, in addition to students who graduate from postsecondary institutions.

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University education: Recent trends in participation, accessibility and returns

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Introduction

Public debate about increased tuition fees and corresponding concern over student indebtedness raises questions about the growing costs of university education. Factors influencing the choice to attend university include availability of financing, family socio-economic status, labour market conditions and perceived benefits of such an education.

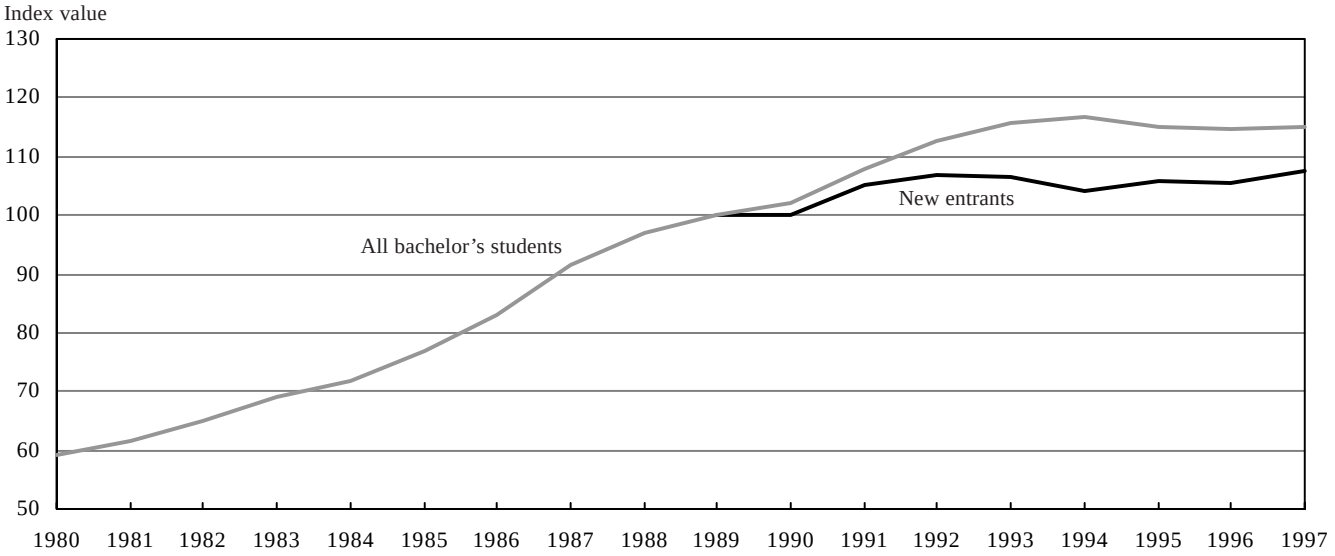
This article provides an overview of important trends in costs and accessibility and assesses the financial and related returns (such as employment prospects) associated with participation in university education. The focus is on the trend in participation rates in the 1990s, compared with the national and provincial trends in tuition fees over the same period. We include an analysis of the cost of tuition versus the ability to pay, as illustrated by the evolution of average family income. Then we examine how a university education relates to job prospects and earnings. The conclusion summarizes the various trends that, together, illustrate the magnitude of the investment associated with participation in university education.

Flattening participation

This analysis starts with an examination of the enrolment trend. We converted enrolment to a participation rate and expressed it in the form of an index, with 1989 as the base year (i.e., 1989 index = 100). We performed these two steps to factor out the effect of population growth and to better illustrate the trend from 1989 to 1997.

Graph 1 incorporates two full-time participation rate indices: one is all bachelor's-level enrolments as a percentage of the 19- to 21-year-old population; the other is new entrants at the bachelor's level (i.e., first-year enrolments[1]) as a percentage of the 19-year-old population. The data pertaining to new entrants, available only since 1989, are more appropriate for examining shifts in participation rates, since total enrolments are subject to a locking-in effect in later years. That is, individuals tend to continue their education once they have started. The choice to attend university is primarily made at the outset, and hence first-year enrolments are more sensitive to changes in any of the factors in the following discussion. Also, first-year enrolments

Graph 1
Full-time bachelor's participation rate index (1989=100)



Notes: *New entrants' refers to bachelor's students who are new to the institution. Full-time participation rates: all bachelor's students as a percentage of the 19- to 21-year-old population, and new entrants as a percentage of the 19-year-old population.*
Source: *University Student Information System.*

show any change in participation trends more quickly, as overall enrolments are an assortment of cohorts entering at several different points in time.

Since 1991, and coincident with the rise in tuition fees in the 1990s (see **Increasing costs of education**), there has been a plateau in the number of new entrants. While there was a 5% increase in new entrant participation between 1989 and 1991, the pattern in the 1990s has been nearly flat, with only slight growth between 1991 (105.3) and 1997 (107).

The overall participation rate was less affected because of the locking-in effect, and continued to increase until 1994. Since 1995, it has remained relatively stable at about 15% over its 1989 level. Compared with the trend in the 1980s, the increase in participation was smaller in the 1990s. Indeed, the participation rate index increased from 59 to 100 between 1980 and 1989, while it increased only to 115 by 1997. Further analysis of participation reveals that most of the increase in the participation rate at the bachelor's level in the 1990s is the result of an increase in participation for women in the 18-to-24 age group.

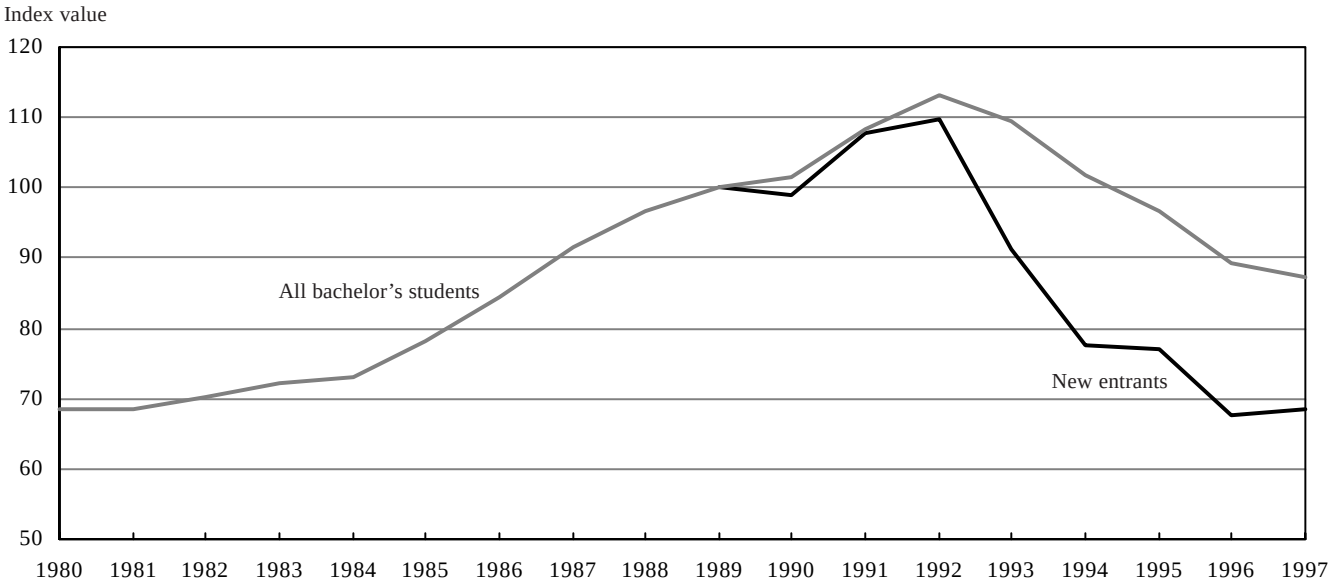
In terms of full-time new entrant and full-time total participation at the bachelor's level, the 1990s has witnessed a flattening in the participation rate, slightly altering the historical increasing trend.

For part-time enrolments, the situation is more dramatic. Overall part-time participation rates[2] have been falling since 1992, following a long period of relatively stable increase. The index for the overall part-time participation rate fell to 87 in 1997, after peaking at 113 in 1992. The drop is even larger for new entrant participation, with the index falling from almost 110 in 1992 to 69 in 1997. A more detailed examination of participation rates by age group reveals that the overall decrease in part-time participation is being driven by the 25-and-over age group, while part-time participation in the 15-to-24 age group is holding much more steady.

Furthermore, the decline in part-time enrolment since 1992 also coincides with a period of voluntary 'capping off' of first-year enrolment by some universities. Enrolments may have been capped for a number of reasons, including the decline in government funding, the shifting of some enrolment and/or resources to other disciplines, or simply the shifting of resources to new programs being established.

Knowing the long-term trend of increasing full- and part-time enrolment in university courses, what factors are associated with the recent flattening? The levelling-off coincided with a period when tuition increases were sharpest (see **Increasing costs of education**). However, for a more complete picture, we must look beyond cost trends as a potential deterrent to participation to consider also financing, demand in the labour market for university graduates, economic returns to individuals on university education, and equity issues such as how access to education varies with family background.

Graph 2
Part-time bachelor's participation rate index (1989=100)

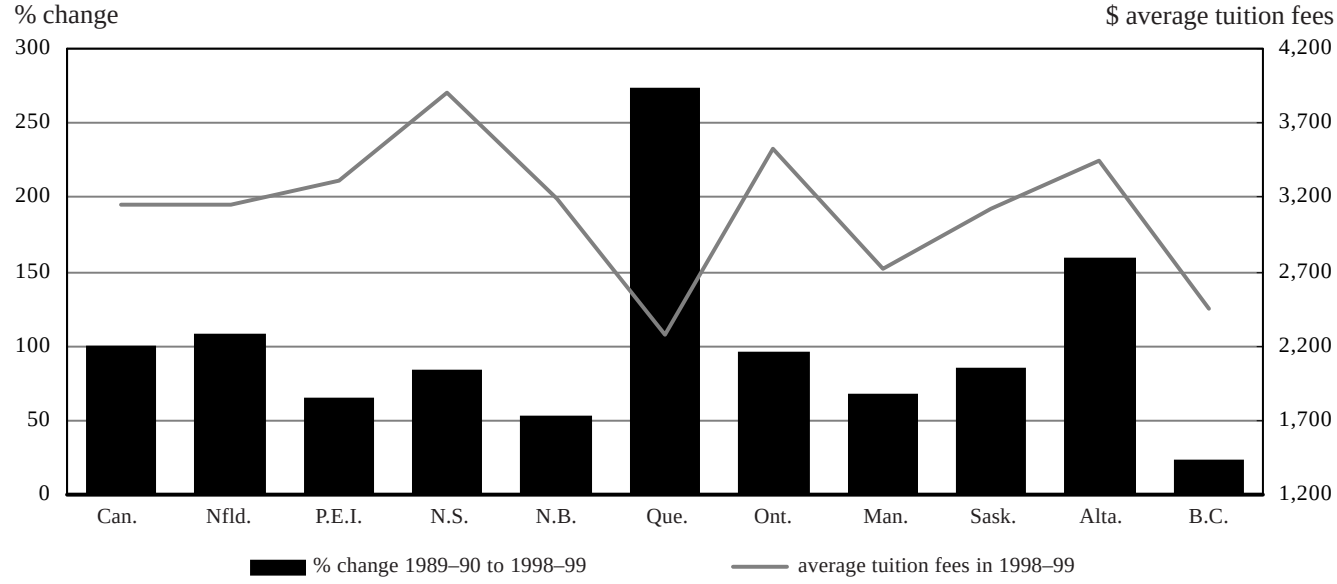


Notes: *New entrants' refers to bachelor's students who are new to the institution. Part-time participation rates: all bachelor's students as a percentage of the population 15 years and older, and new entrants as a percentage of the population 15 years and older.*
Source: *University Student Information System.*

Increasing costs of education

Over the past few years, tuition increases have occurred across most types of programs, with the rate varying among institutions and programs. To illustrate the trend, we used the undergraduate level arts programs.[3] There is a long-term trend of increase in average tuition fees for undergraduate arts programs (in constant 1997 dollars). The rate of increase accelerated in the 1990s and consequently, average tuition fees approximately doubled between the 1989–90 and 1998–99 academic years.

Graph 3
Increase in tuition fees by province, 1989–90 and 1998–99



Source: *Survey of Tuition and Living Accommodation Costs at Canadian Universities.*

The increase between 1989–90 and 1998–99 was highest in Quebec, shooting average undergraduate tuition up from $611 to $2,278. Tuition fees in Quebec had remained fairly stable in the 1980s, and despite showing the sharpest increase in the 1990s, average tuition in Quebec remains the lowest of all provinces. If out-of-province students, who must pay higher tuition fees than students from Quebec, are excluded, the average tuition in Quebec is likely even lower. There was also a sharp increase in tuition in Alberta (159%) during the same period. The smallest increases occurred in New Brunswick (53%), and British Columbia (22%).

While these increases are significant, it is necessary to look at tuition in the context of overall cost.

Table 1
Costs of university education as share of family income

	Average undergraduate tuition, arts	Total cost*	Average family income	Tuition as share of family income	Total cost as share of family income
	1997 constant dollars			%	
1986–87	1,448	5,052	56,921	2.5	8.9
1996–97	2,655	5,629	57,146	4.6	9.9

Note: **Includes tuition fees, other additional fees (such as athletics, health and student association) and on-campus housing and meal plans.*

Sources: *Survey of Tuition and Living Accommodation Costs at Canadian Universities. Statistics Canada, 1997, Income Distributions by Size in Canada (Catalogue no. 13-207-XPB).*

Table 1 illustrates the evolution of the cost burden of university education on families (in constant 1997 dollars). The total costs include tuition fees, additional fees, plus accommodation and meal costs. These represent the majority of costs associated with university education, but do not include books or transportation, for example, because of lack of data.

Between 1986–87 and 1996–97, tuition rose faster than other costs, increasing its share from 29% to 47% of the total costs. Room and board remained the largest portion of the costs, but from over two-thirds of the costs in 1986–87, it represented just over half in 1996–97. Room and board costs—those charged by universities to students living in residence or other accommodation on campus—might not accurately reflect the change in costs for those living off-campus. In constant dollars, additional fees and room and board costs decreased slightly between 1986–87 and 1996–97.

Over this period, tuition nearly doubled while gross family incomes remained unchanged (in constant 1997 dollars). However, when we consider only undergraduate arts students living on campus, the annual total costs have increased only slightly, from 8.9% of gross family income to 9.9%. The implications of the tuition increase in the past decade may therefore not be the same for young people from low-income families as for those from high-income families. For students from low-income backgrounds who must stay home while attending university, tuition has always represented a greater portion of the total costs; consequently, the more rapid increase in tuition would have had a greater impact on these students. For students from higher-income families who choose to live on campus, the increase in tuition cost does not appear to have substantially increased the total financial burden on the family. This finding is of interest, especially given the widening enrolment gap between young people from low socio-economic backgrounds and those from high or middle socio-economic backgrounds (see **Widening gap by socio-economic status**).

Growing student debt

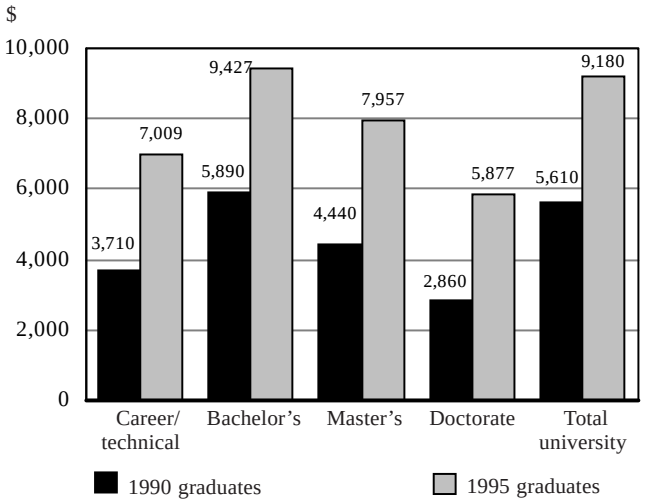
The National Graduates Surveys indicate that government-sponsored student loan programs account for the large majority of student debt at the time of graduation. Data about the 1990 and 1995 graduating classes give a clear indication of rapidly growing student debt among borrowers, even though the proportion of students who borrow from government-sponsored student loan programs has dropped. Among the 1990 cohort, 50% of bachelor's, 47% of master's and 40% of PhD graduates had borrowed from student loan programs, compared with 48%, 43% and 31%, respectively, for the 1995 cohort. This change may be attributed in part to modifications in the eligibility criteria for some government-sponsored student loan programs.

Graph 4 shows the student debt increase for the classes of 1990 and 1995 at various levels of postsecondary education. The debt shown here represents the amount owed two years after graduation, when graduates have had the opportunity to find employment and begin repayment.[4]

The data show a 69% increase in the average amount owed to student loan programs by all university graduates two years after graduation. The increase among bachelor's graduates is 60%—slightly less than the average for all university graduates. However, even with the larger increases, master's and PhD graduates still owed significantly less than bachelor's graduates. Students at the graduate levels are likely to have access to scholarships, fellowships and teaching and/or research assistantships, which may reduce their reliance on student loans. College graduates' average debt two years after graduation increased 89%

between the 1990 and 1995 cohorts, reaching $7,000. Findings from a study on administrative data from the Canada Student Loan Program (Plager and Chen 1999) described an increase of 13% between 1990–91 and 1995–96 in the average amount owed by university students at the time of loan consolidation, that is, within six months of graduation or the end of the full-time study period.

Graph 4
Average amount owed two years after graduation by graduates who have not received additional degree or certification



Note: *Includes only those graduates who had not received additional degree/diploma/certificate two years after graduation.*
Source: *National Graduates Surveys.*

Blishen socio-economic status index

Family socio-economic status (SES) is operationally defined as the Blishen socio-economic index for fathers' occupations (index available on the Public Use Sample Files for the 1994 General Social Survey (GSS) and Analytic Files [Statistics Canada use only] for the 1986 GSS) when the young people were 15 years old. The young people are divided into three SES groups: those whose fathers' occupations fall into the highest quartile of the Blishen index (high SES); those whose fathers' occupations fall into the middle half of the Blishen index (middle SES); and those whose fathers' occupations fall into the lowest quartile of the Blishen index, as well as those who did not have a father or father substitute at age 15 or whose fathers were not employed (low SES). Father's occupation was preferred to mother's occupation as a much higher proportion of fathers were in the labour force. The Blishen socio-economic status index has been shown to have high concurrent validity with both education and income and is well accepted in social research.

While the overall proportion of university graduates indebted to student loan programs has decreased slightly, 1995 graduates owed at least 60% more than their 1990 counterparts two years after graduation. The trend in tuition and other costs, together with the increasing debt load carried after graduation, reveal a picture of heavier burden.

Widening gap by socio-economic status

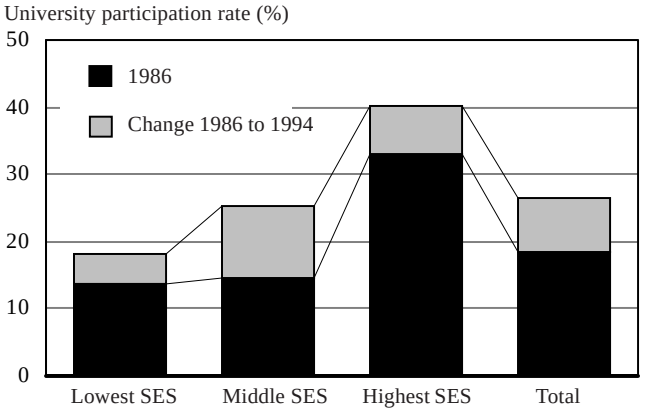
One of the most significant findings of the current trend analysis is that there has been a widening gap in university participation by family socio-economic status (SES) as revealed in the 1986 and 1994 General Social Surveys. In both 1986 and 1994, we examined the university participation rates[5] of young people aged 18 to 21 years by family socio-economic background. We found that the university participation rates for young people from low and middle SES background were quite similar in 1986—13.7% and 14.5%, respectively. However, by 1994, a wide gap had occurred between these two groups, with the rates standing at 18.3% and 25.3%, respectively. Coincidentally, this ever-widening gap has been evident since 1989—the same period of time when rapid tuition increases occurred. It may be that young people from low SES backgrounds are least able to shoulder the burden of higher tuition fees and these increases have affected their participation more than the participation of students from middle or high SES family backgrounds.

In both 1986 and 1994, the university participation rates for young people from high SES backgrounds were significantly higher than for those from middle and low SES backgrounds. However, compared with young adults from middle SES backgrounds, the enrolment increase is smaller for people from high family SES background. This may be partly due to their high starting point—in 1986 it was 33%—and therefore further large increases are less likely. The increase in high SES background participation rates is still larger than that for young people from low family SES background.

It should be pointed out that significant increases in university tuition fees started around 1989 or 1990 and continued beyond 1994. As the most recent observation on participation by family SES was in 1994, it can be expected that the impact of tuition increases in the 1990s on university participation has not been fully captured.

Our findings suggest that university participation rates have not increased as fast for young people from low family SES background. This factor combined with the increase in tuition fees has created a widening gap between them and young people from more affluent family backgrounds. This finding may have important policy implications surrounding issues such as accessibility and equality of opportunity. We need to continue to monitor the situation

Graph 5
University participation rate of 18- to 21-year-olds by socio-economic status of family

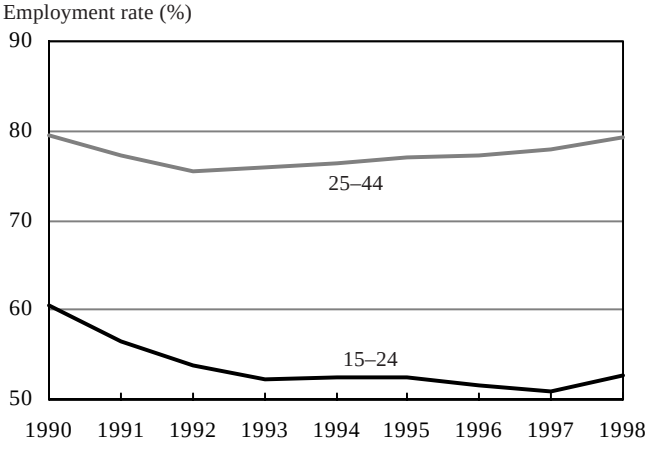


Notes: *University participation rate: young people aged 18 to 21 who have had at least some university education at the time of the interview as a percentage of the 18- to 21-year-old population. Family socio-economic status is operationally defined as the Blishen socio-economic index for fathers' occupations when respondents were 15 years old.*

Source: *General Social Survey, 1994.*

in order to determine whether university participation of young people from low family socio-economic background has fallen further behind since 1994.

Graph 6
Employment rate by age group



Source: *Labour Force Survey.*

Declining youth employment

One hypothesis is that the flattening out of the full-time enrolment rate and the decline in part-time university education may be partly attributable to stronger labour market conditions that create a pull towards employment and hence a push away from education. However, available data do not seem to support this hypothesis. The youth employment rate continued to decline throughout the 1990s until 1997, while the employment rate for people in the prime age group (25 to 44) has rebounded since 1993. The youth employment rate did not start to rebound until 1998. The decline in the youth employment rate occurred during the same period when the enrolment rate stagnated or declined. Even though we are not able to establish a direct link between tuition increase and the stagnation and decline in university participation in the 1990s, the labour market does not appear to be an important factor.

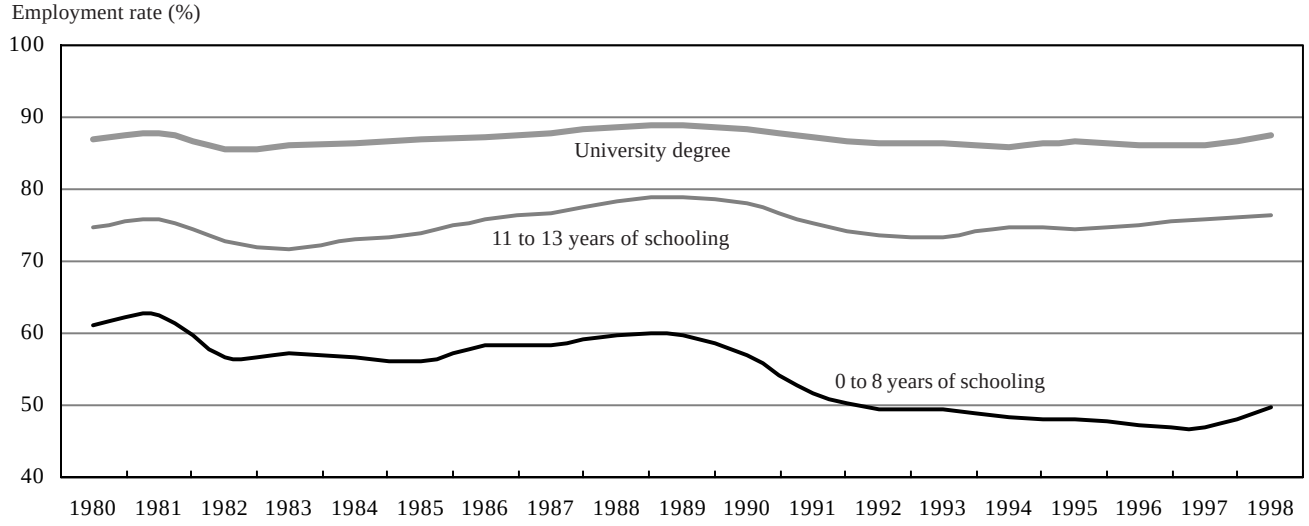
Thus far we have examined several issues and identified key trends: flattening and declining university participation, rising tuition and a widening gap in participation by socio-economic background. Next we turn our attention to labour market returns of a university education from an individual, as opposed to a societal, perspective.

Positive returns

Employment prospects are better with a university education

The employment rate for people with university degrees is much higher than for those with less education. Since 1980, the employment rate of degree holders has consistently been above 85%, compared with less than 75% in recent years for those with only high school education[6] and less than 50% for those with up to eight years of education. Moreover, the employment rate of people with university degrees appears much less influenced by fluctuations in economic cycles than that of people with lower education. In this sense, a university degree not only initially helps to gain employment, but also leads to jobs that are less likely to disappear in economic downturns. In the past decade especially, virtually all job creation in Canada has occurred in professional and managerial occupations, which demand high education qualifications. Between 1989 and 1998, the professional and managerial occupations gained 780,000 workers while employment in most other occupations declined.[7]

Graph 7
Employment rate by level of education, 25 to 44 age group

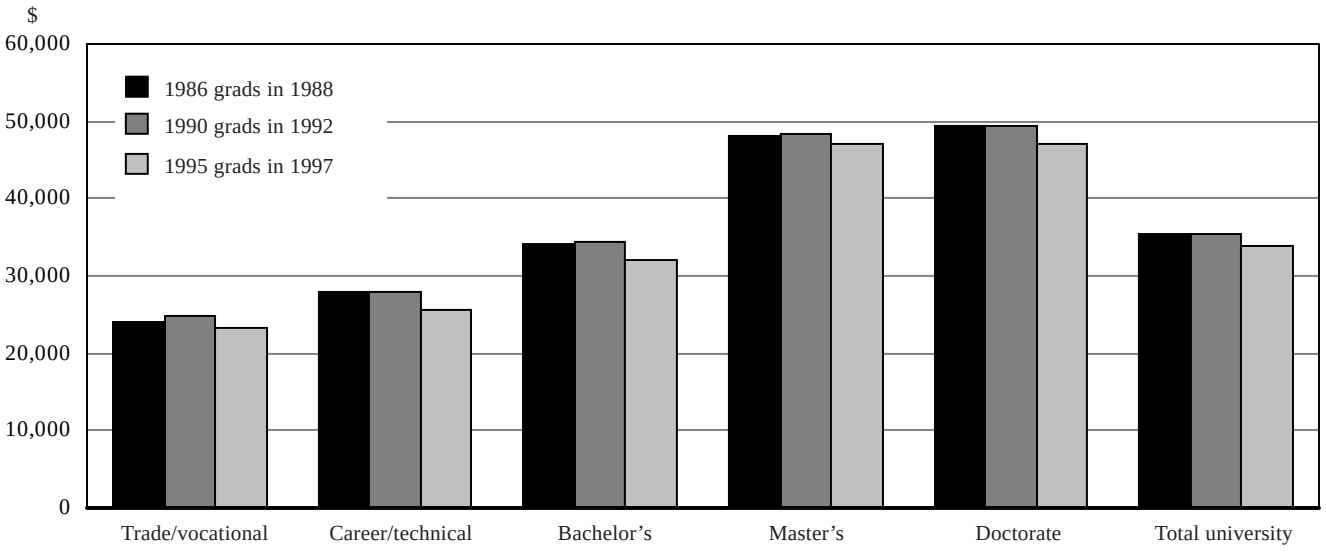


Source: *Labour Force Survey.*

Earnings are highest for university degree holders

According to results from the National Graduates Surveys from successive survey years (1986, 1990 and 1995), two years after graduation university graduates' earnings are higher than those of trade or vocational and career or technical college graduates. In 1997, bachelor's graduates of the class of 1995 earned an estimated $32,000, compared with $25,700 at the career or technical college level and $23,400 at the trade or vocational level. Master's and PhD graduates earned even greater amounts, at an average of $47,000 in 1997 for the 1995 graduating class. Clearly, university graduates enjoy higher earnings.

Graph 8
Estimated median annual earnings two years after graduation of 1986, 1990 and 1995 graduates working full time



Source: *National Graduates Surveys.*

Graph 8 also reveals that in constant 1997 dollars, earnings of university graduates two years after graduation decreased when comparing the 1995 cohort with the 1986 and 1990 cohorts. At the trade, vocational, career and technical college levels, earnings increased slightly in constant terms between the 1986 and 1990 cohorts, but suffered more significant decreases between the 1990 and 1995 cohorts (5.4% and 8.1% respectively) than at the university level (4.8%).

Conclusions

Full-time university enrolment rates have levelled off in the 1990s, in contrast to the long-term increasing trends; part-time university enrolment rates have fared worse, falling significantly during the 1990s. These enrolment changes coincide with a number of events. During the 1990s, the cost of university education increased, at a time when the trend in family income, in real terms, was flat. Between 1986 and 1994—a period which reflects only a portion of the increases in tuition fees and other costs of university education—we witnessed a widening gap in enrolment by SES. We have seen slightly fewer students borrowing from government-sponsored student loan programs, yet the amount borrowed and the debt levels two years after graduation are significantly higher. Increases in tuition and debt levels may have more impact on the participation of students from families with a lower socio-economic status. The advantages of a university education remain; they include increased employment opportunities, more stability of employment, and higher earnings. EQR

Notes

1. 'New entrants' refers to bachelor's students who are new to the institution.

2. Part-time participation rates: all bachelor's students as a percentage of the population 15 years and older; and new entrants as a percentage of the population 15 years and older.

3. In order to compute a rate of increase for average arts tuition by province, average tuition was weighted by enrolment in arts programs at each institution in each province.

4. These results apply only to those graduates who have not received any additional degrees, diplomas or certificates at the time of the survey, although they may have pursued some further education.

5. University participation rate: young people aged 18 to 21 who have had at least some university education at the time of the interview as a percentage of the 18- to 21-year-old population.

6. Eleven to 13 years of education is used as a proxy for high school completion.

7. Zhao et al. (2000).

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Who are the Disappearing Youth?

An analysis of non-respondents to the School Leavers Follow-up Survey, 1995

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Introduction

When conducting surveys of the population, some degree of non-response is inevitable. This is especially true for surveys of youth. Young people, and young men in particular, are relatively difficult to enumerate. Many are mobile for reasons related to work, education, travel or family.[1] Even assuming that it is possible to find respondents in the first place, some people may still refuse to participate.

This paper examines the characteristics of young people who responded to the 1991 School Leavers Survey (SLS), but who subsequently failed to respond to the 1995 School Leavers Follow-up Survey (SLF). As we will see, the characteristics that made youth less likely to respond to the follow-up survey were the same as those that were related to leaving high school without graduating. This analysis of non-response along various characteristics serves to increase our understanding of at-risk youth in general. In addition, the information will be useful for conducting future surveys of youth: by knowing the characteristics of those least likely to respond (who could very well be the youth of greatest interest), we can help to ensure that these people are adequately targeted.

The issue of non-response bias in data from the 1995 SLF is also important.[2] Because non-respondents were more likely to be high school leavers and had characteristics similar to youth with less favourable outcomes, the situations of leavers were likely even more serious than described. With the extreme cases filtered out, the remaining leavers who did respond probably had characteristics and outcomes that were somewhat closer to those of the youth population in general. This would confirm the direction of the relationships described in analyses based on the 1995 SLF.

The degree and type of non-response

For the 1991 SLS, Statistics Canada interviewed nearly 9,500 young people aged 18 to 20 to document the magnitude and circumstances of school leaving (or dropping out of high school). Four years later, for the 1995 SLF, Statistics Canada attempted to interview the same respondents, by then aged 22 to 24, to explore the school–work

About the surveys

The primary objectives of the 1991 School Leavers Survey (SLS) were to establish high school leaving rates and to compare secondary school students who had successfully completed high school (graduates) with those who were still attending (continuers) and those who had left school before graduating (leavers). The SLS was conducted between April and June 1991. The 1995 School Leavers Follow-up Survey (SLF), conducted between September and December 1995, gathered information on school–work transitions of these young adults by focussing on education and work activities beyond high school. Human Resources Development Canada commissioned Statistics Canada to conduct both surveys.

The SLS target population consisted of youths aged 18 to 20 (as of April 1, 1991) from the 10 provinces. They were contacted four years later for the SLF, by which time they would probably have had one or more jobs. In addition, most continuers in 1991 would be graduates or leavers by 1995, allowing a more in-depth labour market analysis.

The SLS sampling frame was formed from five years (1986 to 1990) of Family Allowance (FA) files. The Family Allowance files were believed to provide the most complete listing of young persons under 15 in Canada available at the time of the survey. These files provided indicators used to create a derived variable, "payment status," that could identify potential leavers—youths for whom Family Allowance payments had stopped because they had left the household or had become employed and would thus be at higher risk of leaving school. The frame was stratified using province of residence, age and payment status (the last to help ensure an adequate number of leavers for analysis).

The SLS sample consisted of 18,000 individuals from the 10 provinces who were selected using the stratified design described above. The sample was selected to provide national and provincial leaver rates for 20-year-olds with a maximum coefficient of variation (CV) no greater than 16.5%, and to allow estimation of some characteristics for continuers, leavers and graduates, each considered separately, with a CV no greater than 16.5%. This level of relative precision was also obtained for other estimates. For some estimates, however, CVs fall into the 16.6% to 33.3% range. Such estimates are reliable enough for some purposes, but should be used with caution. (Those with CVs above 33.3% are not published.) The SLF sample consisted of individuals who had responded to the SLS; the very few exceptions are noted below.

Both surveys were conducted by telephone using a computer-assisted telephone interviewing system. SLS respondents were asked to provide contact information for a follow-up. Interviewers confirmed certain respondent information from the SLS before beginning the SLF interview.

Of the 18,000 individuals in the SLS sample, 9,460 provided completed interviews. Of these, 11 preferred not to participate in further surveys, and 18 participated in a pre-test for the SLF. These individuals were excluded from the SLF, leaving a sample of 9,431 of which 6,284 responded. In both surveys, an adjustment for non-response was included in the weighting procedures.

transitions of young people after high school. However, only two-thirds of the original respondents were re-interviewed.

Thus, more than 3,000 young people responded to the 1991 SLS, but not to the 1995 SLF. Of these, over one-half (53%) could not be located. An additional 28% were located but unreachable by telephone. A small proportion (17%) were located and contacted, but refused to participate in the follow-up survey. Interviews were not conducted with the remaining 2% for other reasons, including the illness or death of the young person. The results of the 1995 SLF were weighted to take non-response into account. Information on what was known about the distribution of respondents in 1991 (for example, age, gender, high school status and province) was used to determine the weights for the 1995 survey (see Frank 1998, Appendix A). Results of the 1996 Census confirmed that this weighting procedure was effective. According to the 1996 Census, 14% of youth aged 20 to 24 did not have a high school diploma and were not attending school; the leaver rate according to the SLF was 14% for youth aged 22 to 24 in 1995.

Factors related to non-response

School leavers had higher non-response rates

Overall, 28% of those who completed interviews for the 1991 SLS failed to respond to the 1995 follow-up survey.[3] With a non-response rate of 43%, youth who were leavers in 1991 were much more likely than other youth[4] to not respond to the 1995 SLF.

Continuer: was still attending high school
Leaver: had left school before graduating
Graduate: had successfully completed high school

Young males who left school early (with a non-response rate of 42%) would probably have been seeking work. Without a high school diploma to show to potential employers, it is possible that these people moved around in search of work, making them more difficult to trace than other youth the same age. Female leavers (with a non-response of 45%) were more likely than their male counterparts to have left school for family-related reasons.[5]

They were more likely to have had dependent children and to have been married.

Not surprisingly then, many characteristics associated with being a high school leaver were also more common among non-respondents in general.[6] Correspondingly, non-response rates were higher among youth who

- were living in a single-parent or no-parent family;
- were married or had children;
- had parents with no more than a high school education; and
- had a disability.

Similarly, the education experiences of high school leavers also tended to correspond with those of non-respondents in general. Non-response rates were higher among youth who

- had failed a grade;
- did not enjoy school;
- did not fit in at school;
- did not participate much in class;
- skipped classes; and
- did not get along with their teachers.

Another characteristic held in common between non-respondents and high school leavers involved attitudes of parents and peers about the importance of high school completion. Both groups were less likely than other youth to perceive parents and peers as holding strongly positive attitudes regarding high school completion.

If we look outside school, youth who did not participate in extracurricular activities and who rarely or never spent time with friends had higher non-response rates. Youth, in general, who played a lot of video games at arcades also had higher rates of non-response.[7]

Non-response rates were high among youth whose job opportunities were limited by their difficulties with reading, writing or math skills. Youth who were unemployed, on social assistance, or receiving Family Allowance also had higher rates of non-response.

Youth who reported using drugs frequently and those who had been convicted of a crime had non-response rates above the norm. Non-response rates were also higher among youth who expressed an overall dissatisfaction with life.

All of the characteristics that were associated with higher rates of non-response to the 1995 SLF were more common among school leavers, as compared with the overall youth population.

Non-response patterns by sex

For many of the characteristics listed in the previous section, non-response rates were similar for both men and women. The overall non-response rates were 29% for men and 28% for women. Some characteristics, however, were more prevalent for one sex than for the other.

Factors that played a greater role in the non-response rates of men

Coming from a single-parent or no-parent family had a greater impact on the non-response rates of men, compared with women. Likewise, men who were married or had children had higher non-response rates. In terms of school experiences, men who were not enjoying school, not participating in class, skipping classes or not fitting in at school had greater non-response rates than women who shared these characteristics. Finally, frequent drug use and having been convicted of a crime were also associated with a higher degree of non-response for men than for women.

Other characteristics were related to higher non-response rates for women

Not being born in Canada was a more important factor affecting non-response for women. Women who had parents with a high school education, or less, also had a high non-response rate relative to their male counterparts. In terms of school experiences, not getting along with teachers affected women's non-response more than men's.

Women who never or rarely spent time with friends exhibited higher non-response rates than men who also reported spending little time with friends. Women who were unemployed or collecting Family Allowance also had higher non-response than men in the same situation. Women who expressed dissatisfaction with life also had a mildly higher non-response rate than men who reported the same thing.

Non-response patterns of leavers and non-leavers

As stated previously, non-response among leavers was high compared with the overall survey population (43%, compared with 28%). However, leavers with particular characteristics were especially prone to non-response. Leavers from a single- or no-parent family had a non-response rate of 51% compared with 35% for non-leavers. Leavers who spent little time with friends tended to be non-respondents (52%), as did those who spent a lot of time playing video games at arcades (65%). Leavers who received Family Allowance (in the 1991 survey) were nearly twice as likely to not respond to the 1995 SLF as non-leavers who received that benefit. One-half of leavers who stated they were dissatisfied with life in 1991 were non-respondents for the follow-up survey.

The characteristics that were more common among non-leavers who did not respond included age. Older non-leavers were more likely to be non-respondents. Those

with children had higher rates of non-response than other non-leavers. Having parents with less than a high school education was also associated with higher non-response rates among non-leavers. Similarly, having parents and peers with negative attitudes towards school had more of an impact on non-response for non-leavers than for leavers.

Logistic regression of the characteristics and experiences of non-respondents

Logistic regression[8] was used to establish which risk factors were most associated with non-response to the 1995 SLF. For this analysis, each independent variable was converted into a dichotomous variable, that is, a variable that was either present or not. The dependent variable in the model was non-response (non-response = 1 and response = 0). Each significant characteristic and interaction effect uncovered in our analysis was added to the model. Table 1 outlines the significant independent variables that were included in the final analysis.

The results of logistic regression analysis can be expressed as the relative association between characteristics and the probability of being a non-respondent. This technique allows us to examine the relative predictive importance of various characteristics and interaction effects in isolating characteristics associated with higher levels of non-response. Logistic regression produces a measure known as an "odds ratio" for each explanatory variable being considered. For example, an odds ratio of one (1.0) indicates that the characteristic in question is not important in predicting non-response. An odds ratio of 2.0, on the other hand, indicates that the odds of experiencing a given characteristic are twice as likely as others to be non-respondents (all other things being equal). Values less than 1.0 express the fact that the probability of individuals with certain characteristics are less likely to be a non-respondent than those not having that characteristic (again, controlling for all other independent variables in the model).

For example, switching schools more than six times resulted in an odds ratio of 1.9. In other words, the odds of youth who had switched schools this many times were almost twice as likely as other youth to not respond to the follow-up survey.

An important question is whether any of the variables predicting non-response are more important for certain groups of respondents than for others. For example, are the effects of education experiences stronger for males than for females? To explore the answers to such questions, I have incorporated interaction effects into the logistic regression. The effects are examined first by gender and then by school-leaving status. Many interactions have odds ratios less than one. For gender, this means the interaction is less associated with being a female, hence more associated with being a male. For example, being 18 years old, not participating in class and not enjoying school were significant characteristics for men. Another example: if a woman did not get along with teachers, this increased her probability of being a non-respondent to almost twice that of her male counterpart. The same interpretation of odds ratios is used for leaver and non-leaver interactions. An odds ratio greater than 1.0 means that characteristic is more associated with leavers, while a value of less than 1.0 means that characteristic is more associated with non-leavers.

Table 1
Odds ratios from logistic regression

Characteristic	Odds ratio
1. Mother's education less than or equal to high school (as compared with those whose mothers had more than a high school education)	1.2
2. Father's education less than or equal to high school (as compared with those whose fathers had more than a high school education)	1.4
3. Did not live with both parents	1.4
4. Switched schools more than six times	1.9
5. Skipped classes	1.2
6. Rarely or never watched television or videos	1.2
7. Played video games at arcades often	1.5
Interaction effects[1]	
Sex—effects stronger for males:	
8. 18 years old	0.8
9. Did not enjoy school	0.7
10. Did not participate in class	0.8
Sex—effects stronger for females:	
11. Not born in Canada	1.9
12. No close friends at same school	1.7
13. Unemployed	1.4
14. Friends consider school not important	1.2
15. Did not get along with teachers	1.8
High school status—effects stronger for leavers:	
16. Rarely or never read newspapers	1.5
17. Received Family Allowance	1.6
18. Unemployed	1.6
19. Not satisfied with life	1.5
High school status—effects stronger for non-leavers:	
20. Age[2]	
18 years old	0.4
20 years old	0.7
21. Children	0.6
22. No extracurricular activities	0.6
23. Parents consider school not very important	0.7
24. Unsatisfied with financial situation	0.7
25. Did not fit in at school	0.5
26. No close friends at same school	0.8

1. Only two interaction effects were tested: sex (male/female) and high school status (leaver/non-leaver). Because non-response patterns were looked at for both sex and high school status in previous sections of this paper, it was deemed suitable to include them in the logistic analysis.

2. Non-respondents tended to be 18-year-old males and 20-year-old females for non-leavers; hence, this cell on age of non-leavers resulted.

Conclusion and analysis

One of the highlights in *Leaving School*, an analysis of the 1991 School Leavers Survey, was the finding that school experiences of leavers and graduates were different. Leavers were more likely to report negative school experiences: they did not enjoy school, participated less in class than other students, and skipped classes. They were five times more likely to have failed a grade in elementary school (Sunter 1993). Leavers were more likely to be married, to have more dependent children, and to come from single and no-parent families (Gilbert et al. 1993). Other research also found that these students are at greater risk for factors including substance abuse, negative school experiences, and poor at-home relationships (Johnson 1997).

To add to this list, school leavers, compared to non-leavers, were more likely to be overrepresented in the non-response category. Correspondingly, the characteristics and experiences associated with being a leaver were more common among non-respondents. Non-response was mainly a problem of being unable to locate and contact the person—refusals accounted for just 17% of overall non-response to the 1995 SLF.

The results of the 1995 SLF were weighted to take non-response into account.[9] Still, increasing the weights for leavers who responded assumes that their characteristics were similar to those who did not respond. Therefore, we can have confidence in the patterns of results reported in *High School May Not Be Enough*, as any response bias that may exist in the survey would tend to make the findings even more relevant than as they were reported. In fact, some degree of the same type of bias was likely introduced during the 1991 SLS. Initially, 18,000 people were identified. Interviews were completed with just under 9,500 of them. Those who were untraceable in the first place were probably more likely to have the same at-risk characteristics as those non-respondents to the 1995 SLF described in this paper. If anything, the situation for youth who do not complete high school is likely to be even more serious than has been reported on the basis of the School Leavers Surveys, and for that matter, on the basis of any survey research.

The results from this report have shed light on which type of respondent is more difficult to follow-up in future surveys. The at-risk groups of characteristics for non-response to the School Leavers Follow up Survey have been presented. Efforts to improve non-response would best be aimed at tracing and making contact with youth, keeping in mind particular characteristics that should be adequately targeted. This study will help researchers and the general public to better understand the characteristics of youth at risk. EQR

Notes

1. Previous research indicates that nearly 4 in 10 job-related moves within the workforce involve people aged 15 to 25 (Devereaux and Lemaitre 1992).
2. See Frank (1996) and Frank et al. (1998).
3. Throughout this paper, the overall non-response rate of 28% is the benchmark to which all other non-response rates are compared.
4. Throughout this paper, I distinguish between *leavers* and *non-leavers* (according to high school status in 1991). I could have further subdivided non-leavers into high school *continuers* and *graduates*. However, analysis of the 1995 SLF indicates that nearly 9 in 10 youth who were continuers in 1991 had become high school graduates by 1995. Those who were continuers in 1991, therefore, more closely resemble graduates than leavers. In the interest of simplicity, the major distinction in this analysis is between youth who were high school *leavers* in 1991 and those who were *non-leavers*.
5. See Gilbert et al. (1993), p. 27.
6. Appendix B indicates non-response rates for youth with these and all other characteristics discussed.
7. The numbers were too small for breakdown by sex.
8. A 0.05 (95%) level of significance was chosen. Note that although the sample is large, some of the distributions are quite skewed or uneven, thereby creating some very small cells.
9. Non-response was compensated for by proportionally increasing the weights of responding youth by a factor of the ratio of the number of youth who should have been interviewed to the number of youth actually interviewed. The SLF weight assigned to a record consisted of the ratio of the sum of SLS weights in the weighting class to the number of SLF respondents in the weighting class. Weighting classes were defined by province, age, sex, family allowance payment status, and SLS type (graduate, continuer, leaver).

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Appendix A

Non-response rates (%) for the School Leavers Follow-up Survey, 1995

		Entire cohort (youth aged 22 to 24 in 1995)			Leavers			Non-leavers		
		Men	Women	Total	Men	Women	Total	Men	Women	Total
		%								
Benchmark non-response rates		29.2	27.7	28.4	41.7	44.6	42.8	26.1	25.3	25.7
1	**Age**									
	18	30.1	25.6	27.8	33.6*	38.6*	35.5	29.4	24.1	26.6
	19	27.8	26.8	27.3	47.6	48.5	47.9	22.8	23.5	23.2
	20	29.7	30.6	30.1	42.1	45.4	43.3	26.2	28.2	27.2
2	**Type**									
	Leaver	41.7	44.6	42.8						
	Graduate/continuer	26.1	25.3	25.7						
3	**Marital status**									
	Married	41.1*	32.8*	35.5	—	—	44.2	—	—	26.9 *
	Other (single, divorced, widowed)	28.8	27.4	28.1	41.0	45.5	42.6	26.1	25.2	25.6
4	**Children**									
	Yes	42.1*	39.2	39.9	—	40.8*	43.8	—	37.6*	35.6 *
	No	28.9	26.8	27.9	41.0	46.0	42.6	26.1	24.8	25.4
5	**Born in Canada**									
	Yes	29.2	26.8	28.0	42.0	44.2	42.8	26.0	24.2	25.1
	No	28.5	38.4	33.5	—	52.8	41.7*	27.0*	37.5	32.5
6	**Disability**									
	Yes	31.6*	31.9*	31.8	—	—	45.3*	—	—	27.4
	No	29.0	27.4	28.2	41.3	44.7	42.5	26.1	25.1	25.6
7	**Adopted**									
	Yes	33.4*	34.2*	33.7	—	—	52.2*	—	—	29.8
	No	29.0	27.5	28.2	41.6	43.8	42.4	25.9	25.1	25.5
8	**Living arrangements**									
	Single parent, alone, with children	42.9	36.8	39.9	52.9	48.9	51.2	38.2	32.9	35.4
	Both parents	25.3	25.0	25.2	35.5	41.1	37.4	23.4	23.4	23.4
9	**Mother's education**									
	Less than high school	28.5	28.9	28.7	39.8	40.9	40.3	24.8	26.6	26.3
	High school	24.5	27.7	26.0	35.6*	—	40.4	22.7	25.8	24.8
	Greater than high school	25.7	20.8	23.2	—	—	41.3*	24.7	19.4	23.8
10	**Father's education**									
	Less than high school	27.6	26.8	27.2	28.7*	43.4*	33.9	27.3	24.6	26.6
	High school	23.6	25.4	24.4	—	—	39.3*	21.6	23.9	24.4
	Greater than high school	23.8	19.8	21.9	—	—	48.0*	21.8	18.9	20.8
11	**Fail a grade**									
	Yes	35.3	35.3	35.3	45.2	47.0*	45.7	29.7	28.4*	29.3
	No	27.4	26.9	27.2	39.3	43.7	41.2	25.3	25.1	25.2
12	**Enjoy school**									
	Yes	26.4	26.7	26.6	37.8	43.1	40.9	24.7	24.8	24.9
	No	40.9	34.0	38.1	46.7	45.4	45.5	35.9	29.1	32.8
13	**Participate in class**									
	Less than most	38.1	32.2	35.3	45.8	48.3*	46.7	33.5	26.7	30.1
	Other	27.9	27.1	27.5	40.4	43.5	41.6	24.7	25.1	25.2

See notes at end of table.

Non-response rates (%) for the School Leavers Follow-up Survey, 1995 (continued)

		Entire cohort (youth aged 22 to 24 in 1995)			Leavers			Non-leavers		
		Men	Women	Total	Men	Women	Total	Men	Women	Total
		%								
14	**Get along with teachers**									
	Yes	28.7	27.1	27.8	41.7	43.2	45.4	26.0	25.0	25.5
	No	37.1*	48.0*	40.9	41.6*	—	42.3	—	—	34.1*
15	**Participate in extracurricular**									
	Yes	28.0	26.9	27.5	35.7	39.3	37.2	24.5	24.3	24.4
	No	31.9	29.3	30.6	45.4	48.6	46.6	30.6	27.3	28.8
16	**Fit in at school**									
	Yes	28.4	27.2	27.8	42.7	43.7	43.1	25.2	25.1	25.1
	No	39.1	36.0*	37.8	—	—	40.9	41.4*	29.4*	36.1
17	**Attitude of friends towards school**									
	Not very important	34.7	38.0	36.1	43.5	44.8	44.0	29.8	35	32.1
	Very important	26.7	24.6	25.6	39.4	44.3	41.3	24.9	23.1	23.9
18	**Close friends at same school**									
	Yes	28.9	26.7	27.8	40.6	42.2	41.2	26.0	24.6	25.3
	No	32.6	43.4	37.2	—	—	59.6*	27.5*	37.4*	31.6
19	**Close friends not at school**									
	Yes	31.8	29.1	30.6	41.0	43.3	42.4	28.3	26.5	27.5
	No	26.0	26.4	26.2	42.0	46.3	43.4	23.8	24.2	24.0
20	**Attitude of parents towards school**									
	Not very important	40.8	41.4	27.5	47.5	—	44.8	—	42.5*	36.9
	Very important	28.2	26.8	41.1	40.0	45.8	42.2	25.9	24.5	25.2
21	**Skipped classes**									
	Yes	32.1	29.5	30.9	45.0	42.2	44.0	27.8	27.1	27.5
	No	24.3	25.5	25.0	29.7*	50.0	39.1	23.6	23.3	23.4
22	**Changed schools**									
	0 to 6 times	28.2	26.9	27.6	39.3	42.7	40.6	25.6	24.8	25.2
	7 or more times	44.8	47.8*	46.0	64.5*	—	64.6	35.8*	41.2*	37.9
23	**Reading, writing, or math** limiting job opportunities									
	Yes	32.2	31.3	31.8	37.9	53.4	44.7	29.3	25.6	26.2
	No	28.6	27.0	27.8	43.1	39.9	42.0	25.6	23.6	25.6
24	**Time with friends**									
	Rarely/never	36.7*	41.4*	38.8*	—	—	51.7*	—	—	30.3*
	Often/sometimes	28.8	27.2	28.0	40.8	43.6	41.9	26.1	25.1	25.5
25	**Read newspapers, etc.**									
	Rarely/never	33.6	29.5	32.1	36.8	—	49.9	26.3	25.6	26.0
	Often/sometimes	28.3	27.5	27.9	45.3	44.4	40.8	26.1	25.2	25.6
26	**Television/videos**									
	Rarely/never	31.3	29.4	30.4	59.7	47.3*	39.8	29.5	27.5	28.4
	Often/sometimes	28.1	26.7	27.4	40.9	43.5	44.5	24.6	24.0	24.3
27	**Video games**									
	Often	38.2*	—	40.9	—	—	64.5*	—	—	32.1*
	Sometimes/never	28.9	27.5	28.2	40.9	43.9	42.1	26.0	25.2	25.6
28	**Social assistance or welfare insurance**									
	Yes	37.2	36.7	36.9	—	47.8*	47.0	33.4*	30.5*	31.8
	No	28.5	26.7	27.7	41.2	43.2	41.9	25.6	24.9	25.2

See notes at end of table.

Non-response rates (%) for the School Leavers Follow-up Survey, 1995 (concluded)

		Entire cohort (youth aged 22 to 24 in 1995)			Leavers			Non-leavers		
		Men	Women	Total	Men	Women	Total	Men	Women	Total
		%								
29	**Financial support**									
	Yes	28.3	26.1	27.2	46.2	42.3	44.6	25.7	24.4	25.1
	No	30.0	29.7	29.9	39.4	46.0	41.8	26.5	26.4	26.5
30	**Family allowance**									
	Yes	30.3	33.7	32.2	—	48.5*	51.4	26.3	29.0	27.7
	No	29.0	26.7	27.9	40.5	43.1	41.3	26.1	24.7	25.4
31	**Satisfaction with financial situation**									
	Not satisfied	27.6	29.2	27.1	42.6	42.1	42.4	27.7	26.7	27.2
	Other	31.2	26.5	30.2	40.7	47.6	43.2	25.0	24.2	24.6
32	**Labour force status**									
	Unemployed	30.1	33.3	31.5	44.1	57.4*	48.6	22.7	26.8	24.0
	Employed/not in labour force	29.0	26.7	27.8	40.6	40.1	40.4	26.7	25	24.8
33	**Often used marijuana, cocaine, glue or solvents**									
	Yes	46.6*	—	41.3	52.7*	22.1	45.4*	—	—	35.7
	No	28.5	27.7	28.1	40.3	45.9	42.5	25.9	25.2	25.5
34	**Convicted of crime**									
	Yes	35.6	—	34.4	50.2	—	46.7	23.1*	—	24.1
	No	28.4	27.7	28.0	38.8	45.9	41.9	26.3	25.2	25.7
35	**Satisfied with life**									
	No/no opinion	37.9	40.3	38.8	39.9*	64.9*	49.7	36.2*	27.1*	31.8
	Yes	28.4	26.7	27.6	42.1	39.7	41.2	25.5	25.2	25.3

** numbers less reliable than unmarked numbers*
— data not reliable for release
Source: *School Leavers Follow-up Survey, 1995.*

Initiatives

Enhanced Student Information System (ESIS) project: An update

In the fall of 1995 Statistics Canada began development of the Enhanced Student Information System (ESIS) in order to address the limitations of existing administrative surveys of postsecondary enrolment and graduates. Following extensive consultation and review, ESIS has been developed into a single survey that captures enrolment and graduate data on all Canadian public postsecondary institutions for a 12-month period. These data were formerly collected by three separate annual administrative surveys. The new ESIS survey differs substantially from those it replaces, in both the scope of the data collected and the manner in which the data are collected and processed. As of January 2000, universities in Prince Edward Island, Nova Scotia and New Brunswick report in ESIS format. All other Canadian public postsecondary institutions will be phased in to ESIS format between July 2000 and January 2001.

ESIS is a relational database that is designed to hold demographic, program and course information for each student registered at or through Canadian postsecondary institutions. Included in the database is a complete inventory of all programs and courses offered through these institutions. ESIS will therefore represent the core of a statistical database that will facilitate the production of analytical outputs designed to offer a comprehensive understanding of postsecondary education in Canada.

The primary objectives of ESIS are to

- enable Statistics Canada to provide researchers with a comprehensive understanding of student educational pathways and mobility;
- develop a sample frame for student sample surveys such as the National Graduates Survey (NGS);
- ensure that data collected for ESIS are, insofar as possible, comparable with the historical data of the surveys that ESIS will replace (trade/vocational, career/technical and University enrolments and graduates surveys);
- minimize the response burden placed on institutions by, insofar as possible, collecting information as it is stored by the institutions in their own administrative systems; and

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- provide educational stakeholders with meaningful information in a timely manner.

Documentation on the ESIS project is available at:

English: http://www.statcan.ca/english/concepts/ESIS/index.htm
French: http://www.statcan.ca/français/concepts/ESIS/index.htm

Data availability

announcements

Data releases

*For requests and extractions from CANSIM, contact Sharon-Anne Borde (**sharon-anne.borde@statcan.ca**) at (613) 951-1503 or 1 800 307-3382, Centre for Education Statistics.*

*For more information, or to enquire about the concepts, methods, and data quality of this release, contact Claudio Pagliarello (**claudio.pagliarello@statcan.ca**) at (613) 951-1508, Centre for Education Statistics.*

Education Price Index, 1998

- For the first time since 1995, prices for goods and services in elementary and secondary education increased more than overall inflation. In 1998, the Education Price Index (EPI) increased 1.2% while the Consumer Price Index (CPI) rose 0.9%.

- Teachers' salaries account for more than 70% of school boards' operating expenses and are the major component of the EPI. Growth in teacher's salaries has remained at or under 1% annually since 1994. The non-teaching salary component of the EPI, which saw little or no increases during the mid-1990s, rose 1.5% in 1997 and 3.2% in 1998.

- The prices of the non-salary items included in the EPI have not been as stable as salaries in recent years. This non-salary component rose 0.8% in 1998, the smallest increase in over a decade. It includes school facilities, instructional supplies, fees and contractual services. This component has a relatively smaller influence on the overall EPI, because it represents only 20% of the total operating budgets of school boards.

  Note: The EPI was established in the 1970s to estimate whether increases in elementary and secondary education operating expenditures were attributable to inflation or variations in the quantity and quality of goods purchased by schools (including teaching services). The EPI is used mainly to indicate price changes in elementary and secondary education and to express its expenditures in constant dollar amounts. EQR

These data are now available on CANSIM for the years 1971 to 1998.

Available on CANSIM: T00590304

Table 1
Level and annual growth rate of the Consumer Price Index and of the Education Price Index and its major components, 1998

	Relative importance to EPI %	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Consumer Price Index*		89.0	93.3	98.5	100.0	101.8	102.0	104.2	105.9	107.6	108.6
% change from previous year		5.0	4.8	5.6	1.5	1.8	0.2	2.2	1.6	1.6	0.9
Education Price Index*	100.0	87.1	91.8	96.7	100.0	101.9	102.8	105.3	105.8	106.6	107.9
% change from previous year		4.8	5.4	5.3	3.5	1.9	0.9	2.4	0.5	0.8	1.2
Salaries and wages*	79.9	86.9	91.7	96.4	100.0	101.8	102.2	102.0	102.3	103.0	104.2
% change from previous year		4.7	5.5	5.2	3.7	1.8	0.4	-0.2	0.3	0.6	1.2
Teachers' salaries*	71.7	86.2	91.1	96.2	100.0	101.8	102.3	102.0	102.4	102.9	104.0
% change from previous year		4.7	5.7	5.6	4.0	1.8	0.5	-0.3	0.4	0.5	1.0
Non-teaching salaries*	8.2	93.1	96.9	98.8	100.0	101.7	101.7	101.7	101.7	103.2	106.5
% change from previous year		4.4	4.1	2.0	1.3	1.7	0.0	0.0	0.0	1.5	3.2
Non-salary*	20.1	88.1	92.2	97.7	100.0	102.4	105.5	121.2	122.5	124.3	125.4
% change from previous year		5.5	4.7	5.9	2.4	2.4	3.1	14.9	1.0	1.5	0.8
Instructional supplies*	6.9	98.2	102.9	106.9	100.0	101.5	109.6	163.8	155.5	152.5	152.7
% change from previous year		7.5	4.7	3.8	-6.4	1.5	7.9	49.5	-5.1	-1.9	0.2
School facilities. supplies and services*	4.3	89.3	92.0	97.9	100.0	101.1	101.7	100.1	102.1	105.8	106.0
% change from previous year		2.4	3.0	6.4	2.2	1.1	0.6	-1.6	2.0	3.6	0.1
Fees and contractual services*	8.9	81.5	86.1	92.1	100.0	103.6	105.2	107.8	114.3	118.0	120.0
% change from previous year		6.0	5.6	7.1	8.5	3.6	1.6	2.5	6.0	3.2	1.7

Note: Growth rates may differ slightly due to rounding.
* 1992 =100

Table 2
Education Price Index and its two major components

	1989	1990*	1991	1992	1993	1994	1995	1996	1997	1998
	Index (1992=100)									
Canada										
Education Price Index	87.1	91.8	96.7	100.0	101.9	102.8	105.3	105.8	106.6r	107.9
Salaries and wages	86.9	91.7	96.4	100.0	101.8	102.2	102.0	102.3	103.0r	104.2
Non-salary	88.1	92.2	97.7	100.0	102.4	105.5	121.2	122.5	124.3	125.4
Newfoundland										
Education Price Index	91.0	94.9	99.2	100.0	100.3	100.6	102.1	102.4	103.0r	104.1
Salaries and wages	91.6	95.3	99.5	100.0	100.1	100.1	100.0	100.0	100.1r	101.5
Non-salary	86.9	91.9	97.7	100.0	101.2	103.9	115.7	117.2	121.3	120.6
Prince Edward Island										
Education Price Index	87.7	92.3	97.4	100.0	100.4	97.2	95.8	99.3	101.9r	103.5
Salaries and wages	87.7	92.2	97.2	100.0	100.2	96.5	93.9	97.7	100.2r	102.2
Non-salary	87.5	92.7	98.6	100.0	101.4	102.7	112.2	112.3	116.2	114.1
Nova Scotia										
Education Price Index	88.8	93.1	97.6	100.0	100.1	100.8	100.3	100.4	101.0r	104.1
Salaries and wages	88.8	93.0	97.4	100.0	100.2	100.6	98.3	98.3	98.8r	102.4
Non-salary	89.5	94.0	99.1	100.0	99.8	102.5	116.9	117.4	119.5	118.8
New Brunswick										
Education Price Index	90.6	94.7	98.9	100.0	101.4	102.8	104.9	106.6	108.4r	109.9
Salaries and wages	91.6	95.6	99.3	100.0	101.4	102.6	103.0	104.5	105.8r	107.7
Non-salary	86.0	90.6	97.0	100.0	101.7	104.1	113.6	116.7	120.6	120.5
Quebec										
Education Price Index	89.0	93.5	97.6	100.0	102.6	103.4	106.0	106.5	107.8r	109.1
Salaries and wages	89.6	94.2	97.9	100.0	102.6	102.9	102.9	102.9	103.9r	105.1
Non-salary	86.9	91.0	96.5	100.0	102.7	105.5	117.9	120.3	122.7	124.2
Ontario										
Education Price Index	85.4	90.4	95.7	100.0	101.8	102.8	105.8	106.2	106.6r	107.4
Salaries and wages	85.0	90.1	95.3	100.0	101.6	102.2	102.2	102.4	102.6r	103.3
Non-salary	87.7	91.9	97.6	100.0	102.6	105.9	122.9	124.0	125.5	126.7
Manitoba										
Education Price Index	89.8	94.2	98.5	100.0	101.8	104.1	107.6	107.5	108.7r	110.4
Salaries and wages	89.5	93.9	98.1	100.0	101.8	103.8	103.8	103.8	105.2r	107.0
Non-salary	91.9	95.6	100.7	100.0	101.4	105.4	128.1	126.9	127.6	128.6
Saskatchewan										
Education Price Index	91.7	95.4	99.6	100.0	100.6	103.1	106.6	107.2	109.6r	111.9
Salaries and wages	92.1	95.8	99.9	100.0	100.2	102.4	102.4	102.9	105.6r	108.2
Non-salary	90.3	94.0	98.4	100.0	102.4	105.9	122.9	123.7	125.1	126.4
Alberta										
Education Price Index	86.9	91.2	95.8	100.0	102.5	101.5	102.1	103.3	104.6r	106.7
Salaries and wages	86.7	91.0	95.4	100.0	102.6	100.9	98.6	99.8	100.9r	103.4
Non-salary	88.2	92.2	98.0	100.0	102.0	104.9	120.5	121.7	123.8	123.7
British Columbia										
Education Price Index	85.4	90.2	96.3	100.0	101.7	103.1	105.6	106.1	106.6r	107.8
Salaries and wages	84.4	89.5	95.8	100.0	101.7	102.7	103.1	103.8	104.2r	105.5
Non-salary	92.8	96.2	100.3	100.0	102.1	106.0	125.2	124.1	125.2	126.3

* *Revised due to new methodology introduced in 1990.*
r *Revised figures.*

Table 3
Annual Growth Rate of the Education Price Index and its two major components

	1989	1990*	1991	1992	1993	1994	1995	1996	1997	1998
	Index (1992=100)									
Canada										
Education Price Index	4.8	5.4	5.3	3.5	1.9	0.9	2.4	0.5	0.8	1.2
Salaries and wages	4.7	5.5	5.2	3.7	1.8	0.4	-0.2	0.3	0.6	1.2
Non-salary	5.5	4.7	5.9	2.4	2.4	3.1	14.9	1.0	1.5	0.8
Newfoundland										
Education Price Index	4.0	4.3	4.6	0.8	0.3	0.4	1.5	0.2	0.7	1.0
Salaries and wages	3.9	4.0	4.3	0.5	0.1	0.0	-0.1	0.0	0.1	1.3
Non-salary	4.4	5.8	6.3	2.4	1.2	2.7	11.3	1.3	3.4	-0.5
Prince Edward Island										
Education Price Index	3.0	5.2	5.5	2.7	0.4	-3.1	-1.4	3.6	2.6	1.5
Salaries and wages	2.8	5.2	5.4	2.9	0.2	-3.7	-2.8	4.1	2.5	2.0
Non-salary	3.7	5.9	6.3	1.5	1.3	1.3	9.2	0.1	3.5	-1.9
Nova Scotia										
Education Price Index	4.5	4.8	4.8	2.5	0.1	0.6	-0.5	0.1	0.6	3.1
Salaries and wages	4.4	4.7	4.8	2.7	0.2	0.4	-2.2	0.0	0.4	3.6
Non-salary	5.1	5.1	5.4	1.0	-0.2	2.6	14.1	0.5	1.8	-0.7
New Brunswick										
Education Price Index	3.5	4.5	4.5	1.1	1.4	1.4	2.0	1.7	1.7	1.4
Salaries and wages	3.4	4.3	3.9	0.7	1.4	1.2	0.4	1.5	1.3	1.7
Non-salary	4.0	5.3	7.1	3.1	1.7	2.4	9.1	2.7	3.3	-0.1
Quebec										
Education Price Index	4.6	5.1	4.3	2.5	2.6	0.7	2.5	0.5	1.2	1.2
Salaries and wages	4.2	5.2	3.9	2.2	2.6	0.2	0.0	0.0	1.0	1.2
Non-salary	6.2	4.8	6.0	3.6	2.7	2.8	11.8	2.1	2.0	1.2
Ontario										
Education Price Index	5.0	5.8	5.9	4.5	1.8	1.0	2.9	0.4	0.4	0.7
Salaries and wages	4.9	6.0	5.8	4.9	1.6	0.5	0.0	0.2	0.2	0.6
Non-salary	5.5	4.8	6.1	2.5	2.6	3.1	16.1	0.9	1.2	1.0
Manitoba										
Education Price Index	3.8	4.8	4.7	1.5	1.8	2.3	3.4	-0.2	1.1	1.6
Salaries and wages	3.5	5.0	4.5	1.9	1.8	2.0	0.0	0.0	1.3	1.7
Non-salary	5.2	4.0	5.4	-0.7	1.4	3.9	21.5	-0.9	0.6	0.8
Saskatchewan										
Education Price Index	6.0	4.1	4.3	0.4	0.6	2.5	3.4	0.5	2.3	2.1
Salaries and wages	6.2	4.1	4.2	0.1	0.2	2.3	0.0	0.5	2.7	2.4
Non-salary	5.2	4.1	4.7	1.6	2.4	3.4	16.1	0.6	1.2	1.0
Alberta										
Education Price Index	3.9	4.9	5.1	4.4	2.5	-0.9	0.6	1.2	1.3	1.9
Salaries and wages	3.7	5.0	4.8	4.8	2.6	-1.7	-2.3	1.2	1.1	2.4
Non-salary	4.9	4.5	6.3	2.0	2.0	2.9	14.9	1.0	1.8	-0.2
British Columbia										
Education Price Index	6.2	5.7	6.7	3.8	1.7	1.4	2.4	0.5	0.5	1.1
Salaries and wages	6.5	6.0	7.1	4.4	1.6	1.1	0.4	0.7	0.4	1.2
Non-salary	4.2	3.7	4.3	-0.3	2.1	3.9	18.1	-0.8	0.9	0.8

* *Revised due to new methodology introduced in 1990.*

Current data

Data series	Most recent data	
	Final[1]	Preliminary or estimate [2]
A. Elementary/secondary		
Enrolment in public schools	1997–98	1998–99 [e] 1999–2000 [e]
Enrolment in private schools	1997–98	1998–99 [e] 1999–2000 [e]
Enrolment in minority and second language education programs	1997–98	
Secondary school graduation	1996–97	
Educators in public schools	1997–98	1998–99 [e] 1999–2000 [e]
Educators in private schools	1997–98	1998–99 [e] 1999–2000 [e]
Elementary/secondary school characteristics	1997–98	1998–99 [e] 1999–2000 [e]
Financial statistics of school boards	1996	
Financial statistics of private academic schools	1995–96	1996–97 [p]
Federal government expenditures on elementary/secondary education	1996–97	1997–98 [e]
Consolidated expenditures on elementary/secondary education	1996–97	1997–98 [e] 1998–99 [e]
Education Price Index	1998	
B. Postsecondary		
University enrolments	1998–99	discontinued
University degrees granted	1998	discontinued
University continuing education enrolment	1996–97	discontinued
Educators in universities	1997–98	1998–99
Salaries and salary scales of full–time teaching staff at Canadian universities	1997–98	1998–99
Tuition and living accommodation costs at Canadian universities	1999–2000	
University finance	1996–97	1997–98 [p] 1998–99 [e] 1999–2000 [e]
College finance	1996–97	1998–99 [e] 1999–2000 [e]
Federal government expenditures on postsecondary education	1996–97	1997–98 [e] 1998–99 [e]
Consolidated expenditures on postsecondary education	1996–97	1997–98 [e] 1998–99 [e] 1999–2000 [e]

Current data (Concluded)

Data series	Most recent data	
	Final[1]	Preliminary or estimate [2]
Community colleges and related institutions: enrolment and graduates	1997–98	1998–99 p
Trade/vocational enrolment	1996–97	1997–98 e
College/trade teaching staff	1996–97	1997–98 e
International student participation in Canadian universities	1998–99	

C. Publications[3]

Education in Canada (1999)

South of the Border: Graduates from the class of '95 who moved to the United States (1999)

Leaving school (1993)

After High School, the First Years (1996)

Adult education and training survey (1995)

International student participation in Canadian education (1993–1995)

Education Price Index – methodological report

Handbook of education terminology: elementary and secondary level (1994)

Guide to data on elementary secondary education in Canada (1995)

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)

Literacy, Economy and Society (1995)

Literacy Skills for the Knowledge Society (1997)

Literacy in the Information Age (2000)

International Adult Literacy Survey Monograph Series

Growing Up in Canada: National Longitudinal Survey of Children and Youth (1996)

1. *Indicates the most recent calendar year (e.g., 1993) or academic/fiscal year (e.g., 1993–1994) for which final data are available for all provinces and territories.*
2. *Indicates the most recent calendar year (e.g., 1995) or academic/fiscal year (e.g., 1996–1997) for which any data are available. The data may be preliminary (e.g., 1995p), estimated (e.g., 1995e) or partial (e.g., data not available for all provinces and territories).*
3. *The year indicated in parenthesis 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 the Section of the Centre for Education Statistics at Statistics Canada. Telephone: (613) 951-1503; fax: (613) 951-9040 or Internet: sharon-anne.borde@statcan.ca.*

Education at a glance

This section provides a series of social, economic and education indicators for Canada, the provinces/territories and the G-7 countries. 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, 1981 to 1999

Indicator[1]	1981	1986	1991	1992	1993	1994	1995	1996	1997	1998	1999
	thousands										
Social context											
Population aged 0–3	1,448.7	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
Population aged 4–17	5,480.3	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
Population aged 18–24	3,493.1	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
Total population	24,900.0	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
Youth immigration[r]	42,826	25,861	61,239	61,178	73,098	68,257	65,878	66,339	70,355	61,214	..
	%										
Lone-parent families	16.6	18.8	15.3	14.4	14.8	14.9	15.1	14.8	14.9	..	..
Economic context											
GDP: Real annual percentage change	4.0	3.1	-1.8	-0.6	2.2	4.1	2.3	1.5	..	..	..
CPI: Annual percentage change	12.4	4.2	5.6	1.5	1.8	0.2	2.1	1.6	..	..	..
Employment-rate	60.4	59.9[2]	59.8[2]	58.4[2]	58.2[2]	58.5[2]	58.6	58.6	59.2[3]	..	..
Unemployment rate	7.5	9.5[4]	10.4[4]	11.3[5]	11.2[5]	10.4[5]	9.5	9.7	9.2	8.3	..
Student employment rate	..	34.4	38.0	35.1	34.0	34.2	33.3	34.8	32.5[6]	..	..
Mothers' participation rate	54.7	63.8	70.4	69.8	70.1	70.2	70.7	71.6	..	..	..
Families below low income cut-offs:											
Two-parent families	10.2	10.9	10.8	10.6	12.2	11.5	12.8	..	..	..	..
Lone-parent families	48.4	52.5	55.4	52.3	55.0	53.0	53.0	..	..	..	..
Enrolments	thousands										
Elementary/secondary schools	5,024.2	4,938.0	5,218.2	5,284.1	5,327.8	5,362.8	5,441.4[r]	5,414.6[r]	5,386.3[r]	5,483.9[r,e]	5,524.9[e]
	%										
Percentage in private schools	4.3	4.6	4.7	4.9	5.0	5.1	5.1[r]	5.2[r]	5.3[r]	5.3[r,e]	..

See notes at end of this table.

Table 1
Education indicators, Canada, 1981 to 1999 (concluded)

Indicator[1]	1981	1986	1991	1992	1993	1994	1995	1996	1997	1998	1999
	thousands										
Public college/trade/vocational, full-time[7]	..	238.1	275.9	266.7	306.5	298.5	269.1	266.4[e]	264.5[e]	..	..
College/postsecondary, full-time	273.4	321.5	349.1	364.6	369.1	377.9	389.5	395.3	398.6[r]	409.8[p]	409.4[e]
College/postsecondary, part-time[8]	..	96.4[e]	125.7[e]	106.6[e]	98.4[r]	90.8[r]	87.7[r]	87.1[r]	91.6[r]	..	..
Full-time university	401.9	475.4	554.0	569.5	574.3	575.7	573.2	573.6	573.0	580.4	..
Part-time university	251.9	287.5	313.3	316.2	300.3	283.3	273.2	256.1	249.7	246.0	..
Adult education and training	..	..	5,504	..	5,842	..	..	..	6,069	..	..
	%										
— Participation rate	..	..	27	..	28	..	..	..	26	..	..
Graduates	thousands										
Secondary schools[9]	..	..	260.7	272.9	281.4	280.4	295.3	295.9	295.9	300.8[e]	..
Public college/trade/vocational[10]	..	145.0	159.7	158.8	163.9	151.1	144.2	141.5[e]	138.7[e]	..	..
College/postsecondary	71.8	82.4	85.9	92.5	95.2	97.2	100.9	105.0	105.9[e]	..	..
University/Bachelor's	84.9	101.7	114.8	120.7	123.2	126.5	127.3	128.0	125.8	124.9	..
University/Master's	12.9	15.9	18.0	19.4	20.8	21.3	21.4	21.6	21.3	22.0	..
University/Doctorate	1.8	2.2	2.9	3.1	3.4[e]	3.6	3.7	3.9	4.0	4.0	..
Full-time educators											
Elementary/secondary schools	274.6	269.9	302.6	301.8	295.4	295.7[e]	298.7[e]	294.4[e]	296.8[r,e]	295.9[r,e]	295.9[e]
College/postsecondary/trade/vocational	24.1	25.0	30.9	32.7	28.1	28.0	24.4[e]	31.2	31.7[p]	..	..
University	33.6	35.4	36.8	37.3	36.9	36.4	36.0	34.6	33.7	33.7[e]	..
	ratio										
Elementary/secondary pupil-educator ratio	17.0	16.5	15.5	15.7[e]	16.1[e]	16.1[e]	16.1[e]	16.3[e]	16.3[e]	16.5[e]	16.6[e]
Education expenditures	$ millions										
Elementary/secondary	16,703.2	22,968.0	33,444.9	34,774.5	35,582.3	35,936.0	36,424.7	36,744.7	36,973.1[p]	37,453.8[e]	37,498.9[e]
Vocational	1,601.2	3,275.1	4,573.8	5,380.9	5,631.2	6,559.0	6,185.2	5,301.8	5,896.9[p]	5,903.4[e]	6,229.6[e]
College	2,088.1	2,999.0	3,870.7	4,075.3	4,105.9	4,207.1	4,531.8	4,477.9	4,642.0[p]	4,808.9[e]	5,261.7[e]
University	4,980.7	7,368.7	11,254.8	11,569.8	11,736.8	11,857.9	11,802.0	11,600.7	12,255.4[p]	12,660.5	12,874.9[e]
Total education expenditures	25,373.2	36,610.8	53,144.2	55,800.5	57,056.2	58,560.0	58,943.7	58,125.1	59,767.4[p]	60,826.6	61,865.1
	%										
— as a percentage of GDP	7.1	7.3	7.9	8.1	8.0	7.8	7.6	7.1	6.9	6.8	..

Notes:
1. *See 'Definitions' following Table 3.*
2. *Standard deviation 0.0% – 0.5%.*
3. *The figure is for May 1997.*
4. *Standard deviation 1.1% – 2.5%.*
5. *Standard deviation 0.6% – 1.0%.*
6. *The figure is for April 1997.*
7. *The enrolments have all been reported as full time based on a'full-day' program, even though the duration of the programs varies from 1 to 48 weeks.*
8. *Excludes enrolments in continuing education courses, which had previously been included.*
9. *Source: Canadian Education Statistics Council. (Excludes adults for Quebec, Ontario and Alberta equivalencies.)*
10. *The majority of trade and vocational programs, unlike graduate diploma programs which are generally two or three years' duration, are short programs or single courses that may require only several weeks. A person successfully completing these short-duration programs or courses is considered a completer, not a graduate. These completers do not include persons in part-time programs.*

Table 2
Education indicators, provinces and territories

Indicator[1]		Canada	Newfound-land	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario
Social and economic context								
Educational attainment,[2] 1999:	(%)							
– Less than secondary		26.8	38.4	35.7	30.8	32.9	33.0	24.1
– Graduated from high school		19.3	14.1	15.1	14.0	19.9	15.8	21.0
– Some postsecondary		6.9	4.8	5.5	5.6	4.5	5.4	7.2
– Postsecondary certificate, diploma or university degree		47.0	42.6	43.8	49.5	42.8	45.7	47.6
Labour force participation rates by educational attainment, 1999:	(%)							
– Total		66.0	58.5	65.7	60.8	60.8	63.4	66.9
– Less than secondary		40.0	34.5	47.0	36.2	36.2	37.5	40.2
– Graduated from high school		69.6	64.4	73.7	66.8	69.1	70.1	68.8
– Some postsecondary		71.8	63.0	71.4	70.0	67.9	70.3	72.1
– Postsecondary certificate, diploma or university degree		78.8	76.2	78.2	73.4	76.3	79.2	79.5
Unemployment rate, 1999	(%)	6.3	15.1	13.4	7.8	8.9	8.1	5.0
Costs and school processes								
Public and private expenditures on education as a percentage of GDP, 1994–95		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, 1994–95		13.6	16.9	10.8	9.7	11.2	13.8	14.2
Elementary/secondary pupil-educator ratio, 1997–98		16.4 r	14.6	17.2	17.5	17.6	14.6 r	16.7 r
Educational outcomes								
Secondary school graduation rates, 1996–97	(%)	73.4	80.2	85.6	80.7	86.0	75.9[3,4]	72.0
University graduation rate, 1997–98	(%)	35.1	32.5	22.1	53.8	33.8	41.7	36.7
Unemployment rate by level of educational attainment, 1999	(%)							
– Less than secondary		10.4	25.4	23.6	13.0	15.7	12.7	7.7
– Graduated from high school		6.3	16.7	15.3	6.6	8.9	8.4	5.1
– Some postsecondary		7.1	9.2	5.7	5.8	5.9	9.8	6.6
– Postsecondary certificate, diploma or university degree		5.0	10.7	8.1	6.6	6.5	6.2	4.1

See notes at end of this table.

Table 2
Education indicators, provinces and territories (concluded)

Indicator[1]		Manitoba	Saskatchewan	Alberta	British Columbia	Yukon	Northwest Territories
Social and economic context							
Educational attainment,[2] 1999:	(%)						
– Less than secondary		30.9	31.4	21.6	20.5	..	..
– Graduated from high school		18.3	18.8	19.9	22.6	..	..
– Some postsecondary		6.8	7.9	8.2	8.8	..	..
– Postsecondary certificate, diploma or university degree		44.0	41.9	50.3	48.1	..	..
Labour force participation rates by educational attainment, 1999:	(%)						
– Total		66.8	67.5	73.1	65.8	..	..
– Less than secondary		44.5	44.6	50.4	39.8	..	..
– Graduated from high school		72.1	77.5	75.4	66.5	..	..
– Some postsecondary		75.9	73.5	77.5	69.0	..	..
– Postsecondary certificate, diploma or university degree		78.9	79.1	81.2	76.0	..	..
Unemployment rate, 1999	(%)	4.6	4.8	4.4	7.2	..	..
Costs and school processes							
Public and private expenditures on education as a percentage of GDP, 1994–95		7.8	7.4	5.4	6.5	11.3	16.6
Public expenditures on education as a percentage of total public expenditures, 1994–95		12.9	13.8	13.2	12.2	10.4	12.0
Elementary/secondary pupil-educator ratio, 1997–98		16.3	17.3	17.8[r]	17.5	13.2	13.1
Educational outcomes							
Secondary school graduation rates, 1996–97	(%)	78.1	78.8	64.7	70.5	37.3	24.6
University graduation rate, 1997–98	(%)	31.5	33.2	25.0	24.4	..	..
Unemployment rate by level of educational attainment, 1999	(%)						
– Less than secondary		6.8	7.9	5.6	12.8	..	..
– Graduated from high school		4.2	3.9	3.9	8.1	..	..
– Some postsecondary		4.7	5.6	5.2	7.3	..	..
– Postsecondary certificate, diploma or university degree		3.8	3.7	3.9	5.6	..	..

Notes:
1. See 'Definitions' following Table 3.
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 that graduated from regular day programs.
4. Excludes "Formation professionnelle."

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Table 3
Education indicators, G-7 countries, 1998

Indicator[1]		Canada	United States	France	United Kingdom	Germany	Italy	Japan
Social and economic context								
Educational attainment:	(%)							
Lower secondary or less		20	14	39	19	16	56	20
Tertiary		39	35	21	24	23	9	18
Labour force participation by educational attainment:	(%)							
– upper secondary education								
Men		78	86	64	70	89	43	80
Women		79	87	58	50	79	40	80
Costs and school processes								
Public expenditure on education as a percentage of total public expenditures		11.6	15.3	10.6	11.0	9.2	8.9	10.1
Public expenditure on education as a percentage of GDP		5.4	5.2	5.8	4.6	4.5	4.6	3.6
Participation rate in formal education	(%)	82	74	88	70	88	70	..
Educational outcomes								
Ratio of upper secondary graduates to population	(%)	72	74	87	..	93	..	96
Unemployment rate by level of educational attainment:	(%)							
– all levels								
Men		8	4	9	6	9	7	3
Women		8	4	13	4	11	13	3
– upper secondary education								
Men		12	8	14	14	18	8	5
Women		12	9	17	7	15	16	3

Note:
1. See 'Definitions' following Table 3.
Source: *Education at a Glance: OECD Indicators, OECD, Paris, 2000.*

Definitions

Education indicators, Canada

Table 1.
Year references are as follows: (1) population refers to July of 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. Statistics Canada Sources: 1971 to 1986: *Lone-parent families in Canada*, Catalogue no. 89-522E; 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**
   The Consumer Price Index (CPI) is 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–population ratio**
   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. **Mothers' participation rate**
   The number of mothers who were in the labour force during the reference period and who live in a dwelling with one or more never-married sons and/or daughters, expressed as a percentage of the total number of mothers living in dwellings with one or more never-married sons and/or daughters. Source: Statistics Canada, 1992, *Women in the Workplace*, Catalogue no. 71-534.

9. **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.

10. **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.

11. **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.

12. 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.

13. Educational attainment and labour force participation rates
Refers to the population aged 25 and over. Source: Statistics Canada, Labour Statistics Division.

14. Graduation rate
Source: Statistics Canada, 1999, Centre for Education Statistics, *Education in Canada,* Catalogue no. 81-229-XPB.

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

16. 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.

17. University/secondary school earnings ratio
The average annual earnings of those with university education are expressed as a percentage of the average annual earnings of those with upper secondary education for the population aged 45 to 64.

Education indicators, G-7 countries

Table 3.

18. Educational attainment
Percentage of the adult population aged 25 to 64 that has completed a certain level of education.

19. Participation rate in formal education
The total number of students aged 15 to 19 enrolled in formal education expressed as a percentage of the population aged 15 to 19. EQR

In upcoming issues

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

Postsecondary graduates and the labour market: Job requirements relative to education level

An analysis of the fields of study at specific levels of education that are associated with jobs that have requirements below education.

Holding their own: Employment and earnings of postsecondary graduates

An examination of the fortunes of younger workers based on the results of a longitudinal analysis of the early labour market outcomes of Canadian postsecondary graduates.

Graduates' earnings and the job-education match

An examination of the two important issues relating to transition from school to the labour market—earnings and the education–job skills match.

Factors influencing bachelor's graduates pursuing further postsecondary education

An analysis, using data from the National Graduates Surveys, of the patterns associated with the pursuit of further education.

Indicators of success for effective and efficient schools

An examination of how new initiatives from Statistics Canada's Centre for Education Statistics can be utilized to explore the efficiency and effectiveness of elementary and secondary schools. EQR

Cumulative index

This index lists all analytical articles published in *Education Quarterly Review*. Included are descriptions of education and education-related surveys conducted by Statistics Canada, provincial governments and institutions. The categories under which the articles appear are based on policy issues identified in the report *Strategic Plan (1997)*, released by the Centre for Education Statistics in November 1997 and available on the Internet at address **http:/www.statcan.ca/cgi-bin/downpub/freepub.cgi.**

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School transportation costs
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Federal participation in Canadian education
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Funding public school systems: A 25-year review
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Student flows, student mobility and transitions

Education indicators, interprovincial and international comparisons
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The search for education indicators
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Participation in pre-elementary and elementary and secondary education in Canada: A look at the indicators
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Who are the disappearing youth? An analysis of non-respondents to the School Leavers Follow-up Survey, 1995
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Relationships between education and the labour market

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Trends in education employment
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Survey of labour and income dynamics: An overview
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Earnings and labour force status of 1990 graduates
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