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CANADIAN SOCIAL TRENDS

FEATURES

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Looking after seniors: Who does what for whom?

by Susan Stobert and Kelly Cranswick

Surveys show the continuing willingness of Canadians to assist their older family and friends who need help because of illness or frailty. However, the growing size of the senior population, and particularly the rapidly increasing number of those in their eighties and nineties, raises the question of families' and volunteers' ability to provide the care needed to maintain a senior population independent in their own homes.

Recognizing the challenge of caring for seniors with long-term health problems, governments are searching for ways to support those Canadians who juggle many demands in order to provide care to their loved ones. It is necessary to establish who provides care to our aging population in order to better understand the consequences of caregiving and how best to assist caregivers. And the findings are important: for example, we often think of seniors as the receivers of care, but in fact older Canadians are also actively involved in caregiving.

This article will examine middle-aged (aged 45 to 64) and older (aged 65 and over) caregivers separately because the issues involved are quite different for each group. Generally speaking, the younger caregivers are working, in good health, have children of their own, and are providing care to someone who is older than themselves. As such, the psychological as well as practical dimensions of the relationship are quite different than those of a caregiving relationship between contemporaries.

Most middle-aged caregivers are looking after their parents

Over 1.7 million Canadian adults aged 45 to 64 — 16% of this age group — are providing informal care to almost 2.3 million seniors with a long-term disability or physical limitation. Most are looking after their own parents (67%) and their spouse's parents (24%). Many (24%) are providing help to close friends and neighbours.[1]

Although these middle-aged caregivers are just as likely to be men as women, the women dedicate almost twice as much time to their tasks — 29.6 hours per month, compared with 16.1 hours for men. Working outside the home does not significantly reduce the amount of time middle-aged people spend providing care; employed women still spend 26.4 hours a month and employed men 14.5 hours.[2]

One of the main reasons for the male–female disparity in care-hours is due to the nature of the tasks women

1. Each caregiver is providing help to an average of 1.3 seniors.
2. Three-quarters (77%) of male caregivers aged 45 to 64 reported that their main activity was working at a job or business; almost all (93%) worked 30 or more hours per week. The majority of female caregivers aged 45 to 64 years were also working (63%), most full-time (72%).

What you should know about this study

This article is based on Cycle 16 of the General Social Survey (GSS), "Aging and Social Support". The GSS is an annual telephone sample covering the population living in private homes in the 10 provinces. Approximately 25,000 respondents were randomly selected from a list of individuals aged 45 years and over, based on the sample frame of the Canadian Community Health Survey. Data were collected over an 11-month period from February to December 2002.

The 2002 GSS is the first time Statistics Canada has devoted an entire survey to the collection of detailed information on care provided to people aged 65 years and over. While the main objective of the 2002 GSS was to provide data on the aging population, the survey will also allow detailed analysis of characteristics of family and friends who provide care to seniors, characteristics of seniors receiving informal and formal care; links to broader determinants of health (such as income, education and social networks); and people's retirement plans and experiences.

Senior, older: aged 65 and over.

Middle-aged: aged 45 to 64.

Care receiver: Canadians 65 years and over who reported receiving assistance, in the past 12 months, with at least one task because of a long-term health problem.

Care provider: Canadians 45 years and over who reported providing assistance, in the past 12 months, with at least one task because of a long-term health problem of the care receiver.

Caregiving tasks: include duties inside the house (meal preparation and clean-up, house cleaning or laundry and sewing); duties outside the house (house maintenance and outside work); transportation (shopping for groceries or other necessities, providing transportation for banking and bill paying); or personal care (bathing, toileting, care of toe/fingernails, brushing teeth, shampooing and hair care or dressing).

are performing. They have more often adopted responsibility for keeping the household running smoothly; that is, they are doing housekeeping and helping with personal care. While men also help with these kinds of activities, they devote the majority of their time to tasks like household maintenance and transportation. In other words, the caregiving labour is divided along traditional gender lines, which may reflect the providers' level of comfort performing tasks that mirror their areas of competence in their own homes.

Less than one in five of these care providers (17%, or 305,000 of more than 1.7 million) reported that they received help themselves if they needed a break from their responsibilities. Since most were taking care of their parents or parents-in-law, the lion's share of the extra assistance (82%) came from inside the family — a sibling, spouse or child. However, 16% of respondents relied on paid help (either

Middle-aged women spend almost twice as much time as men providing care to a senior

Average time spent on providing informal care (hours per month)

	Caregivers aged 45 to 64			Caregivers aged 65 and over		
	Total	Men	Women	Total	Men	Women
Average age	53	53	53	72	72	72
Average time by persons						
Total hours	*22.9*	*16.1*	*29.6*	*27.9*	*20.9*	*32.9*
Inside activities (housekeeping, etc.)	13.2	6.4	19.9	16.1	9.4	20.8
Outside activities (house maintenance, etc.)	3.8	5.3	2.3	1.1	2.3	0.3
Transportation, etc.	2.8	3.1	2.6	5.6	6.1	5.2
Personal care	3.1	1.3	4.8	5.1	3.1	6.6
Average time by persons whose main activity is working						
Total hours	*19.9*	*14.5*	*26.4*	--	--	--
Inside activities (housekeeping, meal preparation, etc.)	11.4	5.2	18.8	--	--	--
Outside activities (house maintenance, yard work, etc.)	3.7	5.1	2.0	--	--	--
Transportation	2.4	2.8	2.0	--	--	--
Personal care	2.4	1.4	3.6	--	--	--

-- Small sample size; estimates not calculated.
Source: Statistics Canada, General Social Survey, 2002.

CST Only about one in five care providers get help when they need a break

Informal care provided to seniors because of long-term disability	Caregivers aged 45 to 64 '000	Caregivers aged 45 to 64 %	Caregivers aged 65 and over '000	Caregivers aged 65 and over %
People providing informal care to seniors	1,748	16	321	8
Male	861	49	133	41
Female	886	51	188	59
Marital status of caregivers				
Living common law	108	6	F	F
Married	1,255	72	218	68
Widowed	45	3	67	21
Divorced	158	9	17[E]	5[E]
Separated	45	3	F	F
Single (never married)	132	8	11[E]	3[E]
Total	*1,744*	*100*	*320*	*100*
Main activity of respondent in the past 12 months				
Working at a paid job or business	1,221	70	20[E]	6[E]
Looking for paid work	35[E]	2[E]	0	0
Going to school	F	F	F	F
Caring for children	23[E]	1[E]	F	F
Household work	116	7	34	11
Retired	247	14	245	77
Long-term illness	57	3	F	F
Other	38[E]	2[E]	16[E]	5[E]
Total	*1,745*	*100*	*319*	*100*
Person gets assistance if he/she needs a break	305	17	58	18
From whom does he/she receive assistance?				
Sister	83	27	F	F
Brother	63	21	F	F
Spouse	56	18	F	F
Daughter	26[E]	9	18[E]	31[E]
Son	22[E]	7	8[E]	14[E]
Friend or neighbour	36[E]	12	6[E]	11[E]
Formal help (paid or government)	50	16	12[E]	20[E]
Other family (includes in-laws)	41	13	7[E]	13[E]

[E] Use with caution.

F Too unreliable to be published.

Source: Statistics Canada, General Social Survey Cycle 16, 2002.

private or government) for back-up when they needed a respite.

Only a small minority of care providers describe their lives as very stressful — 13%, the same as their counterparts with no responsibilities to a senior. The proportion who believed that life was somewhat stressful was just about the same as well — 49% versus 46% of other 45- to 64-year-olds.

Over one third (34%) were also very satisfied with their lives in general, a slightly higher rate than that recorded by middle-aged Canadians who provided no informal care to seniors with long-term health problems. This may be linked to feeling that they control all of the decisions affecting their day-to-day lives (25%). Social science researchers have shown that "mastery" is an important factor in contributing to a person's positive outlook on life.

Although they seem to be coping quite well with their responsibilities, caregivers really want some help themselves. When they were asked to identify the most useful thing to allow them to continue providing help, the most common answer (51% of care providers aged 45 to 64) was "occasional relief or sharing of responsibilities." Given that less than one fifth of them are getting this kind of help now, this response seems quite heartfelt. Other types of help — such as information to improve their skills or about the nature of long-term illnesses, more flexible work arrangements and financial compensation — were also suggested by a substantial proportion of caregivers.

Most senior caregivers are looking after their spouses, friends and neighbours

Over one in 12 Canadian seniors — 321,000 — is looking after at least one of their contemporaries whose day-to-day activities are restricted by long-term disabilities or physical limitations. They are most often providing care to a spouse (25%), close friend (33%) or

neighbour (19%). The majority of them are women (59%), as one would expect of a population in which women outnumber men.

Senior women devote more time to caregiving activities than their male counterparts — 32.9 versus 20.9 hours per month — a gap greater than that between middle-aged caregivers. Being retired, men in this age group are now able to dedicate more time to these efforts than when they were working. They also spend a larger proportion of their caregiving hours on indoor tasks, perhaps because they are less vigorous than before, but women still dedicate most of their time to household tasks and personal care.

Few of these senior caregivers can rely on getting help if they need a break. Only 18% said someone else could take over their responsibilities to the care receiver should they themselves need, or want, some time off. For those who could call on someone else to relieve them, the help most often came from their own children, formal sources of help, or other family.

CST Care providers report the same stress levels as people who provide no care

	Persons aged 45 to 64 providing…		Persons aged 65 and over providing…	
	Informal care only	No care	Informal care only	No care
	%			
Would you describe your life as…				
Very stressful?	13	13	5[E]	6
Somewhat stressful?	49	46	29	25
Not very stressful?	27	28	37	37
Not at all stressful?	11	12	27	29
How satisfied are you with your life in general?				
Very satisfied	34	30	32	30
Satisfied	61	63	62	64
Dissatisfied, very dissatisfied	5	6	5[E]	4
Do you feel you have control in making decisions that affect your everyday activities?				
Control no or only a few decisions	10	12	6[E]	8
Control most decisions	65	58	48	45
Control all decisions	25	30	46	47

[E] Use with caution.

Source: Statistics Canada, General Social Survey, 2002.

CST Compassionate care benefits

The federal government expanded the Employment Insurance (EI) program to extend compassionate care benefits to a person who must be absent from work to provide care or support to a gravely ill family member. Benefits may be paid up to a maximum of six weeks to an employee looking after a loved one who is at risk of dying within 26 weeks. Unemployed persons on EI can also ask for this type of benefit. Benefits can be shared with other members of the applicant's family, but they also must be eligible and must apply for them.

Under the new program, a family member is defined as: your child or the child of your spouse or common-law partner; your wife/husband or common-law partner; your father/mother; your father's wife/mother's husband; the common-law partner of your father/mother.

Providing care or support to a family member means providing psychological or emotional support; arranging for care by a third party; or directly providing or participating in the care.

More information is available on the Social Development Canada Web site, at www.sdc.gc.ca.

Caregiver tax credit

Canada Revenue Agency (CRA) allows Canadians to claim deductions and credits for individuals supporting people with disabilities. For example, care could have been provided to parents, parents-in-law and grandparents. The caregiver amount is a non-refundable tax credit which reduces the amount of federal income tax paid.

For more information, consult the CRA Web site at www.ccra-adrc.gc.ca.

Their lifestyle seems no more stressful than that of seniors who are not providing informal care. Only one third (34%) described their lives as very or somewhat stressful, and one third (32%) said they were very satisfied with their life in general, rates that are effectively no different than those of seniors with no care-providing responsibilities. Almost half (46%) reported that they felt they controlled all the decisions that affect their daily activities. This rate is much higher than that for middle-aged caregivers, and may indicate that seniors were more often living in circumstances that obliged them to take decisions on their own.

The rewards and demands of caregiving

It is well-documented that caregiving can provide benefits not only for the receiver but also for those providing care. Asked about the intrinsic rewards associated with their duties, the vast majority of care providers responded positively. Between 80% and 90% feel that helping others strengthens their relationships with the care receiver, and repays some of what they themselves have received from others and from life. It is encouraging to learn that Canadians look upon these duties in a positive light, especially since looking after a frail senior can affect the caregiver in more negative ways.

For example, many middle-aged caregivers have had to change arrangements for social activities and for holidays in order to discharge their caregiving responsibilities. More than one third incurred extra expenses. In addition, a substantial number of middle-aged caregivers reported changing their work patterns, including working split shifts and reducing hours of work.

A caregiver's duties can also have physical consequences, which were twice as likely to be felt by women, regardless of their age. One in 10 middle-aged men reported that their sleep patterns had been disrupted because of their caregiving activities, compared to two in 10 women; similar proportions of men and women indicated that their health had been affected. The same gender differences were recorded among caregivers 65 years and over, as 13% of women and 7%[E3] of men reported disrupted sleep, and 16% of women and 7%[E] of men felt that caregiving had affected their health.

Summary

The results of GSS 2002 show that there are two main sources of unpaid, informal care for seniors with long-term disabilities or physical limitations: the first is middle-aged children helping to care for their parents, and the second is seniors who are looking after each other.

The average middle-aged caregiver is 54 years old and is looking after a parent or parent-in-law with a long-term disability or physical limitation. In contrast, the average older caregiver is 73 years old and is looking after a spouse, close friend or neighbour.

The impact of caregiving on those looking after seniors with long-term health problems is not inconsequential. The challenge is to offer support for the growing numbers of seniors who require both informal and formal services to remain autonomous.

3. [E] Use with caution.

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Does French immersion improve reading achievement?

by Mary Allen

This article has been adapted from "Reading achievement of students in French immersion programs," *Education Quarterly Review*, vol. 9, no. 4 (Statistics Canada Catalogue no. 81-003-XIE). It is available for purchase from the Statistics Canada Web site: www.statcan.ca/english/IPS/Data/81-003-XIE.htm

French immersion programs were introduced into Canadian schools during the 1970s in order to encourage bilingualism across the country. Thirty years later, immersion programs exist to various degrees in every province, providing an alternative education stream for many students.

This article uses data from the 2000 Program for International Student Assessment (PISA) to compare the reading achievement of Canadian 15-year-olds enrolled in immersion and non-immersion programs in English-language school systems in the 10 provinces. It compares reading scores in immersion programs to those in non-immersion programs by gender, and looks at the influence of family socio-economic status and parental education on reading scores. However, it does not measure the relative influence of these factors on reading performance.

Enrolment in French immersion differs widely by province

In 2000, while French immersion programs existed in English-language school systems in all 10 provinces, the percentage of 15-year-olds enrolled in

CST What you should know about this study

The Programme for International Student Assessment (PISA) is a collaborative effort among member countries of the Organisation for Economic Co-operation and Development (OECD) to regularly assess the achievement of 15-year-olds in three domains — reading literacy, mathematical literacy and scientific literacy — through a common international test.

Thirty-two countries participated in PISA 2000. In Canada, approximately 30,000 15-year-old students from more than 1,000 schools took part, a large sample to enable reliable national and provincial estimates.

The PISA 2000 survey included a direct assessment of students' skills through reading, mathematics and science tests as well as questionnaires collecting background information from students and school principals and from parents in the Youth in Transition Survey, administered simultaneously in Canada.

Reading literacy is defined in PISA as the ability to understand, use and reflect on written texts in order to achieve one's goals, to develop one's knowledge and potential, and to participate effectively in society. This definition goes beyond the notion that reading literacy means decoding written material and literal comprehension. Literacy involves the ability of individuals to use written information to fulfill their goals and function effectively. PISA 2000 employed about 140 items representing the kinds of reading literacy that 15-year-olds would require in the future.

In this article, 15-year-old French immersion students include those whose parents reported that the student was currently enrolled in an immersion program (i.e. where 25% or more of instruction is in French).

these programs ranged widely, from 2% in British Columbia to 32% in New Brunswick.

Students may enter French immersion programs at different times. Many children begin immersion programs when they enter school in kindergarten or grade 1 while others start midway through elementary school and still others start at later grades. According to PISA, in most provinces, the majority of 15-year-old students had entered a French immersion program before grade 4; the exceptions were those in Nova Scotia and New Brunswick, with minorities of 21% and 39%, respectively, entering French immersion before grade 4.

One of the most noticeable characteristics of French immersion programs is the over-representation of girls. While the proportion of girls and of boys in non-immersion programs is roughly equal in all provinces, girls

CST Percentage of students in English-language school systems who are currently enrolled in French immersion programs

	% currently enrolled in French immersion	% currently enrolled in immersion who started before grade 4	% of students who are girls	
			Immersion	Non-immersion
Newfoundland and Labrador	7	57	64	50
Prince Edward Island	20	59	58	51
Nova Scotia	12	21	58	49
New Brunswick	32	39	61	46
Quebec	22	74	52	48
Ontario	6	57	64	51
Manitoba	6	90	60	48
Saskatchewan	3	87	65	48
Alberta	4	80	59	47
British Columbia	2	55	61	49

Source: Statistics Canada, Programme for International Student Assessment, 2000.

CST Effect size

Effect sizes are one method for standardizing and comparing differences between groups. An effect size compares the difference between groups to how different the people *within each group* are from each other. The effect size used in this paper, Cohen's *d*, is calculated by dividing the difference between the group means (e.g. average reading scores of immersion and non-immersion students) by the pooled standard deviation of the groups.[1]

Previous research using data from PISA 2000 has found significant effect sizes in the small to medium range (0.2 to 0.5).[2] Effect sizes less than 0.2 are considered trivial, as they suggest that less than 1% of the variation in the variable being studied can be explained by group membership. Although still small, an effect size of 0.2 represents the minimum difference that is interpretable. An effect size greater than 0.5 in the context of student characteristics or performance in PISA is large.

1. Cohen, J. 1988. *Statistical Power Analysis for the Behavioural Sciences* (2nd edition). Hillsdale, NJ: Lawrence Erlbaum Associates.

2. Bussière, P., F. Cartwright, R. Crocker, X. Ma, J. Oderkirk, Y. Zhang. 2001. *Measuring up: The Performance of Canada's Youth in Reading, Mathematics and Sciences, OECD PISA Study — First Results for Canadians Aged 15* (Statistics Canada Catalogue no. 81-590-XIE); Organisation for Economic Co-operation and Development (OECD). 2001. *Knowledge and Skills for Life — First Results from the OECD Programme for International Student Assessment (PISA) 2000*. OECD: Paris, France. www.pisa.oecd.org/knowledge/download.htm.

substantially outnumber boys in immersion programs, comprising about 60% of the immersion students in all provinces except Quebec.

French immersion students outperform non-immersion students in the PISA reading assessment

In every province except Manitoba, students in French immersion programs performed significantly better in reading than students in non-immersion programs. While nearly all immersion students other than Manitobans wrote the PISA assessment in English, about one quarter of immersion students in Manitoba were tested in French. However, language of the test assessment alone did not account for the Manitoba results. Among those Manitoba students who took the test in English, there was still no significant difference in the reading achievement of non-immersion and immersion students.

The over-representation of girls in French immersion programs may contribute to the higher reading performance of students in immersion programs as girls outperform boys in reading. However, this explains only a small part of the high performance of French immersion students. According to PISA, on average, both boys and girls in immersion outperform their counterparts in non-immersion programs (except in Manitoba).

French immersion students are more likely to be from high socio-economic backgrounds

In general, students in French immersion programs come from higher socio-economic backgrounds than non-immersion students. One way to determine the socio-economic status of students is in terms of the socio-economic status of parental occupations and by looking at what proportion of students are from families in the top quartile of the parental occupation scale.[1] In fact, French immersion students are more likely to be from families in the top socio-economic quartile in all provinces, but this advantage is not statistically significant in Quebec, Ontario, Manitoba, Saskatchewan and British Columbia.[2]

Other studies have shown a strong relationship between socio-economic status and student achievement. Therefore, one might expect that differences in family socio-economic status contribute to the high reading achievement of students in French immersion programs. However, the advantage held by French immersion students is not so straightforward.

Looking only at students from families in the top quartile of socio-economic status, there is still a substantial difference in the achievement of students in immersion and non-immersion programs in many provinces. These differences are statistically significant in Newfoundland and Labrador, Prince Edward Island, New Brunswick, Alberta and British Columbia.[2]

CST Fifteen-year-olds in immersion programs have higher reading scores in most provinces

	Reading achievement		
	Immersion	Non-immersion	
	Score		Effect size[1]
Newfoundland and Labrador	**608**	**510**	**1.21**
Prince Edward Island	**558**	**509**	**0.57**
Nova Scotia	**567**	**517**	**0.60**
New Brunswick	**550**	**495**	**0.63**
Quebec	**566**	**537**	**0.32**
Ontario	**570**	**533**	**0.42**
Manitoba	533	533	0.00
Saskatchewan	**570**	**529**	**0.54**
Alberta	**601**	**548**	**0.64**
British Columbia	**610**	**537**	**0.88**

1. Cohen's *d*, which compares the difference between groups to the difference between people within each group.

Note: Items in bold indicate significant differences between immersion and non-immersion students with $p<0.05$ and effect size>0.20.

Source: Statistics Canada, Programme for International Student Assessment, 2000.

1. The PISA International Socio-Economic Index of Occupational Status (ISEI) was derived from student responses on parental occupation. The index captures the attributes of occupations that convert parents' education into income. For more information on the methodology, see Ganzeboom, H.B.G., P. de Graaf and D.J. Treiman with J. De Leeuw. 1992. "A standard international socio-economic index of occupational status," *Social Science Research* 2, 1: 1-56. The PISA ISEI is based on either the father's or the mother's occupation, whichever is the higher.
2. The test for statistical significance for French immersion students is very sensitive to the small sample sizes of French immersion students in this study. The effect of small sample sizes is further amplified when only the top socio-economic quartile of students is considered. Although there are large apparent differences in reading scores between French immersion and non-immersion students among the top quartile, these differences are not statistically significant in several provinces because of the small sample of French immersion students in the top socio-economic quartile.

CST French immersion students are more likely to be from the top quartile of family socio-economic status

	Students in top quartile of family socio-economic status		
	Immersion	Non-immersion	
	% of all 15-year-old students		Effect size[1]
Newfoundland and Labrador	**41**	**13**	**0.67**
Prince Edward Island	**26**	**17**	**0.23**
Nova Scotia	**34**	**18**	**0.37**
New Brunswick	**31**	**16**	**0.36**
Quebec	36	27	0.18
Ontario	35	27	0.19
Manitoba	21	18	0.07
Saskatchewan	26	19	0.18
Alberta	**43**	**25**	**0.39**
British Columbia	27	24	0.07

1. Cohen's *d*, which compares the difference between groups to the difference between people within each group.

Note: Items in bold indicate significant differences between immersion and non-immersion students with $p<0.05$ and effect size>0.20.

Source: Statistics Canada, Programme for International Student Assessment, 2000.

CST Among students in the top quartile of family socio-economic status, reading achievement is significantly higher for French immersion students than non-immersion students in half the provinces

	Students in top quartile of family socio-economic status		
	Reading achievement		
	Immersion	Non-immersion	
	Score		Effect size[1]
Newfoundland and Labrador	**629**	**559**	**0.87**
Prince Edward Island	**584**	**546**	**0.44**
Nova Scotia	583	561	0.29
New Brunswick	**566**	**543**	**0.28**
Quebec	594	574	0.22
Ontario	591	570	0.27
Manitoba	542	565	0.33
Saskatchewan	578	554	0.37
Alberta	**617**	**583**	**0.45**
British Columbia	**635**	**567**	**0.91**

1. Cohen's *d*, which compares the difference between groups to the difference between people within each group.

Note: Items in bold indicate significant differences between immersion and non-immersion students with $p<0.05$ and effect size>0.20.

Source: Statistics Canada, Programme for International Student Assessment, 2000.

French immersion students are more likely to have parents with a postsecondary education

French immersion students were significantly more likely to have a parent with a postsecondary education in all provinces except Quebec, Ontario, Manitoba and British Columbia. As with family socio-economic background, these differences do not entirely explain the high reading achievement of students in French immersion programs. Among students who have a parent with a postsecondary education, French immersion students had significantly higher reading scores than non-immersion students did in all provinces except Quebec and Manitoba.

Many factors influence differences in reading scores between French immersion and non-immersion students

In every province, except Manitoba, French immersion students programs performed significantly better in the PISA reading assessment than their counterparts in non-immersion programs. In fact, in all 10 provinces, students in French immersion programs performed at levels equal to or better than the Canadian national reading score average (534).

A number of factors may contribute to the high achievement of 15-year-olds in French immersion. Parents of immersion students are generally from higher socio-economic backgrounds and are more likely to have a postsecondary education (factors related to high student performance). There is also a higher proportion of girls in immersion programs.

However, when gender, socio-economic background and parents' education are each taken into account (individually), French immersion students still outperform their counterparts in non-immersion programs. No one of these factors alone explains the high performance of these students.

Among students with a postsecondary-educated parent, French immersion students have higher reading scores then non-immersion students in most provinces

	Students with at least one parent with a postsecondary education					
	As a percent of all 15-year-old students			Reading achievement		
	Immersion	Non-immersion		Immersion	Non-immersion	
	%		Effect size[1]	Score		Effect size[1]
Newfoundland and Labrador	**83**	**57**	**0.60**	**607**	**529**	**0.97**
Prince Edward Island	**74**	**60**	**0.29**	**567**	**524**	**0.51**
Nova Scotia	**77**	**59**	**0.39**	**575**	**532**	**0.52**
New Brunswick	**70**	**53**	**0.35**	**560**	**512**	**0.56**
Quebec	73	65	0.17	571	555	0.18
Ontario	77	68	0.20	**577**	**546**	**0.36**
Manitoba	61	56	0.11	541	545	0.05
Saskatchewan	**71**	**58**	**0.27**	**571**	**540**	**0.42**
Alberta	**86**	**63**	**0.54**	**606**	**561**	**0.54**
British Columbia	63	64	0.02	**610**	**550**	**0.74**

1. Cohen's *d*, which compares the difference between groups to the difference between people within each group.

Note: Items in bold indicate significant differences between immersion and non-immersion students with $p<0.05$ and effect size>0.20.

Source: Statistics Canada, Programme for International Student Assessment, 2000.

Instead, other factors may contribute to the high reading performance of French immersion students. Firstly, more information is needed to understand how student environment contributes to how students live and learn. French immersion programs may be more readily available in communities that are more affluent.

Moreover, selection and attrition in French immersion programs may influence reading scores. Schools and parents may screen students to ensure their readiness for immersion programs. This may mean that students who have less developed language skills are not encouraged to enter immersion programs, especially early immersion. This may be one reason for the unequal gender distribution in these programs, as girls tend to develop language skills earlier than boys do and may therefore demonstrate a greater aptitude for language learning when they are considered for entry into early immersion programs.

In addition, there may also be a tendency for less-skilled and less well-adjusted students to transfer out of immersion programs if there is a concern about their ability to learn in the second language. By the time students are assessed by PISA, at age 15, this academic attrition may be significant.

It is also possible that French immersion programs assist student learning in other ways by providing an enriched learning environment. There may be a positive peer effect when students with high potential for achievement are grouped together. Other research has investigated the possibility that bilingualism itself contributes to the learning of students.[3] Nevertheless, a better understanding of the reading achievement of French immersion students can be found by further exploration of the home and school environments, and community, family and student characteristics.

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3. Cummins, J. 1998. "Immersion education for the millennium: What have we learned from 30 years of research on second language immersion?" in M.R. Childs and R.M. Bostwick (eds.). *Learning Through Two Languages: Research and Practice*. Second Katoh Gakuen International Symposium on Immersion and Bilingual Education. p. 34-47. Katoh Gakuen, Japan.

Immigrants in demand: Staying or leaving?

by Heather Dryburgh and Jason Hamel

Since the 1990s, one objective of Canada's immigration program for landed immigrants[1] has targeted economic immigrants with skills and credentials that are in demand in Canada. The gain in skilled immigrants to Canada is clear: the number of skilled immigrants gaining permanent residency in Canada has increased significantly during this period.[2] In addition, many immigrants in the family reunification and refugee protection programs come to Canada highly skilled.

Although immigrants came to Canada with a wide range of occupations and skills, this article focuses on three in-demand occupation groups:[3] workers in information technology (IT), physicians and health care managers, and trades workers. These in-demand groups were selected for this study because of their significant contribution to the Canadian economy, and the health and well-being of Canadians, and because they all depend to some extent on migrants from other parts of the world to augment the pool of workers.[4]

The high demand for workers in information technology, physicians and health care managers and trades occupations through the 1990s suggests that new immigrants intending to work in these occupations should have fared well in Canada.[5] However, growing evidence indicates that even some highly skilled workers are facing employment barriers, which may increase their likelihood of emigrating.[6] Despite positive Canadian experiences, those with strong marketable skills and who meet the criteria of immigrant selection of other countries may be enticed to return to their country of origin or to go to other countries.

This article uses longitudinal data on landed immigrants to Canada from the Longitudinal Immigration Database (IMDB). It looks at what happens to landed immigrants who arrived between 1990 and 1998 and who were intending to work in in-demand occupations as IT workers, physicians and health care managers or trades workers. Their labour market experiences are examined between the time they started filing taxes and 2000. The number of in-demand immigrants who eventually leave is estimated using taxfiler information. Possible reasons why they emigrate are explored by looking at the demographic characteristics of immigrants, the resources they bring to Canada, and their Canadian experiences.

Only a small percentage of immigrants emigrate

It is a life-changing decision to immigrate to another country, and in some cases, the move may not work out well. For many different reasons, some immigrants may decide to return to their home country, while others may decide to move to a different country. When in-demand immigrants emigrate, there is a real loss of needed skills to Canada.

According to the IMDB, 4.3% of all immigrants who landed during the study period and who filed taxes during the 1990s had emigrated by 2000.

1. The term "landed immigrant" refers to immigrants who have been granted permanent residency in Canada. These terms are used interchangeably in this article.
2. Citizenship and Immigration Canada. 2003. *Facts & Figures 2002: Immigration Overview* (Catalogue no. MP43-333/2003E).
3. There are certainly other occupation groups in high demand, but this article focuses on these three. Other in-demand occupations are grouped with the "all others" group for comparison.
4. In-demand occupations not among the three groups above as well as those not in demand are included in the "all others" group.
5. Statistics Canada. 2003. "The changing profile of Canada's labour force." *2001 Census: Analysis Series* (Statistics Canada Catalogue no. 96F0030XIE2001009).
6. Najm, N.A. 2001. *The Devaluation of Foreign Credentials in Canada*. Strategic Research and Analysis, Canadian Heritage. Reference: SRA-625; Boyd, M. and D. Thomas. 2001. "Match or mismatch? The employment of immigrant engineers in Canada's labour force." *Population Research and Policy Review*, 20, 1/2: 107-133.

CST What you should know about this study

The Longitudinal Immigration Database (IMDB) is a database combining immigration and taxation records. This study looks at immigration landing years 1990 to 1998 and tax-filing behaviour from 1990 to 2000. Statistics Canada manages the IMDB on behalf of a federal-provincial consortium led by Citizenship and Immigration Canada. Only landed immigrants over age 17 who filed at least one tax return between 1990 and 1998 and who stated an intended occupation are included in this article, except where otherwise noted.

The IMDB only includes information on intended occupations at landing in Canada and not upon the actual occupation immigrants are employed in. Intended occupation is usually the occupation the immigrant practised before coming to Canada. Although a mismatch between the intended and the actual occupation may be one of the reasons why some immigrants emigrate, this cannot be determined from the IMDB. While the majority of immigrants have declared an intended occupation (74%), 84% of the rest (homemakers, retirees, students) were admitted through the family and other economic classes.

Measuring emigration

In this article, the emigration of immigrant taxfilers is measured. Another study estimated that about 10% of immigrants who entered Canada between 1991 and 1996 emigrated from Canada during those years.[1] Emigration reported in this article is lower because only emigrant taxfilers are included, and those who may have emigrated before filing a tax return (non-taxfilers) are excluded, so total emigration of all immigrants would be higher. Higher numbers are found in a study of the emigration of immigrants from the United States.[2] From the IMBD, it is not possible to determine whether emigration is return migration to the immigrant's country of origin or to a third country.

Many immigrants who emigrate report doing so on their tax return. However, others who emigrate simply stop filing tax returns in Canada and don't indicate that they have emigrated. Emigrants may stop filing taxes because of death or because of low income. These cases are not included in the counts of emigrants. For the remainder of those who have stopped filing taxes for at least two years by 2000, they are identified as emigrants if all of their landing group (family or extended family) have stopped filing taxes at the same time. Emigration is expressed as the percentage of all immigrant taxfilers in the period of interest who emigrated.

Found employment quickly: indicates how many immigrants filed a tax return with employment earnings or self-employment income by a year after they landed in Canada.

Stability of earnings: indicates those who filed taxes with employment earnings or self-employment income for each consecutive year from the year they first filed until 1998.

Employment insurance benefits and **social assistance benefits**: indicates whether, at any time since landing, the immigrant has claimed these benefits or not.

Immigrant classes

Family: applicants landing to reunify their family.

Economic

- *Business*: principal applicants who are entrepreneurs, self-employed or investors.
- *Skilled worker*: principal applicants who landed in Canada based on their education, work experience, knowledge of official languages and other criteria.
- *Other economic*: spouses or dependents of skilled workers or business class applicants and assisted relatives not entering in the family class.

Refugees: sponsored refugees, or refugee claimants from abroad or in Canada.

Other: primarily retired immigrants and those in the live-in caregiver program.

1. Michalowski, M. and C. Grenier. 2002. *Who Is Staying and for How Long: Re-migration of Canada's Immigrants in the 1990s.* Paper presented at the Canadian Population Society Annual Meeting, May 30-June 1, 2002, Toronto.
2. Warren, R. and E. Percy Kraly. 1985. "The elusive exodus: Emigration from the United States." *Population Trends and Public Policy Occasional Paper*, no. 8. Population Reference Bureau: Washington, D.C.

Emigration was highest for immigrant physicians and health care managers and IT workers

Immigrant physicians and health managers were the most likely of the in-demand immigrants to emigrate (11.7%), followed by immigrant IT workers (6.9%). Those immigrants who were not in one of the three in-demand occupation groups were less likely to emigrate (4.1%). Immigrant trades workers were even less likely to emigrate, with only 3.0% doing so. These differences between in-demand occupation groups suggests that other characteristics of in-demand immigrants may also play a role in emigration decisions.

Trades workers have quite different education and official language proficiency than IT workers or physicians and health care managers. IT workers and physicians and health care managers were highly educated

CST Occupations in demand

Information technology (IT) occupations[1]

IT workers are crucial in the shift towards the new economy.[2] Some argue that these highly skilled workers are the artisans of the emerging technology-based information society.[3] In 2000, the contribution to the Gross Domestic Product of the Information and Communications Technologies (ICT) sector in Canada was 6%, a significant increase from 4% in 1997.[4] The 2001 Census showed that almost 3% of total employment in Canada was in IT-related occupations and, of those 387,500 IT workers, about 15%, or over 60,000, arrived in Canada in the 1990s.[5]

During the 1990s, there was strong international competition for IT workers. Many Organisation for Economic Co-operation and Development (OECD) member countries had active recruitment programs for IT workers. The Canadian government developed an Innovation Strategy that identifies the need to strengthen the IT labour force in Canada in part through attracting immigrants with IT qualifications and intentions to work in IT occupations. Between 1990 and 1998, 60,900 immigrants, primarily from Asia and Europe, landed in Canada with the intention of working in IT occupations. More came in the latter half of this period than in the first half.

Physicians and health care managers[6,7]

Health is a top concern for Canadians, as recent polls have indicated. Shortages of physicians and other health professionals have prompted negotiations with professional associations to expedite the accrediting of immigrant physicians. To take one example, Quebec recently has made efforts to facilitate accreditation of new immigrants with degrees and experience in health-related domains from abroad into health occupations in the province. In the period 1990 to 1998, 3,965 family physicians, physician specialists and health managers became permanent residents in Canada. Unlike IT workers, a larger percentage of these immigrants landed in Canada in the early nineties than the mid- to late nineties.

Trades occupations[8]

Construction activity in Canada has increased over the last few years, and, in certain trades, shortages of workers are commonplace. Historically, the construction trades relied on immigrants for workers, notably immigrants from Portugal and Italy. More recently, the majority of trade workers came from Europe, primarily from Poland and Portugal. Between 1990 and 1998, 17,995 immigrants landed in Canada intending to work in the trades. Over one quarter of these immigrants landed in 1990, with declining proportions over recent years. Relatively few trades workers landed in 1997 and 1998.

Regulated occupations

In Canada, provincial and territorial legislation regulate some occupations to protect public health and safety. Regulated occupations make up 20% of the workforce. Before a person can work in one of those regulated occupations, a provincial or territorial body must recognize that person's qualification. The regulatory bodies determine the conditions for admittance to those occupations, evaluate applicants' qualifications and issue licences to practice. The process varies among provinces and territories and among occupations. Typically, persons must wait until they arrive in Canada to have their qualifications recognized and receive a licence. Many of the in-demand occupations are regulated.

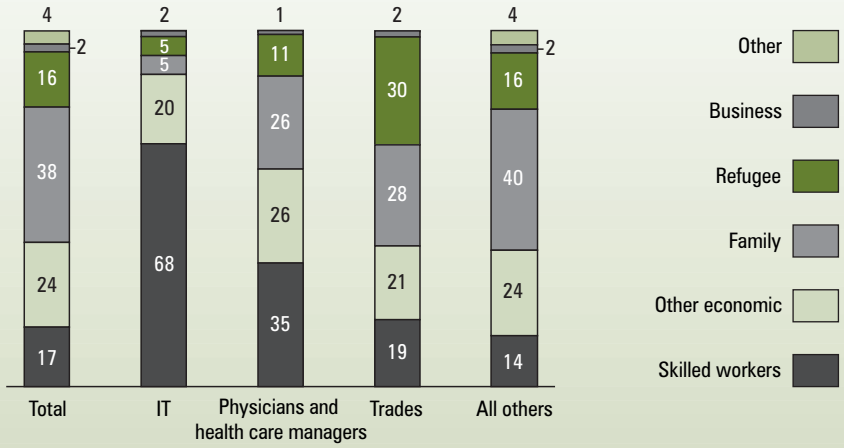
1. Information technology (IT) workers include: computer engineers, computer programmers, computer systems analysts, electrical and electronics engineering technologists and technicians, electrical and electronics engineers, electronic service technicians and graphic designers and illustrators.
2. Downie, R., H. Dryburgh, J. McMullin and G. Ranson. 2004. "A profile of information technology employment in Canada." *Workforce Aging in the New Economy (WANE) International Report*, no. 1. www.wane.ca/PDF/IR1.pdf (accessed June 16, 2004).
3. Castells, M. 2000. *The Rise of the Network Society*. Blackwell Publishers: Oxford.
4. Statistics Canada. 2003. *Innovation Analysis Bulletin* (Statistics Canada Catalogue no. 88-003-XIE. vol. 4, no. 3).
5. Habtu, R. 2003. "Information technology workers." *Perspectives on Labour and Income* (Statistics Canada Catalogue no. 75-001-XIE, vol. 4, no. 7).
6. Physicians and health care managers include general practitioners and family physicians, specialists and health care managers.
7. Health care managers include occupations primarily concerned with planning, organizing, directing and controlling the delivery of health care services, such as chief of anaesthesia, chief of medical staff, home care program co-ordinator, medical clinic director, nursing director, radiotherapy services manager and speech language pathology director. Excluded are senior administrators in medicine and health, which are included in other occupations.
8. Trades occupations include: blacksmiths and die setters, boilermakers, bricklayers, cabinetmakers, carpenters, electricians, floor covering installers, gas fitters, glaziers, insulators, ironworkers, painters and decorators, plasterers, drywall installers and finishers and lathers, plumbers, roofers and shinglers, sheet metal workers, steam fitters, pipefitters and sprinkler system installers, structural metal and platework fabricators and fitters, tilesetters, welder and related machine operators.

CST Economic classes of immigrants are most likely to emigrate

	Intended occupation group									
	Total		IT		Physicians and health care managers		Trades		All others	
	Number of immigrant taxfilers	% of taxfilers who emigrated	Number of immigrant taxfilers	% of taxfilers who emigrated	Number of immigrant taxfilers	% of taxfilers who emigrated	Number of immigrant taxfilers	% of taxfilers who emigrated	Number of immigrant taxfilers	% of taxfilers who emigrated
Total	1,100,160	4.3	47,645	6.9	3,160	11.7	15,640	3.0	1,000,725	4.1
Landing year										
1990	113,790	7.0	2,540	10.4	405	18.0	4,160	4.2	104,380	6.8
1991	132,865	5.6	2,380	12.5	445	10.2	3,285	3.2	124,650	5.4
1992	142,740	5.2	2,750	12.7	400	16.5	2,110	3.1	134,640	4.9
1993	143,020	5.1	4,150	12.3	465	15.9	1,605	2.7	133,560	4.7
1994	119,425	5.7	5,000	12.7	310	13.8	1,090	2.8	110,305	5.2
1995	113,910	4.1	6,020	9.3	310	10.5	1,015	1.8	104,275	3.7
1996	117,190	2.8	7,380	5.1	310	5.1	855	1.2	106,315	2.6
1997	118,345	1.7	8,865	2.2	285	5.2	830	1.3	102,580	1.6
1998	98,880	0.8	8,555	1.1	225	2.7	695	1.3	80,005	0.8
Age										
18-24	190,980	3.2	1,890	5.5	--	--	1,730	1.5	186,645	3.2
25-34	440,005	4.6	27,560	7.7	1,310	13.2	7,710	3.2	396,830	4.3
35-44	278,995	4.8	14,965	6.0	1,365	11.6	4,540	3.0	244,615	4.6
45-54	111,840	4.4	3,010	4.5	370	7.9	1,260	3.7	97,565	4.1
55-64	72,755	4.3	220	--	95	--	385	--	69,580	4.2
65+	5,585	4.3	--	--	--	--	--	--	5,490	4.3
Sex										
Men	558,530	4.5	39,050	6.9	2,060	12.2	15,385	3.0	483,000	4.2
Women	541,630	4.1	8,595	6.8	1,100	10.9	255	--	517,725	4.1
Education										
0-9 years	197,325	2.5	225	--	--	--	4,675	3.8	185,870	2.4
10-12 years	304,630	3.0	1,470	3.5	--	--	3,715	2.1	290,085	2.9
13 or more years	114,830	4.7	2,830	6.3	85	--	955	2.8	108,535	4.7
Trade certificate	119,640	3.8	3,045	5.1	--	--	4,180	3.0	109,405	3.7
Non-university diploma	90,050	4.5	4,640	5.3	60	--	1,400	2.6	81,385	4.4
Bachelor's degree	211,980	6.0	26,355	5.7	1,550	11.9	650	2.9	175,625	6.0
Master's degree	47,515	10.4	7,400	11.9	855	12.4	60	--	38,035	10.2
Doctorate	14,185	13.3	1,685	14.7	525	12.2	--	--	11,780	13.2
Last permanent residence										
North America	27,435	14.1	830	17.4	135	25.2	230	7.3	25,885	13.9
Europe	220,430	4.6	16,575	6.2	1,125	13.1	8,690	3.8	190,750	4.5
Asia	564,785	4.3	19,600	7.4	705	9.0	1,905	1.0	519,710	4.1
Middle East	73,060	5.7	4,450	5.7	250	11.2	1,550	2.6	63,260	5.6
Africa	82,585	2.7	3,730	5.7	765	10.2	580	2.7	75,945	2.4
Caribbean and Guyana	70,480	0.9	675	3.1	60	--	1,760	0.8	67,650	0.9
South and Central America	48,930	2.6	1,185	7.4	85	--	700	2.4	46,155	2.4
Oceania, Australia and other	12,455	6.5	590	11.7	40	--	220	--	11,365	6.1
Official language ability										
English only	615,145	5.0	33,805	7.4	2,415	12.7	6,705	3.0	557,545	4.8
French only	50,030	4.1	2,870	5.4	155	--	745	5.9	45,480	3.9
English and French	52,235	7.9	5,960	7.9	280	11.8	435	5.6	44,600	7.8
Neither	381,915	2.8	5,010	2.9	310	9.0	7,755	2.5	353,025	2.7
Immigrant class[1]										
Family	399,495	2.2	2,390	5.2	685	8.4	4,385	1.5	389,495	2.2
Business	40,995	9.7	640	10.9	--	--	240	7.9	20,365	9.5
Skilled workers	188,985	6.6	32,735	7.2	1,235	13.8	2,900	5.1	151,910	6.4
Other economic	243,600	7.6	9,360	6.6	815	11.3	3,155	5.8	221,645	7.8
Refugee	187,710	1.0	2,475	3.6	380	12.4	4,905	1.0	178,455	0.9
Other	38,515	5.1	--	--	--	--	--	--	38,060	5.2

1. There are 860 taxfilers whose immigrant class is "unknown." These cases are not included in the counts for immigrant class.
-- Too few cases to report.
Source: Statistics Canada, Longitudinal Immigration Database.

CST Immigrant class composition differs for each intended occupation



Note: Includes all immigrants over age 17 who landed in Canada between 1990 and 1998 except for the 925 who had an unknown immigrant class.
Source: Citizenship and Immigration Canada, Field Operations Support System.

and predominantly English-speaking. Trades workers, on the other hand, tended to have trade certificates or high school or less education, and almost half were not able to speak either of Canada's official languages. Although all three in-demand occupational groups were male-dominated, immigrants intending to work in trades occupations far exceeded the others, being 98% men.

In all occupation groups, immigrants who had arrived in 1990 were more likely to have emigrated by 2000 than immigrants who had arrived in 1995. This pattern may reflect the fact that earlier immigrants have a longer period in which to assess their situation and choose to leave Canada than immigrants who have landed more recently.

Economic immigrants were most likely to emigrate

Immigrants to Canada in the 1990s had to meet certain criteria to be admitted in the skilled worker class. The points-based system used for skilled workers awarded points for education levels, official language ability and occupational skills, as well as requiring funds for immigrants to establish themselves in Canada. Likewise, business class immigrants — entrepreneurs, investors and self-employed persons —were required to bring extensive business skills and capital to gain landed immigrant status in the country.

Many immigrants intending to work in IT or trades or in health care arrived in the skilled worker class of immigrants. But many also entered as family, other economic or refugee class intending to work in these in-demand occupations. Notably, about 30% of trades workers who landed in Canada between 1990 and 1998 did so as refugees, and a further 28% landed as family class immigrants. Only one fifth of trades workers landed in Canada under the skilled worker class, compared with two-thirds of IT workers and one third of physicians and health care managers.[7,8]

Skilled workers and business class immigrants were the most likely to emigrate. This was true for each of the in-demand occupational groups. The relationship between high skill levels and emigration can be seen when looking at emigrants' education and language competencies. Those with higher education and official language ability were more likely to emigrate than those without. For example, since trades workers were less likely to have a university education, they were also less likely to emigrate than IT workers, physicians and health care managers.

Immigrants from the United States were most likely to emigrate

Immigrants who had last resided in the United States were the most likely to emigrate compared with immigrants from other parts of the world. This tendency was equally true across both in-demand and other occupation groups. Immigrants who last resided in Oceania, Australia and Other were the second most likely to emigrate, regardless of occupation group.

In-demand immigrants who found work quickly were more likely to emigrate

In-demand immigrants who found employment quickly[9] were more likely to emigrate than the average for their occupation group. In contrast, among immigrants in the other occupational group, those who found work quickly were less likely to emigrate than those who did not. This suggests that finding work early was a good reason for staying in Canada for immigrants, but may not have been enough for in-demand immigrants.

7. This paragraph refers to all immigrants over age 17 that landed in Canada between 1990 and 1998 and is not restricted to taxfilers.
8. Physicians were barred from entering under the skilled worker program until 2002. They could have applied using another intended occupation such as medical technologist or another science occupation.
9. Filing a tax return with employment earnings or self-employed income by the first year after landing is used as an indicator of finding employment quickly.

CST In-demand immigrants who found employment quickly are more likely to emigrate

	Intended occupation group				
	Total	IT	Physicians and health care managers	Trades	All others
Total number of taxfilers	1,100,160	47,645	3,160	15,640	1,000,725
	% immigrant taxfilers who emigrated				
Total	4.3	6.9	11.7	3.0	4.1
Found employment quickly[1]	4.1	7.1	13.4	3.2	3.9
Received social assistance	1.3	4.2	8.0	1.7	1.2
Received employment insurance	2.4	6.2	8.8	2.4	2.2
Stable employment earnings[2]	1.8	5.1	4.5	0.9	1.6

1. Filed taxes with employment earnings or self-employed income by the first year after landing.
2. Filed taxes with employment or self-employment earnings each year after first filing taxes up to 1998.
Source: Statistics Canada, Longitudinal Immigration Database.

Regardless of occupation group, immigrants who received social assistance or employment insurance were less likely to emigrate. In general, trades workers were more likely to have received social assistance or EI benefits than IT workers, physicians and health care managers and workers in other occupation groups. Over half of immigrant trades workers had received EI and about one third had received social assistance at some time. This may partly explain why they were less likely to emigrate than immigrants who intended to work in other in-demand occupations. As moving to another country is often an expensive proposition, those immigrants who have received social assistance or employment insurance may be less likely to have the financial resources for another international move.

Emigration of IT workers and physicians and health care managers were lower for those with stable earnings

IT workers were much more likely than all other occupational groups to have had stable employment. On the other hand, trades workers were much less likely to have experienced stable employment, a fact which is also reflected by higher percentages of those who had received EI or social assistance benefits.

For all occupational groups, stable employment is clearly a factor in whether or not to emigrate. A smaller percentage of those with stable employment emigrated in all groups. Although trades workers were less likely to have stable employment, and were less likely to emigrate than the other in-demand occupations, those who did have stable employment were even less likely to emigrate that those who did not.

Summary

Canada has attracted high demand immigrants between 1990 and 1998, and only a small percentage of these immigrants decided to emigrate. Immigrants intending to work in trades tended to remain in Canada, whereas others intending to work as physicians, health care managers and IT workers were more likely to emigrate. For the small number who did emigrate, the decision appears to be related to the relative lack of stable employment, and having the resources to facilitate moving again. There was also a relationship between higher resources — skills and education — and emigration: those who were skilled and highly educated were more likely to emigrate. Those intending to work as physicians and health care managers and IT workers predominantly landed in Canada as skilled workers or other economic class immigrants, both immigrant classes requiring high resource levels and with a high likelihood of emigration. In comparison, a large proportion of trades workers landed as refugees, the immigrant class least likely to emigrate.

CST

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Class of 2000 — Student loans

by Mary Allen and Chantal Vaillancourt

This article has been adapted from a section of "Class of 2000: Profile of postsecondary graduates and student debt," *Education, Skills and Learning – Research Papers*, no. 16, 2004 (Statistics Canada Catalogue no. 81-595-MIE2004016). It is available free of charge from the Statistics Canada Web site: www.statcan.ca/english/IPS/Data/81-595-MIE2004016.htm.

Students finance their education in a variety of ways including employment income, savings, family support, scholarships, and loans from government and private sources. Although student loans are not the most frequently cited source of financial support for postsecondary students, they are an important source of funding for those who do borrow.[1]

About half of college and bachelor's graduates left school owing money for their education

At the time of graduation in 2000, about half of college and bachelor's graduates had some kind of debt for their education, and most of these graduates had government student loans. Government student loan programs were the major source of student borrowing: 45% of bachelor's graduates and 41% of college graduates left school with government student debt.

Almost one in five college and bachelor's graduates, however, borrowed from other sources to finance their education. Among college graduates, 33% had only government student loans, 8% owed money only to non-government sources and 8% owed money to both. Bachelor's graduates were more likely to turn to both sources for funding. While 34% had only government student loans and 8% had only non-government student loans, 11% had both.

On average, the amounts owed to non-government sources were generally smaller than government loans. However, for graduates who owed money to both sources, the combined debt was considerably larger than for those with debt from only one source.

On average, the Class of 2000 owed more than the Class of 1995

The rest of this article focuses on government-sponsored student loans. For both the Class of 1995 and the Class of 2000, just over 40% of college and bachelor's students owed money to government student loans programs at the time of graduation. However, the 2000 graduates owed significantly more than their 1995 counterparts, who in turn owed more than the 1990 graduates did.[2]

On average, the Class of 2000 bachelor's student loan borrowers owed 30% more than the Class of 1995. Average debts for college

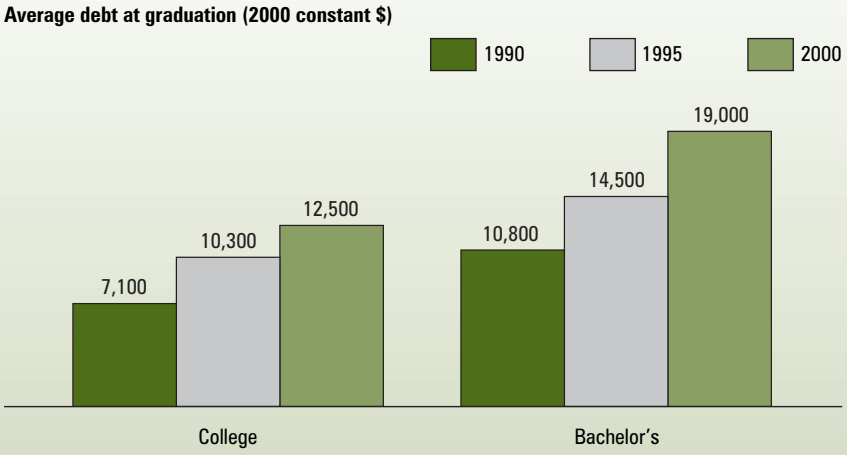
1. According to the 2002 Postsecondary Education Participation Survey, 26% of young postsecondary students (aged 18 to 24) used government student loans to finance their current academic year. However, the median amount borrowed was $5,000, a substantial amount when compared to the typical cost of schooling ($11,200 for university students, and $9,330 for college). Barr-Telford, L., F. Cartwright, S. Prasil and K. Shimmons. 2003. "Access, persistence and financing: First results from the Postsecondary Education Participation Survey (PEPS)." *Education, Skills and Learning – Research Papers*, no. 7 (Statistics Canada Catalogue no. 81-595-MIE2003007).

2. To enable comparisons with the Class of 1990 and the Class of 1995, average student loans are calculated for graduates who have not completed any further studies. This differs from the population covered in the rest of the article as graduates who pursued further studies without completing them are included for the comparison of the class cohorts, but are excluded for the presentation of the rest of the Class of 2000 results. All comparisons are made in 2000 constant dollars. Information on amounts owing to other sources at graduation is not available for 1995 graduates.

What you should know about this study

This article uses data from the 2002 National Graduates Survey (Class of 2000) to examine the management of student loans. It includes students who completed the requirements for or graduated with a degree, diploma or certificate in 2000 from college or a bachelor's program (including first professional programs such as law or medicine). Data for master's and doctoral graduates are available but are not discussed in this article. This analysis primarily focuses on graduates who had government-sponsored student loans and examines how much money they owed at graduation and two years later in 2002. Data referring to the Class of 2000 graduates is restricted to graduates who did not pursue further education during the two years after graduating from their program in 2000. Comparisons of graduates between the Classes of 1990, 1995 and 2000 used a slightly different group of graduates including only those who did not **complete** further studies in the two years after graduation. This would include graduates who pursued but did not complete studies.

Average government student debt at graduation is increasing



Note: Includes graduates who have not completed any further education in the two years after graduation.
Source: Statistics Canada, National Graduates Surveys (Classes of 1990, 1995 and 2000).

graduates were 21% higher than for the Class of 1995.

One in five borrowers had paid off their government student loans by 2002

Usually students are required to begin repaying government student loans within six months of completing their studies. With rising student debt, there has been much discussion about the level of debt and how repayment is managed.

The ability to pay off debt is influenced by a number of factors: size of debt, employment, earnings, interest rates, and personal circumstances. It is not surprising, therefore, that the graduates who were able to eliminate their student debt in the first two years following graduation were advantaged in many of these respects. In fact, about one in five graduates who had left school with government student loans had paid them off completely two years after graduation. For the graduates who still owed money two years after graduation, about three-quarters of their debt remained to be repaid.

Not surprisingly, graduates with smaller loans were more likely to have paid off their loans two years later than those who had large loans. In addition to starting out with lower debt, Class of 2000 graduates who were able to pay their loans off by 2002 had significantly higher incomes than those who still had student debt two years after graduation. On average, personal income for graduates who had paid off their debt was 13% higher for bachelor's graduates ($4,000) and 24% higher for college graduates ($6,000) than those graduates who had not paid off their loans.

College graduates who had repaid all of their student debt were more likely to have a job than those who had not, but bachelor's graduates had no difference in employment rates between those who had completely repaid their loans and those who still owed. Family circumstances and responsibilities may also have an impact on the ability of graduates to pay off their debt quickly. College graduates who had paid off their debt by 2002 were less likely to be married than those who still owed money, and graduates at both levels were less likely to have dependent children if they had paid off their loan than those who still owed.

Two years after graduation, graduates had paid off about a quarter of their government student loan debt

Two years after graduating, about one third of all college and bachelor's graduates who had not continued their studies still owed money on

government student loans. On average, graduates who still owed had repaid about one quarter of their government student debt and bachelor's graduates still owed $16,300 while college graduates owed $10,300.

Graduates who were still repaying student loans had higher debt loads and were more likely to have large debts than those who had repaid all of their student debt by 2002. In fact, bachelor's graduates who still owed started out with $8,000 more debt, on average, than those who had repaid all of their student loans. College graduates who still owed started out with twice the debt of those who had repaid their loans ($6,000 more).

The higher levels of debt may have led to graduates with remaining debt in 2002 being more likely to report repayment difficulties. Of those who were still repaying, 28% of bachelor's and 34% of college graduates reported difficulties repaying their debt, compared to only 9% of bachelor's and 9% of college graduates who had paid off their debt by 2002.

One in seven bachelor's graduates owed $25,000 or more in government student loans upon graduating

The size of government student debt owed upon graduation varied widely. Some students accumulated large debts, while others only had small debts that readily could be paid off after graduation.

Bachelor's graduates were the most likely to leave school with large student debts of $25,000 or more. Fourteen percent of bachelor's graduates who had not continued their studies owed $25,000 or more when they graduated. Although these graduates were more likely to be employed and had higher earnings than those with smaller debts, they had higher debt-servicing ratios (median 11%) and 38% of them reported having difficulties repaying their loans.

Almost half of college borrowers owed under $10,000. A small number

CST Debt-servicing ratio as a measure of debt burden

While debt size is a key factor in the ability to manage debt, the relationship between income and debt payments is equally important as a measure of the ability to pay. The debt-servicing ratio is the ratio of debt payments in 2001 expressed as a percentage of personal income in 2001. This measures the level of debt burden on an individual and is a rough indicator of ability to pay. In some cases, the ratio may be high because payments are high or it may be high because income is low.

To put these values in context, there is a variety of similar measures used by creditors (including student loan programs) to identify possible debt burden. For example, American studies on student loan debt burden often use a debt-servicing ratio benchmark of 8% as the threshold beyond which student debt becomes difficult to manage.[1]

In Canada, the debt-servicing ratios in the Canadian Student Loan Program (CSLP) interest relief program vary depending on the size of the monthly loan repayment, household income and family size. To be eligible for interest relief, the borrower may revise the terms of payment to reflect a 15-year amortization period.

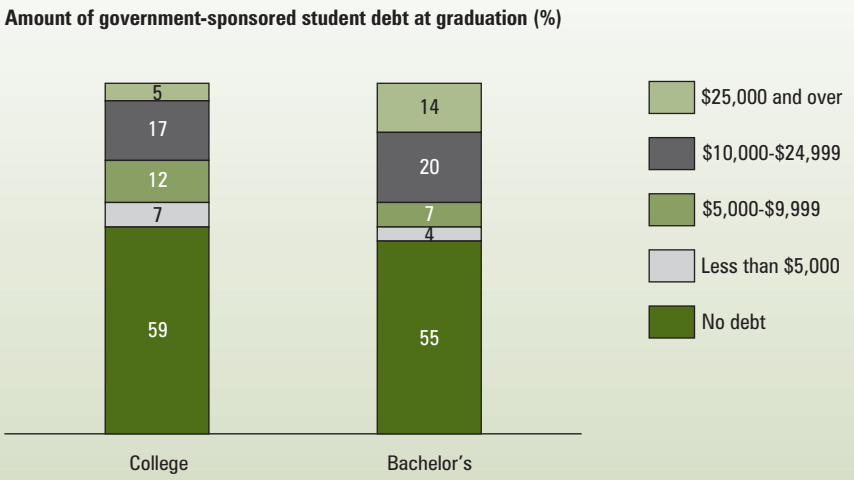
For those graduates with debt remaining two years after graduation, median debt-servicing ratios were 6% for college and 8% for bachelor's graduates. While these values do not exceed the 8% threshold used in a number of American studies, there are still a considerable number of graduates with high debt-servicing ratios. In fact, at the college level, one quarter of these graduates had debt-servicing ratios of 10% or higher while one quarter of bachelor's graduates had ratios exceeding 13%.

The debt-servicing ratios calculated here, however, may not indicate by themselves debt burden. In some cases, the minimum payment that is required to service the debt might constitute a relatively high proportion of the debtor's income. In other cases, debtors may choose to make lump sum payments or payments exceeding the minimum to repay their debt more quickly. Further analysis is required to understand fully how graduates are managing their student debt.

1. National Association of Student Financial Aid Administrators (NASFAA). March 7, 2003. *Federal Student Loan Debt Burdens for Most Borrowers Remain Stable*. Press release available at www.NASFAA.org/publications/2003/rnnedrc030703.html; Scherschel, P.M. June 2000. "Student debt levels continue to rise: Stafford indebtedness: 1999 update." *USA Group Foundation New Agenda Series*, vol. 2, no. 3. www.luminafoundation.org/publications/debtburden.pdf (accessed May 6, 2004); Choy, S. 2000. *Debt Burden Four Years after College*. Washington, D.C.: National Center for Education Statistics.

of college graduates, about 5%, left school with large debts of $25,000 or more. Nearly 60% of these graduates reported having difficulties repaying and half of them had debt-servicing ratios of 10% or more. College graduates with large debts tended to be older, and were more likely to be married and have children than graduates with smaller debts.

One in seven bachelor's graduates owed $25,000 or more in government student loans at graduation



Note: Graduates who pursued further studies after graduation are excluded.
Source: Statistics Canada, National Graduates Survey, 2002.

Doctors in debt

Medicine stands out as having the highest proportion of graduates with student loans and also the highest average student debt at any level of education. At graduation, 80% of medicine graduates (M.D.s)[1] who did not pursue further studies had student debt: on average, they owed $38,200. Three-quarters of medicine graduates owed more than $25,000. In part, these large debts are related to higher tuition fees for medicine programs and longer studies at university to obtain a degree in medicine than the average bachelor's graduate.

However, medicine graduates who did not pursue further studies paid off their debts faster than the average bachelor's graduate. Despite the size of medicine graduates' debts, over one quarter (26%) of them had paid off their debt two years after graduation compared to 22% of all bachelor's graduates. On average, medicine graduates paid down 40% of their debt in the two years after graduation compared with 35% of all bachelor's borrowers.

1. M.D.s are first professional degree graduates and are included with bachelor's degrees in this article.

Summary

About half of the college and bachelor's graduates from the Class of 2000 carried student debt when they graduated. Just over 40% of graduates owed money to government student loan programs, about the same proportion as for the Class of 1995. Average debt sizes were notably higher, however, than for the 1995 college and bachelor's graduates.

Two years after graduation, about one in five borrowers from the Class of 2000 had paid off their government student loans completely. Not surprisingly, graduates who managed to do so had started out with smaller than average debts, and they had higher incomes than the graduates who still owed money in 2002.

A small, but notable, proportion of graduates left school with large student debts. Despite having higher than average incomes, they were more likely to report difficulties repaying their loans.

Mary Allen is a senior analyst and **Chantal Vaillancourt** is an analyst with the Centre for Education Statistics, Statistics Canada.

New low in crude birth rate

Canada's crude birth rate (the number of live births for every 1,000 people in the population) fell to its all-time low in 2002 in the wake of another decline in the number of live births. The crude birth rate dropped to 10.5 live births for every 1,000 population, the lowest since vital statistics began to be produced nationally in 1921. The rate has dropped 25.4% in the last 10 years alone. In total, 328,802 babies were born in 2002, down 1.5% from the previous year.

Twenty years ago, 66% of live births in Canada were to mothers aged 20 to 29 years. Only 48% of births were to mothers in this age group in 2002.

Births
Catalogue no. 84F0210XIE

Induced abortions

Canadian women obtained 106,418 abortions in 2001, a slight increase of almost 1% from 105,427 in the previous year. The rate of abortion has also marginally increased from 15.4 in 2000 to 15.6 abortions per 1,000 women in 2001.

Induced Abortion Statistics
Catalogue no. 82-223-XIE

Drug crime

The police-reported drug crime rate has risen an estimated 42% since the early 1990s and now stands at a 20-year high. Three in four drug-related incidents in 2002 involved cannabis offences, about 72% of which were possession offences.

The overall drug-related crime rate has been on an upward trend since 1993, driven by increases in cannabis possession, as well as production and importation offences. The cannabis offence rate has risen approximately 80% from 1992 to 2002, largely the result of increased numbers of possession offences. All trafficking offences declined over the same period.

"Trends in drug offences and the role of alcohol and drugs in crime."
Juristat
vol. 24, no. 1
Catalogue no. 85-002-XIE

Teenaged health

Teenagers in Canada's northern regions, especially girls, are more likely to report lower self-rated health than their counterparts in major metropolitan regions. Only 17% of girls in rural regions and 15% of girls in northern regions rated their health as "excellent," compared with 33% of girls in major metropolitan regions. Only 23% of boys in northern regions rated their health as excellent, as opposed to 36% of boys in metropolitan regions.

Boys in small town areas were most likely to be overweight or obese. About 30% of boys in small towns were overweight, compared with 25% nationally and about 9% were obese, compared with 6% nationally. Girls in northern regions were the most likely to smoke, at 21% compared with 15% of girls nationally, while there were no significant differences found for boys.

Boys in small metro regions had the highest rate of heavy drinking, at 30% compared with 20% nationally while only 13% of boys in major metro areas reported heavy drinking.

"Health status and behaviours of Canada's youth: A rural-urban comparison."
Rural and Small Town Canada Analysis Bulletin
vol. 5, no. 3
Catalogue no. 21-006-XIE

High school dropouts

In May 2000, more than 345,000 students aged 15 were in school, the majority of whom were in grade 10. By December 2001, an estimated 9,000 of this group (3%) had left high school without a diploma.

While the dropout rates for these boys (3%) and girls (2%) were similar, their reasons for leaving high school differed. Although both cited school-related reasons most frequently, girls were much more likely to cite personal or family reasons, including health reasons, pregnancy, caring for own child, and problems at home. Conversely, boys more often reported work-related factors such as they wanted to or had to work.

Overall, dropouts viewed school less favourably than other students did. They were less engaged in school, both socially and academically, at age 15 than those students who continued their studies or graduated. They were also more likely to feel that discipline was not handled fairly, that students were not respected, and that their school was not a friendly place.

However, there were positive signs that, at an early age, youth who left high school without graduating understood the importance of education. At age 15, four out of every five future dropouts believed that getting a good job later in life depended on their success in school, and three-quarters wanted to obtain some form of postsecondary education.

In and Out of High School: First Results from the Second Cycle of the Youth in Transition Survey, 2002
Catalogue no. 81-595-MIE2004014

Low income in census metropolitan areas

Median family incomes increased by 1% during the 1990s to $62,300, but the gap between lower and higher income neighbourhoods increased. In Toronto, for example, median family income in the poorest 10% of neighbourhoods was up 2.6% since 1980. In the highest 10% of neighbourhoods it was up by 17.4%.

The report also shows that recent immigrants, Aboriginal people, and lone-parent families were much more likely to be in lower income neighbourhoods.

"Low-income in census metropolitan areas, 1980-2000."
Trends and Conditions in Census Metropolitan Areas
vol. 24, no. 2
Catalogue no. 89-613-MIE200400

SOCIAL INDICATORS

	1996	1997	1998	1999	2000	2001	2002	2003
ECONOMY[1]								
Annual % change								
Real gross domestic product[1]	1.6	4.2	4.1	5.5	5.3	1.9	3.3	1.7
Wages, salaries and SLI	2.4	5.7	4.9	5.8	8.4	4.6	4.8	3.4
Personal expenditures on goods and services[1]	2.6	4.6	2.8	3.8	4.0	2.6	3.4	3.3
Consumer Price Index	1.6	1.6	0.9	1.7	2.7	2.6	2.2	2.8
Savings rate (%)	7.0	4.8	4.8	4.0	4.6	4.5	4.2	2.0
Prime lending rate	6.06	4.96	6.60	6.44	7.27	5.81	4.21	4.69
5-year mortgage rate	7.93	7.07	6.93	7.56	8.35	7.40	7.02	6.39
Exchange rate (with U.S. dollar)	1.364	1.385	1.484	1.486	1.485	1.549	1.570	1.401
EDUCATION								
Consolidated[2] government expenditures on the environment[3] ($ millions)	8,666	8,381	8,703	8,566	8,672	9,232	9,866	9,795
Consolidated[2] government expenditures[4] ($ millions)	381,158	371,693	372,695	387,438	401,520	422,656	435,885	440,006
Consolidated[2] government expenditures on the environment[3,4] (% of total expenditures)	2.3	2.3	2.3	2.2	2.2	2.2	2.3	2.2
Greenhouse gas emissions (kilotonnes of carbon dioxide equivalents)	673,000	682,000	690,000	706,000	730,000	720,000	..	..
Billions of public transit passengers	..	..	..	..	..	1.53	1.63	..
Total consumption of refined petroleum products[5] used for transportation (thousand m^3)	51,063	52,574	54,182	55,711	55,894	55,344	55,497	..
JUSTICE								
Rate per 100,000 population[6]								
Total *Criminal Code* offences	8,914	8,453	8,136	7,725	7,641	7,633	7,590	..
Property offences	5,264	4,867	4,555	4,261	4,067	3,992	3,960	..
Violent offences	1,000	990	979	955	981	981	965	..
Other *Criminal Code* offences	2,650	2,596	2,602	2,509	2,593	2,660	2,664	..
Average days to process Criminal Code *case through courts*								
Adults[7]	151	160	152	156	160	190	191	..
Youths[8]	114	104	107	109	114	110	124	..
Average length of sentence per Criminal Code *case*								
Adults (days in prison)	131	132	134	140	134	130	126	..
Youths (days of open and secure custody)	92	91	83	80	77	76	77	..
CIVIC SOCIETY								
Government expenditures on culture[9] ($ millions)	5,564	5,401	5,485	5,535	5,701	6,073	..	..
Households reporting expenditure on newspapers (%)	71.0	70.7	69.1	66.9	65.0	63.5	61.4	..
Households reporting expenditure on live performing arts (%)	36.0	38.0	36.0	35.0	35.9	35.9	37.6	..
Households reporting expenditure on admission to heritage facilities and other activities and venues[10] (%)	..	35.5	35.0	34.8	33.9	31.9	33.0	..

.. Data not available.

1. Data in chained (1997) dollars.
2. Does not include CPP and QPP.
3. Includes expenditures on water purification and supply.
4. Expenditures for fiscal year ending March 31.
5. Refers to diesel oils, light heating oils, residual fuel oils, aviation gasoline, fuel for gas turbines and motor fuel.
6. Revised rates based on updated population estimates.
7. Excludes New Brunswick, Manitoba, British Columbia, the Northwest Territories and Nunavut.
8. Alberta is excluded.
9. Excludes intergovernmental transfers. Data in 1993 dollars. Municipal spending is on a calendar-year basis.
10. Includes museums, zoos, ice shows, craft shows, fairs and historic sites.

Sources: Statistics Canada, National Income and Expenditure Accounts, CANSIM II Tables 385-0001, 380-0002, 380-0001, 380-0004, 380-0024, 326-0002, 203-0011, 203-0010, 176-0043 and 176-0049, *Canadian Crime Statistics, 2002* (Catalogue no. 85-205), *Government Expenditure on Culture* (Catalogue no. 87F0001XPE), and Environment Canada, *Canada's Greenhouse Gas Inventory, 1990-2000* (Catalogue no. EN 49-5-5/5-2000E).

LESSON PLAN

Suggestions for using Canadian Social Trends *in the classroom*

Lesson plan for **"Class of 2000 — Student loans"**

Objectives

- ❑ To plan financially for postsecondary education.

Curriculum areas: Family studies, business studies and economics.

Classroom instructions

1. Survey the class to find out how many plan to go to university or college. Ask how they plan to finance their education.
2. In a spreadsheet, have the students identify categories of expenses for their first year of university or college. For each category, have the students estimate their expenses for an eight-month study period. Many universities and colleges have Web sites showing tuition fees, residence costs and meal plans. Newspapers or real estate listings may show the cost of apartments or houses for rent.
3. Have the students estimate the resources they have available to pay for their education such as part-time jobs, savings, support from their family. Itemize the sources of income and other resources in another part of the spreadsheet. Calculate the differences between educational expenses and the resources available to spend on education.
4. The Canada Student Loans program and provincial student loans programs may provide loans and grants for students in need. Check out the National Student Loans Service Centre Web site to find out the terms and conditions for eligibility for student loans.
5. Discuss the impact that education expenses may have on students and their families if students continue their studies at university or college.

Using other resources

- ❑ To find lesson plans, articles and data for elementary and secondary schools, check out the Statistics Canada Web site at www.statcan.ca/english/kits/teach.htm. There are more than 150 lesson plans for high school classes, many articles, E-STAT access and other data.
- ❑ Check out over 30 lessons using *Canadian Social Trends* articles on the Teachers page under Teacher's kits at www.statcan.ca/english/kits/social.htm.
- ❑ See the Family studies kit at www.statcan.ca/english/kits/Family/intro.htm for detailed graphs that you can use to make overheads for your class.

Educators

You may photocopy "Lesson plan" or any item or article in *Canadian Social Trends* for use in your classroom.

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