

Studying on the job

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In today's highly competitive and changing global economy, among the attributes employers value most in their workers are high levels of skill, flexibility and adaptability. These requirements have led to much discussion in recent years about the quality and adequacy of the education and training of Canada's labour force. On one side of the debate, statistics show that Canada lags behind other countries: training expenditures as a percentage of the gross domestic product (GDP) are comparatively low, and in 1990 the Organisation for Economic Co-operation and Development (OECD) ranked Canada 16th among its 23 member nations with respect to its vocational training. In 1986-87, fewer than one-third of Canadian firms provided formal training to their workers, and among those that did, spending per employee was half what it was in the United States ([Sharpe](#), 1990). At the same time, figures show a sharp acceleration in the number of adults enrolling in credit courses for vocational certificates, college diplomas and university degrees. And there is no sign that this trend is slowing down ([Haggard-Guénette](#), 1991).

Using the results of the 1990 Adult Education and Training Survey (AETS), this article describes some of the characteristics of those paid workers who received part-time training from their employers, the industries they worked in, the jobs they held, and the subjects they studied.

One in seven workers took training

In the 12-month period from December 1989 to November 1990, over 1.5 million Canadian workers over the age of 16 took education or training courses that were sponsored by their employers. The majority (88%) actually took part-time training. These 1.3 million people accounted for 14% of the paid workforce in 1990, or almost one in seven employees. (See [Notes about the data and Definitions](#) for the concepts used in this study.)

The highest rate of employer-sponsored part-time training in the country was recorded in Alberta (18%), and the lowest in Newfoundland (8%). These figures reflect the types of industries concentrated in the provinces, which have varying rates of training ([Chart A](#)).



Chart A Workers in Alberta were the most likely to take employer-sponsored training in 1989-1990.

Sources: *Adult Education and Training Survey and Labour Force Survey*

Although studies in other countries show that men received more formal employer-sponsored training than women, that is not the case in Canada. Almost equal proportions of Canadian working men and women were likely to take courses; that is, 14% of male and 13% of female employees received training during the survey reference period.

Utilities and public administration biggest trainers of employees

Industries that placed the highest priority on training, as judged by the percentage of employees they trained, were utilities (31% of the workforce received training) and public administration (28%). Several service industries had rates at the low end of the scale - trade (9%) and commercial services (8%). This may reflect the heavier reliance of these industries on part-time workers as well as the presence of smaller firms, which record lower formal training rates. Manufacturing industries, at 11%, also had below average training rates ([Table 1](#)).



Table 1 Training rate of paid workforce in employer-sponsored part-time training, by selected characteristics, 1989-1990.

Sources: *Adult Education and Training Survey and Labour Force Survey*

Training rates higher in larger firms

The chances of receiving employer-sponsored training rise as the size of the firm increases. From a low of 6% for small firms with less than 20 employees, the rate of training rose to 11% for medium-small and 15% for medium-large firms, and then reached 22% for companies with 500 or more employees



Chart B Workers in large firms were more likely to receive employer-sponsored training in 1989-1990.

Sources: *Adult Education and Training Survey and Labour Force Survey*

The reasons why formal training rates are higher in larger firms vary according to the industry in which the firm operates and the particular circumstances of the organization itself. But one of the most likely reasons is that they have a larger internal labour market. Training provides the worker with

greater opportunities to change jobs or seek promotion within the company, rather than looking to another firm for advancement, and thus reduces the chances that the company's training investment will be lost to a rival organization. Another advantage enjoyed by workers in large firms is that per capita costs of training may be lower if the firm can train a number of workers at the same time using a kind of "group discount"; hence, training is more readily available to employees. Also, since large organizations are more heavily unionized than smaller ones, high rates may stem from union pressures to provide worker training. And this also reflects the triple-the-average rates of the utilities and public administration industries, which are characterized by large organizations.

Since the AETS did not collect data on informal, on-the-job training, the figures undoubtedly underrepresent the total amount of training provided by employers, especially in smaller firms. (2) In fact, some international studies show that when informal, on-the-job training is covered, training rates are very similar for all firms regardless of size.

Professionals get more training

People in white-collar (3) occupations received more employer-sponsored training than others, with those in natural sciences most likely to benefit (28%). Rates almost as high (25%) were reported for workers employed in social sciences and managerial or administrative positions. High rates were also found in all white-collar occupations, usually jobs that require a higher level of education (Table 1).

High training rates for managers and professionals reflect a number of factors, among them the need to remain current with developments in their field of expertise and to acquire new skills to meet changing job requirements (for example, learning to use new computer software or to manage the introduction of new technologies). However, it should be noted that people in these positions have input into training decisions, so that some degree of "self-selection" may explain the high rates observed in the professional occupational groups.

Lower-than-average rates of employer-sponsored part-time training were generally recorded among

workers in pink- (4) and blue-collar (5) occupations. For instance, only 7% of workers in service and machining jobs took courses at company expense. The only notable exception was in mining occupations, where 20% of workers received employer-sponsored training.

The high level of training among white-collar occupations is mirrored in the rates reported for better-educated workers. One in every four employees with a university degree (25%) received some employer-sponsored training; 19% of workers with a postsecondary certificate or diploma also took courses at company expense. Workers without secondary school credentials had only a 4% chance of receiving employer-sponsored training (Table 1). (6)

Trainees most likely to be "loyal" employees

Almost one in six workers (16%) aged 35 to 44 took part-time training. The rate was slightly lower for the 25 to 34 age group. Workers in their early twenties and those over 54 were only half as likely to get employer-sponsored training (8%).

These rates for workers of different ages are reflected in the figures for job tenure: employees having 11 to 20 years of service with the same firm were most likely to receive training (17%). This was about double that for employees with seniority of one year or less. Workers with over 25 years' seniority also recorded a lower rate (12%), perhaps because they had received all the training necessary for their jobs. Alternatively, they may have been at the top of their profession, or nearing retirement, and did not feel the need to take training to further their careers.

Commerce courses most popular

Employers enroll their employees in courses for any number of reasons, but the content of the courses they choose to sponsor usually reflects the work trainees do. Some of the other reasons probably hinge on the worker's value to the firm, the organization's goals and the availability of a training program.



Table 2 Training rate of paid workforce in employer-sponsored part-time training, by job tenure and age, 1989-1990.

Sources: *Adult Education and Training Survey and Labour Force Survey*

Commerce, management and business administration courses were the most popular among employer-sponsored students during the survey reference period. Workers enrolled in this category accounted for

29% of all employer-sponsored part-time training. Within that field, financial management claimed the most students, with business and commerce ranking second. Industrial management and administration, and marketing, merchandising, retailing and sales were tied for the third highest level of enrolment ([Table 3](#)).



Table 3 Distribution of employer-sponsored trainees enrolled in commerce and engineering technologies courses, by sex, 1989-1990 .

Sources: Adult Education and Training Survey and Labour Force Survey

The second most popular field of study (26% of enrolment) was engineering and applied science technologies and trades, which encompasses computer technology. The majority of employees took data processing and computer science technologies courses, reflecting the demands of the new computerized workplace, while the second highest enrolment was in mechanical engineering technologies. Courses in the general category of health science and technologies claimed the third largest group of trainees (14%). [\(7\)](#)

Enthusiasm for courses in both commerce and engineering technologies did not vary significantly by firm size. Enrolment in commerce was higher than average among large firms, while small firms placed heavier emphasis on engineering and applied science technologies and trades.

More female trainees took commerce and data processing courses

One-third of women took commerce courses, compared with one-quarter of male trainees ([Chart C](#)). Within this discipline, the largest group of women was in financial management; however, women's enrolment in secretarial science was almost as high.



Chart C In 1989-1990, the majority of employer-sponsored trainees took courses in commerce or engineering technologies

Sources: Adult Education and Training Survey and Labour Force Survey

Engineering and applied science technologies and trades accounted for about 20% of women and 31% of men. Although both sexes heavily enrolled in data processing and computer science technologies courses, the subject was twice as popular with women as with men.

Who gets training - the international picture

Comparing statistics on training across national boundaries can be difficult and at times misleading. This is because definitions of training, the survey instruments, sample selection, social institutions, labour market conditions and even classifications or aggregations of industries and occupations, are as diverse as the countries collecting the data. (8)

Nevertheless, a comparison of results can provide a useful frame of reference. The OECD recently reviewed international data collected on employer-sponsored worker training in member countries and drew the following general conclusions:

- The rate of formal training is higher in large firms.
- The rate of training varies considerably across industries and countries but, generally speaking, non-durable manufacturing industries have lower rates of training, while financial industries have higher rates.
- Well-educated workers are much more likely to receive employer-sponsored training.
- Women are less likely than men to receive formal training.
- The chances that a worker will receive training fall with age, especially in countries with strong apprenticeship programs.

Canada seems to conform to these basic trends, the only exception being the training rates observed for men and women, which the AETS results show were almost the same for male and female paid workers.

Conclusion

The evidence from the AETS appears to show that a "natural selection" process operates in regard to training, whereby those who already have some advantages, such as a better education or a white-collar job, continue to acquire advantages related to training.

About one in seven paid workers in Canada, or 1.3 million, received employer-sponsored part-time training in the 12 months from December 1989 to November 1990. Employees in utilities and public administration were most likely to take employer-sponsored courses, with well over one-quarter of each of these industry's workforces undertaking such training. The likelihood of being trained by an employer rose from 1 in 16 in a small firm to 1 in 5 in a large one. Workers in managerial, administrative, natural science and social science occupations were most likely to benefit, as were workers who had 11 to 20 years' seniority with their employer. Almost 70% of trainees enrolled in three fields of study: commerce

and business management, engineering and applied science technologies and trades (mainly data processing and computer science), and health professions.

Almost equal proportions of men and women received training (14% and 13% respectively), and although both sexes tended to enroll in the same narrow group of subjects, women were more likely to take commerce and business administration courses, while men most frequently opted for courses in engineering and applied science technologies and trades.

This article presents a brief description of the characteristics of paid workers who receive employer-sponsored part-time training. But the issues raised by worker training are complicated and often controversial. Who should be trained? In what fields of study should they be trained and by whom? What is the best method, and how should it be paid for? Everyone benefits from a productive workforce: individuals hold good and stable jobs, businesses enjoy higher profits, and Canada sustains a strong economy. But it has yet to be resolved how the beneficiaries should divide the responsibility for educating and training that productive workforce.

Notes about the data

Data source

This study is based on the 1990 Adult Education and Training Survey (AETS), a supplement to the November 1990 Labour Force Survey (LFS) sponsored by Employment and Immigration Canada. Respondents in about 50,000 households, and representing almost 93,000 individuals, were interviewed about any educational or training courses they, or other household members 17 years of age and over, had taken in the preceding 12 months (December 1989 to November 1990). They were asked what type of education or training they had taken: full-time academic program; apprenticeship program; full-time employer-related training (excluding apprenticeship); or short-term or part-time courses. Respondents were then asked to describe the subject matter of the most recent course taken; any financial and non-financial assistance received and the source of that assistance; and the main reason for taking the course. (For more information on the 1990 AETS, and the recently-completed 1992 AETS, see Statistics Canada, [1990](#) and [1992](#).)

Data on educational attainment, occupation, industry and job tenure (the number of years working for the employer) describe the individual's labour market situation during the LFS reference week. Data on firm size are from the AETS, and represent the individual's perception of the firm's size at the time the course was taken.

Population

This study focuses on the 1.3 million paid workers who took employer-sponsored training on a part-time basis during the AETS reference period. It covers only paid workers, but does not distinguish full-time from part-time workers. (Part-time employees comprised only 6% of employer-sponsored workers taking part-time training.

Full-time employer-sponsored education and training is not discussed in this article. The full-time category of education and training contains three components that represent a very mixed population. Given the considerably different characteristics of the full-time and part-time populations, a comparison of the two would not have done justice to either group. [\(1\)](#)

Definitions

Training - A course or program in which the employee was a student. Data on informal and on-the-job training were not collected by the 1990 AETS.

Employer-sponsored - Training assisted in whole or in part by the employer. The employer's assistance may have consisted of paying tuition, providing courses at the work site, allowing the employee paid time off to attend class, reimbursing transportation or living expenses, paying for course materials, and so on.

Part-time training - It comprises two components: part-time and short-time courses. *Part-time* courses are taken on a regular basis and generally last more than one month. These courses, taken by employer-sponsored workers, lasted an average of seven weeks. Just over half the workers enrolled in part-time training in 1989-90 took these types of courses. *Short-term* courses are taken over a period of less than one month and usually require attendance for a considerable part of the working day or week. These courses lasted an average of one week and students attended for 21 hours per week. A little less than half of all part-time trainees took short-term courses.

Course - The most recent course taken. It may not have been the only course taken by the respondent during the 12-month reference period. It is the one the respondent described in the 1990 AETS as to subject matter, employer sponsorship, and course duration.

Firm size - The respondent's perception of the total number of workers employed by the company across Canada. This study classifies firms into four size categories: small firms - fewer than 20 employees; medium-small firms - 20 to 99 employees; medium-large firms - 100 to 499 employees; and, large firms -

500 or more employees.

About 9% of respondents 'did not know' the size of the firm. These workers are included in the totals.

Service industries - Community services include education, health, social services and religious organizations; commercial services include accommodation, food and beverage, business services, other services (including amusement and recreation, personal and household services).

Notes

Note 1

The full-time group itself is not homogeneous and exhibits disparate characteristics. For example, about 60% of trainees in academic programs and employer-related training already have college or university degrees but only 36% of apprentices do; 90% of apprentices are under the age of 35 compared with 56% of workers in the other types of full-time training.

Note 2

The 1992 Adult Education and Training Survey will collect data on formal and informal on-the-job training.

Note 3

White-collar jobs are defined as those falling into the broad occupational categories of managerial or administrative, natural science, social science, religion, teaching, medicine and artistic.

Note 4

Pink-collar jobs are defined as clerical (81% female employees), sales (47%) and service (57%) occupations.

Note 5

Blue-collar jobs are found in the following broad occupational categories: farming, fishing, forestry, mining, processing, machining, fabricating, construction, transportation, material handling and other crafts. The majority of workers in these occupations are male.

Note 6

In her study of adults aged 30 to 64 taking credit courses, Haggard-Guénette (1991) found that higher levels of education were strongly associated with the return to school. In *Adult literacy in Canada: results of a national study*, Statistics Canada (O'Neill and Sharpe, 1991) showed that the jobs of poorly

educated workers are disappearing more quickly than others, and that employment opportunities for those with less than secondary school qualifications deteriorated significantly during the 1980s.

Note 7

About 45% of workers who received employer-sponsored training took short-term courses; the remainder were enrolled in part-time courses. The subject matter of the courses taken by each of these groups is almost identical. Commerce and engineering and applied science technologies and trades both claimed almost the same proportion of short-term as part-time students. The only notable differences appear in four fields of study that, taken together, accounted for only 16% of students: social sciences, humanities, education, and industrial engineering technologies.

Note 8

This general profile of workers receiving employer-sponsored training is based on studies conducted in a number of OECD countries, among them: Australia, France, Germany, Japan, the United States, Great Britain, Sweden, several other European Community countries, and Canada. The studies reflect the surveys' sponsors (from statistical agencies to private researchers), a variety of collection techniques, different survey objectives, and the particular circumstances of the country in which they were conducted. Arriving at a portrait with features common to a number of countries is difficult, as can be demonstrated by a partial list of "irreconcilable differences." Some countries included informal on-the-job training as well as formal classroom courses in their definition of training; some studies collected data using labour force surveys while others used administrative data; some data were collected at the enterprise (firm) level and other data at the establishment (plant) level. (The complete review of international training surveys can be found in Chapter 5 of the 1991 OECD [*Employment Outlook*](#).)

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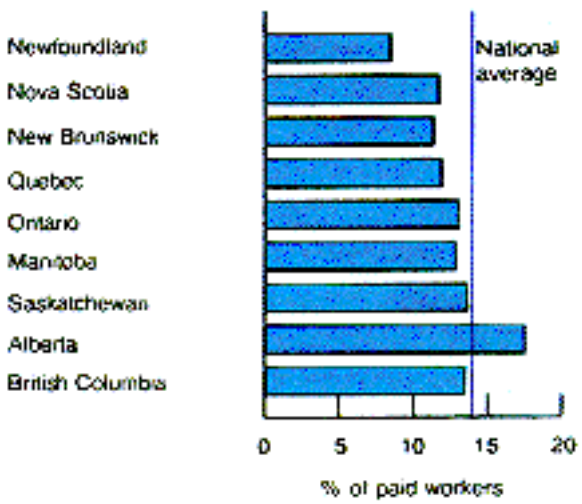
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Chart A

Workers in Alberta were the most likely to take employer-sponsored training in 1989-1990.



Sources: *Adult Education and Training Survey and Labour Force Survey*

Note: *Estimates for Prince Edward Island cannot be released due to high sampling variability.*

Table 1

Training rate of paid workforce in employer-sponsored part-time training, by selected characteristics, 1989-1990

	All trainees	Training rate
	'000	%
All industries	1,334	14
Agriculture	--	--
Forestry, fishing and mining	41	16
Manufacturing	217	11
Construction	25	4
Transportation	63	15
Communication	50	19
Utilities	43	31
Trade	146	9
Finance, insurance and real estate	133	22
Community services*	292	17
Commercial services*	116	8
Public administration	202	28
All occupations**	1,334	14
Managerial and administrative	323	25
Natural science	109	28
Social science	43	25
Religion	--	--
Teaching	70	17
Medicine	89	19
Artistic	12	10
Clerical	231	13
Sales	83	10
Service	78	7
Farming	--	--
Fishing	--	--
Forestry	--	--

Mining	11	20
Processing	24	6
Machining	15	7
Fabricating	111	12
Construction	49	8
Transportation	40	10
Material handling	14	5
Other crafts	15	11
All levels of education	1,334	14
Grades 0 to 8	25	3
Some secondary education	98	5
High school graduation	284	12
Some postsecondary	133	18
Postsecondary certificate or diploma	471	19
University degree	324	25

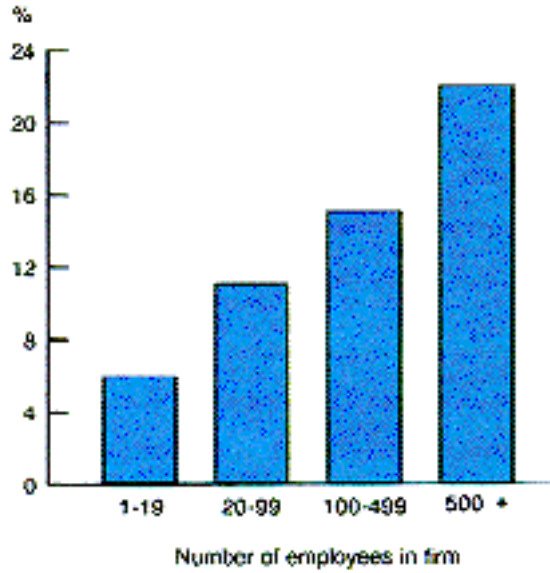
Sources: Adult Education and Training Survey and Labour Force Survey.

*** See Definitions.*

*** Includes occupations in religion, farming, forestry and fishing.*

Chart B

Workers in large firms were more likely to receive employer-sponsored training in 1989-1990.



Sources: *Adult Education and Training Survey* and *Labour Force Survey*

Table 2

Training rate of paid workforce in employer-sponsored part-time training, by job tenure and age, 1989-1990

	All trainees	Training rate
	'000	%
Total	1,334	14
Job tenure		
1 year or less	220	8
2-5 years	419	13
6-10 years	234	15
11-15 years	197	17
16-20 years	137	17
21-25 years	70	15
26 years or more	58	12
Age		
17-19	13	2
20-24	99	8
25-34	481	15
35-44	453	16
45-54	219	13
55-64	68	8

Sources: Adult Education and Training Survey and Labour Force Survey

Table 3

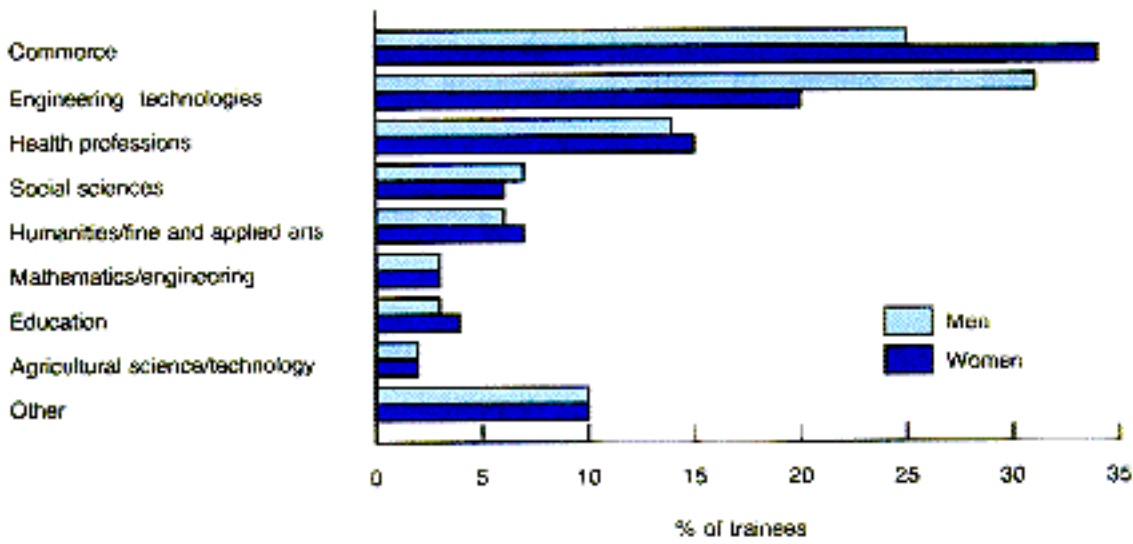
Distribution of employer-sponsored trainees enrolled in commerce and engineering technologies courses, by sex, 1989-1990

	All trainees	Distribution		
		Both sexes	Men	Women
	'000	%		
Commerce, management and business administration	381	100	100	100
Financial management	103	27	23	31
Business and commerce	70	18	24	13
Industrial management and administration	69	18	21	15
Marketing, merchandising, retailing and sales	69	18	24	13
Secretarial science	63	17	6	26
Institutional management and administration	--	--	--	--
Engineering and applied science technologies and trades	346	100	100	100
Data processing and computer science technologies	179	52	37	80
Mechanical engineering technologies	43	13	18	--
Industrial engineering technologies	26	8	10	--
Electronic and electrical technologies	26	7	10	--
Transportation technologies	22	6	7	--
General and civil engineering technologies	18	5	6	--
Building technologies	11	3	5	--

Sources: *Adult Education and Training Survey and Labour Force Survey*

Chart C

In 1989-1990, the majority of employer-sponsored trainees took courses in commerce or engineering technologies.



Sources: Adult Education and Training Survey and Labour Force Survey