

THE LEARNING AND WORK CIRCUMSTANCES OF AUSTRALIA'S YOUNG ADULTS

Comparing learning and work for young adults in Australia and Canada

Summary

MaryAnn McLaughlin

The Conference Board of Canada

Three years ago, the Conference Board began to benchmark Canada's performance against Australia and five other OECD countries. On the economic front, Canada has lost ground during the 1990s, while Australia has led a relatively charmed life.

Structural changes in the labour market pose challenges for young adults in both countries. Young Australians are more likely to be in the labour market, and young Canadians are more likely to be in school. Skill and education requirements are rising and there is an increasing premium on relevant work experience.

To act in the best interests of young adults in both Australia and Canada, we need a combination of strategies that:

- Improve the general labour market. Improvements in the general labour market would likely have a much greater impact on youth employment than specific youth measures. However, there are groups of young adults for whom specific measures are necessary.
- Encourage young people to stay in school to complete educational programs while improving the employability skills they receive through the education system.
- Foster innovation and systemic change in education systems.
- Engage employers and others in the community. Providing students with opportunities to gain skills through experiential learning greatly strengthens the connections between work and learning.

**Comparing learning and work for young adults
in Australia and Canada**

MaryAnn McLaughlin

The Conference Board of Canada

Contents

| | |
|--|----|
| Introduction | 1 |
| The social and economic context | 2 |
| The Canadian educational context | 3 |
| The labour market for young adults | 5 |
| Unemployment | 6 |
| Investment in education | 7 |
| The influence of schooling on young adult life | 9 |
| Are we equipping young adults with an appropriate skills base? | 11 |
| Literacy skills are not high enough | 11 |
| Science and mathematics test results are modest | 11 |
| Science and technology still account for only 17 per cent of graduates | 12 |
| More women are graduating in technology subjects—they will get the | 13 |
| jobs | |
| Managing scarce skills is a priority | 15 |
| What do young workers think? | 15 |
| Young adults are optimistic and willing to take responsibility | 16 |
| Where the jobs are being created | 16 |
| Conclusion and implications | 17 |
| References | 18 |

Figures

| | |
|--|---|
| Figure 1: Participation, employment and unemployment rates | 5 |
|--|---|

Tables

| | |
|---|----|
| Table 1: Real GDP growth rates, Canada and Australia, 1991-1999 | 3 |
| Table 2: Unemployment rates for 15-19 and 20-24 year-olds, percentage, 1994 | 6 |
| Table 3: Education enrollment, Australia and Canada, percentage, 1995 | 8 |
| Table 4: Full time enrollment of students aged 18-21, 22-25, post-secondary education, Australia and Canada, percentage, 1995 | 8 |
| Table 5: Completed education, 25-64 year olds, Australia and Canada, percentage, 1995 | 9 |
| Table 6: Education attainment and labour force participation rates, 25-64 year olds, Australia and Canada, percentage, 1995 | 9 |
| Table 7: Education attainment and unemployment rates, 25-64 year olds, Australia and Canada, percentage, 1995 | 10 |
| Table 8: Education and labour market situations of 1990 graduates in 1995, percentage | 10 |
| Table 9: University degrees awarded by subject area, percentage | 13 |
| Table 10: University graduates aged 20-29 by field of study, 1986-96, Canada | 14 |
| Table 11: Youth share of employment by age of firm | 17 |

Introduction

Very few countries can match the high quality of life that Australia and Canada enjoy. Our success is rooted in our well-educated workforces, our world-class resource bases and our status as trading nations.

And yet, young adults in both Australia and Canada face big challenges as they move into the world of work. Globalization of the economy and rapid changes in technology have had dramatic effects on the skills they need, the types of jobs available and their future prospects.

This paper set out to compare realities and risks for young adults in our two countries. It touches on four areas explored in depth in the papers prepared by Australian researchers: the labour market for young adults; investment in education; the influence of school; and what young adults think.

Most of the information for this comparison is taken directly from The Conference Board of Canada's annual review of Canada's performance and potential.¹ That report is prepared by numerous Conference Board research staff under the direction of Dr. James Frank, Chief Economist. Additional data and points of view are drawn from a variety of sources listed at the end of this paper.

All sources provide an overwhelming collection of statistics. After sorting through the numbers from Canada and from preliminary drafts of the Australian papers in this report, what do we know? If my children had grown up in Australia rather than Canada, how might their lives be different today?

- The economic outlook for Australia is better than it is for Canada.
- Young Australians are more likely to be in the labour force. Labour force participation is 82.5 per cent for young Australians (20-24 years old), compared with 75 per cent for young Canadians.
- Young Canadians are 50 per cent more likely than young Australians to be enrolled full-time in a post-compulsory education program.
- Young Australians are more likely to be in a post-compulsory education program in the science and technology areas where the current marketplace demand is high. In 1997, 56% of Canadian university degrees were in the humanities, compared with 38% of Australian university degrees.
- Young Canadians are more likely to be unemployed in the short-term than young Australians. However, in the long-term, they are more likely to be employed. The reason is that Canadian youth are more likely to 'shop around' for their first jobs, or take up temporary, low paying jobs until they get a good first job.
- Young Canadians are more likely to drop back into school during this period of their lives. Even if they already have a university degree, they would likely go

¹ The Conference Board's review compares the performance and potential of 7 OECD countries, including Australia and Canada. One of the limitations for this paper is that some of the data are from 1994 or 1995, whereas Australian researchers are using more recent data. Any errors or omissions are the responsibility of the author.

to college which will provide them with specific job skills training (as opposed to university) if they cannot get a job.

The social and economic context

Canada's 30 million people occupy a land area roughly 30 per cent larger than Australia. About 90 per cent of Canadians live and work within 150 kilometres of the United States border, and 80 per cent of our exports go to our powerful southern neighbour.

Not surprisingly, Canadians are strongly influenced by American media, trends and values. At the same time, we have a strong sense of regional identity and entitlement, which, combined with political uncertainty, can get in the way of any national approaches to solving the kinds of problems that young adults face in learning and work.

Historically, jobs in Canada have been mainly in the natural resource and manufacturing sectors. In recent years economic restructuring and technological advances have led to growth in the service sector where high-end jobs depending on innovation and knowledge pay well, and low-end jobs do not. One consequence is a polarization in earnings for all workers, including young adults.

The form of employment is also changing. Non-standard work involving part-time work, short-tenure jobs and self employment accounted for 31.7 per cent of jobs in 1997. Full-time, long-tenure self employment accounted for one third of net job creation between 1992 and 1997.

While employment growth rates in Canada are among the highest in the OECD, unemployment is still a serious issue. The unemployment rates for all groups, including youth and young adults, tends to rise from west to east, reaching a high for youth of 29.0 per cent in Newfoundland. In some rural and northern communities, the unemployment rate can be as high as 95 per cent.

One measure for tracking economic performance is the gross domestic product (GDP). Table 1 shows the real GDP growth rates for Canada and Australia from 1991, with forecasts for 1998 and 1999.

Australia's economic performance on this measure is consistently better, except for 1997. The Conference Board sees Australia as well-positioned in Asia to take advantage of the huge markets there—despite the problems just now—and the future as bright, mainly because of Australia's closeness to these large markets and its huge natural resource base.

Table 1: Real GDP growth rates, Canada and Australia, 1991-1999

| | Canada | Australia |
|-------|--------|-----------|
| 1991 | -1.8 | -1.3 |
| 1992 | 0.8 | 2.7 |
| 1993 | 2.2 | 3.9 |
| 1994 | 4.1 | 5.4 |
| 1995 | 2.3 | 4.1 |
| 1996 | 1.5 | 3.7 |
| 1997 | 3.7 | 2.7 |
| 1998f | 2.9 | 3.1 |
| 1999f | 2.4 | 2.8 |

Sources: The Conference Board of Canada (1998, p.24);
OECD Economic Outlook (1998); Consensus Forecasts (March 1998)

The Canadian educational context

Education in Canada is the closely guarded responsibility of the 10 provinces and 2 territories. (This will increase to 13 jurisdictions in 1999, with the establishment of the new Inuit territory, Nunavet.) Each has developed its own educational structures and institutions that reflect regional as well as linguistic and religious differences guaranteed under the Constitution.

Education is compulsory from the ages of six or seven to sixteen. In most jurisdictions, education begins with kindergarten for five-year-olds, followed by elementary school which lasts up to eight years. Secondary school continues from the end of elementary education through the 12th year, with the exception of Quebec, where it ends at Grade 11, and Ontario, which still has an extra year beyond Grade 12 to prepare students for university. Most secondary schools offer a mix of academic and vocational courses, but the vocational courses are declining in most jurisdictions. There are about 16,000 elementary and secondary schools across Canada, serving more than 5 million elementary and secondary school students. Private school enrollments account for 5 per cent of the elementary–secondary total.

Following secondary school, students can continue their studies at one of the 200 community colleges which offer technical programs, one of 77 universities which offer academic and professional programs, or a wide range of adult education facilities and private post–secondary training institutions. In Quebec, students go from secondary school to general and vocational colleges where they follow either a two–year pre–university program or a three–year technical program. Some jurisdictions have developed transfer programs between colleges and universities, but transfers among the various institutions even within jurisdictions remains a very serious issue.

There are about 400,000 college students and 600,000 university students and these numbers continue to increase. Women account for 53 per cent of the total full-time enrollment.²

Vocational training is offered in a variety of venues, including secondary schools, specialized trade schools, private institutions, community colleges and education services offered by school boards and governments. There are about 300,000 students enrolled in trade and vocational programs, reflecting, in part, the image problem for these areas of study in Canada.

Canada has been one of the highest spenders for education among the OECD countries. The resources devoted to education per student have been rising for many years, peaking in real terms at about C\$7,000 per student in 1992, having risen 100 per cent since the early 1970s. The deficit-fighting crunch of the 1990s slowed this expansion and drove the amount down to C\$45 billion, or about 5.2 per cent of GDP in 1997-98. This support for the education system is distributed as: 61 per cent for the elementary-secondary sector, 7 per cent for colleges, 20 per cent for universities and 11 per cent for vocational training.

Underlying the size of the public commitment to education spending is the fact that the population attending school will be falling as a share of Canada's population over the next decade. By 2004-05 it will be about 20.5 per cent, much lower than the 24.5 per cent 20 years ago or the 30.5 per cent 30 years ago.

Declining school age populations will present both a challenge and an opportunity for Canada. The challenge will arise because less infrastructure and staff will be required in traditional systems of education. The opportunity will be to maintain current spending, redirect it into such areas as adult literacy and retraining, early childhood education or increased emphasis on the sciences, trades and technology.

² See OECD, 1998, for an excellent summary of transition options in Canada.

The labour market for young adults

In Canada in 1997, there were 2 million young adults aged 20-24 years, down from 2.3 million young adults in 1987. The majority of these young adults—75 per cent—were part of the Canadian labour force. This is down from a decade ago for both students and non-students, and is a lower labour force participation rate than in Australia where 82.5 per cent of young adults either held jobs or were actively seeking work in July 1998³.

Figure 1: Participation, employment and unemployment rates

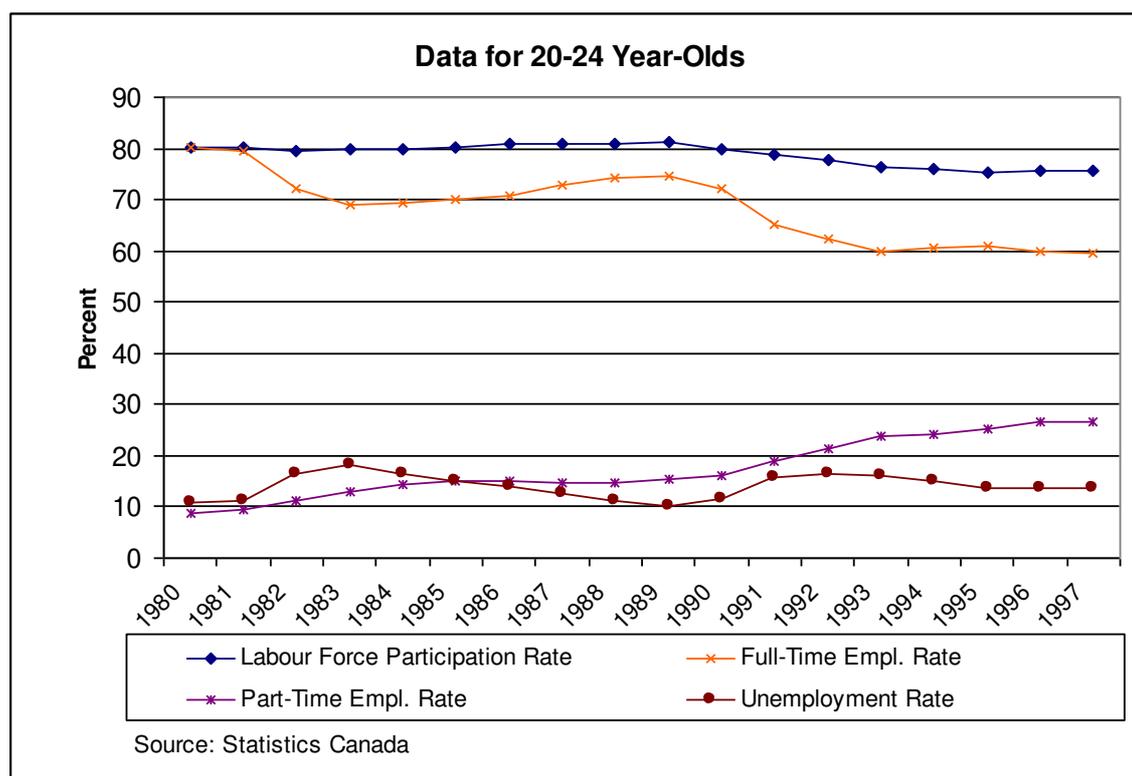


Figure 1 shows labour force participation rate, full- and part-time employment, and unemployment rates for young Canadians for the period 1980 to 1997.

Over 80 per cent of the fall in labour force participation by young adults in Canada is accounted for by young people who are deferring entry into the labour force to pursue higher education. They are staying in school longer and a higher percentage are going on to post-secondary studies—85 per cent of young Canadians now are likely to complete secondary school by the age of 20. Of these, eventually 40 per cent go to university and another 30 per cent go to community college.

The proportion of youth who combined part-time work and full-time school increased sharply between 1976 and 1990. Since then, the proportion of students between 15 and 19 who are working has fallen sharply, while the proportion of young

³ See paper by Adriana VandenHeuvel and Mark Wooden.

adults has remained relatively constant. The 20-24 age group are more likely to be working to finance their education and gain work experience. They also work longer hours than the younger group.

Unemployment

It is clear that as goes the overall job market, so goes the youth job market, with one major exception implied by the drop in labour market participation the 1990s. Young people are somewhat more 'flexible' in their lives. When jobs are scarce, they drop out of the labour market, their participation rate falls, and they 'drop in' to school. College students are particularly likely to drop in when the job market is tight.

At the current unemployment rate of 15.9 per cent, there are about 400,000 unemployed young Canadians between 15 and 24 years old. During the school year, more than one third of unemployed youth are students looking for part-time work. While 75 per cent of these unemployed students are under 20 years of age, the remainder are older students who are more likely to be looking for work to finance their education. The unemployment rate for non-student young adults is about 17 per cent, and for students 20-24, the rate is about 11 per cent.

While Canadian long-term unemployment data are only available for 15-24 year-olds, as compared to Australia's data for 15-19 year-olds and 20-24 year-olds, the rates are much lower for Canadians. The numbers are similar for young people in the U.S., suggesting that North American youth shop around for jobs. Whether this is by choice or because more stable employment is unavailable is not clear.

Table 2: Unemployment rates for 15-19 and 20-24 year-olds, percentage, 1994

| Country | Men | | | | Women | | | |
|-----------|--------------------|-----------|----------------|-----------|-------------------|-----------|----------------|-----------|
| | Long & short term* | | Long term only | | Long & short term | | Long term only | |
| | 15-19 yrs | 20-24 yrs | 15-19 yrs | 20-24 yrs | 15-19 yrs | 20-24 yrs | 15-19 yrs | 20-24 yrs |
| Australia | 19.2 | 15.4 | 15.8 | 32.5 | 21.5 | 12.1 | 20.4 | 39.0 |
| Canada | 20.9 | 17.1 | | 7.2 | 16.8 | 12.8 | | 8.4 |

Source: OECD Employment Outlook, 1996

Note: Long term unemployment lasts one year or longer

Canada has long term unemployment rates for 15-24 year olds only

Level of education makes a significant difference in the unemployment rate. In Canada, the unemployment rate for high school graduates with further education and training age 20 to 24 in 1996 was 10.8 per cent; for young graduates without further training, it was 12.9 per cent. For high school leavers, the unemployment rate was 27 per cent, with the rate for young women nearly double the rate for young men.

Aboriginal youth face significantly greater challenges. Although there are limitations in the data for Aboriginal people, we do know that:

- Although their educational attainment is increasing, only 30 per cent of Aboriginal youth between 18 and 20 years graduated from high school in 1991, compared to 63 per cent for all 18-20 year olds that year.
- The unemployment rate for Aboriginal youth living off-reserve is roughly 10 per cent higher than the rate for other youth. The unemployment rate for on-reserve youth is close to 80 per cent.
- Four hundred thousand Aboriginal youth will enter the labour market over the next 25 years. Given that 65 per cent of the Aboriginal population is under 29 years of age, and that Aboriginals represent the fastest growing segment of Canada's youth population, this is a pressing issue.

In the short-term, however, education alone will not bring down the unemployment rate among young workers. And government programs to increase the employability of young Canadians have had mixed results. In the meantime, policies that increase demand are more likely to help young unemployed workers than labour market policies, especially where moving to other parts of the country is not an option. The most effective tool will be a thriving economy.

Investment in education

Canada is one of the highest investors in the OECD countries. We are especially supportive of post-secondary education, spending 2.6% of GDP (roughly C\$15,000 per head). Australia spends 2.0% and the OECD average is 1.5% of GDP. Spending at this level shows the importance we attach to producing very highly skilled university and college graduates who can contribute to bottom-line results soon after beginning work. It also reflects our conviction that participating in university and college programs has great social benefits to individuals and society.

There seems to be a difference in timing of education participation. Tables 3 and 4 show that Australia has a higher rate of participation overall for 5–29 year olds, and for people 30+. For those 30+, participation in post-secondary education in Australia is more than double that in Canada, 10.6 per cent and 4.4 per cent, respectively. Australia appears to be doing a relatively good job of giving its mature adults access to advanced education programs, and Australians are responding.

Table 3: Education enrollment, Australia and Canada, percentage, 1995

| | Enrollment 5-29 | Enrollment 30+ |
|--------------|-----------------|----------------|
| Australia | 75.6 | 10.6 |
| Canada | 67.8 | 4.4 |
| OECD Average | 61.3 | 2.7 |

Source: Education at a Glance, OECD Indicators 1997, pp.139-140

In The Conference Board of Canada, 1998

A higher proportion of young adults is enrolled in post-secondary education in Canada than in Australia. The OECD reports that in 1995, 37.9% of 18-22 year olds and 21.7% of 22-25 year olds were enrolled in post-secondary education. This compares with 29.8% and 14.1%, respectively, for the same age groups in Australia.

Because of our high enrollments and graduation rates, Canada produces as many highly skilled graduates as our competitors with much larger populations. However, our advantage may be slipping, if recent declines in enrollment rates continue.

Table 4: Full time enrollment of students aged 18-21, 22-25, post-secondary education, Australia and Canada, percentage, 1995

| | Enrollment 18-21 | Enrollment 22-25 |
|--------------|------------------|------------------|
| Australia | 29.8 | 14.1 |
| Canada | 37.9 | 21.7 |
| OECD Average | 21.1 | 15.5 |

Source: Education at a Glance, OECD Indicators 1997, p.172

In The Conference Board of Canada, 1998

Canada's post-secondary graduation record has long been the best in the world. Today, more people aged 25-64 have successfully completed university and college programs in Canada than in any other country in the world. It is still true that if you graduate from secondary school in Canada in 1998, you are much more likely to gain a post-secondary qualification than in any other country except the United States. In the past, this high graduation rate has helped Canada's businesses by providing them with a larger domestic pool of highly qualified employees who could create value-added products and services than was available to competitors in other countries.

Table 5: Completed education, 25-64 year olds, Australia and Canada, percentage, 1995

| | Secondary school | Post-secondary |
|--------------|------------------|----------------|
| Australia | 52.8 | 24.3 |
| Canada | 75.2 | 46.9 |
| OECD Average | 59.7 | 21.9 |

Source: Education at a Glance, OECD Indicators 1997, p. 11

In The Conference Board of Canada, 1998

The influence of schooling on young adult life

In both Australia and Canada, for people of all ages, educational attainment, labour force participation and employment are highly correlated—education means jobs. A secondary school dropout in Canada is three times more likely to be unemployed than a university graduate, and will earn significantly less over his or her lifetime.

Table 6: Education attainment and labour force participation rates, 25-64 year olds, Australia and Canada, percentage, 1995

| | Australia | Canada | OECD |
|------------|-----------|--------|------|
| Elementary | 66 | 61 | 63 |
| Secondary | 81 | 79 | 80 |
| College | 84 | 84 | 87 |
| University | 89 | 89 | 89 |
| All levels | 75 | 78 | 75 |

Source: Education at a Glance, OECD Indicators 1997, p.245

In The Conference Board of Canada, 1998

A highly educated individual either country is unlikely to be unemployed or to stay unemployed for long, compared with someone who is poorly educated. But the situation for people without post-secondary education is significantly better in Australia.

Table 7: Education attainment and unemployment rates, 25-64 year olds, Australia and Canada, percentage, 1995

| Level of attainment | Australia % unemployment | Canada % unemployment | OECD % unemployment |
|---------------------|--------------------------|-----------------------|---------------------|
| Elementary | 8.5 | 13.0 | 10.1 |
| Secondary | 6.2 | 8.6 | 7.0 |
| College | 5.1 | 7.5 | 5.6 |
| University | 3.3 | 4.6 | 4.0 |
| All levels | 6.6 | 8.3 | 7.3 |

Source: Education at a Glance, OECD Indicators 1997, p.251
 In The Conference Board of Canada, 1998

The vast majority of Canadian college and university graduates have full-time employment within two years of graduating, even though they may have started out on short-term contracts. Table 8 shows the educational and labour market situation of the 1990 graduates 5 years after graduation.

Table 8: Education and labour market situations of 1990 graduates in 1995, percentage

| 1990 graduates | Trades/ Vocational | College | University |
|------------------------------|-----------------------|---------|------------|
| Full time work | 69 | 78 | 80 |
| Part time work | 10 | 11 | 9 |
| Unemployed | 12 | 6 | 6 |
| Not in the labour force | 7 | 4 | 5 |
| Directly related job | 41 | 44 | 34 |
| Partly related job | 44 | 48 | 60 |
| Same employer in 1992 & 1995 | 41 | 52 | 49 |
| Pursued other studies | 41 | 47 | 58 |

Source: HRDC and Statistics Canada, The Class of '90 Revisited, 1997.
 In The Conference Board of Canada, 1998

Not surprisingly, there are important differences by field of study. Employment and earnings prospects are strong for college and university graduates in engineering and

technology, commerce, education and health, and relatively weak for graduates of fine arts, humanities and social sciences.

Are we equipping young adults with an appropriate skills base?

An appropriate, relevant skills base can be a moving target, and preparation for work is only one goal of education. The Conference Board recognized these two realities when we set out to respond to the question of educators, 'What are employers looking for?' Through research and consultation with employers of all types and sizes, we developed an Employability Skills Profile that identifies generic academic, personal management and teamwork skills that are required in every job.

This employability skills profile has been adopted and is used in every jurisdiction in the country, both in curriculum and in engaging industry in partnerships with education. But we face some major problems in achieving these outcomes.

Literacy skills are not high enough

Literacy levels define the capability of our labour force to perform skilled work and therefore our ability to compete internationally. The latest International Adult Literacy Survey revealed that Canada's adult population's literacy skills are only average among competitor nations: 44 per cent of tested adults had level 2 literacy or lower. It also showed some polarization.

Adults who lack literacy skills find it hard to get and keep a job and this affects their personal income. Over a lifetime, males with high literacy skills will make C\$585,000 more than males with low literacy skills, on average. Highly literate females will earn C\$683,000 more than those with low literacy skills.

Highly literate people earn more because their literacy skills greatly benefit their employers, who reward them accordingly. The benefits to employers include increased output and quality of products and services, higher employee retention and lower absenteeism, reduced error rate and wastage, a better health and safety record, and increased customer retention. All of this improves the bottom line.

Science and mathematics test results are modest

The predicted evolution of the world economy points to a long-term problem: an ongoing shortage of critical skills in science and technology. The job growth in science and technology is very real: in 1992, science occupations accounted for only 3.8 per cent of Canadian jobs.⁴ In the five following years, they accounted for 12.4 per cent of new jobs, with more than half of these appearing in 1997.

⁴ Science occupations include chemists, geologists, physicists, mathematicians, statisticians, architects and engineers.

The supply side will need to respond, and the responses will take many years and involve changes in attitudes and values. Nothing indicates now that Canadian education systems are adapting to meet these new demands of industry.

International tests provide extensive information about how well Canadian students match up to students in competitor nations around the world. TIMSS, the Third International Mathematics and Science Study, is one of the most important of these tests.

Last year's TIMSS test results for grade eight students revealed that Canada's students are only moderately successful in acquiring basic science and mathematics knowledge and skills. The results disturbingly showed that high levels of student learning in mathematics and science in the formative, elementary school years do not match our heavy investment in education.

Current TIMSS results for final year secondary school students are not much better. The tests, which in Canada included grade 12 students and Ontario OAC students, had four major components. The first and second evaluated the mathematical and scientific knowledge and ability of all students leaving secondary school, the third assessed students taking advanced mathematics courses, and the fourth evaluated students taking courses in grade 12 physics.

It is small consolation to know that Australian students scored about the same or slightly better than Canadian students on these tests.

For both Australia and Canada, these results imply that we will be hard pressed in future to expand our pool of skilled tradespersons, technologists, engineers, physicists, mathematicians and other scientists to meet our growing need for highly-skilled graduates in these areas.

Science and technology still account for only 17 per cent of graduates

Despite the current requirements for scientific and technological skills in the job market, Canadian students are not opting in great numbers for science and technology training. In this most-demanded category, we are at only 17 per cent of all post-secondary graduates, and this percentage has not changed since 1986.

Table 9: University degrees awarded by subject area, percentage

| Subject Category | Australia % | Canada % | OECD |
|----------------------------|-------------|----------|------|
| Medical Science | 15 | 7 | 11 |
| Natural Science | 11 | 8 | 10 |
| Maths & Computer Science | 4 | 4 | 3 |
| Engineering & Architecture | 7 | 8 | 15 |
| Law & Business | 26 | 18 | 24 |
| Humanities | 38 | 56 | 37 |

Source: OECD, Education at a Glance, OECD Indicators 1997, p.340.

In The Conference Board of Canada, 1998

For non-university graduates aged 20-29, the most popular fields continue to be engineering and applied sciences, trades and technologies. However, there is no shift to science and technology at university level. The top field of study continues to be the social sciences and humanities, followed by commerce, management and business administration. These educational choices will not serve students well if the trends we observe in the labour markets continue as expected.

This highlights a major area of concern in post-secondary education: our continuing failure to attract enough students into university science and mathematics programs whose graduates are in very high demand in Canada's workplaces. We produce nearly 50 per cent more humanities graduates than Australia. While humanities graduates offer a wide range of valuable skills to employers, the imbalance in numbers within each subject area is putting pressure on our ability to grow businesses and create jobs in areas with the greatest potential for growth, especially to service international markets.

The issue is exacerbated by the willingness and ability of our competitors, especially the United States, to compete for subject specialist university graduates in science and mathematics.

More women are graduating in technology subjects—they will get the jobs

Women represent an increasing proportion of post-secondary graduates in Canada. The largest increase among women is in the engineering and applied sciences—109 per cent—indicating that the multi-stakeholder strategies implemented over the last 15 years to increase awareness of science and technology among young girls may be paying off. More women than ever are making the right career choices, as engineering, along with health sciences, continues to provide the highest paying jobs for graduates.

Not only is there a smaller increase in science and technology graduates between 1986 and 1996, but some data indicate that institutions graduate scientists in areas where jobs are scarce while not graduating enough students for jobs in high demand. For instance, the unemployment rate for graduates in applied sciences (such as agriculture, biophysics and wildlife management) in 1982, 1986 and 1990 ranged between 13 and 15 per cent two years after earning their first degree, while the jobless rate for computer science graduates in those same years, also two years after their first degree, ranged from 4 to 6 per cent.

The proportion of computer science graduates as a share of all graduates has not grown between the early 1980s and the early 1990s. Given all the hype around the growth of this sector and the high salaries that are offered we must look for other reasons for the lack of increase. One that suggests itself is the inherent difficulty and demanding nature of this discipline; another is the lack of sufficient spaces for qualified students in our institutions of higher learning.

Table 10: University graduates aged 20-29 by field of study, 1986-96, Canada

| Subject Category | Total | % change | Males | % change | Females | % change |
|------------------------------------|---------|----------|---------|----------|---------|----------|
| All fields | 721,885 | 31 | 314,325 | 17 | 407,130 | 43 |
| Education | 99,265 | 39 | 26,390 | 43 | 72,875 | 38 |
| Arts, humanities & social sciences | 277,640 | 40 | 105,450 | 32 | 172,185 | 53 |
| Business administration | 128,130 | 22 | 63,995 | 6 | 64,135 | 44 |
| Agriculture, biology | 41,740 | 9 | 17,425 | -3 | 24,310 | 20 |
| Engineering | 64,625 | 21 | 50,445 | 8 | 14,185 | 109 |
| Health | 54,310 | 25 | 15,350 | 24 | 38,960 | 25 |
| Maths, physical sciences | 55,330 | 19 | 35,270 | 13 | 20,060 | 31 |

Source: Statistics Canada, The Daily, Tuesday, April 14, 1998.

In The Conference Board of Canada, 1998

While the Canadian higher education system demonstrates some responsiveness to private sector demands, it continues to fail to adapt rapidly enough to the changing needs of industry. This is where business steps in, taking initiative in the areas of in-house training, co-operative ventures, and apprenticeship programs.

Managing scarce skills is a priority

When natural resources become scarce, companies pay attention to their management in order to reduce waste and optimize existing resources. The scarcity of skills demands increased attention to recruitment, retention and development.

Companies that are seen by graduates as 'employers of choice' have a built-in advantage over the competition. Such firms are characterized by:

- Clarity of focus
- Great technologies
- Good projects
- Career prospects
- Excellent human resources practices
- Robust partnerships with educational institutions
- Good corporate citizenship.

It is obviously unwise to discount the role of basic pay and taxation in young people's choices of where to work. But once the financial side is addressed, employers must realize that the quality of their human resource management and the technical challenges they provide are critical factors. It is unproductive to hire the best and have them supervised by poor managers.

What do young workers think?

The Australian Centre for Industrial Relations Research and Teaching (ACIRRT) points out that the limited labour market research on young adults is scarce, and that what is available tends to focus on the growing insecurity of employment and increasing unemployment rates. The ACIRRT paper explores how an increasingly competitive employment market is affecting the attitudes and experiences of young workers.

While there are no Canadian data available for a direct comparison, a recent study by the Canadian Federation of Independent Business (CFIB), which represents small and medium enterprises, sheds some light on the attitudes and expectations of young adults in Canada.

The CFIB conducted a series of surveys with 10,252 small- and medium-sized business owners, public opinion polling of 600 young adults between the ages of 18 to 25 and a set of focus groups with a wide range of young adults in varying stages of their school-to-work transition. Those in the focus groups were involved in, or had recently completed, some form of post-secondary education whereas the polled youth incorporated a wider range of educational backgrounds, including those who had not completed high school up to those with postgraduate experience.

Young adults are optimistic and willing to take responsibility

The study found that young adults are optimistic and willing to take responsibility, although they tend to be more positive about their own job prospects than they are of youth in general. More than 65 per cent of respondents rated their own job prospects higher than they rated the prospects for young adults in general, and another 19 per cent see themselves at the same level. Young adults typically rated their future job prospects at 7 or 8 out of 10, while other young adults in general are seen as having prospects of only 5 or 6 out of 10.

The study found that young adults see themselves as the ones with the primary responsibility to make the successful transition into the work force. They do not wish to have their career responsibilities taken over by others.

When asked what could be done to improve their opportunities at finding work, the young adults in this study overwhelmingly stated further education and upgrading their skills. This view is somewhat contradictory, however. They also put much of the blame for youth unemployment onto schools, stating that schools have not properly prepared them for the work force yet selecting schools as the 'best solution' to better prepare themselves for future employment.

Small business was identified as a source of good jobs, because of the dynamism and growth of smaller businesses and the greater opportunities to 'get involved', 'provide ideas', 'be valued', and 'make a difference'. This is consistent with the Conference Board's findings regarding the management of scarce skills.

Both the young adults and small businesses in the study agreed that employers have a role to play in assisting youth gain employment. The young adults do not expect business to simply hire them, nor do they believe that employers are responsible for the problem of youth unemployment. They have greater expectations of employers than of government, expecting employers to create opportunities for youth to gain experience through such initiatives as co-op education, on-the-job training, contract work or trial placements.

Where the jobs are being created

It is widely recognized that small businesses are major job creators in the Canadian economy. Their ability to create jobs for youth is no less important.

Table 11: Youth share of employment by age of firm

| Age of firm | Youth percentage of work force |
|--------------------|--------------------------------|
| Less than 1 year | 32.0 |
| 2 to 4 years | 25.1 |
| 5 to 10 years | 21.2 |
| 11 years and older | 16.6 |

Source: CFIB, 1998.

New firms are likely to have twice the proportion of young employees compared to older businesses, implying that a healthy business creation environment will also generate additional employment opportunities for youth.

The greatest predictor of whether a business will hire youth in the future is whether they have had a good experience with hiring youth in the past. Other significant drivers include:

- Industry sector. Certain sectors will hire youth more readily than others.
- Expectations of firm's future growth. If the firm expects to do well, they are more likely to hire youth.
- The number of youth currently employed by a firm. The more youth they have, the more likely they will hire more.

Conclusion and implications

Three years ago, the Conference Board began to benchmark Canada's performance against Australia and five other OECD countries. On the economic front, Canada has lost ground during the 1990s, while Australia has led a relatively charmed life.

Structural changes in the labour market pose challenges for young adults in both countries. Skill and education requirements are rising and there is an increasing premium on relevant work experience.

We need a combination of strategies that:

- Improve the general labour market, since improvements in the general labour market would likely have a much greater impact on youth employment than specific youth measures.
- Encourage young people to stay in school as long as possible while improving the employability skills they receive through the education system.
- Foster innovation and systemic change in education systems. In Canada, that could mean, for example, major expansion of co-operative education, or adoption of the Australian approach to enterprise and vocational education.
- Engage employers and others in the community. Providing students with opportunities to gain skills through experiential learning greatly strengthens the connections between work and learning.

References

- Bloom, Michael R., Marie Burrows, Brenda Lafleur & Robert Squires, *The Economic Benefits of Improving Literacy Skills in the Workplace*, The Conference Board of Canada, Ottawa, 1997.
- Canadian Education Statistics Council, *Education Indicators in Canada*, Pan-Canadian Education Indicators Program, Toronto, 1996.
- Canadian Federation of Independent Business, *Hire Expectations: Employment Strategies for Canada's Youth*, Willowdale, 1998.
- Canadian Youth Foundation, *Help Wanted: How Can the Private Sector Improve Employment Prospects for Young Canadians?* Ottawa, 1997.
- Conference Board of Canada, *Performance and Potential 1998*, Ottawa, 1998.
- Dusseldorp Skills Forum, *Australia's youth: reality and risk*, Sydney, 1998.
- Human Resources Development Canada, 'Youth Employment Discussion Paper', Youth Employment Strategy, Ottawa, 1997.
- Human Resources Development Canada, *Effectiveness of Employment-Related Programs for Youth: Lessons Learned from Past Experience*, Evaluation and Data Development, Ottawa, 1997.
- Human Resources Development Canada and Statistics Canada. *High School May Not be Enough: An analysis of Results from the School Leavers Follow-up Survey, 1995*, Ottawa, 1998.
- Krahn, Harvey, 'School-Work Transitions Changing Patterns and Research Needs: Consultation Paper prepared for Applied Research Branch, Human Resources Development Canada, University of Alberta, Edmonton, 1996.
- McLaughlin, MaryAnn, *Employability Skills Profile: What are Employers Looking For?* The Conference Board of Canada, Ottawa, 1992.
- Organisation for Economic Co-operation and Development, *Education at a Glance: OECD Indicators 1997*, Centre for Educational Research and Innovation Indicators of Education Systems, Paris, 1997.
- Organisation for Economic Co-operation and Development, *The Transition from Initial Education to Working Life: A Canadian Report for an OECD Thematic Review*, Ottawa, 1998.