

Education at a Glance 2006

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Draft OECD Briefing Note for Canada

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The 2006 edition of *Education at a Glance*

Education at a Glance 2006 provides a rich, comparable and up-to-date collection of indicators on the performance of education systems. While the focus is on the 30 OECD countries, the indicators also include a number of partner countries from throughout the world. The indicators look at who participates in education, what is spent on it, how education and learning systems operate and a wide range of outcomes, from how well secondary school children can solve problems to the effect of education on adults' chances of securing employment.

New material in this edition includes further analysis of results of the 2003 survey of the OECD's Programme for International Student Assessment (PISA), covering the lowest performing students and the effects of family background (Indicator A6), the way classes are organised in schools (Indicator A7) and student access to and use of Information and Communication Technology (ICT) (Indicator D5). Other new data cover: tertiary qualifications (Indicator A3); survival rates in tertiary education (Indicator A3); the impact of demographic trends on education systems and implications for expenditure to the year 2015 (Indicator A11); average tuition fees charged by educational institutions (Indicator B5); trends in expected years of education (Indicator C1); a global picture of the distribution of foreign students by destinations and their contribution to the graduate output of their country of study (Indicator C3); and instruction time per subject for 9-to-14-year-olds (Indicator D1).

Good performance of Canada on baseline qualifications

Upper-secondary educational attainment has been the norm for many years already in Canada...

- While on average two thirds of adults have attained upper-secondary education or more in the OECD, baseline qualifications are much more widespread in Canada: 84% of adults aged 25 to 64 have attained at least upper-secondary education. Canada is only



topped in this respect by the Czech Republic, Norway, the Slovak Republic, Switzerland, the United States and the partner country Russian Federation (Table A1.2a).

- Compared to other OECD countries, progress in upper-secondary attainment has been comparatively modest in Canada over a 20 year period: from 83% of the 45-to-54 age cohort to 91% of the 25-to-34 age cohort. This modest progress is shared by most other countries that started from a high level of upper-secondary attainment 2 decades ago – *i.e.* countries with high educational attainment of the 45-to-54 year-old population (Chart A1.2 based on Table A1.2a).
- Progress in educational attainment has been more marked among females than males. While 45-to-54 year-old men and women had received the same amount of education 2 decades ago, females have gained 1.1 extra year of education on average, compared to only 0.6 additional years for males, and 25-to-34 year-old women now have received on average half a year of education more than men (Chart A1.5 based on Table A1.5).
- A possible source of caution results however from the gap in upper-secondary attainment that can be observed between Canada and the top-performing countries for the younger age cohort. Although 91% of 25-to-34 year-olds have attained upper-secondary education in Canada, this proportion reaches 96% in Norway and as high as 97% in Korea. To the extent that universal baseline qualifications are the key to labour productivity growth and economic success in the future, this trend ought to be kept an eye on in the years to come (Table A1.2a).

Canada stands among the few countries that succeed in achieving high quality in baseline qualifications...

- In addition to nearly universal upper-secondary educational attainment, Canada enjoys above average education outcomes of its students of upper-secondary age, and stands among the few countries that succeed in achieving high levels of performance on baseline qualifications without leaving students behind.
- At age 15, students in Canada perform well above the OECD average in the mathematics area with a mean score of 533 on the OECD PISA mathematics scale, the 5th highest level of performance across OECD countries after Finland, Korea, the Netherlands and Japan. In terms of knowledge content, this difference in mean performance with a typical OECD country amounts to nearly one additional year of education (Chart A4.1 based on Table A4.3).
- Furthermore, Canada also displays a high proportion of high achievers among its 15-year-old students, with more than 20.3% of them reaching the PISA proficiency Levels 5 or 6. Other OECD countries with more than 20% of high achievers among students are Belgium, Finland, Japan, Korea, the Netherlands, New Zealand and Switzerland (Chart A4.2 based on Table A4.1).
- At the other end of the spectrum, few students are left behind in the Canadian education system compared to other OECD education systems: only 10.1% of students of upper-secondary age perform at Level 1 or below on the PISA mathematics scale – meaning they are unable to display the minimum level of mathematics proficiency needed to succeed in their professional and private life. This is 3rd lowest proportion among OECD countries. Other OECD countries with less than 15% of low achievers are Australia, Finland, Iceland, Japan, Korea, the Netherlands, New Zealand and Switzerland (Chart A6.1 based on Table A4.1).



... While ensuring equity in their distribution

- Canada not only displays above average performance in mathematics, but also below average variance in performance between students, suggesting a high degree of homogeneity within the education system. Moreover, most of the variance between students in Canada can be attributed to variance within schools, while variance in student performance between specific schools or programmes is far below the OECD average. This feature is typical of education systems where performance is largely unrelated to the schools in which the students are enrolled, and parents can be less concerned about school choice (Chart A5.1 based on Table A5.1).
- In addition, Canada is one of the countries in which social background has the smallest impact on students' success. Students with the lowest socio-economic status are 2.7 times more likely to be poor performers in mathematics (*i.e.* perform at Level 1 or below) than students with the highest socio-economic status – while the chances are 3.5 times more likely in the OECD (Table A6.1). Socio-economic status plays a comparatively weaker role in Canada than in other OECD countries, accounting for 10.5% of total variance between students compared to 16.8% in the OECD on average and as high as 20% or more in Belgium, France, Germany, Hungary, the Slovak Republic or Turkey (Table A7.1).

Widespread upper-secondary attainment translates into better employment and earnings prospects for individuals...

- From the labour market perspective, the transition of young adults from school to work is smoother for those with baseline qualifications. The proportion of 25-to-29 year-olds who are neither in work nor in education drops from 12.1% for individuals with less than upper-secondary education to 7.3% for those with upper-secondary qualifications (Chart C4.1 based on Table C4.3).
- As a result, individuals with at least upper-secondary education are more likely to be in employment than their less educated peers: in Canada only 57% of 25-to-64 year-olds with less than upper-secondary education are employed in 2004, compared to 77% for those with upper-secondary or post-secondary non-tertiary education (Chart A8.1 based on Table A8.3a).
- In addition to greater employability, improvements in the labour market situation have greater benefits for individuals possessing baseline qualifications. Indeed, while unemployment rates have decreased since 1995 for all levels of educational attainment, the decrease in unemployment rate has been steeper for individuals with upper-secondary than for those without – by 2.6 and 1.3 percentage points respectively (Table A8.4a).
- Lastly, the possession of baseline qualifications also yields a premium in terms on earnings in addition to better employment prospects. Earnings of 25-to-64 year-olds with less than upper-secondary education are indeed 22% lower than those of upper-secondary graduates (Chart A9.2 based on Table A9.1a).

... As well as greater opportunities for subsequent training and upgrading of their skills

- The development of the new economy translates into an acceleration of technological progress and changing skill demands over time. In this context, the ability to take part in lifelong learning, and opportunities to do so, are increasingly becoming a necessity for individuals to remain competitive on the labour market throughout their career.
- In this respect, Canada has a well developed system of continuing education and training by OECD standards, which provides real opportunities for individuals to improve their



skills in various areas and, for those lacking baseline qualifications, to acquire them at later stages of their working lives. A quarter of 25-to-64 year-olds in Canada report participation in some type of non-formal job-related training during the past 12 months – significantly above the OECD average of 18%.

- But this aggregate participation rate in a given year masks large differences according to the educational attainment of individuals: from 6% for adults with less than upper-secondary education to 20% for upper-secondary graduates and 35% for tertiary graduates. As a result of their higher participation rates, individuals with baseline qualifications can expect to receive more non-formal job-related training during the course of their working lives in Canada. Over a typical working life (40 years), individuals with upper-secondary education can expect to spend 517 hours in non-formal job-related training compared to up to 796 hours for tertiary graduates (Chart C5.2 based on Table C5.1a).

Progression in high-level skills and returns to tertiary education

Canada enjoys a highly skilled population: nearly half of adults hold a tertiary qualification – more than in any other OECD country

- Beyond baseline qualifications, more people around the world are now completing university courses and other forms of tertiary education. In this respect, Canada has the highest level of tertiary attainment in the OECD: 45% of 25-to-64 year-olds hold a tertiary degree, spread equally between graduates of tertiary-type B education and graduates of tertiary-type A and advanced research programmes. This is 20 percentage points above the OECD average (25%). Interestingly, this high level of tertiary attainment of 25-to-64 year-olds in Canada is only matched by the 2 partner countries Israel and Russian Federation, with 45 and 55% of tertiary attainment respectively (Table A1.3a).
- The high level of tertiary attainment in Canada mainly results from higher participation in and completion from tertiary-type B programmes in comparison with other OECD countries. Indeed, although other OECD countries have more than 20% of their 25-to-64 population holding a tertiary-type A qualification – Australia, Denmark, Iceland, Japan, Korea, the Netherlands, Norway and the United States – Canada also has a tradition of vocational education at the tertiary level, with 22% of the population holding a tertiary-type B qualification, compared to only 9% in the OECD (Table A1.3a).
- When measured in terms of average years of education received, the educational attainment of the adult population in Canada is among the highest in the OECD. Canadian 25-to-64 year-olds have spent an average of 13.2 years in education, more than one year longer than in the OECD (11.9 years). This high level of overall educational attainment is only outperformed by Denmark, Germany, Luxembourg, Norway and the United States (Chart A1.1 based on Table A1.5).
- Canada is also one of the 8 OECD countries (together with Finland, Iceland, Ireland, Poland, Portugal, Sweden and the United States) where the educational attainment of females is above that of males for the 25-to-64 age group, although marginally in the case of Canada – 13.3 vs. 13.2 years of education respectively. Gender differences are more pronounced for the younger age cohort: Canadian 25-to-34 females have received about half a year more education than their male counterparts – 14.1 and 13.6 years respectively (Chart A1.5 based on Table A1.5).



Canada stands among the OECD countries with the largest expansion of tertiary educational attainment in recent years...

- Almost all OECD countries have seen a rise in the education levels of their citizens over the past decades, and in some the increase has been spectacular. Canada stands among the countries that have experienced the largest increases in tertiary attainment in the past 2 decades, following the rapid progress of Korea – which managed to triple the proportion of its population holding a tertiary qualification – and France, Ireland, Poland and Spain where this proportion roughly doubled. In Canada, 41% of 45-to-54 year-olds hold a tertiary qualification while this is the case of 53% of 25-to-34 year-olds – *i.e.* an increase of 12 percentage points over 2 decades (Chart A1.3 based on Table A1.3a).

... But the growth in demand for tertiary qualifications has halted in Canada in stark contrast with the trend everywhere else, suggesting that other countries are catching up

- Yet, Canada reported the lowest increase in tertiary enrolments of all OECD countries in absolute terms, with only 4% more tertiary students in 2002 than in 1995, compared to a 49% increase in the OECD on average. Most of this progression can be attributed to population growth. Tertiary enrolment rates have barely increased compared to 1995, suggesting that the demand for tertiary qualifications is static in Canada, and it will be relatively easy for other countries to catch up (Chart C2.2 based on Table C2.2).
- Current participation rates in tertiary education already suggest that 5 year-old children in Canada can expect to receive 2.9 years of tertiary education throughout their life – which is slightly below the OECD average of 3.0 years. This modest tertiary education expectancy lies well below the performance of the leading countries, with more than 4 years of tertiary education to be expected by children in Finland, Korea, New Zealand and the United States (Table C1.1). This may be due, in part, to the relatively high rate of participation in Canada in tertiary-type B programmes, which tend to be of shorter duration than tertiary-type A programmes.

Rising tertiary education levels among citizens seem generally not to have led to a decrease of the labour-market value of qualifications

- Rising tertiary education levels among citizens seem generally not to have led to a decrease in the labour-market value of qualifications as these have become more readily available. On the contrary, among the countries in which the proportion of young adults with tertiary qualifications increased by more than 5 percentage points in the past 2 decades – Australia, Belgium, Canada, Finland, France, Greece, Iceland, Ireland, Japan, Korea, Luxembourg, the Netherlands, Norway, Poland, Portugal, Spain, Sweden and the United Kingdom (Table A1.3a) – most have seen falling unemployment (Table A8.4a) and rising earnings benefits (Table A9.2a) among tertiary graduates over the last decade.
- This is the case in Canada where the unemployment rate of tertiary graduates dropped from 6.2% in 1995 to 4.7% in 2004 while in the meantime, their earnings advantage relative to upper-secondary graduates rose from 27 to 40% since 1997 (Tables A8.4a and A9.2a).

In Canada, tertiary university education has a greater pay-off than in most other countries... but this is less the case for tertiary vocational education

- In Canada, 25-to-64 year-old individuals with tertiary education enjoy an earning premium relative to their counterparts with just upper-secondary education. For tertiary-type A (university) programmes, this premium reaches 70% for men and 75% for women. With earnings premiums for men and women ranking respectively 7th and 4th in the OECD, tertiary university-type education has a greater pay-off in Canada than in



most other countries. This contrasts with the situation of graduates from tertiary-type B (vocational) programmes whose earnings premium – 15% for men and 18% for women – is comparatively low by OECD standards (Chart A9.2 based on Table A9.1a).

- Tertiary graduates in Canada also enjoy a fairly smooth integration into the labour market: 4.9% of 25-to-29 year-olds are neither in work nor in education, compared to 12.1% for individuals with less than upper-secondary education (Chart C4.1 based on Table C4.3). They are more likely to be employed than their less educated peers throughout their career: 82% of 25-to-64 year-olds with tertiary education are in employment, while this is the case of only 57% of those with less than upper-secondary education (Chart A8.1 based on Table A8.3a).
- Yet, the unemployment rate of tertiary graduates in Canada is – at 4.7% – comparatively high by OECD standards (OECD average: 3.9%). If limiting the comparison with other G7 countries, the unemployment rate of tertiary graduates is lower in Canada than in France (6.1%), Germany (5.5%) and Italy (4.8%) but more than one percentage point above Japan (3.7%), the United Kingdom (2.2%) and the United States (3.3%) (Table A8.4a).

Tertiary education is rapidly becoming an international domain worldwide... but Canada is losing ground relative to other destinations

- In 2004, 2.7 million students were enrolled in the OECD area outside their country of origin (Table C3.6), with more than half of them choosing France, Germany, the United Kingdom and the United States as their destination. Canada is also a significant player on the international education market, with 5% of foreign students worldwide enrolled in Canada (Chart C3.2 based on Table C3.8).
- With a 16% increase in the number of foreign students enrolled in Canada since 2000 – compared to a 61% progression in the OECD – Canada is losing ground relative to other destinations for international students. Its market share has declined from 6 to 5% of worldwide enrolments in a short period (Chart C3.3 based on Table C3.8). This relative decline may be attributed to the comparatively high level of tuition fees charged to international students in Canada in the context of fierce competition from other destinations offering similar educational opportunities at a lower cost (Box C3.3).
- Yet, international students represent 8.8% of tertiary enrolments in Canada – above average by OECD standards – and as high as 23.3% of enrolments in advanced research programmes – placing Canada amongst the most internationalised countries at that level (Chart C3.1 based on Table C3.1).
- International students make a significant contribution to the graduate output of Canadian tertiary institutions. They account for nearly one in five graduates from tertiary-type A second degrees (18.1%), and over a quarter of graduates from advanced research programmes (27.3%), thus making Canada highly dependent upon foreign brainpower to sustain its graduate output (Chart C3.4 based on Table C3.7).

A cost-efficient system up to upper-secondary education – with good performance for reasonable levels of investment

Canada spends reasonable amounts per student up to upper-secondary education...

- The cost-efficiency of Canadian primary and secondary education appears fairly good, with high levels of student performance for a very reasonable level of investment per



primary and secondary student. Indeed, Canada invested US\$ 6482 per primary and secondary student in 2002, just slightly above the OECD average of US\$ 6278. This was more than 15% below the level of expenditure per student of Italy at these levels of education. Yet, Canada significantly outperformed Italy in terms of student outcomes, highlighting the efficiency of its education system up to upper-secondary education (Chart B1.3 based on Table B1.1c).

- Moreover, expenditure per student increased by 19% in real terms in primary, secondary and post-secondary non-tertiary education since 1995 – a significantly lower progression than in other OECD countries where expenditure grew by 33% on average (Chart B1.7 based on Table B1.5).

... But stands out for a decreasing share of GDP being devoted to education...

- Investment in primary, secondary and post-secondary non-tertiary education is also reasonable relative to the country's wealth. In 2002, Canada devoted 3.6% of its GDP to primary, secondary and post-secondary non-tertiary education, slightly below the OECD average of 3.9% (Chart B2.2 based on Table B2.1b).
- While Canada spent 4.5% of its GDP on primary, secondary and post-secondary non-tertiary education in 1995 – the highest proportion across OECD countries and second only to Israel – educational investment did not match growth in domestic income and spending on educational institutions has declined by nearly one percentage point of GDP (Table B2.1b).

Yet, spending on primary and secondary education has increased in absolute terms... essentially as a result of a shift from public to private funding

- Yet, spending on primary, secondary and post-secondary non-tertiary education has increased by 9% in absolute terms compared to 1995, but this is a modest increase by OECD standards. Indeed, expenditure on these levels of education increased by 33% in the OECD on average, and only Austria, the Czech Republic, Germany, Japan and Spain display slower growth in education investments than Canada (Table B2.3).
- These additional resources on primary, secondary and post-secondary non-tertiary education have benefited from a shift from public to private funding over the period. Private expenditure grew faster than public funds, by 48% in absolute terms compared to a 6% increase in public spending (Table B2.2). As a result, Canada is one of the few countries – together with the Slovak Republic, Switzerland, the United Kingdom and the partner country Chile – where the private share of education expenditure increased by more than 2 percentage points, from 6.3 to 8.7%. Yet, primary, secondary and post-secondary non-tertiary education remains essentially publicly-funded in Canada, with 91.3% of expenditure emanating from public sources (Chart B3.3 based on Table B3.2a).

High investment in tertiary education – mostly as a result of high tuition fees and private contributions

By contrast with the situation of primary, secondary and post-secondary non-tertiary education, Canada invests heavily on tertiary education by OECD standards...

- Different from spending patterns on primary, secondary and post-secondary non-tertiary education, Canada spends a lot on tertiary education relative to its OECD peers. With 2.4% of its GDP devoted to tertiary education, Canada stands 1 percentage point above the OECD average. Canada, Korea, the United States and the partner countries Chile and



Israel are the only countries to spend more than 2% of their GDP on tertiary education (Chart B2.2 based on Table B2.1b).

- In addition, the share of GDP devoted to tertiary education progressed slightly since 1995 – from 2.3 to 2.4% of GDP – contrasting with Canada’s falling investments on primary and secondary education (Table B2.1b).
- In real terms, overall spending on tertiary education institutions also increased by 38% since 1995, although most of the increase took place between 1995 and 2000 (Chart B2.3b based on Table B2.3).
- With US\$ 19992 spent annually per tertiary student, Canada is the 3rd highest spender at that level after Switzerland and the United States. Expenditure per tertiary student is more than 75% higher in Canada than in a typical OECD country where spending per tertiary student reaches US\$ 11254 on average (Chart B1.2 based on Table B1.1a).
- In addition, a comparatively low proportion of expenditure on tertiary institutions corresponds to Research and Development activities in Canada (Chart B6.2 based on Table B6.1). The comparison of expenditure per tertiary student on the sole core education services reveals an even higher level of spending in Canada relative to other OECD countries, with expenditure per tertiary student now more than double the OECD average – at US\$ 16937 compared to US\$ 8093 in the OECD – second only to the United States (Table B1.1a).

... And expenditure per tertiary student has increased since 1995

- Expenditure on tertiary education has increased faster than enrolments in Canada since 1995, with changes of 38 and 7% respectively, resulting in a 28% increase in expenditure per tertiary student – a remarkable progression in comparison with the 6% increase in the OECD. This progression in tertiary expenditure per student was made possible by the low progression in tertiary enrolments in Canada (Chart B1.7 based on Table B1.5).

... High levels of investment in Canada are made possible by a large contribution from the private sector

- With 43.6% of tertiary education expenditure funded from private sources, Canada stands well above the OECD average (23.6%) in terms of the contribution of the private sector to tertiary education funding. Australia, Japan, Korea, the United States and the partner country Chile also rely heavily on private funding of tertiary education, with more than half of tertiary expenditure coming from private sources (Chart B3.3 based on Table B3.2b).
- The high contribution of the private sector in Canada results from a comparatively high level of tuition fees – at US\$ 3267. Annual tuition fees are also above US\$ 3000 in Australia, Japan, Korea, the United States and the partner country Chile (Chart B5.1 based on Table B5.1).

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