Education at a Glance
OECD INDICATORS

Country Profile for Canada

2006

Council of Ministers of Education, Canada
Conseil des ministres de l'Éducation (Canada)

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Comparison of Selected Indicators

Comparison of selected indicators from OECD's *Education at a Glance*, 2006											
Results for **Canada**, G7 countries, and others											
Indic-ator	Source Table	CAN	FRA	DEU	ITA	JPN	UKM	USA	High	Low	OECD average
A1	Table A1.3a Population that has attained tertiary education (2004), age 25 to 64	45%	24%	25%	11%	37%[1]	26%	39%	CAN	TUR 9%	25%
B1	Table B1.1c Annual expenditure per student[2] on core services, ancillary services and R&D (2003), primary, secondary and post-secondary non-tertiary education	$6482[3]	$7181	$6594	$7754	$6842	$6741	$8935	LUX $13621	TUR $986	$6278
B1	Table B1.1c Annual expenditure per student[2] on core services, ancillary services and R&D (2003), tertiary education	$19992[3]	$10704	$11594	$8764	$11556	$11866	$24074	CHE $25900	POL $4589	$11254
B2	Table B2.1a Expenditure on educational institutions as a percentage of GDP, for all levels of education (2003)	5.9%[3]	6.3%	5.3%	5.1%	4.8%	6.1%	7.5%	USA, KOR 7.5%	TUR 3.7%[3]	5.9%
B4	Table B4.1 Total public expenditure on education (2003) as a percentage of total public expenditure	12.5%[3]	11.0%	9.7%	9.9%	10.7%	11.9%	15.2%	MEX 23.8%	GRC 8.0%	13.3%

C3	Table C3.1 Student mobility and foreign students in tertiary education (2004), foreign students as a percentage of all tertiary enrolment, total tertiary	10.6%[3]	11.0%	11.2%	2.0%	2.9%	16.2%	3.4%	NZ 28.3	KOR 0.3%	7.3%
C4	Table C4.3 Percentage of the population not in education and unemployed in the total population (2004), age 15–19	3.5%	2.9%	1.8%	3.7%	N/A	2.2%	2.3%	SLO 7.0%	DEN 0.6%	2.6%
C5	Table C5.1a Participation rate in non-formal job-related education and training, all levels of education (2003)	25%[3]	19%	12%	4%	N/A	27%	37%	SWE 40%	GRE, HUN, ITA 4%	18%

[1]Year of reference 2003.
[2]In equivalent US dollars converted using PPPs.
[3]Year of reference 2002.

Introductory Note

This document, Country Profile for **Canada**, is intended to provide an overview of the data reported for **Canada** in *Education at a Glance, OECD Indicators 2006* (EAG 2006). Readers are invited to explore the full document in more depth, if they wish.

The text in italic type in this country profile is extracted directly from EAG 2006 and has page (p.) and paragraph (para.) references to the longer document. Please note that the EAG 2006 text has not been edited for this country profile. The comments in regular type relate to **Canada** but are derived from the tables and charts in EAG 2006.

The section entitled Background Information at the end of this document is drawn directly from the "Introduction" in EAG 2006 and is included here for the reader's convenience.

Chapter A: The output of educational institutions and the impact of learning

Indicator A1: Educational attainment of the adult population

Educational attainment refers to the highest level of schooling an individual has completed and serves as a proxy for measuring human capital — the skills available in the population and labour force. Among OECD countries, **Canada** is the country with the highest percentage of its population having completed postsecondary education. Almost half of the population aged 25 to 64 has completed either college or university. (Table A1.3a). Five countries, Denmark, Iceland, the Netherlands, Norway, and the United States have a greater proportion of their population with university-level educational qualifications than **Canada**. **Canada** has the highest proportion with college-level qualifications.

*In countries whose adult population generally has a high attainment level, differences among age groups in the level of educational attainment are less pronounced (Table A1.2a). An exception to this is Korea – where the difference in upper secondary attainment between those aged 25 to 34 years and those aged 45 to 54 years reaches 40 percentage points. Nevertheless, in countries where more than 80% of 25-to-64-year-olds achieve at least upper secondary attainment, the difference in the share of 25-to-34-year-olds who have attained the upper secondary level and the share of 45-to-54-year-olds who have attained this level is, on average, only 7 percentage points. In Germany, the proportion of upper secondary attainment is almost the same, at around 85% for the three youngest age groups. For other countries, where there is more room for increase, the average gain in attainment between these age groups is 13 percentage points. Only seven of these countries (**Canada**, the Czech Republic, Denmark, Mexico, Switzerland, the United Kingdom and the United States) show gains of less than 8 percentage points.*

*Attainment at the tertiary level differs greatly across countries. Among 25-to-64-year-olds, the share that has attained tertiary education, whether type B or type A, ranges from below 15% in the Czech Republic, Italy, Portugal, the Slovak Republic and Turkey, to a high of 45% in **Canada**. It equals or exceeds 30% in nine other countries (Table A1.3a).*

*The pattern of tertiary attainment in OECD countries for 25-to-64-year-olds who have completed tertiary-type A or advanced research programmes is also diverse and ranges from 9% in Austria to 20% or more in Australia, **Canada**, Denmark, Iceland, Japan, Korea, the Netherlands, Norway and the United States. However, certain countries also have a tradition of vocational education at the tertiary level (tertiary-type B). The proportion of persons who have attained the tertiary-type B level is equal to or exceeds 15% in Belgium, **Canada**, Finland, Japan and Sweden (Table A1.3a).*

*In 18 OECD countries, males' level of educational attainment – measured by the average number of years of schooling – is still higher than that of females, sometimes considerably, as in Korea and Switzerland. In 8 OECD countries (**Canada**, Finland,*

Iceland, Ireland, Poland, Portugal, Sweden and the United States), the educational attainment of females aged 25 to 64 – measured by the average number of years of schooling – is higher than that of men.

The difference in educational attainment between males and females varies considerably depending on the age group (Chart A1.5). For 55-to-64-year-olds, the gender difference, expressed in average duration of formal study, favours females in only three countries (Table A1.5). By contrast, the situation of 25-to-34-year-olds exhibits a different picture. For this group, the average number of years of study completed is higher among females in 20 out of 30 OECD countries, and only 2 of the remaining 10 countries − Switzerland and Turkey − register differences of more than 0.5 years in favour of males.

Indicator A2: Current upper secondary graduation rates

Data for **Canada** do not include upper secondary graduation rates but do include graduation rates from postsecondary non-tertiary programs (generally, trade-vocational programs in **Canada**), in Table A2.2.

Indicator A3: Current tertiary graduation and survival rates

Data for **Canada** for 2004 are available only for graduation from advanced research programs (Table A3.1). **Canada**'s rate (0.8%) is below the OECD average of 1.3%. Data cannot be reported on tertiary-type A programs in terms of first-time graduation because OECD's method of collecting and reporting the data makes it impossible in the Canadian context to distinguish between first and second degrees (for example completion of a second bachelor's degree).

Indicator A4: What 15-year-olds can do in mathematics

This indicator presents results from OECD's Programme for International Student Assessment (PISA 2003).

Examining individual countries' performance by proficiency level shows that in Belgium, Japan, Korea, the Netherlands and Switzerland, 7% or more of students reach the highest level of proficiency [Level 6]. *In these countries and in **Canada**, Finland and New Zealand, a significant proportion of students also reach Level 5 or above (over 20% in each case). In contrast, in Greece, Mexico, Portugal and Turkey, less than 6% of students reach these two levels of proficiency.*

*On the combined mathematics scale, Finland, Korea and the Netherlands are the best performing OECD countries. Students' average scores in these countries – ranging from 538 points in the Netherlands to 544 points in Finland – are over one-half a proficiency level higher than the OECD average. Eleven other OECD countries (Australia, Belgium, **Canada**, Czech Republic, Denmark, France, Iceland, Japan, New Zealand, Sweden and Switzerland) have mean scores that are above the OECD mean. Four countries (Austria,*

Germany, Ireland and the Slovak Republic) perform similarly to the OECD mean, and the remaining 11 OECD countries perform below it.

*For some countries – most notably Greece, Italy, Korea, Mexico, Portugal, Spain and Turkey – the relative standing is similar across the four mathematics content areas. By contrast, in Austria, **Canada**, the Czech Republic, France, Germany, Ireland, Japan, New Zealand, Norway, the Slovak Republic and Switzerland, performance differences among the content areas are particularly large and may warrant attention in curriculum development and implementation.*

> **Canada**'s mean scores were 518 for Space and Shape, 537 for Change and Relationships, 528 for Quantity, and 542 for Uncertainty.

*In addition, the range of performance in the middle half of the students (i.e. the difference between the 75th and 25th percentiles) on the combined mathematics scale ranges from less than 120 score points in **Canada**, Finland, Ireland and Mexico to more than 140 score points in Belgium and Germany. In the majority of countries, this range exceeds the magnitude of two proficiency levels and in Belgium and Germany it is around 2.4 proficiency levels.*

*On the change and relationships scale, among the 25 countries for which data can be compared, the OECD average increased from 488 points in 2000 to 499 points in 2003, the largest observed difference in any areas of the PISA assessment. Again, however, there is wide variation across countries and more countries saw differences on this scale than on the space and shape scale. The Czech Republic and Poland both saw increases of around 30 score points (equivalent to about one-half a proficiency level); and in Belgium, **Canada**, Finland, Germany, Hungary, Korea, Portugal, and Spain, increases were between 13 and 22 points. There were no statistically significant increases or decreases in average scores of the remaining countries.*

*Finally, a comparison between the range of performance within a country and its average performance reveals that wide disparities in performance are not a necessary condition for a country to attain a high level of overall performance. For example, **Canada**, Denmark, Finland, Iceland and Korea all have above-average performance but below average differences between the 75th and 25th percentiles.*

Indicator A5: Between- and within-school variation in the mathematics performance of 15-year-olds

> This indicator presents results from OECD's Programme for International Student Assessment (PISA 2003).

*The proportion of between-school variance is around one-tenth of the OECD average level in Finland and Iceland, and half or less in **Canada**, Denmark, Ireland, Norway, Poland and Sweden. In these countries, performance is largely unrelated to the schools in which students are enrolled (see Table 5.1). This suggests that the learning environment*

*is similar in the ways that it affects the performance of students. It is noteworthy that **Canada**, Denmark, Finland, Iceland, Ireland, Norway and Sweden also perform close to or above the OECD average level. Parents in these countries can be less concerned about school choice in order to enhance their children's performance, and can be confident of high and consistent performance standards across schools in the entire education system.*

Indicator A6: Fifteen-year-old students who perform at the lowest levels of proficiency in mathematics (2003)

This indicator presents results from OECD's Programme for International Student Assessment (PISA 2003).

Across OECD countries, more than one-fifth (21.4% of 15-year-old students) performed at Level 1 and below. This is also true for 13 of the 29 OECD countries individually. For all countries except one (Finland), there are at least 10% of students at Level 1 and below in mathematics. This is a sizeable percentage of a country's human capital.

*There is also considerable variation across countries with respect to the percentages of students who perform at these levels. The percentages of students displaying minimal or less-than-minimal functioning in mathematics ranges from a low of 6.8% in Finland to a high of 66.0% in Mexico. Limiting the analysis to those countries which perform above the OECD average (500 points), the variation remains marked, from 6.8% in Finland to 21.6% in Germany. Additionally, some countries that perform similarly in terms of mean score have different percentages of students performing at Level 1 and below. For example, while there is no statistically significant difference in the mean scores of students in the top-performing countries of **Canada** and Belgium, **Canada** has a statistically significantly lower rate of low achievers than the Belgium by 6.4 percentage points. Similar examples can be found among countries at other levels of overall performance, such as in Germany and Ireland – both perform around the OECD average – where the percentages of low-achievers are 21.6% versus 16.8%, respectively. These findings show how mean scores can mask varying degrees of dispersion in countries, and that some countries do demonstrate both high scores and low variation.*

*The likelihood of the most disadvantaged students relative to the most advantaged students to perform at or below Level 1 was lower than the OECD average in eight countries (**Canada**, Greece, Iceland, Japan, Norway, Spain, Sweden and Turkey), indicating a weaker association in these countries between 15-year-olds' mathematical competence and family backgrounds. In these countries, students from the lowest quarter on the socio-economic index were 2.1 to 2.9 times more likely on the economic index to perform at Level 1 or below in mathematics.*

Indicator A7: Institutional differentiation, socioeconomic status and 15-year-old students' mathematics performance (2003)

This indicator presents results from OECD's Programme for International Student Assessment (PISA 2003).

Canada's variance in mathematics performance is below the OECD average on all the comparisons used in this indicator.

Table A7.1 shows that 9.7% of Canadian students had repeated at least one grade. While many Canadian jurisdictions have introduced policies designed to minimize grade retention, these policies, in many cases, would not have been in effect during the entire schooling period for students participating in PISA. **Canada**'s rate of grade repetition is the lowest among G7 countries other than Japan (0%) and the United Kingdom, which had too low a response rate to ensure compatibility.

Indicator A8: Labour force participation by level of educational attainment

*In countries such as Australia, **Canada**, Denmark, Finland, France, Greece, Ireland, Italy, Mexico, Netherlands, New Zealand, Norway, Spain, Sweden and the United Kingdom – unemployment rates for persons with an upper secondary education decreased between 1995 and 2004.*

Indicator A9: The returns to education: education and earnings

*For 25-to-64-year-olds, financial rewards from tertiary education benefit females more than males in Australia, **Canada**, Ireland, Korea, the Netherlands, Norway, Spain, Switzerland and the United Kingdom. The reverse is true in the remaining countries, with the exception of Belgium where, relative to upper secondary education, the earnings of males and females are equally enhanced by tertiary education (Table A9.1a).*

The data show that in most countries the share of individuals in the lowest earnings categories falls as the level of educational attainment rises. This result is another way of viewing the well-established positive relationship between earnings and educational attainment. However, it is notable that even at higher levels of education there are individuals in the lower earnings categories, indicating that they have experienced a relatively low rate of return to education.

*Still, countries differ significantly in the dispersion of earnings. For instance, Table A9.4a shows that in most countries the majority of the population has earnings above half of the median but less than 1.5 times the median. Yet this percentage ranges from 45% in **Canada** and 51% in the United States to 79% in the Czech Republic. Across all levels of education, countries such as Belgium, the Czech Republic, France and Luxembourg have relatively few individuals with earnings either at or below half the median. Conversely, while across all countries an average of 21% of individuals between*

the ages of 25 and 64 has pre-tax earnings above 1.5 times the median, this population share is as low as 15% in Sweden.

Note that the section on Definitions and methodologies contains information about the Canadian data.

Indicator A10: The returns to education: links between education, economic growth, and social outcomes

This indicator presents information on demographic trends between 2005 and 2015 and the likely impact on educational expenditure, student enrolments, and graduate numbers. For example, the Canadian population aged 5 to 19 is likely to decline, leading to a corresponding decline in enrolments in elementary and secondary education.

Chapter B: Financial and human resources invested in education

Indicator B1: Educational expenditure per student

Even if overall spending per student is similar in some OECD countries, the ways in which resources are allocated across the different levels of education vary widely. OECD countries as a whole spend USD 5 055 per student at the primary level, USD 6 936 per student at the secondary level and USD 14 598 per student at the tertiary level. At the tertiary level, these totals are influenced by high expenditure in a few large OECD countries, most notably ***Canada*** *and the United States. Spending on education per student in a typical OECD country (as represented by the simple mean across all OECD countries) amounts to USD 5 450 at the primary level, USD 6 962 at the secondary level and USD 11 254 at the tertiary level (Table B1.1a and Chart B1.2)*

More differences in expenditure per student on core educational services compared to total expenditure are observed at the tertiary level. Naturally, OECD countries in which most R&D is performed by tertiary educational institutions tend to report higher expenditure per tertiary student than countries in which a large part of R&D is performed in other public institutions or by industry. Excluding R&D activities and ancillary services, expenditure on core educational services in tertiary institutions represents on average USD 7 774 and ranges from USD 4 500 or below in Greece, Poland, the Slovak Republic and Turkey to more than USD 9 000 in ***Canada****, Denmark, Norway, Switzerland, the United Kingdom and the United States (Table B1.1c).*

On average among the 28 OECD countries for which data are available, 66% of all expenditure on educational institutions is allocated to primary, secondary and post-secondary non-tertiary education while 74% of students are enrolled at this level of education. The difference between the two figures exceeds 10 percentage points in Australia, ***Canada****, Hungary, Japan, Mexico, the Slovak Republic, Switzerland, Turkey and the United States, and the partner countries Brazil, Chile and Israel (Table B1.2).*

Compared to primary, secondary and post-secondary non-tertiary education, there are significant differences between the proportion of money invested and the proportion of students enrolled in tertiary education. On average among the 28 OECD countries for which data are available, 25% of all expenditure on educational institutions is allocated to tertiary education, whereas only 15% of students are enrolled in tertiary education. The difference between the two proportions in tertiary education ranges from below 7 percentage points in Austria, France, Greece, Iceland, Italy, Korea, Norway, Poland and Portugal to more than 15 percentage points in ***Canada****, Switzerland, Turkey, the United States, and the partner countries Brazil and Chile (Table B1.2).*

Expenditure on education per student averages 20% of GDP per capita at the primary level, 26% at the secondary level and 43% at the tertiary level (Table B1.4). Countries with low levels of expenditure per student can nevertheless show distributions of investment relative to GDP per capita which are similar to countries with a high level of spending per student. For example, Hungary, Korea, Poland and Portugal – countries

with expenditure per student and GDP per capita below the OECD average at primary, secondary and post-secondary non-tertiary level of education – spend more per student relative to GDP per capita than the OECD average. Similarly, Hungary, Mexico and Turkey and the partner country Chile spend more than 56% of GDP per capita on each tertiary-level student, which is among the highest proportions after ***Canada****, Switzerland and the United States which spend respectively 66, 78 and 64 % of GDP per capita on each tertiary-level student.*

The pattern is different at the tertiary level of education. In 7 out of 27 OECD and partner countries for which data are available – Australia, the Czech Republic, Poland, Portugal and the Slovak Republic, and in the partner countries Brazil and Israel – expenditure on tertiary education per student declined between 1995 and 2003. In all of these countries, this decline was mainly the result of a rapid increase (more than 30%) in the number of tertiary students during the same period (Chart B1.7). On the other hand, expenditure per student at the tertiary level rose significantly in Greece, Hungary, Ireland and Mexico, and in the partner country Chile despite a growth in enrolment of 93, 70, 34, 48 and 68%, respectively. Among the 27 OECD and partner countries, Austria, ***Canada****, Denmark, Germany, Italy, the Netherlands and Turkey were the only countries in which the number of tertiary students increased by less than 10% (Table B1.5 and Chart B1.7).*

> Note that combined elementary and secondary data for **Canada** are reported in the column for All Secondary in Table B1.1a because it is not possible to distinguish between spending on elementary and secondary education for the Canadian data. Other OECD countries do report expenditures at these levels separately, meaning that their data in this column are for secondary education only.

Indicator B2: Expenditure on educational institutions relative to gross domestic product

More than one-quarter of combined OECD expenditure on educational institutions is accounted for by tertiary education. At this level of education, pathways available to students, programme durations and the organisation of teaching vary greatly among OECD countries, leading to greater differences in the level of expenditure allocated to tertiary education. On the one hand, Korea and the United States spend respectively 2.6 and 2.9% of their GDP on tertiary institutions and these two countries are also two of the three countries with the highest proportion of private expenditure on tertiary education. ***Canada****, Denmark, Finland and Sweden, as well as the partner countries Chile and Israel, also show high levels of spending, with 1.8% or more of GDP devoted to tertiary institutions.*

Countries vary in the levels of education at which spending has increased over the period 1995 to 2003, but in most countries, expenditure in tertiary education increased in higher proportions compared to primary, secondary and post-secondary non-tertiary education. Denmark, Finland and the United States – OECD countries with a comparably high

increase (about 30%) in absolute spending on educational institutions between 1995 and 2003 for all levels of education combined – as well as Austria, Germany, Ireland, Sweden and Turkey invested additional resources in similar proportions in primary, secondary and post-secondary non-tertiary and tertiary education combined (Table B2.2). Australia, the Netherlands, New Zealand, Norway and the United Kingdom invested most of the increases between 1995 and 2003 in primary, secondary and post-secondary non-tertiary education. Conversely, in ***Canada****, the Czech Republic, Greece, Hungary, Japan, the Slovak Republic, Spain and Switzerland, increases in spending on tertiary education surpassed increases at the primary, secondary and post-secondary non-tertiary levels by more than 20 percentage points (Table B2.3).*

Over the period 1995 to 2003, spending on the various levels of education evolved quite differently. Expenditure on primary to post-secondary non-tertiary education follow the same trends as for all levels of education combined. At the tertiary level, however, the increase is more pronounced from 2000 than before 2000 in more than half of the countries (and in two-thirds of the countries if based on the average annual variation). The increase of expenditure is more marked from 2000 than before 2000 particularly in the Czech Republic, Greece, New Zealand, Norway, Poland, the Slovak Republic and Switzerland. On the contrary, the increase of expenditure from 2000 is significantly smaller than from before 2000 in ***Canada****, Italy, Portugal, Spain and Turkey. Ireland has even shown a decrease in expenditure on tertiary education since 2000 (Table B2.3 and Chart B2.3b).*

However, to make a sound interpretation, these variations over time should be viewed in light of the trends in national income. The increase in spending on education between 1995 and 2003 tended to fall behind the growth in national income in a third of the 22 OECD and partner countries for which data are available. The most notable differences are observed in Austria, ***Canada****, Ireland, Norway and Spain, where the proportion of GDP spent on education decreased by 0.4 or more percentage points between 1995 and 2003 (Table B2.1a).*

Indicator B3: Public and private investment in educational institutions

In all the OECD countries for which comparable data are available, private funding represents 12% of all funds on average. This proportion varies widely among countries and only nine OECD and two partner countries report a share of private funding above the OECD average. In Australia, ***Canada****, Japan and the United States, private funds constitute around one-quarter of all educational expenditure and exceed 39% in Korea and partner country Chile (Table B3.1).*

Between 1995 and 2003, among the 20 OECD and partner countries with comparable data available, there was a small decrease in the share of public funding at primary, secondary and postsecondary non-tertiary levels in approximately two-thirds of countries. Twelve countries recorded shifts from public to private funding, but the increase in the private share is more than 2 percentage points only in ***Canada*** *(from 6.3 to 8.7%), the Slovak Republic (from 0.9 to 8.2%), Switzerland (10.9 to 13.6%) and the*

United Kingdom (from 11.5 to 13.5), as well as in the partner country Chile (from 28.2 to 31.7%). Funding shifts in the opposite direction, towards public funding, are notable in other countries; the share of public funding increased by between 3 and 7 percentage points in the Czech Republic (from 90.9 to 94.5%), Hungary (from 91.7 to 94.9%) and Spain (86.6 to 93.4%) (Chart B3.3 and Table B3.2a).

*In one-quarter of OECD and partner countries – Australia, **Canada**, Hungary, Korea, the Netherlands, Sweden, the United Kingdom, the United States, and the partner country Israel – the proportion of expenditure on tertiary institutions covered by private entities other than households represents 10% or more.*

Indicator B4: Total public expenditure on education

*The public-sector proportion of funding of the different levels of education varies widely among OECD countries. In 2003, OECD and partner countries spent between 5.3% (Greece) and 16.3% (Mexico) of total public expenditure on primary, secondary and post-secondary non-tertiary education, and between 1.6% (Italy) and 5.5 (New Zealand) on tertiary education. On average in OECD countries, public funding of primary, secondary and post-secondary non-tertiary education is three times that of tertiary education, mainly due to enrolment rates (see Indicator C1) or because the private share in expenditure tends to be higher at the tertiary level. This ratio varies by country from less than two times in **Canada**, Denmark and Finland to as high as more than five times in Korea and the partner country Chile.*

*Typically, from 1995 to 2003, public expenditure on education grew faster than total public spending, but not as fast as national income. The process of budget consolidation puts pressure on education along with every other service. Nevertheless, with the exception of **Canada**, the Czech Republic and Japan, spending on education grew at least as fast as spending in other public areas between 1995 and 2003; on average, the proportion of public budgets spent on education in OECD countries grew from 12.0% in 1995 to 13.3% in 2003. The figures suggest that the greatest increases in the share of public expenditure on education between 1995 and 2003 took place in Denmark (increasing from 12.7% to 15.1%), Greece (6.6% to 8.6%) New Zealand (16.5% to 22.6%), the Slovak Republic (8.8% to 11.2%) and Sweden (10.7% to 12.8%).*

Indicator B5: Tuition fees charged by tertiary institutions and support for students and households through public subsidies

Information for **Canada** is provided on public subsidies such as scholarships, student loans, and other grants as a percentage of total public expenditure on education and GDP, for tertiary education. **Canada**'s data, which are for 2002, show that 0.38% of GDP went to public subsidies, the sixth highest among OECD countries.

Indicator B6: Expenditure in institutions by service category and by resource category

*There is some noticeable variation among OECD countries with respect to the relative proportions of current and capital expenditure: at the primary, secondary and post-secondary non-tertiary levels combined, the proportion of current expenditure ranges from less than 85% in Korea and Luxembourg and the partner country Chile to 97% or more in Austria, Belgium, **Canada**, Mexico and Portugal (Chart B6.3).*

Canada shows the lowest percentage of spending on capital expenditures in Table B6.2, at 2.7%, among OECD countries. In part, this reflects differences in accounting methods used in various Canadian jurisdictions, with some jurisdictions leasing buildings rather than purchasing them, for example. Costs related to leased assets would be considered as current expenses, rather than capital.

Chapter C: Access to education, participation, and progression

Indicator C1: Enrolment in education from primary education to adult life

Data for **Canada** are included for students aged 17 through 20 in postsecondary non-tertiary and tertiary education (Table C1.3). This is because Canada does not currently collect data on enrolment by age at the elementary-secondary level.

Indicator C2: Participation in secondary and tertiary education

*Growing demand, reflected in higher enrolment rates, is the main factor driving expansion in tertiary enrolments. Australia, **Canada**, Iceland, Mexico and Turkey are the only OECD countries where population increases have significantly contributed to higher tertiary enrolments. The actual increase in tertiary students would have been significantly higher in many OECD countries (in particular Denmark, Germany, Hungary and Korea) had the population not decreased.*

Indicator C3: Student mobility and foreign students in tertiary education

*Compared to 2000, the number of foreign students enrolled in tertiary education increased noticeably in Australia, the Czech Republic, France, Greece, Ireland, Italy, Japan, Korea, the Netherlands, New Zealand and Spain, and in the partner countries Chile and Russian Federation, with indexes of change of 150 or above. By contrast, the number of foreign students enrolled in Austria, Belgium, **Canada**, the Slovak Republic and the United States grew by about 20% or less and even shrunk in Turkey (Table C3.1).*

In 2004, more than five out of ten foreign students were attracted to a relatively small number of destinations. Indeed, only four countries host the majority of foreign students enrolled outside of their country of citizenship. The United States receives the most foreign students (in absolute terms) with 22% of the total of all foreign students worldwide, followed by the United Kingdom (11%), Germany (10%) and France (9%). Altogether, these four major destinations account for 52% of all tertiary students pursuing their studies abroad (Chart C3.2).

*Besides these four major destinations, significant numbers of foreign students are enrolled in Australia (6%), **Canada** (5%), Japan (4%), New Zealand (3%) and the partner country the Russian Federation (3%).*

*The United States saw a significant drop as a preferred destination of foreign students, from 25.3 to 21.6% of the global intake. **Canada** and the United Kingdom also saw their market share decline by about 1 percentage point over the four year period scrutinised. By contrast the market shares of France, New Zealand and the partner country South Africa expanded by one percentage point or more. The growth in market position was most impressive for New Zealand, thereby positioning the country among the big players in the international education market (Chart C3.3).*

Australia and New Zealand have successfully adopted differentiated tuition fees for international students. In Japan and Korea, although tuition fees are the same for domestic and international students, foreign enrolments also grew at a robust pace between 2000 and 2004 despite high levels of tuition fees (see Indicator B5). This pattern highlights that tuition costs do not necessarily discourage prospective international students as long as the quality of education provided and its likely returns for individuals make the investment worthwhile. However, in choosing between similar educational opportunities, cost considerations may play a role, especially for students originating from developing countries. In this respect, the comparatively low progress of foreign enrolments in ***Canada*** *and the United Kingdom between 2000 and 2004 and the deterioration of its market share on the international education market over the same period may be attributed to the comparatively high level of tuition fees charged to international students in the context of fierce competition from other Anglo-Saxon destinations offering similar educational opportunities at a lower cost (Box C3.3).*

Australia, Austria, Switzerland and the United Kingdom display the highest levels of incoming student mobility, measured as the proportion of international students in their total tertiary enrolment. In Australia, 16.6% of tertiary students enrolled in the country have come to the country expressly to pursue their studies. Similarly, international students represent 13.4% of total tertiary enrolments in the United Kingdom, 12.7% in Switzerland and 11.3% in Austria. International enrolments are also significant in relative terms in ***Canada****. By contrast, incoming student mobility remains below 2% of total tertiary enrolments in Norway and Spain (Chart C3.1).*

Looking at the proportions of international students at different levels of tertiary education in each country of destination sheds light on patterns on student mobility. A first observation is that with the exception of ***Canada****, tertiary-type B programmes are far less internationalized than tertiary-type A programmes, suggesting that international students are mostly attracted to traditional academic programmes where degree transferability is easier. Among countries where data on student mobility are not available, tertiary-type B programmes also enrol a higher proportion of foreign students than tertiary-type A programmes in Finland, Italy and Spain (Table C3.1).*

In Australia and Sweden, the proportions of international students are roughly the same in tertiary-type A and advanced research programmes, suggesting that these countries of destination are successful at attracting students from abroad from the start of their tertiary education, and/or keeping them beyond their first degrees. Among countries where data on student mobility are not available, a similar pattern can be observed in New Zealand and the Slovak Republic.

By contrast, other countries display significantly higher incoming student mobility relative to total enrolments in advanced research programmes than in the tertiary-type A programmes that precede advanced research studies. This pattern is most obvious in Belgium, ***Canada****, Hungary, Spain, Switzerland and the United Kingdom, and in France and Iceland among countries where data on student mobility are not available. It may reflect a strong attractiveness of advanced research programmes in these countries, or a*

preferred recruitment of international students at higher levels of education to capitalise on their contribution to domestic research and development or in anticipation of their subsequent recruitment as highly qualified immigrants.

*In Australia, **Canada** and the United Kingdom, three of the top destinations of international students in 2004, the numbers of international students originating from Asia have increased significantly over the previous year. The same holds for foreign students in Turkey among countries where data on student mobility are not available.*

*In some countries a comparatively large proportion of international students are enrolled in tertiary-type B programmes. This is the case in Belgium (26.1%), **Canada** (29.5%) and Japan (24.3%). Among countries where data on student mobility are not available, foreign enrolments in tertiary-type B programmes also constitute a large group of foreign students in Greece (28.7%) and New Zealand (24.3%) (Table C3.4).*

*As indicated by Table C3.5, sciences attract about one in five international students in Australia (20.2%), Norway (20.5%) and the United States (19.4%) but less than one in fifty in Japan (1.3%) and in Poland (2.1%) among countries where data on student mobility are not available. Other countries showing a large proportion of international students enrolled in sciences are **Canada** (14.3%), Germany (17.3%), Switzerland (17.0%), the United Kingdom (14.7%) and to a lower extent Sweden (12.4%) and New Zealand (13.6%) among countries where data on student mobility are not available.*

*In Australia, **Canada**, Switzerland and the United Kingdom, more than a quarter of tertiary-type A second degrees or advanced research degrees are awarded to international students. This pattern implies that the true domestic graduate output is significantly over-estimated in overall graduation rates.*

*Several OECD countries have recently softened their immigration policies to encourage the temporary or permanent immigration of some international students (OECD, 2005a and Tremblay, 2005). Interestingly, the education systems where international students contribute most to the graduate output are those of countries with a long tradition of immigration favouring skilled individuals (Australia, **Canada**, New Zealand) or countries where the economy relies extensively upon foreign highly skilled workers (Switzerland, United Kingdom, United States).*

Indicator C4: Education and work status of the youth population

*By and large, males and females differ very little in terms of the expected number of years in unemployment, even though expected periods of unemployment tend to be longer for males. While the situation is similar for both genders in many countries, females appear to be at a particular advantage in **Canada**, Finland, Germany, Poland, the Slovak Republic and Turkey. Periods of unemployment for females exceed those for males in only six countries: Denmark, Greece, Luxembourg, Portugal, Spain and Switzerland (Table C4.1a).*

*Whereas young males can expect to spend 1.6 years neither in education nor in employment between the ages of 15 and 29, the average figure for females is 2.7 years. In the Czech Republic, Greece, Hungary, Mexico, the Slovak Republic and Turkey, there is a much stronger tendency for young females to leave the labour market and to spend time out of the educational system and not working. In some countries – Austria, **Canada**, Finland, Germany, Iceland, Japan, Norway, Portugal and Sweden – young males and young females do not differ by more than half a year in this measure.*

*Countries differ not only in the duration of education, but also in how education is combined with work experience. The 27 OECD countries which provide data on youth transitions show differences in both the duration of education and how education is combined with work experience or work study programmes (Table C4.2a). On average, 16.5% of 15-to-19-year-olds combine education with work. However, in Austria, Germany, Norway and the United States this figure is equal to or above 20%. In Australia, **Canada**, Switzerland and the United Kingdom, the figure is close to or above 30%.*

*The employment status of males and females during the years spent in education is broadly similar, except in Australia, Austria, the Czech Republic, Germany, the Slovak Republic and the United Kingdom, where noticeably more men participate in work-study programmes among 15-to-19-year-olds. In Australia, **Canada**, the United Kingdom and the United States, more females than males in the 20-to-24-year-old age group combine work outside school hours with education (Tables C4.2b and C4.2c).*

*However, the situation has been remarkably stable over the last six years for several countries: at a low level of the non-employment ratio in Denmark, Iceland and Luxembourg, at an intermediate level in France and the United Kingdom, and at a high level in Turkey (with the exception of the significant increase in the most recent year). Other profiles are less pronounced, but a general picture appears. With the exception of Norway, which shows a trend increase in the non-employment ratio, and Switzerland, with a pronounced 'V' curve with a low point in 2000, most countries show a regular fall of unemployment and withdrawal from the labour force from 1998 to 2001, followed by a stabilization or even an increase of unemployment and withdrawal from the labour force to 2004. In Australia, **Canada**, Finland, Greece, Hungary, Italy and the Slovak Republic, the decrease continues into 2004.*

Indicator C5: Participation in adult learning

There is substantial cross-country variation in participation rates in non-formal job-related continuing education and training. In the OECD, four countries – Denmark, Finland, Sweden and the United States – take the lead, with more than 35% of the population between 25 and 64 years of age having participated in some type of non-formal job-related continuing education and training over the previous 12 months. The participation rate is lower than 10% in Greece, Hungary, Italy, the Netherlands, Poland, Portugal and Spain. Between these two extremes, the incidence of participation in education and training varies greatly; for example, the figure is about 11 % in the Czech

*Republic and Ireland, but up over twice this rate in **Canada** and the United Kingdom (Table C5.1a).*

***Canada**, Denmark, Finland, Sweden, Switzerland and the United States are notable in the extent to which they achieve relatively high expected hours in non-formal learning across age groups. Denmark and Sweden are exceptional as regards the high number of expected hours in non-formal learning in the oldest age group, with about 140 hours.*

Chapter D: The learning environment and organization of schools

Indicator D1: Total intended instruction time for students in primary and secondary education

No data for **Canada** are included in this indicator.

Indicator D2: Class size and ratio of students to teaching staff

No data for **Canada** are included in this indicator.

Indicator D3: Teachers' salaries

No data for **Canada** are included in this indicator.

Indicator D4: Teaching time and teachers' working time

No data for **Canada** are included in this indicator.

Indicator D5: Access to and use of ICT

*Across OECD countries, virtually all students attend schools with at least one computer. It is clear that virtually all schools have at least some level of ICT resources. In Australia, Austria, **Canada**, Hungary, Korea, New Zealand, the United Kingdom and the United States the number of computers per student is more than 0.2, implying five or fewer students per computer. In Germany, Greece, Mexico, Poland, Portugal, the Slovak Republic and Spain, the number of computers per student is less than 0.1, implying 10 or more students per computer. In Turkey and the partner countries Brazil and the Russian Federation there are fewer computers per student, with 25 or more students enrolled at schools per computer (Table D5.1 and Chart D5.1).*

*On average, 64% of computers within schools are available to 15-year-old students across OECD countries. Considering that virtually all schools have at least one computer, most 15-year-old students have access to a computer at their school. However, there are substantial differences between countries. In Iceland, Norway, Turkey and partner country Brazil, less than one-half of computers in schools are available to 15-year-old students compared with Austria, **Canada** and Poland, and the partner country the Russian Federation, where over three-quarters of the school computers are made available. Importantly, this is not strongly correlated with the number of computers in schools. However, there are some countries that have relatively few computers per student and of those computers, relatively few are available to 15-year-old students. For example, Portugal and Spain have fewer computers per student than the OECD average and, of those computers, have a lower percentage available to 15-year-old students.*

First, student access to ICT in schools is of increased importance for those students that have little access at home. On average across OECD countries, 18% of students reported

*having rare or no use of computers at home (defined as students who reported that they used a computer at their home "less than once a month" or "never"). However, there is considerable variation across countries. In seven OECD countries (Australia, Austria, Belgium, **Canada**, Denmark, Germany and Switzerland), less than 10% of students reported rare or no use of computers in their homes, and in a further three OECD countries (Iceland, Korea and Sweden), the figures was less than 5%. Conversely, in five OECD countries (the Czech Republic, Hungary, Ireland, Mexico and the Slovak Republic), around one in five students reported rare or no use of computers in their homes, and in a further four OECD countries (Greece, Japan, Poland and Turkey), this rises to more than one in three students. For these countries, increased importance is placed upon access to ICT within schools to counterbalance a lack of use in homes.*

*Change has occurred in most countries between 2000 and 2003. In some countries the situation appears to have improved; in others, it seems to have worsened. For most countries, these changes are relatively minor but in others, the percentage of students in schools whose principals report that a shortage of computers hinders instruction to some extent or a lot has changed substantially between 2000 and 2003. In Belgium, **Canada**, the Czech Republic, Denmark, Hungary, Norway, Poland, Portugal and Spain, the hindering of instruction to some extent or a lot due to a shortage of computers has increased. In Belgium, Hungary and Spain, the proportion of students whose principals report this shortage has even doubled between 2000 and 2003. Conversely, the reported effects of shortages have substantially lessened in Germany, Greece, Iceland and Korea, and the partner country the Russian Federation, although not to the same extent.*

Background Information

The indicators and their framework

The organizing framework

Education at a Glance – OECD Indicators 2006 provides a rich, comparable, and up-to-date array of indicators that reflect a consensus among professionals on how to measure the current state of education internationally. The indicators provide information on the human and financial resources invested in education, on how education and learning systems operate and evolve, and on the returns to educational investments. The indicators are organized thematically, and each is accompanied by relevant background information. The education indicators are presented within an organizing framework that

- Distinguishes between the actors in education systems: individual learners, instructional settings and learning environments, educational service providers, and the education system as a whole

- Groups the indicators according to whether they speak to learning outcomes for individuals or countries, policy levers or circumstances that shape these outcomes, or to antecedents or constraints that set policy choices into context

- Identifies the policy issues to which the indicators relate, with three major categories distinguishing between the quality of educational outcomes and educational provision, issues of equity in educational outcomes and educational opportunities, and the adequacy and effectiveness of resource management

The following matrix describes the first two dimensions:

	1. Education and learning outputs and outcomes	**2. Policy levers and contexts shaping educational outcomes**	**3. Antecedents or constraints that contextualize policy**
I. Individual participants in education and learning	**1.I** The quality and distribution of individual educational outcomes	**2.I** Individual attitudes, engagement, and behaviour	**3.I** Background characteristics of the individual learners
II. Instructional settings	**1.II** The quality of instructional delivery	**2.II** Pedagogy and learning practices and classroom climate	**3.II** Student learning conditions and teacher working conditions
III. Providers of educational services	**1.III** The output of educational institutions and institutional performance	**2.III** School environment and organization	**3.III** Characteristics of the service providers and their communities
IV. The education system as a whole	**1.IV** The overall performance of the education system	**2.IV** System-wide institutional settings, resource allocations, and policies	**3.IV** The national educational, social, economic, and demographic contexts

The following sections discuss the matrix dimensions in more detail:

Actors in education systems

The OECD Education Indicators program seeks to gauge the performance of national education systems as a whole, rather than to compare individual institutional or other sub-national entities. However, there is increasing recognition that many important features of the development, functioning, and impact of education systems can only be assessed through an understanding of learning outcomes and their relationships to inputs and processes at the level of individuals and institutions. To account for this, the indicator framework distinguishes between a macrolevel, two mesolevels, and a microlevel of education systems. These relate to

- The education system as a whole
- The educational institutions and providers of educational services
- The instructional setting and the learning environment within the institutions
- The individual participants in education and learning

To some extent, these levels correspond to the entities from which data are being collected, but their importance centres mainly on the fact that many features of the education system play out quite differently at different levels of the system. For example, at the level of students within a classroom, the relationship between student achievement and class size may be negative if students in small classes benefit from improved contact with teachers. At the class or school level, however, students are often intentionally grouped such that weaker or disadvantaged students are placed in smaller classes so that they receive more individual attention. At the school level, therefore, the observed relationship between class size and student achievement is often positive (suggesting that students in larger classes perform better than students in smaller classes). At higher aggregated levels of education systems, the relationship between student achievement and class size is further confounded, e.g., by the socioeconomic intake of schools or by factors relating to the learning culture in different countries. Past analyses that have relied on macrolevel data alone have therefore sometimes led to misleading conclusions.

Outcomes, policy leavers, and antecedents

The second dimension in the organizing framework further groups the indicators at each of the above levels:

- Indicators on observed outputs of education systems, as well as indicators related to the impact of knowledge and skills for individuals, societies, and economies, are grouped under the subheading *output and outcomes of education and learning.*

- The sub-heading *policy levers and contexts* groups activities seeking information on the policy levers or circumstances that shape the outputs and outcomes at each level.

- These policy levers and contexts typically have *antecedents* – factors that define or constrain policy.

These are represented by the sub-heading *antecedents and constraints*. It should be noted that the antecedents or constraints are usually specific for a given level of the education system and that antecedents at a lower level of the system may well be policy levers at a higher level. For teachers and students in a school, for example, teacher qualifications are a given constraint, while at the level of the education system, professional development of teachers is a key policy lever.

Policy issues

Each of the resulting cells in the framework can then be used to address a variety of issues from different policy perspectives. For the purpose of this framework, policy perspectives are grouped into the following three classes that constitute the third dimension in the organizing framework for INES:

- Quality of educational outcomes and educational provision

- Equality of educational outcomes and equity in educational opportunities

- Adequacy and effectiveness of resource management

In addition to the dimensions mentioned above, the time perspective as an additional dimension in the framework allows dynamic aspects in the development of education systems to be modelled also.

The indicators that are published in *Education at a Glance 2006* fit within this framework, though often they speak to more than one cell.

Most of the indicators in **Chapter A** *The output of educational institutions and impact of learning* relate to the first column of the matrix describing outputs and outcomes of education. Even so, indicators in **Chapter A** measuring educational attainment for different generations, for instance, not only provide a measure of the output of the educational system but also provide context for current educational policies, helping to shape polices on, for example, lifelong learning.

Chapter B *Financial and human resources invested in education* provides indicators that are either policy levers or antecedents to policy, or sometimes both. For example, expenditure per student is a key policy measure that most directly impacts on the individual learner as it acts as a constraint on the learning environment in schools and student learning conditions in the classroom.

Chapter C *Access to education, participation, and progression* provides indicators that are a mixture of outcome indicators, policy levers, and context indicators. Entry rates and progression rates are, for instance, outcomes measures to the extent that they indicate the results of policies and practices in the classroom, school, and system levels. But they can also provide contexts for establishing policy by identifying areas where policy intervention is necessary to, for instance, address issues of inequity.

Chapter D *Learning environment and organization of schools* provides indicators on instruction time, teachers' working time, and teachers' salaries [and] not only represent policy levers that can be manipulated but also provide contexts for the quality of instruction in instructional settings and for the outcomes of learners at the individual level.