

# Education at a Glance

OECD INDICATORS

## Country Profile for Canada

2005



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 <i>Education at a Glance, 2005</i>											
Results for Canada, G7 countries, and others											
Indicator	Source Table	CAN	FRA	GER	ITA	JAP	UK	US	High	Low	OECD Country Mean
A1	Table A3.1a Population that has attained tertiary education (2003), age 25–34	<b>53%</b>	37%	22%	12%	52%	33%	39%	CAN	TUR 11%	29%
A9	Table A9.1a Relative earnings of the population with income from employment, tertiary education (high school=100), age 25–64	<b>136</b>	150	153	153	N/A	162	183	HUN 235	DEN 124	N/A
C4	Table C4.3 Percentage of the population not in education and unemployed in the total population (2003), age 15–19	<b>3.0%</b>	2.1%	1.9%	4.3%	N/A	4.9%	2.4%	DEN 1.4%	SLO 7.4%	2.7%
C6	Table C6.1a Participation in formal and/or non-formal education and training, by level of educational attainment and gender (2003), all levels	<b>37%</b>	21%	15%	9%	N/A	38%	N/A	SWE, CHE 56%	HUN 8%	N/A/

## **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 2005* (EAG 2005). 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 2005 and has page (p.) and paragraph (para.) references to the longer document. Please note that the EAG 2005 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 2005.

The section entitled Background Information at the end of this document is drawn directly from the “Introduction” in EAG 2005 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. Over half of the population aged 25 to 34 has completed either college or university. (Table A1.3a).

*Among the population of 25-to-64-year-olds the share of the labor force that attains tertiary education, at either Type B or Type A, varies from below 10% in Italy and Turkey, to 44% in **Canada**, and equals or exceeds 30% in seven other countries (Table A1.1a).*

*Consequently, in OECD countries the proportion of 25- to 64-year-olds who have completed tertiary type A or advanced research programmes ranges from less than 10% in Austria, Luxembourg and Portugal 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, New Zealand and Sweden (Table A1.1a).*

*In 20 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 ten OECD countries (**Canada**, Denmark, Finland, Ireland, New Zealand, Norway, 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 at least slightly higher than that of men.*

### **Indicator A2: Current upper secondary graduation rates**

No data for Canada are included in this indicator.

### **Indicator A3: Current tertiary graduation rates**

No data for Canada on tertiary graduation rates are included in this indicator. Data are included on motivation in mathematics for 15-year-olds, showing that motivation is higher for males than females.

### 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. 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.*

*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.*

Canadian students showed stronger performance on the content areas of “Change and Relationships” and “Uncertainty” than in “Quantity” and “Space and Shape.”

*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.*

*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.*

*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.*

#### **Indicator A5: What 15-year-olds can do in problem solving**

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

*The percentage of students unable to reach even Level 1 ranges from over half of students in Mexico and Turkey to below 10% in Australia, **Canada**, Finland and Korea. There are comparatively high proportions of low-performing students in other OECD countries as well: in Italy, Portugal and the United States, nearly one-quarter fall below Level 1, and in Greece roughly one-third do so.*

*[T]he top performing countries in terms of mean scores are Finland, Japan and Korea. These three countries perform indistinguishably well and have mean scores that are almost 50 score points, or around one-half of a proficiency level, higher than the mean performance level for OECD countries, which is 500 score points. Other countries performing above this average are Australia, Belgium, **Canada**, the Czech Republic, Denmark, France, Germany, Iceland, the Netherlands, New Zealand, Sweden and Switzerland.*

#### **Indicator A6: 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 (Table A6.1). 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 A7: Mathematics and science achievement of eighth-grade students (2003 and 1995)**

No data for Canada are included in this indicator. Data are based on the Trends in International Mathematics and Science Study (TIMSS). Canada did not participate in TIMSS in 2003.

**Indicator A8: Labour force participation by level of educational attainment**

*Higher unemployment rates for females at all levels of educational attainment are seen in 16 OECD countries (Table A8.2a). Combining all levels of education, differences in unemployment rates among males and females are less than half of a percentage point in seven countries: Australia, Austria, **Canada**, Germany, Iceland, Japan and Mexico. In 13 countries, unemployment rates for females with below upper secondary education are higher than those for males (Chart A8.3).*

In Canada, as in most OECD countries, unemployment rates are lower for individuals with postsecondary education than for those with lower levels of educational attainment.

**Indicator A9: The returns of education: education and earnings**

*However, countries differ significantly in the dispersion of earnings. For instance, Table A9.4a shows that, considering all levels of educational attainment, and across all countries, an average of 62.8% of the population has earnings above half of the median but less than 1.5 times the median. However, this average includes a range that goes from 47% in **Canada** and 50% in the United States to 75% in Luxembourg and 81% in Belgium.*

In Canada, the earnings of people with a university education are 61% higher than for people with a secondary school education.

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

*The estimated long-term effect on economic output of one additional year of education in the OECD area generally falls between 3 and 6%. Analyses of human capital across 14 OECD economies – based on literacy scores – also suggest significant positive effects on growth within countries.*

## **Chapter B: Financial and Human Resources Invested in Education**

### **Indicator B1: Educational expenditure per student**

No data for Canada are included in this indicator.

### **Indicator B2: Expenditure on educational institutions relative to Gross Domestic Product**

Data included for Canada are for 1995 only.

### **Indicator B3: Public and private investment in educational institutions**

Data included for Canada are for 1995 only.

### **Indicator B4: Total public expenditure on education**

Data included for Canada are for 1995 only.

### **Indicator B5: Support for students and households through public subsidies**

No data for Canada are included in this indicator.

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

No data for Canada are included in this indicator.

## **Chapter C: Access to Education, Participation and Progression**

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

No data for Canada are included in this indicator.

### **Indicator C2: Participation in secondary and in tertiary education**

No data for Canada are included in this indicator.

### **Indicator C3: Foreign students in tertiary education**

This indicator provides data on students studying in OECD countries other than their native country. While no data are available on foreign students in Canada, data are included on the percentage of Canadian students studying in other OECD countries.

### **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 unemployment periods tend to be longer for males. While the situation is similar for both genders in many countries, or with a slight disadvantage for males, females appear to be at a disadvantage in Greece and Spain, and at an advantage in **Canada**, Germany, Poland, the Slovak Republic and Turkey (Table C4.1a).*

*Many young people also combine paid work out of school hours with education. This form of initial contact with the labour market for students between the ages of 15 and 24 is a major feature of the transition from education to work in Australia, **Canada**, the Netherlands, the United Kingdom and the United States and, to a lesser extent, Norway.*

*In Australia, **Canada**, Finland, Iceland, Norway, Sweden and the United Kingdom, noticeably more females than males in the 15- to 24-year-old age group combine work outside school hours with education (Tables C4.2b and C4.2c).*

### **Indicator C5: The situation of the youth population with low levels of education**

*In other OECD countries, the proportion [of 15- to 19-year-olds who are not in education and not employed] is lower but not insignificant, ranging from 3 to 9%. The problem affects more males than females in Austria, **Canada**, Finland, France, Iceland, Ireland, Italy, the Netherlands, Poland, the Slovak Republic, Sweden and the United Kingdom.*

*Quadrant 2 shows a third group of countries with more positive outcomes, with relatively high rates of participation in education and relatively low rates of non-students with low*

*education levels. This characterises **Canada**, Denmark, Finland, Norway, Poland, Sweden and Switzerland, with France and Germany being more borderline. [Chart 5.3]*

In some OECD countries, including Canada, the difference in employment rates between those with a low level of education (less than secondary school) and those with secondary school education or above are significant. In Canada, the employment rate for 20- to 24-year-olds with less than secondary school education who are not in school was 57.6% in 2002, compared to 79.1% for those with a secondary school education or above.

*On the high end, starting from just above a difference of 20 percentage points, are all other countries, i.e., Australia, Austria, Belgium, **Canada**, the Czech Republic, France, Germany, Hungary, Norway and the United Kingdom. In this group of countries, only Austria passes the 60% mark for the employment rate of its low educated young adults.*

### **Indicator C6: Participation in continuing education and training**

*There is substantial cross-country variation in participation rates in non-formal job-related continuing education and training. In the OECD, five countries – Denmark, Finland, Sweden, Switzerland and the United States – take the lead with more than 40% of the labour force having participated in some type of non-formal job-related continuing education and training within a 12-month period. The participation rate is lower than 10% in Greece, Hungary, Italy, Portugal and Spain. Between these two extremes, the incidence of training participation varies greatly; for example, the figure is about 12% in the Netherlands and Poland, but up to twice this rate and more in Austria, **Canada** and the Slovak Republic (Chart C6.1).*

*The mean hours spent in learning per participant partly reflects a balance between extensive and intensive participation (Chart C6.4). Mean hours per participant vary from more than 100 hours in Greece and Hungary (associated with a low participation rate) to an average of 42 hours for the six countries with the highest participation rate (Denmark, Finland, Sweden, Switzerland, United Kingdom and the United States). **Canada** appears as an exception with 100 hours per participant associated with a high participation rate (Chart C6.4) (i.e., both intensive and extensive participation).*

## **Chapter D: The Learning Environment and Organisation 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: Public and private providers**

This indicator compares the size of the public and private sectors and the distribution of teaching resources, and the performance of students in public and private schools. In Canada, only 6% of students are enrolled in private schools (these data are drawn from PISA, which surveyed 15-year-old students).

*The performance advantage of private schools [on PISA 2003] amounts to 33 score points on average across OECD countries, to between 24 and 46 score points in **Canada**, Ireland, Korea, the Slovak Republic, Spain, the United States and the partner country Macao-China, to between 55 and 66 score points in Germany, Mexico and New Zealand and to more than 90 score points in the partner countries Brazil and Uruguay (Chart D5.4 and Table D5.4).*

### **Indicator D6: Institutional differentiation**

*This indicator examines aspects of the structure of education systems, in particular the nature and degree of stratification and institutional differentiation in the countries participating in PISA 2003. The analysis investigates whether the data provide any evidence that particular structures of education systems promote higher levels of quality and/or equity in student outcomes.*

## Background Information

### INTRODUCTION: THE INDICATORS AND THEIR FRAMEWORK

#### The organising framework

*Education at a Glance – OECD Indicators 2005* 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 organised thematically, and each is accompanied by relevant background information. The education indicators are presented within an organising framework which:

- 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; and
- 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.

	<b>(1) Education and learning outputs and outcomes</b>	<b>(2) Policy levers and contexts shaping educational outcomes</b>	<b>(3) Antecedents or constraints that contextualise policy</b>
<b>(I) Individual participants in education and learning</b>	(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
<b>(II) Instructional settings</b>	(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
<b>(III) Providers of educational services</b>	(1.III) The output of educational institutions and institutional performance	(2.III) School environment and organisation	(3.III) Characteristics of the service providers and their communities
<b>(IV) The education system as a whole</b>	(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 programme 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 macro level, two meso-levels and a micro-level 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; and
- 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 mainly centres 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 socio-economic intake of schools or by factors relating to the learning culture in different countries. Past analyses which have relied on macrolevel data alone have therefore sometimes led to misleading conclusions.

### **Outcomes, policy levers and antecedents**

The second dimension in the organising 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 sub-heading *output and outcomes of education and learning*;
- The sub-heading *policy levers and contexts* groups activities seeking information on the policy levers or circumstances which shape the outputs and outcomes at each level; and

- 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 which constitute the third dimension in the organising framework for INES:

- Quality of educational outcomes and educational provision;
- Equality of educational outcomes and equity in educational opportunities; and
- 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 2005* 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*, of course 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 policies on life-long learning, for example.

**Chapter B**, examining the *Financial and human resources invested in education*, provides indicators which are either policy levers or antecedents to policy, or sometimes both. For example, expenditure per student is a key policy measure which 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** turns to issues of *Access to education, participation and progression*. Indicators in this chapter provide a mixture of outcome indicators, policy levers and context indicators. Entry rates and progression rates are, for instance, measures of outcomes to the extent that they indicate the results of policies and practices at 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** examines the *Learning environment and organisation of schools*. Here, indicators on instruction time, teachers' working time and teachers' salaries not only represent policy levers which 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.