Catalogue no. 81-582-G
ISSN 1927-6257

Education Indicators in Canada: Handbook for the Report of the Pan-Canadian Education Indicators Program

November 2021

Release date: November 1, 2021

Statistics Canada Statistique Canada

Canada

How to obtain more information

For information about this product or the wide range of services and data available from Statistics Canada, visit our website, www.statcan.gc.ca.

You can also contact us by

Email at STATCAN.infostats-infostats.STATCAN@canada.ca

Telephone, from Monday to Friday, 8:30 a.m. to 4:30 p.m., at the following numbers:

- Statistical Information Service 1-800-263-1136
- National telecommunications device for the hearing impaired 1-800-363-7629
- Fax line 1-514-283-9350

Depository Services Program

- Inquiries line 1-800-635-7943
- Fax line 1-800-565-7757

Standards of service to the public

Statistics Canada is committed to serving its clients in a prompt, reliable and courteous manner. To this end, Statistics Canada has developed standards of service that its employees observe. To obtain a copy of these service standards, please contact Statistics Canada toll-free at 1-800-263-1136. The service standards are also published on www.statcan.gc.ca under "Contact us" > "Standards of service to the public."

Note of appreciation

Canada owes the success of its statistical system to a long-standing partnership between Statistics Canada, the citizens of Canada, its businesses, governments and other institutions. Accurate and timely statistical information could not be produced without their continued co-operation and goodwill.

Published by authority of the Minister responsible for Statistics Canada

© Her Majesty the Queen in Right of Canada as represented by the Minister of Industry, 2021

All rights reserved. Use of this publication is governed by the Statistics Canada Open Licence Agreement.

An HTML version is also available.

Cette publication est aussi disponible en français.

Table of contents

Note to readers on the gender variable 4

Acronyms and abbreviations 5

Introduction 8

Project Team 9

Section A: A portrait of the school-age population 10

Section B: Financing education systems 19

Section C: Elementary-secondary education 30

Section D: Postsecondary education 41

Section E: Transitions and outcomes 57

Appendix 1: Structure of education and training in Canada 68

Appendix 2: Canadian and Organisation for Economic Co-operation and Development (OECD) indicators 73

Note to readers on the gender variable

This variable is obtained through administrative data shared with Statistics Canada by other organizations. Hence, it is possible that sometimes the only information available is “Sex at birth” in which case it is used as a proxy for “Gender.” Also, some organizations include “Non-binary genders” in the “Unknown gender” category for the gender variable provided in their files which makes it impossible to publish data on non-binary population. Statistics Canada and the Canadian Government tries to make our gender data as inclusive as possible and we will keep working with our data provider to maximize alignment with the new recommended standard on gender.

Acronyms and abbreviations

ASETS – Access and Support to Education and Training Survey

AUS – Australia

AUT – Austria

BEL – Flanders (Belgium)

BTSD – Basic training for skill development

CANSIM – Canadian Socio-economic Information Management System

CAUBO – Canadian Association of University Business Officers

CCSIS – Community College Student Information System

CEGEP – Collège d'enseignement général et professionnel

CCES – Canadian Centre for Education Statistics

CESC – Canadian Education Statistics Council

CFI – Canada Foundation for Innovation

CHL – Chile

CIHR – Canadian Institutes of Health Research

CIP – Classification of Instructional Programs

CMA – Census metropolitan area

CMEC – Council of Ministers of Education, Canada

CPI – Consumer Price Index

CV – coefficient of variation

CZE – Czech Republic

DEU – Germany

DNK – Denmark

EAG – Education at a Glance

ELMLP – Education and Labour Market Longitudinal Platform

ENG – England (UK)

ESDC – Employment and Social Development Canada

ESES – Elementary-Secondary Education Survey (formerly ESESP - Elementary-Secondary Education Statistics Project)

ESP – Spain

EST – Estonia

FEDEX – Survey of Federal Government Expenditures in Support of Education

FIN – Finland

FINCOL – Financial Statistics of Community Colleges and Vocational Schools

FIUC – Financial Information of Universities and Colleges Survey

FOG – Follow-up Survey of Graduates

FRA – France

FTE – Full-time equivalent

GBR – England (UK)

GBR-NIR – Northern Ireland (UK)

GDP – Gross domestic product
GED – General education diploma
GERD – Gross domestic expenditures on research and development
GRC – Greece
HRSDC – Human Resources and Skills Development Canada
IALSS – International Adult Literacy and Skills Survey
ICT – information and communication technologies
IDN-JAK – Jakarta (Indonesia)
IEA – International Association for the Evaluation of Educational Achievement
ILO – International Labour Organization
INAC – Indigenous and Northern Affairs Canada
INES – Indicators of Educational Systems
IRL – Ireland
ISCED – International Standard Classification of Education
ISR – Israel
ITA – Italy
JPN – Japan
JRT – Job readiness training
KOR – Korea
LFS – Labour Force Survey
LICO – Low-income cutoff
LTU – Lithuania
NDL – Northern Distance Learning
NDM – New Dissemination Model
NEET – not in employment, not in education (or training)
NGS – National Graduates Survey
NHS – National Household Survey
NLD – Netherlands
NLSCY – National Longitudinal Survey of Children and Youth
NOR – Norway
NSERC – Natural Sciences and Engineering Research Council of Canada
NZL – New Zealand
OAC – Ontario Academic Credits
OECD – Organisation for Economic Co-operation and Development
PCAP – Pan-Canadian Assessment Program
PCEIP – Pan-Canadian Education Indicators Program
PIAAC – Programme for the International Assessment of Adult Competencies
PIRLS – Progress in International Reading Literacy Study
PISA – Programme for International Student Assessment
POL – Poland
PPPs – purchasing power parities

PPVT-R – Peabody Picture Vocabulary Test-Revised
PSIS – Postsecondary Student Information System
PS-TRE – problem solving in technology-rich environments
R&D – Research and development
RAIS – Registered Apprenticeship Information System
RUS – Russian Federation
SAIP – School Achievement Indicators Program
SCF – Survey of Consumer Finances
SCI – Survey of Colleges and Institutes
SDG – Sustainable Development Goal
SGP – Singapore
SHS – Survey of Household Spending
SLID – Survey of Labour and Income Dynamics
SSGS – Secondary School Graduates Survey
SSHRC – Social Sciences and Humanities Research Council of Canada
SUFSB – Survey of Uniform Financial System – School Boards
SVK – Slovak Republic
SVN – Slovenia
SWE – Sweden
TALIS – Teaching and Learning International Survey
TLAC – Tuition and Living Accommodation Costs for Full-time Students at Canadian Degree-granting Institutions
TUR – Turkey
UCASS – University and College Academic Staff System
UKM – United Kingdom
UNESCO – United Nations Educational, Scientific and Cultural Organization
UOE – UNESCO/OECD/Eurostat data collection
USA – United States
USIS – University Student Information System
YITS – Youth in Transition Survey

Introduction

This handbook updates the general descriptions for the indicators of the Pan-Canadian Education Indicators Program (PCEIP) as new sets of tables are released. It is a reference document that gives readers a broad understanding of each indicator, rather than the very specific methodological descriptions that would be necessary to reproduce the indicator using the raw data.

The PCEIP tables highlight the most recent data available for five broad indicator sets:

1. A portrait of the school-age population
2. Financing education systems
3. Elementary and secondary education
4. Postsecondary education
5. Transitions and outcomes.

The following information forms the main body of the Handbook, and is presented for each of the PCEIP indicators:

- A brief, general description.
- The major concepts and definitions used.
- An overview of the methodology.
- A short review of any major data limitations, including interjurisdictional comparability as needed.
- The data source(s) used to produce the indicator.

Two appendices conclude this Handbook. One that presents the structure of education and training in Canada and another that details the relationship of some indicators to international comparators.

Project Team[1]

Rebecca Bell	Statistics Canada
Sylvie Brunet	Statistics Canada
Christian Chénier	Statistics Canada
Jennifer Chew Leung	Statistics Canada
Gregory Christ	Statistics Canada
Taylor Cornwall	Statistics Canada
Jaclyn Layton	Statistics Canada
Bissèle Lendi	Statistics Canada
Ryan Rezai	Statistics Canada
Klarka Zeman	Statistics Canada

1. Note of appreciation to staff of the Centre for Education Statistics at Statistics Canada for their invaluable contribution to this report, and to staff of the Official Release, Language Services and Respondent Communications division at Statistics Canada.

Section A: A portrait of the school-age population

A1 Population with Aboriginal identity

Overall, Indicator A1, Population size, provides information on the school-age population in Canada. This sub-indicator provides estimates and projections of the population aged 0 to 29 with Aboriginal identity, as well as the proportion of the total Canadian population with Aboriginal identity, by age group, for Canada and for the provinces/territories (table 17-10-0115-01 formerly CANSIM 477-0110 and table 17-10-0116-01 formerly CANSIM 477-0111).

Concepts and definitions

- For the indicator on population size, the **school-age population** refers to all individuals aged 5 to 24, whether or not they were attending school. The estimates and projections presented for the population with Aboriginal identity also include the pre-school-age population (aged 0 to 4), as well as the population aged 25 to 29. Data are presented for the following age groups: 0 to 29 overall; 0 to 4, 5 to 14, 15 to 19, 20 to 24, and 25 to 29.
- The **Aboriginal identity** population refers to individuals who, on the **2011 National Household Survey**, said they were First Nations, Métis or Inuit, and/or were a Treaty Indian or Registered Indian as defined by the *Indian Act of Canada*, and/or were members of an Indian band or First Nation.[2]
- Population **estimates** represent the number of people who reported Aboriginal identity in the 2011 National Household Survey adjusted for census undercount and partially enumerated reserves.
- A **population projection** refers to the future population size resulting from a set of assumptions regarding the demographic and non-demographic components of growth. These assumptions consider the populations at both the outset of the projections and the future evolution of the components likely to affect the size and composition of the populations. For the Aboriginal population, assumptions were grouped together in a limited number of **scenarios** designed to show what would happen in the coming years if the underlying assumptions were proven correct.
- Projections are presented for 2016, 2021, 2026, 2031 and 2036, for five scenarios (see the "Methodology" section).
- **Fertility** refers to the demographic phenomenon in relation to live births, which can be considered from the point of view of women, the couple and occasionally men.
- **Ethnic mobility** is "the phenomenon by which individuals and families change their ethnic affiliation."[3] Ethnic mobility has two components: intragenerational and intergenerational.[4]
- **Intergenerational** ethnic mobility results from a change in ethnic affiliation between parents and their children, with the parent(s) not having the same ethnic affiliation as the child(ren).
- **Intragenerational** ethnic mobility results from a change in an individual's ethnic affiliation over time.
- **Net undercoverage** represents the difference between the number of persons who were covered by the Census of Population, but who were not enumerated (undercoverage) and the number of persons who were enumerated when they should not have been, or who were enumerated more than once (overcoverage).
- **Microsimulation**, unlike population estimates and projections done using the cohort component method, simulates the demographic destiny of individuals one by one. The method is based on multiple random drawing at the individual level rather than on aggregated data applied at the population group level.

2. The "Concepts and definitions" used in this handbook section on the population with Aboriginal identity are cited or adapted from the Glossary entries in the 2015 Statistics Canada report Projections of the Aboriginal Population and Households in Canada, 2011 to 2036 (www.statcan.gc.ca/pub/91-552-x/2015001/section04-eng.htm) (catalogue number 91-552), prepared by Jean-Dominique Morency, Éric Caron-Malenfant, Simon Coulombe and Stéphanie Langlois.
3. Guimond, Éric. 2003. "Fuzzy Definitions and Population Explosion: Changing Identities of Aboriginal Groups in Canada", in Newhouse, D. and Peters, E. J., editors, *Not strangers in these parts: Urban Aboriginal peoples*, Policy Research Initiative, Government of Canada.
4. Boucher, Alexandre, Norbert Robitaille and Éric Guimond. 2009. "La mobilité ethnique intergénérationnelle des enfants de moins de 5 ans chez les populations autochtones, Canada, 1996 et 2001" , in *Cahiers québécois de démographie*, volume 38, no. 2.

Methodology

- The projections for this sub-indicator were provided by the Demosim team in the Demographic Analysis and Projections Section of Demography Division at Statistics Canada. The population estimates presented for 2011 represent the number of people who reported Aboriginal identity in the 2011 National Household Survey, adjusted to take into account net undercoverage in the census by age, sex, and province/territory, and incompletely enumerated reserves.
- The microdata file for the 2011 National Household Survey also serves as the base population for projections of populations according to Aboriginal identity to 2036.
- The Demosim microsimulation population projections model was used to develop the projections for both the Aboriginal and non-Aboriginal population (table 17-10-0115-01 and table 17-10-0116-01). Assumptions for the Aboriginal and Non-Aboriginal population are from Scenarios 1, 2, 3, 4 and 5 of the *Projections of the Aboriginal Population and Households in Canada, 2011 to 2036*, Statistics Canada Catalogue no. 91-552.

Table 1
Projections for the five scenarios

	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5
Assumptions regarding Aboriginal peoples	Constant ethnic mobility and complete converging of fertility	Constant ethnic mobility and half converging fertility	Constant ethnic mobility and fertility	No ethnic mobility and complete converging fertility	No internal migration, constant ethnic mobility, and complete convergence of fertility
Fertility	Converging: complete decrease in the gap between the Aboriginal and non-Aboriginal populations	Converging: decrease of 50% in the gap between the Aboriginal and non-Aboriginal populations	Constant level[1] and maintenance of the gap in fertility between Aboriginal and non-Aboriginal populations	Converging: complete decrease in the gap between the Aboriginal and non-Aboriginal populations	
Intragenerational ethnic mobility	Constant ethnic mobility based on 1996-to-2011 levels			No intragenerational ethnic mobility[2]	Constant ethnic mobility based on 1996-to-2011 levels
Intergenerational ethnic mobility	Constant, based on 2011 NHS				
Intergenerational transmission of registered Indian status and registration category (including mixed unions)	Constant, based on 2011 NHS with a continuation of the 2001-2011 trends as to mixed unions				
Mortality	Moderate increase in life expectancy and maintenance of the gap between the Aboriginal and non-Aboriginal populations				
International migration	Zero international net migration for Aboriginal population				
Internal migration	Patterns of constant migration at the 2001, 2006 and 2011 levels				
Registration on the Indian Register and reclassification of registration category over an individual's lifetime	Late registrations: constant rates; C-31[3] registrations: 4,300 registrations and progressive decline until 2036; C-3[4] registrations: 40,200 registrations until 2020; Qalipu[5] registrations: 23,700 registrations until 2013; 6(2) to 6(1) reclassifications under C-3: 18,200 reclassifications until 2020; Other reclassifications from 6(2) to 6(1): constant rates				
Education	A progressive levelling off of trends, and constant graduation gaps between the sub-groups that comprise the population				

	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5
Assumptions regarding non-Aboriginal peoples	Constant ethnic mobility and complete converging of fertility	Constant ethnic mobility and half converging fertility	Constant ethnic mobility and fertility	No ethnic mobility and complete converging fertility	No internal migration, constant ethnic mobility, and complete convergence of fertility
Fertility	An average fertility rate that reaches 1.67 children per woman at the national level in 2021, and the gaps between the projected groups are maintained				
Mortality	A moderate increase in life expectancy, and constant mortality gaps between the sub-groups that comprise the population				
Immigration	A constant immigration rate at 7.5 per thousand, with the composition by country of birth being representative of the immigration observed during the period from 2006 to 2011				
Emigration	A total emigration rate constant at the 2002/2003 to 2011/2012 level and constant emigration gaps between the subgroups that comprise the population				
Internal migration	Patterns of constant migration at the 2001, 2006 and 2011 levels				No internal migration

1. In 2010/2011, the total fertility rate was estimated at approximately 2.7 children for women of Inuit identity, 2.4 for those with First Nations identity, and 1.8 for women of Métis identity, compared with 1.6 for non-Aboriginal women.
2.In other words, within the Canadian-born, non-Aboriginal population, any persons likely to report Aboriginal identity had already done so prior to 2011.
3. Modifications of 1985 to the *Indian Act*.
4. The Gender Equity in Indian Registration Act.
5. Legal recognition of the Qalipu Mi'kmaq First Nation.

Limitations

- The population reporting an Aboriginal identity should not be confused with the population reporting Aboriginal ancestry. The latter concept refers to the ethnic or cultural group of a person's ancestors, but it does not mean that the person identifies with the Aboriginal group to which his/her ancestors belonged.[5]
- Although commonly used for planning purposes, population projections should be interpreted with caution as they are based on assumptions about the future course of demographic components.

Data sources

- National Household Survey, 2011.
- Special tabulations provided by the Demosim team in the Demographic Microsimulation Section of Demography Division, Statistics Canada.
- *Projections of the Aboriginal Population and Households in Canada, 2011 to 2036*.

A2 Cultural diversity

Indicator **A2** portrays the diversity of the school-age population in some of Canada's major census metropolitan areas (CMAs) in terms of immigrants, visible minorities and language spoken at home. It also traces shifts in the proportion of the school-age population with Aboriginal identity (table 37-10-0098-01 formerly CANSIM 477-0094).

Concepts and definitions

- For this indicator, the **school-age population** refers to all individuals aged 5 to 24, whether or not they are attending school. The following **age groups**, which align with the standard used by the Organization for Economic Cooperation and Development (OECD) and Statistics Canada, have been adopted for PCEIP: 5 to 14; 15 to 19; 20 to 24; and 25 to 29.
- **Immigrant** refers to a person who is or has ever been a landed immigrant/permanent resident. This person has been granted the right to live in Canada permanently by immigration authorities. Some immigrants have resided in Canada for a number of years, while others have arrived recently. Some immigrants are Canadian citizens, while others are not. Most immigrants are born outside Canada, but a small number are born in Canada. In the 2016 Census of Population, 'Immigrant' includes immigrants who landed in Canada on or prior to May 10, 2016.
- **Visible minority** rrefers to whether a person belongs to a visible minority group as defined by the *Employment Equity Act* and, if so, the visible minority group to which the person belongs. The *Employment Equity Act* defines visible minorities as 'persons, other than Aboriginal peoples, who are non-Caucasian in race or non-white in colour.' The visible minority population consists mainly of the following groups: South Asian, Chinese, Black, Filipino, Latin American, Arab, Southeast Asian, West Asian, Korean and Japanese.
- **Home language** 'Language spoken most often at home' refers to the language the person speaks most often at home at the time of data collection. A person can report more than one language as "spoken most often at home" if the languages are spoken equally often.Readers will find a complete analysis of factors affecting comparability of language results between the censuses in the publication Dictionary, Census of Population, 2016, Catalogue no. 98-301-X
- **Aboriginal identity** refers to whether the person reported being an Aboriginal person, that is, First Nations (North American Indian), Métis or Inuk (Inuit) and/or being a Registered or Treaty Indian (that is, registered under the Indian Act of Canada) and/or being a member of a First Nation or Indian band. Aboriginal peoples of Canada are defined in the *Constitution Act, 1982*, section 35 (2) as including the Indian, Inuit and Métis peoples of Canada.
- Aboriginal identity includes the Aboriginal groups (First Nations (North American Indian), Métis or Inuk (Inuit)), multiple Aboriginal identities and Aboriginal responses not included elsewhere.

5. As stated in the Glossary entries in the 2015 Statistics Canada report Projections of the Aboriginal Population and Households in Canada, 2011 to 2036 (www.statcan.gc.ca/pub/91-552-x/91-552-x2015001-fra.htm) (catalogue number 91-552), prepared by Jean-Dominique Morency, Éric Caron-Malenfant, Simon Coulombe and Stéphanie Langlois.

- In 2016, there were 14 Indian reserves and Indian settlements that were 'incompletely enumerated' in the census (see *Incompletely enumerated Indian reserves and Indian settlements*). In 2011, there were a total of 36 Indian reserves and Indian settlements that were 'incompletely enumerated' in the NHS; 31 of these were also incompletely enumerated in the 2011 Census. The five additional reserves that were incompletely enumerated in the NHS were cases where only the census portion of the enumeration was completed and the NHS enumeration was either not permitted or was interrupted before it could be completed, or was not possible because of natural events. In 2006 there were 22 Indian reserves and Indian settlements that were 'incompletely enumerated' in the census. For more information on incompletely enumerated Indian reserves and Indian settlements, please refer to Appendix 1.2 of the *Guide to the Census of Population, 2016*, Catalogue no. 98-304-X.
- A **census metropolitan area (CMA)** or a census agglomeration (CA) is formed by one or more adjacent municipalities centred on a population center (known as the core). A CMA must have a total population of at least 100,000 of which 50,000 or more must live in the core. A CA must have a core population of at least 10,000. To be included in the CMA or CA, other adjacent municipalities must have a high degree of integration with the core, as measured by commuting flows derived from previous census place of work data.
- If the population of the core of a CA declines below 10,000, the CA is retired. However, once an area becomes a CMA, it is retained as a CMA even if its total population declines below 100,000 or the population of its core falls below 50,000. Small population centers with a population count of less than 10,000 are called fringe. All areas inside the CMA or CA that are not population centers are rural areas.

Methodology

- The proportion of the school-age population with particular characteristics is based on information reported in the 2011 National Household Survey (NHS) for immigrants, visible minorities, and Aboriginal identity, and the 2016 Census of Population for home language.
- The proportion of the school-age population with characteristic y = (number of individuals aged 5 to 24 with characteristic y) / (number of individuals aged 5 to 24).

Limitations

- PCEIP reports separate Canada-level indicators for people who self-identify as North American Indian, Métis or Inuit. Although this grouping lends itself to more detailed analyses of the Aboriginal population in Canada than a broad pan-Canadian grouping, it does not capture the entire picture. For instance, the grouping does not differentiate between Aboriginal people living in urban versus rural or isolated communities, or between Aboriginal people residing on/off reserves and Aboriginal people from these diverse settings may have very different opportunities, needs and aspirations. Separate Aboriginal indicators for each of the 10 provinces and three territories are also reported; again, the variations within jurisdictions may not be captured completely.
- When comparing estimates from the 2016 Census long form and estimates from the 2011 National Household Survey (NHS) users should take into account the fact that the two sources represent different populations. The target population for the 2016 Census long form includes usual residents in collective dwellings and persons living abroad whereas the target population for the NHS excludes them. Moreover, the NHS estimates are derived from a voluntary survey and are therefore subject to potentially higher non response error than those derived from the 2016 Census long form.

Data source

- 2011 National Household Survey, Statistics Canada.
- 2016 Census of Population, Statistics Canada.

A3 Low income

Indicator **A3** provides information on the proportion of the population aged 0 to 24 living in low-income circumstances, by age groups and types of living arrangement (table 37-10-0129-01 formerly CANSIM 477-0134). The length of time the individuals aged 5 to 24 have been living in such situations is also presented. These data are presented for Canada and the provinces.

Concepts and definitions

- This indicator refers to the pre-school as well as the **school-age population** and includes all individuals aged 0 to 24, whether or not they are attending school. The following **age groups** have been adopted for PCEIP: 0 to 4, 5 to 19 (5 to 14, 15 to 19), 20 to 24 and 0 to 24.
- Three **living arrangements** are presented for the population aged 0 to 24 in low-income circumstances: living with two parents, living with a lone parent and not living with any parent. The category "All living arrangements" encompasses all three categories above.
- **Parents** captures biological and step-parents, as well as those who have adopted children. **Lone parent** refers to guardians and adults, regardless of marital status, without a partner but with children in their care. "Census family type" was used to define living arrangements. The term "census family" corresponds to what is commonly referred to as a "nuclear family" or "immediate family". In general, it consists of a married couple or common-law couple with or without children, or a lone-parent with a child or children. Furthermore, each child does not have his or her own spouse or child living in the dwelling.
- **Low income** is determined using Statistics Canada's **Low Income Measures (LIMs)**. The concept underlying the LIM is that all persons in a household have low income if their adjusted household income falls below half of the median adjusted income. For the purpose of making international comparisons, the LIM is the most commonly used low income measure. "Persons in low income" should be interpreted as persons who are part of low income households, including persons living alone whose income is below the low income line (LIL). Similarly, "children in low income" means "children who are living in low income households".

Methodology

- Data from 2006 to 2011 for this indicator are drawn from the Survey of Labour and Income Dynamics (SLID) and data for 2012 to present are from the Canadian Income Survey (CIS). The CIS is a cross-sectional survey developed to provide a portrait of the income and income sources of Canadians, with their individual and household characteristics.
- Low income is calculated using the after-tax low income measure (LIM-AT). Individuals are defined as having low income if their adjusted after-tax income falls below 50% of the median adjusted after-tax income. Adjusted after-tax income is derived by dividing household income by the square root of the household size and assigning this value to all persons in the household. LIM-AT thresholds are computed each year and vary according to trends in median income. Because a new set of LIMs is calculated each year using new data, they do not require updating using an inflation index. Unlike the low income cut-offs, which are derived from an expenditure survey and then compared to an income survey, the LIMs are both derived and applied using a single income survey.
- The percentage of the (pre)school age population in low income is defined as the number of children living in low income households divided by the total number of children in that age category.

Limitations

- There is no internationally accepted standard for measuring "poverty", nor is there an official definition of poverty in Canada. LIM-AT provides one of many possible measures to monitor trends in the relative economic well-being of Canadian families.

- The CIS uses a different methodology compared to that used in SLID. Data from the SLID were revised for the years 2006 to 2011 to allow CIS data to be compared with data for earlier years. No revisions were made to data prior to 2006. In the implementation of the revision for 2006 to 2011, revisions to the data were made in such a way as to minimize "breaks" in trends. Nonetheless, for some characteristics the data trends could reveal a "break" because of the change in methodology. Such a break would appear as a noticeable upward or downward shift in the data. These breaks may be found in estimates for 2006 and 2012 and may be more prevalent in estimates for small domains such as family type or region (Statistics Canada, 2015).

Data sources

Canadian Income Survey (CIS), Statistics Canada. For more information, consult "Definitions, data sources and methods", Statistics Canada Web site, survey 5200.

Statistics Canada, 2016, "Low income lines: What they are and how they are created,". *Income Research Paper Series*. Statistics Canada catalogue 75F0002M, no. 002, Ottawa. Income Statistics Division. (accessed August 13th, 2020).

Statistics Canada, 2015. "Income of Canadians, 2000 to 2013." *The Daily*. December 17. (accessed August 13th, 2020).

Statistics Canada, February 2020. *User Guide for the Canadian Income Survey 2018*. Income Statistics Division.

Statistics Canada, 2015, "Low Income Lines, 2013-2014: Update,". *Income Research Paper Series*. Statistics Canada catalogue 75F0002M, no. 002, Ottawa. Income Statistics Division. (accessed August 13th, 2020).

A4 Family background

Indicator **A4** examines the living arrangements of the school-age population and the working status of parents. Distributions are presented for the total school-age population (table 37-10-0093-01 formerly CANSIM 477-0089 and table 37-10-0094-01 formerly CANSIM 477-0090) and the school-age population with Aboriginal identity (table 37-10-0095-01 formerly CANSIM 477-0091 and table 37-10-0096-01 formerly CANSIM 477-0092).

Concepts and definitions

- For this indicator, the **school-age population** refers to all individuals aged 5 to 24, whether or not they are attending school. The following **age groups**, which align with the standard used by the Organisation for Economic Co-operation and Development (OECD) and Statistics Canada, are used: 5 to 14; 15 to 19; 20 to 24; and 25 to 29.
- The 5- to 24-year-old population was grouped into the following categories to reflect **living arrangements**: living with parents(s), which includes married parents, common-law parents, and lone parents; and not living with parents, which captures those individuals living as part of a couple or lone parent, or who have other living arrangements.
- **Parents** captures biological, same sex and step-parents, as well as those who have adopted children. **Lone parent** refers to guardians and adults, regardless of marital status, without a partner but with children in their care. "Other living arrangements" includes people who live with "non-family" persons; that is, people living with relatives only, living with relatives and other persons, or living with non-relatives (at least two of these non-relatives must constitute a census family). Parents also refers to grandparents when there are no parents present in the household.
- Percentage distributions are presented for the 5-to-24 **age group** overall, and for the following age groups: 5 to 14, 15 to 19, and 20 to 24.
- The Census of Population definition of **family** refers to a married couple (with or without children of either or both spouses), a couple living common-law (with or without children of either or both partners) or a lone parent of any marital status, with at least one child living in the same dwelling. A **married couple** or a couple living common-law may be of the opposite or same sex. "**Children**" in a census family include grandchildren living with their grandparent(s) but with no parent(s) present.

- There were several significant changes that were made to the **census family** concept beginning in the 2001 Census: two persons living in a same-sex common-law relationship, along with any of their children residing in the household will be considered a census family. Children in a census family can have been previously married (as long as they are not currently living with a spouse or common-law partner); previously, they had to be never-married. A grandchild living in a three-generation household where the parent (middle generation) is never-married will, contrary to previous censuses, now be considered as a child in the census family of his or her parent, provided the grandchild is not living with his or her own spouse, common-law partner, or child. Traditionally, the census family usually consisted of the two older generations. A grandchild of another household member, where a middle-generation parent is not present, will now be considered as a child in the census family of his or her grandparent, provided the grandchild is not living with his or her own spouse, common-law partner, or child. Traditionally, such a grandchild would not be considered as the member of a census family.
- In table 37-10-0093-01, children living with **same sex married parents** are grouped together with those living with same sex common-in –law parents to be consistent with the definitions used in the 2006 Census. Therefore, in this table, the category of children living with "common-law- parents" include those of opposite sex common-law, same sex common-law and same sex married parents. It is important to note that the data in this table are not comparable to the data in table 37-10-0095-01 where children living with same sex married parents are grouped together with those living with married parents to be consistent with the definitions used in the 2011 National Household Survey (NHS).
- **Aboriginal identity** refers to whether the person reported being an Aboriginal person, that is, First Nations (North American Indian), Métis or Inuk (Inuit) and/or being a Registered or Treaty Indian (that is, registered under the *Indian Act of Canada*) and/or being a member of a First Nation or Indian band. Aboriginal peoples of Canada are defined in the Constitution Act, 1982, section 35 (2) as including the Indian, Inuit and Métis peoples of Canada.
- "**Total Aboriginal identity**" includes Aboriginal group (i.e., whether the person reported being an Aboriginal person, that is, First Nations (North American Indian), Métis, or Inuk (Inuit)), multiple Aboriginal identities and Aboriginal responses not included elsewhere.

Methodology

- The percentage distribution of the school-age population, by age group and living arrangements, was examined for the total Canadian population (table 37-10-0093-01 and table 37-10-0094-01), and for the school-age population with Aboriginal identity (table 37-10-0095-01 and table 37-10-0096-01).
- To ensure the confidentiality of responses collected for the census, a random rounding process is used to alter the values reported for individual counts. As a result, when data are summed or grouped, the total value may not match the sum of the individual values, since the total and subtotals are independently and randomly rounded. However, apart from discrepancies due to simple rounding, the percentages were calculated to add up to 100%, as recommended by the census methodology group.

Limitations

- PCEIP reports separate Canada-level indicators for people who self-identify as North American Indian, Métis or Inuit. Although this grouping lends itself to more detailed analyses of the Aboriginal population in Canada than a broad pan-Canadian grouping, it does not capture the entire picture. For instance, the grouping does not differentiate between Aboriginal people living in urban versus rural or isolated communities, or between Aboriginal people residing on/off reserves and Aboriginal people from these diverse settings may have very different opportunities, needs and aspirations.
- Some Indian reserves and settlements did not participate in the 2011 National Household Survey (NHS) as enumeration was either not permitted, it was interrupted before completion, or because of natural events (e.g., forest fires). These reserves are referred to as 'incompletely enumerated reserves.' There were 36 reserves out of 863 inhabited reserves in the 2011 NHS that were incompletely enumerated. Data for these 36 Indian reserves and Indian settlements are not included in the 2011 NHS tabulations. As a result, some estimates in this document may be underestimated for First Nations people. Please refer to the reference document entitled *Aboriginal Peoples Reference Guide*, National Household Survey, catalogue no. 99-011-X2011006, for more information on these exclusions.

- When comparing the census results to other Statistics Canada sources, it appears that there is some over-estimation of persons aged 15, 16 and 17 who are counted as married, common-law, separated, divorced or widowed, rather than never married (single). For further information, please consult the *Families Reference Guide, 2011 Census*.
- There is some variability of the counts in each census of people aged 20 to 24 due to the possibility that students are being reported at their college location instead of at their parents' home (which is recommended). Please see "Living Arrangements of Young Adults aged 20 to 29", a *Census in Brief* by Anne Milan.
- When comparing estimates from the 2006 Census long form and estimates from the 2011 National Household Survey (NHS) users should take into account the fact that the two sources represent different populations. The target population for the 2006 Census long form includes usual residents in collective dwellings and persons living abroad whereas the target population for the NHS excludes them. Moreover, the NHS estimates are derived from a voluntary survey and are therefore subject to potentially higher non response error than those derived from the 2006 Census long form.

Data source

- 2006, 2011 and 2016 Census of Population, 2011 National Household Survey (NHS), Statistics Canada.

Section B: Financing education systems

B1 Total expenditure on education

Indicator B1 examines total combined public and private expenditure on education in Canada and its provinces and territories.

- Table 37-10-0131-01 presents combined public and private expenditure on educational institutions in millions of current dollars.
- Table 37-10-0022-01 presents indices of change and percentage distributions of combined public and private expenditure on educational institutions from 2007/2008 forward in constant dollars.
- Table 37-10-0025-01 presents combined public and private expenditure on education per capita and its index of change for Canada, provinces and territories in constant dollars.
- Table 37-10-0210-01 presents annual expenditure by educational institutions per student, in Canadian and American dollars. At the primary/secondary level, the amount spent on educational core services and ancillary services is also presented. The corresponding OECD indicator is C1, "How much is spent per student on educational institutions?".
- Table 37-10-0211-01 (which replaces Table 37-10-0040-01) presents combined public and private expenditure on education as a percentage of Gross Domestic Product (GDP). The corresponding OECD indicator is C2, "What proportion of national wealth is spent on education?".
- Table 37-10-0212-01 presents the proportions of total expenditure by educational institutions on current and capital expenses, including salaries and wages. The corresponding OECD indicator is C6, "On what resources and services is education funding spent?".

Concepts and definitions

- **Total expenditure** on education refers to the total combined public and private expenditures on education for Canada, or for a province/territory, in a given fiscal year.
- **Public expenditure** refers to direct expenditure by public entities on educational institutions such as schools, universities and other public and private institutions delivering or supporting educational services. It also includes subsidies provided to households for undertaking education related activities. Public entities comprise federal and provincial ministries as well as local government and other public agencies.
- **Private expenditure** comprises of direct expenditure funded by households or other private entities on educational institutions. Private spending on institutions supporting education services is also included. Public subsidies and private expenses undertaken outside of educational institutions such as purchases of textbooks and private tutoring are excluded.
- **Pre-elementary** includes kindergarten only, while Elementary-Secondary consists of 12 years of study, Grades 1 through 12. The only exception is Quebec, where the elementary-secondary system has 6 years of elementary school and 5 years of secondary school.
- **College**, in this context, refers to community colleges and vocational schools including collèges d'enseignement général et professionnel (CEGEPs) in Quebec and College of Applied Arts and Technology in Ontario. Depending on the province or territory, they are called colleges, regional colleges, centres, colleges of applied arts and technology, community colleges, institutes, schools, or CEGEPs in Quebec.
- **Universities** typically offer four-year undergraduate programs leading to bachelor's degrees. Advanced degrees include master's degrees, generally requiring two years of study after a first degree, and doctoral degrees, which require three to five years of postgraduate study and research as well as a dissertation.
- **Post-secondary levels combined** refers to the sum of college and university expenditure. It provides an overview of education spending in the higher education sector.
- **All levels combined** comprises of education expenditure for all the levels, including: pre-elementary; elementary-secondary; college; and university.

- The **index** refers to the annual cumulative percent change in a variable from a given base year, expressed as an index with the base year equal to one hundred. The index value of 104 at Canada level (table 37-10-0025-01), for example, five years after the base year, indicates a 4% increase in per capita combined expenditure on education between 2007/2008 and 2012/2013.
- **Gross domestic product** (GDP) is the total market value of a country's (or province's, or territory's) goods and services produced over the year.
- **Current expenditure** refers to resources used each year by institutions as they carry out their activities. It includes research and development expenditures.
- **Capital expenditure** refers to assets that last longer than one year, including spending on new or replacement equipment and construction or renovation of buildings.
- **Educational core services expenditure** includes all expenditure directly related to instruction and education.
- **Ancillary services expenditure** has two main components:
    - Student welfare services which includes transportation, lodging, meals and general support facilities.
    - General public services which includes museums, radio and cultural programs.
- **Expenditure on educational institutions** includes spending on both of the following:
    - **Instructional education institutions** which are entities that provide instructional programmes (eg., teaching) to individuals directly in an organized group setting or through distance education.[6]
    - **Non-instructional education institutions** which are entities that provide advisory, administrative or professional services to other educational institutions but do not enrol students themselves.
- The **OECD average** is calculated as the unweighted mean of the data values of all OECD countries for which data are available or can be estimated. It does not take into account the absolute size of the education system in each country nor the relatively small number of countries surveyed. Note that when a category is not applicable in a country or when the data value is negligible for the corresponding calculation, the value zero is imputed for the purpose of calculating OECD averages. When both the numerator and the denominator of a ratio are not applicable for a certain country, this country is not included in the OECD average.
- Canada classifies **expenditure by education level** in a way that differs slightly from that of most other countries; that is, expenditure on pre-elementary education is grouped with expenditure at the elementary and secondary levels, while expenditure on postsecondary non-tertiary education (essentially technical and vocational training) is grouped with ISCED level 2 (short-cycle tertiary education) expenditure. This should not affect international comparability, however, since expenditure at the elementary and secondary levels is dominant.

Methodology

Expenditure per capita

- Per capita expenditure in table 37-10-0025-01 divides the spending on education in Canada or in a province or territory, by the total population, to show how much is spent on education per person.

Expenditure per student

Data refer to the financial year and the school year. Unlike publications prior to 2018, the financial and enrolment data here are not processed to reflect a single calendar year. These data are collected for the elementary and secondary levels as well as for the college and university sectors. The OECD figures are from the UOE data collection on education statistics, administered by the OECD.

6. Business enterprises or other institutions providing short-term courses of training or instruction to individuals on a one-to-one basis are excluded.

Expenditure per student by educational institutions at a given level of education is calculated by dividing the total expenditure by educational institutions at that level by the corresponding full-time equivalent (FTE) enrolment. Only educational institutions and programs for which both enrolment and expenditure data are available are taken into account. In accordance with the OECD definition provided in the data collection manual, debt servicing expenditure is excluded.

Financial data for elementary and secondary school levels are based on three Statistics Canada surveys: the Survey of Uniform Financial System – School Boards (this is the largest source of expenditure reporting); the Elementary-Secondary Education Survey (ESES) and the Survey of Federal Government Expenditures in Support of Education (FEDEX). The survey data are consolidated with federal and provincial expenditures on education, and other sources of revenue, to give a more complete picture of government expenditures.

Enrolment data for elementary and secondary school levels are the sum of enrolment in public and private schools (ESES), and enrolment in First Nations band-operated schools (Indigenous Services Canada).

In Quebec, vocational training and general education for adults are included at the secondary level. Given that a significant number of these enrolments are part time, the headcounts were adjusted to FTE enrolments using a factor of 0.6 for vocational training, and 0.2 for adult education. Students enrolled in regular programs for youth who were over 21 years of age were treated as part-time and a factor of 0.2 was applied. Due to these changes, this year's estimate of expenditure per student is not comparable with estimates from publication years 2017 or earlier.

Financial data for the college level came from the Financial Information of Community Colleges and Vocational Schools Survey (FINCOL). For the university sector, the financial data were drawn from the Financial Information of Universities and Colleges Survey (FIUC), done in conjunction with the Canadian Association of University Business Officers (CAUBO), and the Survey of Federal Government Expenditures in Support of Education (FEDEX). These survey data are then consolidated with federal and provincial expenditures on education, and other sources of revenue, to give a more complete picture of government expenditures at the two levels.

Subsequently, educational institutions that have both enrolment as well as expenditure data are kept in the analysis. For college, if an institution has expenditure data but no enrolment, the FINCOL value for that college is subtracted from the total expenditure. For university, where there is more complete coverage, if an institution has expenditure data but no enrolment data, the enrolment data was estimated based on public information.

The enrolment figures for both the college and university levels come from the Postsecondary Student Information System (PSIS). In the case of colleges, a new methodology was used in order to calculate full-time equivalent enrolments. This method used course-level data in order to estimate a ratio for calculating the number of full-time equivalent enrolments. Apprentices were treated as full-time students due to their high resource use while they are in school sessions.

For university, student-program enrolments on a given day from the fall term were used to approximate a full-time enrolment count. Part-time students identified in this count were divided by 3.5 and added to the number of full-time students.

In addition, for both the university and college sectors, financial data are collected at an institutional level only, and thus cannot be divided by type of program. As a result, expenditures also include any expenditure for programs that are not at the diploma, Bachelor's, Master's, or Doctoral levels such as career, technical or professional training programs. In order to be consistent, enrolment for these additional programs have also been retained in the analysis.

For comparison with the OECD, expenditure in Canadian currency was converted into equivalent US dollars by dividing the national currency figure by the purchasing power parity (PPP) index for the gross domestic product (GDP). The value of 1.20 (for 2017/2018) was used. The PPP index was used because the market exchange rate is affected by many factors (interest rates, trade policies, economic growth forecasts, etc.) that have little to do with current relative domestic purchasing power in different OECD countries. Expenditure data are not adjusted for the differences in the cost of living across the provinces and territories.

Educational core services are the expenditure portion that covers the real mission of educational institutions, which is to provide education. There are also expenditures on ancillary services, which have two main components: student welfare services (transportation, lodging and meals) and services for the general public (museums, radio and cultural programs). In the university and college sector, ancillary services typically include bookstores, food services (dining hall, cafeterias and vending machines), residences and housing, parking, university press publishing, laundry services, property rentals, university facility rentals, theaters, and conference centers.

Education expenditure at the university level also includes expenditure on research and development, such as subsidies received by the institution for research projects and an estimate of the proportion of other current expenditures allocated to research and development.

The OECD average is calculated as the average of all OECD countries for which data are available.

Note: The corresponding OECD indicator is C1, *How much is spent per student on educational institutions?*.

Distribution of expenditure on education

This indicator (table 37-10-0212-01) shows the proportion of budgets allocated to current and capital spending at different education levels. Expenditures are based on accrual and cash (or fund) accounting, depending on the data source(s) used by the provinces and territories. It also shows the proportion of current expenditure allocated to compensation of teachers and of other staff, along with other current expenditure.

The distinction between current expenditure and capital expenditure is taken from the standard definition used in national accounts. Current refers to resources used each year by institutions as they carry out their activities. It includes research and development expenditures, which are not capital expenditures. Capital covers assets that last longer than one year, including spending on new or replacement equipment and construction or renovation of buildings. Neither takes expenditure related to debt service into account.

Expenditure on educational core services includes all expenditure directly related to instruction and education; i.e., all expenditure on teachers, school buildings, teaching materials, books and administration of schools.

Limitations

- Any historical analysis of financial data should be carried out with caution. Though institutions are provided with guidelines for survey respondents, comparisons may still be limited due to differences in the institution's own accounting principles. In addition, inherent institutional differences such as size, budgets and physical environment may further limit comparison.
- When making inter-jurisdictional comparisons, the following should be taken into account: variations in sources of funding; differences in fiscal year-end dates, which can vary from March 31 to June 30, and variations in provincial policies and provincial funding responsibilities.
- Private school data are not included at the pre-primary and elementary-secondary levels.
- Debt servicing expenditure is excluded in accordance with the OECD definition.
- Although amounts presented in constant dollars provide a consistent picture over time, the impact of spending on education in any jurisdiction will be affected by several factors, including changes to the cost of living within jurisdictions.

Data sources

- For pre-elementary and elementary-secondary levels, data were drawn from three Statistics Canada surveys: Elementary-Secondary Education Survey (ESES), Survey of Federal Government Expenditures in Support of Education (FEDEX) and Survey of Uniform Financial System-Schools Boards (SUFSB). In addition, data were also collected from the Provincial and Territorial Public Accounts.
- Enrolment data for elementary and secondary school levels are the sum of enrolment in public and private schools (ESES), and enrolment in First Nations band-operated schools (Indigenous Services Canada).

- For college, including collèges d'enseignement général et professionnel (CEGEPs) in Quebec, data were drawn from the Financial Statistics of Community Colleges and Vocational Schools survey (FINCOL).
- For the university sector, the financial data were drawn from the Financial Information of Universities and Colleges Survey (FIUC), done in conjunction with the Canadian Association of University Business Officers (CAUBO), and the Survey of Federal Government Expenditures in Support of Education (FEDEX).
- University and college survey data was then consolidated with federal and provincial expenditures on education, and other sources of revenue, to give a more complete picture of government expenditures at the two levels.
- Enrolment figures for both the college and university levels were drawn from the Postsecondary Student Information System (PSIS).
- GDP data were drawn from the System of National Accounts Branch.
- Information for OECD member countries was drawn from the data collection on educational systems conducted jointly by three international organizations—UNESCO, the OECD and Eurostat (UOE).

B2 Average university tuition fees

This subset of Indicator **B2** includes data on average undergraduate and graduate university tuition fees, over time, in current dollars (table 37-10-0045-01 formerly CANSIM 477-0077), at the Canada level and by province and by field of study (table 37-10-0003-01 formerly CANSIM 477-0021 and table 37-10-0004-01 formerly CANSIM 477-0022). These tables are based on data from the Tuition and Living Accommodation Costs (TLAC) survey which covers the academic year (eight months).

Concepts and definitions

- Average **university tuition fees** represent the tuition fees charged to full-time Canadian students over the academic year; that is, September to April. International students are not included. Average tuition fees for graduate studies (Master's and doctorates) are also presented. These average tuition fees do not include additional compulsory fees such as those for athletics, health services and student associations.
- The **fields of study** classification for **undergraduate** and **graduate programs** are adapted from the Classification of Instructional Programs (CIP), Statistics Canada's standard. The average tuition amounts for both types of programs are presented ranked from highest to lowest, based on the most recent year of data.
- Information is presented for the following 17 fields of study in both undergraduate and graduate programs: agriculture, natural resources and conservation; architecture and related services; business, management and public administration; dentistry; education; engineering; humanities; law, legal professions and study; mathematics, computer and information sciences; medicine; nursing; other health, parks, recreation and fitness; pharmacy; physical and life sciences and technologies; social and behavioural sciences; veterinary medicine; and visual and performing arts, and communications technologies.
- The graduate programs also include Master of Business Administration (MBA) programs; specifically, Regular MBA and Executive MBA.
- All tuition fee amounts are presented in **current dollars**. To convert the current dollar amounts to constant dollar amounts for comparison over time, it is suggested that the September Consumer Price Index corresponding with the beginning of the university academic year (September to August) be used. For the index and further details on converting, see Consumer Price Index (CPI), 2011 basket, monthly, September, Canada and provinces.

Methodology

- The Tuition and Living Accommodation Costs (TLAC) survey collects data for full-time students at Canadian degree-granting institutions that are publicly funded. The survey was developed to provide an overview of tuition and additional compulsory fees, and living accommodation costs that students can expect to pay for an academic year.

- The target population of TLAC is all degree-granting institutions (universities and colleges) in Canada. The survey is a census with a cross-sectional design. Data are collected for all units of the target population; therefore, no sampling is done.
- A major redesign of the Tuition and Living Accommodation Costs (TLAC) questionnaire was implemented for the 2007/2008 collection cycle, to include the standard coding structure for fields of study based on the Classification of Instructional Programs (CIP). Executive MBA and Regular MBA, previously included in the "Business, management and public administration" category were presented independently under the graduate programs; this change had a substantial impact. In 2010/2011, MBA programs were excluded from the national and provincial weighted averages to eliminate the impact of the high cost of these programs on the overall tuition fee averages for graduate programs.
- Using the most current enrolment data available, average tuition fees have been weighted by the number of students enrolled by institution and field of study.
- As of 1998/1999, Quebec weighted averages include the different tuition fees paid by "in-province" and "out-of-province" Canadian students. As of 2007/2008, Nova Scotia weighted averages include the different tuition fees paid by in-province and out-of-province Canadian students. In Ontario, the undergraduate weighted averages are calculated using the average of the lower and upper tuition values including enrolments by field of study. All other provinces except for Nova Scotia and Quebec use the lower tuition values including enrolments by field of study to calculate undergraduate weighted averages. Graduate weighted averages are calculated using the average of the lower and upper tuition fees including enrolments.
- All surveys are subject to errors. Only non-sampling errors apply to this survey given that no sampling process was used to produce the final results. Each year, data comparability is performed for each university and college, and any major discrepancies are investigated with the respondent. Tuition fee data is available at the provincial level and by province and field of study in CANSIM. Tuition fees at the institutional level are available through Client Services upon request and for a fee; these are the raw data reported by each institution.

Limitations

- Since the distribution of enrolment across various programs varies from period to period, caution should be exercised when making historical comparisons.

Data source

- Survey of Tuition and Living Accommodation Costs (TLAC), Statistics Canada. For more information consult "Definitions, data sources and methods", Statistics Canada Web site, survey 3123.

University revenues

This subset of Indicator **B2** presents the percentage distribution of university revenues, by source, at the Canada and provincial levels (table 37-10-0110-01 formerly CANSIM 477-0106). Amounts are presented in current dollars, for the financial year.

Concepts and definitions

- **Government revenues** at universities captures grants and contracts from government departments and agencies at the federal, provincial, municipal, and foreign levels.
- The **federal** portion of income is mainly from six major federal government agencies: the Social Sciences and Humanities Research Council of Canada (SSHRC), Health Canada (HC), the Natural Sciences and Engineering Research Council of Canada (NSERC), the Canadian Institutes of Health Research (CIHR), the Canada Foundation for Innovation (CFI), and Canada Research Chairs. Grants and contracts from all other federal government departments and agencies are also included.

- Grants and contracts at the **provincial** level include: income from provincial government departments and agencies, including provincial CFI matching grants; and provincial CFI matching income from the ministry responsible for the institution. "Income from other provinces," which includes grants from, and contracts with, provinces other than the province with jurisdiction, is also included.
- Grants from urban transit, communication and parking authorities are examples of income from **municipal** governments.
- Income from **foreign nations** includes grants from the National Endowment for Humanities, the National Institutes of Health, and the National Science Foundation.
- **Private revenues** at universities refer to those obtained from any source other than government, categorized as:

    - **Student fees**: Payments obtained from students directly in the form of tuition (credit and non-credit courses) and other fees.
    - **Non-government grants and contracts, donations and bequests**: Financial support received by colleges and universities from donors, bequests from wills, and contracts from sources other than government, the latter provided with specific stipulations.
    - **Sales**: Institution revenue from sales of services and products.
    - **Investment**: Revenue from dividends, bonds, mortgages, short-term notes, and bank interest. Includes the "Endowment" fund, a restricted fund (primarily donations), which cannot be spent. Investment income generated by endowments may be used for various purposes, which are often restricted by donors.
    - **Miscellaneous**: Commissions, royalties, and fees from the use of institution-owned rights or properties, fees for services rendered, library and other similar fines, rentals, net gain or loss on the sale of fixed assets, and any type of revenue not identified under other forms of revenue.

Methodology

- Data were drawn from the **Financial Information of Universities and Colleges Survey (FIUC)**, which was developed to provide financial information (income and expenditures) on all universities and affiliated institutions ("institution" may refer to universities, university-colleges, colleges, institutes and hospitals) in Canada. The survey is a census with a cross-sectional design, and the target population is all degree-granting institutions (universities and colleges) in Canada. Data are collected for all units of the target population; therefore, no sampling is done.
- The collection process for FIUC is conducted using two separate questionnaires:

    1. A questionnaire developed in conjunction with the Canadian Association of University Business Officers (CAUBO) that was designed and implemented by the CAUBO Finance Committee, which comprises financial administrators from six universities. These administrators meet twice a year and any proposed changes to the questionnaire and guidelines are discussed and implemented by the Committee.
    2. A non-CAUBO questionnaire, which is a virtual duplicate of the CAUBO questionnaire. Any modifications to the CAUBO questionnaire or guidelines are applied to the non-CAUBO questionnaire.

- Ontario CAUBO universities report to the province's own collection authorities (Council of Finance Officers — Universities of Ontario [COFO]). This information is sent to Statistics Canada, where a mapping and integration process converts the COFO data into the CAUBO format database.
- In 1999/2000, there was a break in the series, when major changes made to the CAUBO questionnaire and guidelines affected the historical comparability of the data; therefore, 1999/2000 was selected as the basis for comparison. Data from 1999/2000 onwards are comparable as they are based on the same guideline definitions.

- "University-colleges" are part of the FIUC universe made by CAUBO and as such are considered universities.
- Each university (and university-college) returns its questionnaire with accompanying audited financial statements, thus ensuring data accuracy. Nevertheless, each year a data comparability review is done for each institution and any major discrepancies are investigated with the respondent.

Limitations

- Non-CAUBO data are amalgamated with the CAUBO data at the provincial level. Data for non-CAUBO institutions are not released publicly at the institution level. They can only be released at the provincial level.
- Comparisons of financial data over multiple years should be done with caution because of changes in generally accepted accounting principles that could alter the underlying data and changes in the guidelines that govern the reporting of the data.

Data source

- Financial Information of Universities and Colleges Survey, Statistics Canada. For more information, consult "Definitions, data sources and methods," Statistics Canada Web site, survey 3121.

University expenditures

This subset of Indicator **B2** includes university expenditures by type of expenditure, for Canada and the provinces. Amounts are presented in current dollars and percentage distributions (table 37-10-0097-01 formerly CANSIM 477-0093). Expenditures figures are drawn from multiple sources including financial survey data and institutional financial reports. Some of the data are estimated in order to produce a complete and coherent financial picture.

Concepts and definitions

- The **capital expenditures** category reflects all expenditures on capital assets by universities and is not restricted to those originating in an institution's capital fund. Capital expenditures include: acquisitions of buildings, land, major equipment and furniture; major renovations and alterations; space rental; etc.
- **Operating expenditures** include the following funds: general operating; special purpose and trust; sponsored research; and ancillary enterprises. Such expenditures reflect the items that an institution purchases and consumes within a year, and those the institution purchases on an ongoing basis. Costs directly attributable to instruction such as salaries, instructional aids, administrative support, teacher development, and costs for other educators such as counselors, are included. Operating expenditures refer to:
    - **Compensation**, which includes gross salaries for educators and other staff (before deduction of taxes, contributions for retirement or health care plans, and other contributions or premiums for social insurance or other purposes), plus expenditure on retirement (actual or imputed expenditure by employers or third parties to finance retirement benefits for current educational personnel) and other non-salary compensation (fringe benefits). These statistics on compensation of university staff are categorized as:
        - **Academic salaries** – salaries paid to full- and part-time staff members engaged in instruction and research activities (includes deans, professors, associate professors, assistant professors and lecturers; also includes payments to staff members in the academic ranks for various types of leave such as administrative, academic or sabbatical).

- **Other salaries and wages** - payments to all full- and part-time non-instructional (support) staff including, among others, technicians, teaching and research laboratory technicians, clerical and secretarial, professional and managerial, janitorial, trades and maintenance. Also includes payments to individuals who may hold an academic rank (or equivalent), but are engaged in activities other than instruction and research.
- **Benefits** – includes the costs of institutions' contributions (with respect to salaries) for pensions (including payments for actuarial deficiencies and past service liability), group life insurance, salary continuance insurance, dental plans, Workers' Compensation, health taxes, tuition remission, Employment Insurance, and other costs of employee benefit programs. Also includes the cost of benefits paid during early retirement periods, as well as the cost of post-retirement benefits.

- The **other operating expenditures** category includes all non-salary related items such as spending on tuition fees and books, spending attributable to research and development, membership fees include fees paid by the institution to organizations such as AUCC and CAUBO, utilities, school services under contract, building operations and maintenance staff and so on. Other non-salary costs include those related to the maintenance of buildings as well as supplementary costs such as lunch programs and transportation and other expenses not covered elsewhere.

Methodology

- Data were drawn from the **Financial Information of Universities and Colleges Survey (FIUC)**, which was developed to provide financial information (income and expenditures) on all universities and affiliated institutions (institution may refer to universities, university-colleges, colleges, institutes and hospitals) in Canada. The survey is a census with a cross-sectional design, and the target population is all degree-granting institutions (universities and colleges) in Canada. Data are collected for all units of the target population; therefore, no sampling is done.
- The collection process for FIUC is conducted using two separate questionnaires:

  1. A questionnaire developed in conjunction with the Canadian Association of University Business Officers (CAUBO) that was designed and implemented by the CAUBO Finance Committee, which comprises financial administrators from six universities. These administrators meet twice a year and any proposed changes to the questionnaire and guidelines are discussed and implemented by the Committee.
  2. A non-CAUBO questionnaire, which is a virtual duplicate of the CAUBO questionnaire. Any modifications to the CAUBO questionnaire or guidelines are applied to the non-CAUBO questionnaire.

- Ontario CAUBO universities report to the province's own collection authorities (Council of Finance Officers — Universities of Ontario [COFO]). This information is sent to Statistics Canada, where a mapping and integration process converts the COFO data into the CAUBO format database.
- In 1999/2000, there was a break in the series, when major changes were made to the CAUBO questionnaire and guidelines, which affected the historical comparability of the data; therefore, 1999/2000 was selected as the basis for comparison. Data from 1999/2000 onwards are comparable as they are based on the same guideline definitions.
- "University-colleges" are part of the FIUC universe made by CAUBO and as such are considered universities.
- Each university (and university-college) returns its questionnaire with accompanying audited financial statements, thus ensuring data accuracy. Nevertheless, each year a data comparability review is done for each institution and any major discrepancies are investigated with the respondent.
- The percentages presented were calculated using the current dollar values for Canada from table 37-10-0097-01.

Limitations

- While considerable effort is made to ensure that universities and colleges are preparing information in accordance with the prescribed guidelines, there are limitations in the comparability of the data because of differences in the underlying accounting practices followed by institutions. Institutional comparisons are subject to interpretation and clarification because of differences such as size, academic programs, structure, physical environment, management philosophy, and budgetary and accounting procedures. Therefore, comparisons of financial data over multiple years should be done with caution.
- When making inter-jurisdictional comparisons, the following should be taken into account: variations in sources of funding; differences in fiscal year-end dates, which can vary from March 31 to June 30, and variations in provincial policies and provincial funding responsibilities.

Data source

- Financial Information of Universities and Colleges Survey (FIUC), Statistics Canada. For more information, consult "Definitions, data sources and methods," Statistics Canada Web site, survey 3121.

B3 Student debt

Indicator **B3** provides data on student debt from government-run student loan programs, for the classes of 2010 and 2015. Using data from the National Graduates Survey (NGS), the tables look at the percentage of students who borrowed and their average debt at graduation (table 37-10-0180-01), as well as the incidence and repayment of government student loans among graduates who did not pursue further postsecondary education (table 37-10-0181-01) in Canada and the provinces.

Concepts and definitions

- In the National Graduates Survey (NGS), **graduates** include those who graduated from: university programs leading to bachelors, masters or doctorate degrees or specialized certificates or diplomas; other postsecondary programs such as programs of a three months duration or longer that normally require secondary school completion or its equivalent for admission in colleges of applied arts and technology, CEGEPs, community colleges, technical schools and similar institutions. The NGS was conducted three years after graduation.
- **Government student loan programs** include all federal and provincial student lending resources; programs under which provincial and federal governments provide loans to Canadians enrolled in full- or part-time postsecondary education, based on eligibility and need.
- The data in table 37-10-0181-01 include only graduates who did not pursue any further postsecondary education program; i.e., a program leading to a diploma, certificate or degree above the high school level that would take three or more months to complete when attending full-time.
- The data presented in PCEIP may not be comparable with reports based on administrative data from student financial assistance programs in provinces, as they are based on self-reported responses.

Methodology

- Survey information collected from graduates on student loans includes the amounts owed to both federal and provincial student loan programs as well as the amount owed to other sources. Results presented refer to borrowing from government student loan programs only. Borrowing from private sources is not included.
- In table 37-10-0180-01 average debt at graduation for graduates is expressed in current dollars.
- The data in table 37-10-0180-01 captures all graduates who borrowed from government student loan programs and who reported data three years after graduation.
- In table 37-10-0180-01, the calculation of the average debt at graduation for those who borrowed from government student loan programs includes graduates who had paid off government student loans completely at graduation.

- In table 37-10-0181-01, only graduates who still owed at graduation and at three years after graduation are reflected in the average debt numbers. Hence, it excludes those who have already paid off their debts by calculating the average debt of only the population still owing at each time period.

Interjurisdictional comparability

- Provincial data refer to the province of study, which may differ from the province of residence three years after graduation. The Canada totals do not include data for the territories.

Limitations

- The 2018 National Graduates Survey (NGS) (class of 2015) and the 2013 NGS (class of 2009-2010) were both conducted three years after graduation, whereas previous National Graduate Surveys were conducted two years after graduation. While information on graduates at the time of graduation is comparable across cycles, information on graduate's activities at the time of the interview is not directly comparable. For example, labour market outcomes and debt repayment pertain to status three years after graduation for the 2018 NGS (class of 2015) and the 2013 NGS (class of 2009/2010), compared to two years after graduation for other cycles of NGS.

Data source

- National Graduates Survey (NGS), Statistics Canada. For more information, consult "Definitions, data sources and methods", Statistics Canada Web site, survey 5012.

Section C: Elementary-secondary education

C1 Early years and school readiness

Indicator **C1** assesses the early years and school readiness of 4- and 5-year-old children by examining their health status (including any health limitations), participation in activities, exposure to reading and reading materials, and their language scores/vocabulary skills.

Concepts and definitions

- The child's **general health** was classified as: excellent; very good; good; or fair or poor. The categories were read to the adult respondents who answered on behalf of their children in the **National Longitudinal Survey of Children and Youth (NLSCY)**.
- This indicator also considers certain **health limitations** affecting the child. One set of questions asked about the child's day-to-day health and focused on his or her abilities relative to other children of the same age. The adult respondents were told that these same questions would be asked of everyone. This indicator considers the following: difficulty seeing; difficulty hearing; difficulty being understood when speaking; difficulty walking; and pain or discomfort. Pain or discomfort reflects the "no" responses to a question asking if the child is "usually free of pain or discomfort." These questions are part of an index called the Health Utility Index.
- Before being asked about chronic conditions, the adult who was responding on behalf of the child was told that this referred to "conditions that have lasted or are expected to last six months or more and have been diagnosed by a health professional" and was instructed to mark all that apply. This indicator presents information for long-term allergies and long-term bronchitis, as well as asthma. The questions for asthma were asked separately, and the information presented reflects the percentage of children aged 4 or 5 who had ever been diagnosed with asthma, not just those who had had an asthma attack in the 12 months before the survey interview.
- **Weekly physical activities outside of school hours** refers to weekly participation (ranging from most days to about once a week) in: sports that involved a coach or instructor (except dance, gymnastics or martial arts); lessons or instruction in organized physical activities such as dance, gymnastics or martial arts; lessons or instruction in music, art or other non-sport activities; and participation in any clubs, groups or community programs with leadership (for example, Beavers, Sparks or church groups). The adults who responded on behalf of these young children were asked to provide information on the children's physical activities for the 12-month period leading up to the survey interview.
- **Daily reading activities outside of school hours** reflects some of the information obtained from questions about literacy, including how often a parent read aloud to the child or listened to the child read (or try to read). Respondents were also asked how often the child looked at books, magazines, comics, etc. on his/her own, or tried to read on his/her own (at home).
- The **Peabody Picture Vocabulary Test-Revised (PPVT-R)** measures children's receptive vocabulary, which is the vocabulary that is understood by the child when he or she hears the words spoken. It is a "normed" test; that is, a child's performance is scored relative to that of an overall population of children at the same age level as the child. A wide range of scores represents an average level of ability, taking the age of the child into consideration. Scores below the lower threshold of this average range reflect a delayed receptive vocabulary, and scores above the higher threshold demonstrate an advanced receptive vocabulary.
- The PPVT-R is scaled to an average of 100. The range of average receptive vocabulary measured by the PPVT-R covers scores from 85 to 115. A score below 85 is considered to indicate delayed receptive vocabulary; a score above 115, advanced. Scoring is adjusted to reflect the different abilities of 4- and 5-year-olds. English and French scores are assessed separately and are not directly comparable.

Methodology

- The **National Longitudinal Survey of Children and Youth (NLSCY)** is a long-term study of Canadian children that follows their development and well-being from birth to early adulthood. The survey was designed to collect information about factors influencing a child's social, emotional and behavioural development and to monitor the impact of these factors on the child's development over time.
- This indicator is based on nationally representative data for 4- and 5-year-olds from cycle 8 of the NLSCY, which was conducted in 2008/2009.
- The information presented was obtained from the NLSCY child component; specifically, the questions on child health, activities (sports, lessons, clubs, etc.) and literacy. Responses were provided by the person most knowledgeable (PMK) about the child, which is usually the mother.

Limitations

- The NLSCY relies on the perceptions of the adult most familiar with the child to report on the child's general health and development, and such reports may not always be entirely objective or accurate.
- The following are possible sources of non-sampling errors in the NLSCY: response errors due to sensitive questions, poor memory, translated questionnaires, approximate answers, and conditioning bias; non-response errors; and coverage errors.

Data source

- National Longitudinal Survey of Children and Youth (NLSCY), Statistics Canada. For more information, consult "Definitions, data sources and methods", Statistics Canada Web site, survey 4450.

C2 Elementary and secondary school: enrolments and educators

Characteristics of the educator work force are captured in Indicator C2 (table 37-10-0113-01 formerly CANSIM 477-0109, table 37-10-0021-01 formerly CANSIM 477-0107, and table 37-10-0105-01 formerly CANSIM 477-0108)

Concepts and definitions

- **Public schools** are publicly funded elementary and secondary schools that are operated by school boards or the province or territory. They include all regular publicly funded schools, as well as provincial reformatory or custodial schools and other schools that are recognized and funded by the province or territory.
- **Private/Independent schools** encompass elementary and secondary schools that are operated, managed and administered by private individuals and/or groups (e.g., a church, a trade union or a business enterprise, or a foreign or international agency) or that have a governing board that exercises powers similar to those of a board of education and consists mostly of members not selected by a public agency. Parents can choose to send their children to private/independent schools, which typically offer a curriculum similar to that provided by public schools, in a similarly structured way.
- **Home-schooling** is an alternative method of learning that takes place outside the public or private school environment. Parents choosing home-schooling have the primary responsibility of managing, delivering and supervising their children's courses and programs of learning.
- **Educators** include all employees in the public schools who belong to one of the three following categories: teachers, school administrators and pedagogical support.
    - *Teachers* include personnel involved in direct student instruction in a group or one-on-one basis. They include classroom teachers; special education teachers; specialists (music, physical education); and other teachers who work with students as a whole class in a classroom, in small groups in a resource room, or one-on-one inside or outside a regular classroom, including substitute/supply teachers. Chairpersons of departments who spend the majority of their time teaching and personnel temporarily not at work (e.g. for reasons of illness or injury, maternity or parental leave, holiday or vacation) are reported in this category. It excludes teacher's aides or student teachers as well as other personnel **who do not get paid for their employment**. For paid teacher's aides or educational assistants see category "**pedagogical support**" below.

  - *School administrators* include all personnel who support the administration and management of the school such as principals, vice-principals and other management staff with similar responsibilities only if they do **not** spend the majority of their time teaching. This category excludes those who are in higher level management; receptionists, secretaries, clerks and other staff who support the administrative activities of the school; and those who are reported under "other than educators".
  - *Pedagogical support staff* includes professional non-teaching personnel who provide services to students to support their instruction program. It includes educational assistants, **paid** teacher's aides, guidance counselors and librarians. This category excludes those in health and social support who should be reported under "other than educators".

- **Educator headcount** is defined as the number of educators on September 30th (or as close as possible thereafter) of the school year who are responsible for providing services to the students reported in the enrolment headcount tables.

Methodology

- The **Elementary-Secondary Education Survey** (ESES) is a national survey that enables Statistics Canada to provide information on enrolments, graduates, educators and finance of Canadian elementary-secondary public and private educational institutions. It also provides enrolment information for home-schooled students.
- The ESES is an annual survey that collects aggregate data from each provincial/territorial Ministry or Department of Education. The information on enrolments is collected by type of program (regular, upgrading, and vocational), by grade and sex and by age and sex.
- The survey also collects data on secondary school graduates by type of program (regular, upgrading, and vocational), by age and sex.
- Information pertaining to full-time and part-time educators by age group and sex is also collected. Finally, the survey also gathers expenditures data pertaining to level of government (school board and other government) and type of expenditures.
- Calculations were completed using unrounded data. Each age group is calculated as a percentage of all known age groups. However for the "Total" age category, cases where age is unknown were included. Similarly, the "Both sexes" category includes cases where sex is not reported, while the "Male" and "Female" categories were calculated as a percentage of the total excluding cases where sex was not reported.

Limitations

- Due to the nature of the Elementary-Secondary Education Survey (ESES) data collection, these data are updated on an ongoing basis and are therefore subject to further revisions.
- Care should be taken with cross-jurisdictional comparisons. The proportion of educators (comprising a mix of teachers, administrators and pedagogical support) and their respective remuneration differ in each jurisdiction. Northwest Territories was not included due to some data being unavailable.
- Educational assistants are not included.
- Data for part-time educators are not available for Nova Scotia.
- It is highly suggested that one should not compare data with more recent data due to a change in methodology for Alberta (prior to 2004), Manitoba (prior to 2011/2012) as well as Ontario (prior to 2010/2011).

Data source

- Elementary-Secondary Education Survey, Statistics Canada. For more information, consult "Definitions, data sources and methods", Statistics Canada Web site survey 5102.

C4 Student achievement

Programme for International Student Assessment (PISA)

Indicator **C4** reports on student achievement in three key areas—reading, mathematics, and science—and looks at changes in results over time. Performance was examined using results from the Programme for International Student Assessment (PISA), an international program of the Organisation for Economic Co-operation and Development (OECD).

This sub-indicator presents detailed information on the performance of 15-year-old students in Canada in the major PISA domains of reading, mathematics and science (table 37-10-0149-01 formerly CANSIM 479-0002).

Concepts and definitions

- The **Programme for International Student Assessment (PISA)** is a collaborative effort of member countries of the OECD along with partner countries to regularly assess youth outcomes, using common international tests, for three domains: **reading**, **mathematics**, and **science**. The goal of PISA is to measure students' skills in reading, mathematics, and science not only in terms of mastery of the school curriculum, but also in terms of the knowledge and skills needed for full participation in society.
- **Reading:** An individual's capacity to understand, reflect on, and engage with written texts, in order to achieve one's goals, to develop one's knowledge and potential and to participate in society.
- **Mathematics:** An individual's capacity to identify and understand the role that mathematics plays in the world, to make well-founded judgments and to use and engage with mathematics in ways that meet the needs of that individual's life as a constructive, concerned and reflective citizen.
- **Science:** An individual's capacity to use scientific knowledge, to identify questions and to draw evidence-based conclusions in order to understand and help make decisions about the natural world and the changes made to it through human activity.

Methodology

- Internationally, around 600,000 students from 79 countries and economies participated in PISA 2018. PISA's target population comprises 15-year-olds who are attending school. In Canada, the student sample is drawn from Canada's 10 provinces; the territories have not participated in PISA to date. The PISA assessments are administered in schools, during regular school hours, in the spring. Students of schools located on Indian reserves were excluded, as were students of schools for those with severe learning disabilities, schools for blind and deaf students, and students who were being home-schooled.
- While all three of the PISA domains are tested in each assessment, only one forms the major domain in each cycle, meaning it includes more assessment items than the others. In each cycle, two-thirds of testing time is devoted to the major domain. Mathematics was the major domain in 2003 and 2012, reading in 2000, 2009 and 2018, and science in 2006 and 2015.
- Results for the major domains are available in a combined domain scale (which represents students' overall performance across all the questions in the assessment for that domain), as well as on the sub-domains that make up each overall scale. As fewer items are tested as part of the minor domains, only combined or overall results are available from PISA.
- In PISA, student performance is expressed as a number of points on a scale constructed so that the average score for the major domains for students in all participating countries was 500 and its standard deviation was 100.
- PISA results can also be presented as the distribution of student performance across levels of proficiency. The levels range from the lowest, Level 1, to the highest, Level 6. Descriptions of each of these levels have been generated, based on the framework-related cognitive demands imposed by tasks that are located within each level, to describe the kinds of knowledge and skills needed to successfully complete those tasks, and which can then be used as characterisations of the substantive meaning of each level.

- According to the OECD, Level 2 can be considered a baseline level of proficiency, at which students begin to demonstrate the competencies that will enable them to participate effectively and productively in life. Students performing below Level 2 can still accomplish some tasks successfully, but they lack some fundamental skills that may prepare them to either enter the workforce or pursue postsecondary education.
- When comparing student performance among countries, provinces, or population subgroups, the PISA tables identify statistically significant differences. Statistical significance is determined by mathematical formulas and considers issues such as sampling and measurement errors. Sampling errors relate to the fact that performance was computed from the scores of random samples of students from each country and not from the entire population of students in each country. Consequently, it cannot be said with certainty that a sample average has the same value as a population average that would have been obtained had all 15-year-old students been assessed. Additionally, a degree of error is associated with the scores describing student skills as these scores are estimated based on student responses to test items.
- Standard errors and confidence intervals have been used as the basis for performing comparative statistical tests. The standard error expresses the degree of uncertainty around the survey results associated with sampling and measurement errors. The standard error is used to construct a confidence interval, which indicates the probability that a given error range (given by the standard error) around the sample statistic includes the population number. The PISA survey results are statistically different if the confidence intervals do not overlap. Furthermore, an additional t-test was conducted to confirm statistical difference.
- It is possible to compare changes in student performance over time in each PISA domain because a number of common test questions are used in each survey. However, the limited number of such common test items used increases the chances of measurement error. To account for this, an extra error factor, known as the linking error, is introduced into the standard error. The standard errors with linking errors should be used whenever comparing performance across assessments (but not when comparing results across countries/economies or subpopulation within a particular assessment).

Limitations

- Looking at the relative performance of different groups of students on the same or comparable assessments at different time periods shows whether the level of achievement is changing. Obviously, scores on an assessment alone cannot be used to evaluate a school system, because many factors combine to produce the average scores. Nonetheless, these assessments are one of the indicators of overall performance.
- Since data are compared for only two points in time, it is not possible to assess to what extent the observed differences are indicative of longer term trends.
- Statistical significance is determined by mathematical formulas and considers issues such as sampling. Whether a difference in results has implications for education is a matter of interpretation; for example, a statistically significant difference may be quite small and have little effect. There are also situations in which a difference that is perceived to have educational significance may not, in fact, have statistical significance.

Data sources

- Council of Ministers of Education, Canada, *Canadian Results of the OECD PISA Study.*
- Organisation for Economic Co-operation and Development. Programme for International Student Assessment (PISA).

Pan-Canadian Assessment Program (PCAP)

Indicator **C4** reports on student achievement in three core learning areas (also referred to as domains): mathematics, science, and reading. It also examines the process of mathematics problem-solving. This sub-indicator examines performance by presenting results from the Pan-Canadian Assessment Program (PCAP), an initiative of the provinces and territories conducted through the Council of Ministers of Education, Canada (CMEC).

Detailed information on the performance of Grade 8 students in Canada in the major PCAP domain of reading, assessed in 2016, is presented. Mean scores and the distribution of students by performance levels for the overall reading domain, as well as mean scores for the reading sub-domains, are also outlined. The performance of students in science and math is also shown. Results are presented by the language of the school system.

Concepts and definitions

- The **Pan-Canadian Assessment Program (PCAP)** is a cyclical program of assessments that measures the achievement of Grade 8 students in Canada. It is conducted by the Council of Ministers of Education, Canada (CMEC). PCAP provides a detailed look at each of three core learning areas, or domains, in the years when it is a major focus of the assessment (reading in 2007, mathematics in 2010, science in 2013 and reading in 2016), along with a minor focus on the other two domains. PCAP, which was first conducted in 2007, has replaced CMEC's School Achievement Indicators Program (SAIP). PCAP was designed to determine whether students across Canada reach similar levels of performance in these core learning areas at about the same age, and to complement existing assessments in each jurisdiction.
- PCAP 2016 focused on reading literacy, defined through compenents of the reading literacy model (reader, text, purpose, context); four subdomains (understanding texts, interpreting texts, responding personally to texts, and responding critically to texts).
- Reading is considered a dynamic, interactive process during which the reader constructs meaning from texts. The process of reading involves the interaction of reader, text, purpose and context, before, during, and after reading.
- Mathematics is assessed as a conceptual tool that students can use to increase their capacity to calculate, describe, and solve problems.
- Science literacy reflects the emphasis of 'science for all' and is inclusive of both those who choose to pursue further study in science and those who choose other careers and interests that are not specific to science.
- While all three of the PCAP domains are tested in each assessment, each cycle places a major focus on only one domain, meaning it will include more assessment items than the other two. PCAP has been, and will be, administered to students as follows:

- **Three Pan-Canadian Program Assessment (PCAP) domains tested**

Domain focus	2010	2013	2016	2019	2022
Major	Mathematics	Science	Reading	Mathematics	Science
Minor	Science	Reading	Mathematics	Science	Reading
Minor	Reading	Mathematics	Science	Reading	Mathematics

Methodology

- Approximately 32,000 Grade 8 students from Canada's 10 provinces and Yukon participated in PCAP 2010. The Northwest Territories and Nunavut have not yet participated in the PCAP assessments.
- When PCAP began in 2007, its target population was all 13-year-old students. In 2010, the target was modified to capture all Grade 8 students, regardless of age. This simplified the selection of students and reduced disruptions to the schools and in the classrooms. In 2007, 13-year-old students accounted for most of the PCAP sample, although these students may not have all been in Grade 8 at the time.

- The assessment adopted the following stratified sampling process in the selection of participants:
    - the random selection of schools from each jurisdiction, drawn from a complete list of publicly funded schools provided by the jurisdiction;
    - the random selection of Grade 8 classes, drawn from a list of all eligible Grade 8 classes within the school;
    - the selection of all students enrolled in the selected Grade 8 class;
    - when intact Grade 8 classes could not be selected, a random selection of Grade 8 students.
- The PCAP participation rate was over 85% of sampled students. The school determined whether or not a student could be exempted from participating in the PCAP assessment. Students were excused from the assessments if they had, for example: functional disabilities; intellectual disabilities; socio-emotional conditions; or limited language proficiency in the target language of the assessment.
- The PCAP structure was designed to align with that used for the Programme for International Student Assessment (PISA), which is conducted by the Organisation for Economic Co-operation and Development (OECD).
- PCAP 2016 tested approximately 27,000 students in English, and about 7,000 students in French. The results for students in the French school system were reported as Francophone school system, and the results for students in the English school system were reported as Anglophone school system. The Total results for a jurisdiction represent those for students in both systems. Results for French immersion students who wrote in French were calculated as part of the English results since these students are considered part of the English-language cohort. (Caution is advised when comparing achievement results based on assessment instruments that were prepared in two different languages. Despite extensive efforts to produce an equivalent test in both languages, each language has unique features that may make direct comparisons difficult.)
- Results for the major domains are available in an overall domain scale (which represents students' overall performance across all the questions in the assessment for that domain), as well as on the sub-domains that make up each overall scale. As fewer items are tested as part of the minor domains, only combined or overall results are available from PCAP.
- When scores obtained from different populations and on different versions of a test are compared over time, a common way of reporting achievement scores that will allow for direct comparisons is needed. One such commonly used method numerically converts the raw scores to "standard scale scores." For PCAP 2016, raw scores were converted to a scale on which the average for the Canadian population was set at 500, with a standard deviation of 100. From this conversion, the scores of two-thirds of all participating students fell within the range of 400 to 600 points, which represents a "statistically normal distribution" of scores.
- Results for a major domain in PCAP can also be presented as the percentage of students who had different performance levels. Performance levels represent how well students were doing based on the cognitive demand and degree of difficulty of the test items. Cognitive demand is defined by the level of reasoning required by the student to correctly answer an item, from high demand to low demand; degree of difficulty is defined by a statistical determination of the collective performance of the students on the assessment. There were three levels of performance in the reading component of PCAP 2016:
    - Level 3 (scores of 603 or above)
    - Level 2 (scores between 400 and 602)
    - Level 1 (scores 399 and less)
- Level 2 represents the expected level of performance for Grade 8 students, and Level 1, a level below that expected of students in their Grade 8 level group. Level 3 represents a higher level of performance. These definitions of the expected levels of performance were established by a panel of assessment and education experts from across Canada, and were confirmed as reasonable given the actual student responses from the PCAP assessments.

- When comparing student performance among provinces and territories, or across population sub-groups, statistically significant differences must be considered. Standard errors and confidence intervals were used as the basis for performing comparative statistical tests. The standard error expresses the degree of uncertainty around the survey results associated with sampling and measurement errors. The standard error is used to construct a confidence interval. The confidence interval represents the range within which the score for the population is likely to fall, with 95% probability. It is calculated as a range of plus or minus about two standard errors around the estimated average score. The differences between estimated average scores are statistically significant if the confidence intervals do not overlap.
- It is not possible to compare the results from any minor assessments that took place before the first major (full) assessment of a domain because the framework for the domain is not fully developed until the cycle in which it is assessed as a major domain. Consequently, the results measured as a minor domain beforehand are not comparable.
- In addition to the assessment of students' knowledge and skills in mathematics, reading, and science, PCAP also administers accompanying contextual questionnaires to students, teachers, and schools.

Limitations

- An examination of the relative performance of different groups of students on the same or comparable assessments at different time periods shows whether the level of achievement is changing. However, scores on an assessment alone cannot be used to evaluate a school system, because many factors combine to produce the average scores. Nonetheless, these assessments are one of the indicators of overall performance.
- Statistical significance is determined by mathematical formulas and considers issues such as sampling. Whether a difference in results has implications for education is a matter of interpretation; for example, a statistically significant difference may be quite small and have little effect. There are also situations in which a difference that is perceived to have educational significance may not, in fact, have statistical significance.

Data source

- *Pan-Canadian Assessment Program, PCAP-2016: Report on the Pan-Canadian Assessment of Science, Reading, and Mathematics*, Council of Ministers of Education, Canada (CMEC), 2018.

C5 Information and communications technologies (ICT)

Indicator **C5** reports on computer and software availability in schools, computer use among students at school, and student self-confidence in performing computer tasks. Information is presented for Canada, the provinces, and selected member countries of the Organisation for Economic Co-operation and Development (OECD) using results from the OECD's 2009 Programme for International Student Assessment (PISA).

Concepts and definitions

- Information for this indicator is obtained through the 2009 **Programme for International Student Assessment (PISA)**, which evaluates the skills and knowledge of 15-year-old students that are considered to be essential for full participation in modern economies, and sheds light on a range of factors that contribute to successful students, schools, and education systems. Information on computer and software availability in schools is obtained through the PISA school context questionnaire in which principals provided information on the availability of computers at their schools and whether they felt a lack of computers or software hindered instruction. Information on computer use among students at school and student self-assessment of their confidence in performing computer tasks was obtained from the optional ICT familiarity component of the PISA student context questionnaire.

- The **number of computers per student** is often used as a proxy to indicate the technology available to students. It refers to the total number of computers available for educational purposes to students in schools in the national modal grade for 15-year-olds (Grade 10 or equivalent in Canada) divided by the total number of students in the modal grade.
- A **shortage or inadequacy of computers or software for instruction** was explored in the PISA 2009 school context questionnaire as another way of looking at student access to ICT resources. In this questionnaire, principals reported on their perceptions of whether their school's capacity to provide instruction was hindered by a shortage of computers or computer software for instruction. Schools are considered to have a shortage or inadequacy of computers or software for instruction when school principals reported that this situation was hindering instruction to "some extent" or "a lot". The principals' subjective perceptions of shortages should be interpreted with some caution, because cultural factors and expectations, along with pedagogical practices, may influence the degree to which principals consider shortages a problem. Perceptions of inadequacy may be related to higher expectations among principals for ICT-based instruction rather than fewer computers available for learning.
- **The Index of self-confidence in information and communications technologies high-level tasks** as constructed to summarize student's self-confidence in performing certain computer tasks. This index reflects a composite score based on students' indications of the extent to which they could perform the following five different types of technical tasks: edit digital photographs or other graphic images; create a database; use a spreadsheet to plot a graph; create a presentation; create a multimedia presentation. For each task there were four possible responses: I can do this very well by myself; I can do this with help from someone; I know what this means but I cannot do it; I don't know what this means. This index was constructed so that the average OECD student would have an index value of zero, and about two-thirds of the OECD student population would be between -1 and 1. For this index, a negative score indicates a level of confidence that is lower than the average calculated for students across OECD countries. Students' subjective judgments of task competency may vary across jurisdictions. Each index is self-contained; that is, a jurisdiction's score on one index cannot be directly compared with its score on another.
- The **Index of computer use at school** was constructed to summarize how frequently students perform different types of ICT activities at school. This index reflects a composite score based on students' responses when asked how frequently they perform the following nine activities: chat on-line; use e-mail; browse the Internet for schoolwork; download, upload or browse material from the school Web site; post work on the school's Web site; play simulations; practice and do drills (e.g., for mathematics or learning a foreign language); do individual homework; and do group work and communicate with other students. For each activity there were four possible responses: never or hardly ever; once or twice a month; once or twice a week; every day or almost every day. This index was constructed so that the average OECD student would have an index value of zero, and about two-thirds of the OECD student population would be between -1 and 1. Index points above zero indicate a frequency of use above the OECD average. Each index is self-contained; that is, a jurisdiction's score on one index cannot be directly compared with its score on another.
- **The modal grade attended by 15-year-olds** is the grade attended by most 15-year-olds in the participating country or economy. In Canada, most 15-year-olds attend Grade 10 (or equivalent).
- **Students' socio-economic status** is measured by the PISA Index of Economic, Social and Cultural Status (ESCS). It is important to emphasize that this indicator presents information organized according to the socio-economic status of the student, not of the school attended by the student.
- The **PISA Index of Economic, Social and Cultural Status (ESCS)** provides a measure of the socio-economic status of the student. This index was constructed based on information provided by the representative sample of 15-year-old students who participated in the PISA student background questionnaire, in which information on students' backgrounds was obtained from their answers to a 30-minute questionnaire that covered topics such as educational background, family and home situation, reading activities, and school characteristics. The PISA ESCS index was derived from the following variables: the international socio-economic index of occupational status of the father or mother, whichever is higher; the level of education of the father or mother, whichever is higher, converted into years of schooling; and the index of home possessions, obtained by asking students whether they had a desk

at which they studied at home, a room of their own, a quiet place to study, a computer to use for school work, educational software, a link to the Internet, their own calculator, classic literature, books of poetry, works of art (e.g., paintings), books to help them with their school work, a dictionary, a dishwasher, a DVD player, three other country-specific items, and the number of cellular phones, televisions, computers, cars and bathrooms at home. The rationale for choosing these variables is that socio-economic background is usually seen as being determined by occupational status, education, and wealth. As no direct measure of parental income or wealth was available from PISA, information on access to household items was used as a proxy as students would have knowledge of these items within the home. These questions were selected to construct the indices based on theoretical considerations and previous research. Structural equation modeling was used to validate the indices.

- Greater values on the Index of Economic, Social and Cultural Status (ESCS) represent a more advantaged social background, while smaller values represent a less advantaged social background. A negative value indicates that the socio-economic status is below the OECD mean. The index is divided into quarters based on students' values on the ESCS index. Therefore students in the bottom quarter are in the lowest quarter of students in the ESCS index, and students in the top quarter are in the highest quarter of students based on their ESCS value.

Methodology

- The target population for PISA 2009 comprised 15-year-olds who were attending schools in one of Canada's 10 provinces; the territories have not participated in PISA to date. Students of schools located on Indian reserves were excluded, as were students of schools for those with severe learning disabilities, schools for blind and deaf students, and students who were being home-schooled.
- In 2009, PISA was administered in 65 countries and economies, including Canada and all other OECD member countries. Between 5,000 and 10,000 students aged 15 from at least 150 schools were typically tested in each country. In Canada, approximately 23,000 students from about 1,000 schools participated in the 10 provinces. This large Canadian sample was needed to produce reliable estimates for each province.
- The information for this indicator is obtained from certain responses to three contextual questionnaires that were administered along with the main PISA skills assessment: a student background questionnaire that provided information about students and their homes; a questionnaire on familiarity with ICT that was administered to students; and a questionnaire administered to school principals. The questionnaire framework that is the basis of the context questionnaires and the questionnaires themselves are found in *PISA 2009 Assessment Framework: Key Competencies in Reading, Mathematics and Science* (OECD 2010).
- All member countries of the OECD participated in the PISA 2009 main assessment (including the student and school background questionnaires that are a main source of data for this indicator), and 29 member countries chose to administer the optional ICT familiarity questionnaire. This indicator presents information for a subset of these participating countries; namely, the G-8 countries (Canada, France, Germany, Italy, Japan, the Russian Federation, the United Kingdom, and the United States) and nine selected OECD countries that were deemed to be among Canada's social and economic peers and therefore of key comparative interest (Australia, Denmark, Finland, Ireland, Korea, New Zealand, Norway, Sweden, and Switzerland).
- The statistics in this indicator represent estimates based on samples of students, rather than values obtained from the entire population of students in each country. This distinction is important as it cannot be said with certainty that a sample estimate has the same value as the population parameters that would have been obtained had all 15-year-old students been assessed. Consequently, it is important to measure the degree of uncertainty of the estimates. In PISA, each estimate has an associated degree of uncertainty, which is expressed through the standard error. In turn the standard error can be used to construct a confidence interval around the estimate—calculated as the estimate +/- 1.96 x standard error—which provides a way to make inferences about the population parameters in a manner that reflects the uncertainty associated with the sample estimates. Using this confidence interval, it can be inferred that the population parameter would lie within the confidence interval in 95 out of 100 replications of the measurement, using different samples randomly drawn from the same population.

- When comparing sample estimates among countries, provinces and territories, or population subgroups, statistically significant differences must be considered in order to determine if the true population parameters are likely different from each other. Standard errors and confidence intervals are used as the basis for performing comparative statistical tests. Results are statistically different if the confidence intervals do not overlap.
- In *Percentage of 15-year-old students in schools whose principals reported shortage or inadequacy of computer hardware or software for instruction, by students' socio-economic status, Canada, provinces, G-8 and selected OECD countries, 2009*, differences in the percentage of students whose principals reported a shortage or inadequacy of computers or software between the top and bottom quarters of the PISA Index of Economic, Social, and Cultural Status were tested for statistical significance at Statistics Canada's Centre for Education Statistics. The testing method involved calculating the confidence intervals surrounding the percentage of students whose principals reported computer or software inadequacies for both the top and bottom quarters of the index. If these confidence intervals did not overlap, then the difference was determined to be statistically significant at the 95% confidence level.

Limitations

- Some data previously presented in Indicator C5 of Pan-Canadian Education Indicators Program (PCEIP) are not available from PISA 2009 as some of the questions were not repeated, or the information is not comparable with that used in past iterations of the PISA assessment.
- The PISA background questionnaires that explored ICT topics were not designed to assess the quality of ICT use at school nor the integration of ICT in pedagogy and its impact on student's cognitive skills.
- The territories have not participated in PISA to date.

Data sources

- Statistics Canada, Programme for International Student Assessment (PISA), 2009 database; Organisation for Economic Co-operation and Development (OECD), 2009 PISA database.

Section D: Postsecondary education

D1 Postsecondary enrolment

Registered apprentices

Overall, Indicator **D1** portrays postsecondary enrolment. This sub-indicator presents information on the number of registered apprentices in Canada, and in its provinces and territories, including breakdowns by sex and major trade group (table 37-10-0118, formerly CANSIM 477-0117), and by age group (table 37-10-0119, formerly CANSIM 477-0118).

Concepts and definitions

- Information on the number of **registered apprentices** is based on data provided by apprenticeship branches in the provinces and territories and includes all individuals registered in an apprenticeship program, whether or not they had been enrolled in any formal classroom training during the year. This information is collected through the Registered Apprenticeship Information System (RAIS), which gathers information on individuals who receive training and those who obtain certification in a trade for which apprenticeship training is being offered; specifically, the number of registered apprentices taking in-class and on-the-job training in trades that have either Red Seal or non-Red Seal endorsement, and for which apprenticeship training is either compulsory or voluntary. The RAIS survey also compiles data on the number of provincial and interprovincial Red Seal certificates granted to apprentices or trade qualifiers (challengers).[7]
- Provincial and territorial governments co-ordinate apprenticeship programs in their jurisdiction. Most of the apprentice's training time is spent on the job working with experienced, certified tradespersons who act as mentors, usually over an average period of three to four years. A portion of the apprenticeship program is spent in formal classroom instruction prior to or during their apprenticeship period.
- The numbers of registered apprentices are presented for the following 25 **major trade groups**, by sex: automotive service; carpenters; early childhood educators and assistants; community and social service workers, electricians; electronics and instrumentation; exterior finishing; food service; hairstylists and estheticians; heavy duty equipment mechanics; heavy equipment and crane operators; interior finishing; landscape and horticulture technicians and specialists; machinists; metal workers (other); millwrights; oil and gas well drillers, servicers, testers and related workers; plumbers, pipefitters and steamfitters; refrigeration and air conditioning mechanics; sheet metal workers; user support technicians; welders; stationary engineers and power plant operators; construction workers (other); and other.[8] These 25 major trade groups comprise a special grouping that was created using the National Occupation Classification (NOC).
- The numbers and percentages of registered apprentices are provided for the following seven **age groups**: under 20; 20 to 24; 25 to 29; 30 to 34; 35 to 39; 40 to 44; 45 and over; and for those whose age was unknown.

Methodology

- The **Registered Apprenticeship Information System (RAIS)** survey is an annual census. Data are collected for all registered apprentices and trade qualifiers (challengers); no sampling is done. Response is mandatory and data are collected from administrative files supplied by provincial apprenticeship branches. The information is requested in individual record format and each record represents a registered apprentice or trade qualifier (challenger); however, multiple registrations in more than one trade by an individual do exist in the data. Information is collected on registration status of apprentices at the beginning and during the reporting period; their status during and at the end of the reporting period; the number of credits accumulated at the start and during their apprenticeship as well as the type of certificate granted. The reference period is the calendar year, and the collection period is February through September of the reference year.

7. "Trade qualifiers (challengers)" refers to individuals who have sufficient practical work experience to meet the established criteria to attempt the certification journey level (provincial or interprovincial) examination. The criteria include relevant on-the-job experience of at least one year in excess of the apprenticeship term. This means that they did not register for or complete apprenticeship training, but they did succeed in obtaining certification within that trade.
8. "Other" consists of miscellaneous trades and occupations not classified elsewhere.

- The RAIS collected aggregate data by trade programs from 1980 to 1990. It included information on the number of new registrations, total registrations, leavers, completions and certificates granted. In 1991, in response to requests for more information on individual apprentices, the survey began collecting additional information on sex and age and requested information in individual record format. It should be noted that aggregate reporting still existed for some jurisdictions until 2007. Since 2008, the provinces and territories have been providing data at the individual level.
- In 2008, the RAIS underwent a major survey redesign, and a number of new data elements were added and requested from the jurisdictions. Some of the new data elements being requested relate to the number of technical and on-the-job hours completed by apprentices during their training.
- Beginning with the 2008 data, the RAIS used the National Occupation Classification (NOC) to create a special grouping of 25 major trade groups. All RAIS historical data have been revised to reflect these 25 groups.

Limitations

- To ensure the confidentiality of responses, all counts are randomly rounded to a multiple of 3. As a result, when the data are summed or grouped, the total value may not match the sum of the individual values, since the total and subtotals are independently rounded. Similarly, percentage distributions, which are calculated on rounded data, may not necessarily add up to 100%.
- The information on number and percentage distribution of registered apprentices that is presented by age group also includes an “age unknown” category, as age was not available for some records due to missing information.
- Provinces and territories, which provide the data for this release, make operational and administrative changes related to the training and certification of the trades within their jurisdictions. Changes have occurred in all provinces and territories since 1991 that affect historical comparisons. For the 2013 reporting period in particular, these changes had an impact on all data collected by the survey, including the number of registrations, participation in Red Seal and non-Red Seal apprenticeship programs, and certificates awarded. Interpretation of the data should be made within the context of these administrative and operational changes. For further information on federal, provincial and territorial changes see the Registered Apprenticeship Information System (RAIS) Guide.

Data Sources

- Registered Apprenticeship Information System (RAIS), Statistics Canada. For more information, consult “Definitions, data sources and methods”, Statistics Canada Web site, survey 3154.

Colleges

Overall, Indicator **D1** portrays postsecondary enrolment. This sub-indicator presents information on student enrolment in colleges, by sex, registration status and program type (table 37-10-0018-01 formerly CANSIM 4770019). These counts are presented for full- and part-time students. The percentage of female enrolment relative to total full-time college enrolment, by program type, is also examined. Data are presented for Canada, and for the provinces and territories.

It should be noted that sex was replaced by gender in the 2017/2018 Postsecondary Student Information System (PSIS) release therefore, the sub-indicators included under this section have been updated accordingly.

Concepts and definitions

- The information presented reflects college enrolment. Enrolments are based on students enrolled in the postsecondary institutions at the time of the fall snapshot date, that is, a single date chosen by the institution which falls from September 30th to December 1st. Therefore, students who are not enrolled during this time period are excluded and enrolment totals do not represent a full academic year.

- **Colleges** are created under the authority of either a province's Colleges Act or equivalent, or under a Society/Societies Act or equivalent, with education as a primary purpose. These institutions are created primarily to offer certificate, diploma, and transfer or continuing education and professional development programs requiring less than three years of full-time study. They are often circumscribed by government and often need to seek government approval to introduce new programs, especially degree programs. High school completion is generally required for admission.
- **College** refers to community colleges, CEGEPs (collège d'enseignement général et professionnel or college of general and vocational education in Quebec), technical institutes, hospital and regional schools of nursing, radiography, medical technology and health records, as well as establishments providing technological training in specialized fields.
- **Registration status** captures enrolment for full- and part-time students on the day of the snapshot. Since there is no commonly accepted definition for the registration status of full- and part-time students, it is defined by the reporting postsecondary institutions.

- Information is presented for the following **program types** offered at colleges:

    - **Total enrolment, all programs**, for both part-time and full-time students, also includes the category "Other program levels," which is not presented in the tables. "Other program levels" includes "program levels not applicable" or "non-programs" (taking non-credit courses or taking courses without seeking a credential).
    - **College certificate or diploma and other programs at the college level** includes college postsecondary programs; college post-diploma programs; collaborative degree programs; university transfer programs from a college or CEGEP (includes associate degrees); and college preliminary year courses.
    - **Undergraduate enrolment** captures those programs leading to a bachelor's degree, an applied degree, a university preliminary year or pre-bachelor, or to an undergraduate-level certificate or diploma.
    - **Graduate** portrays programs leading to a master's degree or other university graduate-level certificates or diplomas.

Methodology

- The data on college enrolments were extracted from the **Postsecondary Student Information System (PSIS)**, a national survey that enables Statistics Canada to publish information on enrolments in and graduates of postsecondary education institutions in Canada. Implemented in 2000, PSIS replaced the following three surveys: the University Student Information System (USIS), the Community College Student Information System (CCSIS) and the Trade and Vocational Student Survey (TVOC).
- PSIS is a census with a cross-sectional design and a longitudinal follow-up. Data are collected for all units of the target population; no sampling is done. Up to and including 2007, the target population was Canadian public and private not-for-profit postsecondary institutions (universities, community colleges and trade and vocational training centres). As of 2008, the target population is postsecondary institutions that are publicly funded by provincial ministries of education or their equivalent. Each postsecondary institution (the "collection unit") provides Statistics Canada with data pertaining to its programs and students.
- The college data presented here exclude students enrolled in programs related to pre-employment, apprenticeship, basic training or skills upgrading, second language training, job readiness or orientation programs.

Limitations

- From year to year, more institutions are reporting data using the Postsecondary Student Information System (PSIS) format. The institutions that report data using the PSIS format are asked to include students enrolled in non-programs, including non-credit activities, as well as undergraduate- and graduate-level enrolments. In general, this has resulted in institutions reporting a larger number of student enrolments. Starting in 2000/2001, enrolments from private non-subsidized institutions that were part of the PSIS survey were no longer included.

- These figures on college enrolment should not be compared with those published before PSIS was introduced in 2000. All PSIS data are subject to revision.
- To ensure the confidentiality of responses, all counts are randomly rounded to a multiple of 3. Since the total and subtotals are independently rounded, the total values may not match the sum of the individual values. Similarly, percentage distributions, which are calculated on rounded data, may not necessarily add up to 100%.
- The college enrolment figures for both sexes include enrolments for which sex was not reported; therefore, these figures may not match the totals obtained when the enrolments for males and females are added together.
- The denominator used to calculate the percentage of females relative to total full-time college enrolment excludes enrolments for which sex was not reported.

Data Sources

- Postsecondary Student Information System (PSIS), Statistics Canada. For more information, consult "Definitions, data sources and methods", Statistics Canada Web site, survey 5017.

Universities

Overall, Indicator **D1** portrays postsecondary enrolment. This sub-indicator provides information on student enrolment in universities, by sex, registration status and program type (table 37-10-0018-01 formerly CANSIM 4770019). These counts are presented for full- and part-time students. The percentage of female enrolment relative to total full-time university enrolment, by program type, is also examined. Data are presented for Canada and the provinces (there are no universities in the territories).

It should be noted that sex was replaced by gender in the 2017/2018 Postsecondary Student Information System (PSIS) release therefore, the sub-indicators included under this section have been updated accordingly.

Concepts and definitions

- The information presented reflects **university enrolment**. Enrolments are based on students enrolled in the postsecondary institutions at the time of the fall snapshot date, that is, a single date chosen by the institution which falls from September 30th to December 1st. Therefore, students who are not enrolled during this time period are excluded and enrolment totals do not represent a full academic year.
- **Universities** are created under the authority of a province's University Act or equivalent, or under a Society/ Societies Act or equivalent, with education as a primary purpose. These institutions are created primarily for the purposes of offering degree programs and to conduct research. They generally have complete authority to set their own academic standards and priorities. Within the institution, the supreme authority on all academic policy is generally a body on which faculty predominate.
- **Registration status** captures enrolment for full- and part-time students on the day of the snapshot. Since there is no commonly accepted definition for the registration status of full- and part-time students, it is defined by the reporting postsecondary institutions.
- Information is presented for the following **program types** offered at universities:
    - **Total enrolment, all programs**, for both full-time and part-time students, includes the following categories not presented in the tables: "trade/vocational and preparatory training certificate or diploma," "community college certificate or diploma or other community college level" and "other program levels." "Other program levels" includes "program levels not applicable" or "non-programs" (taking non-credit courses or taking courses without seeking a credential.
    - **Undergraduate enrolment** captures those programs leading to a bachelor's degree, a first professional degree, an applied degree, university preliminary year or pre-bachelor, undergraduate level certificate or diploma, license undergraduate and licentiate or testamur.
    - **Graduate reflects** enrolment in programs leading to a master's degree, an earned doctorate, post-doctoral program, master's qualifying year, university graduate level certificate or diploma, PhD qualifying year or probationary, internship (postgraduate medical education known as post-MD) and residency (medical, dental, veterinary).

Methodology

- The data on **university enrolments** were extracted from the **Postsecondary Student Information System (PSIS)**, a national survey that enables Statistics Canada to publish information on enrolments in and graduates of postsecondary education institutions in Canada. Implemented in 2000, PSIS replaced the following three surveys: the University Student Information System (USIS), the Community College Student Information System (CCSIS) and the Trade and Vocational Student Survey (TVOC).
- PSIS is a census with a cross-sectional design and a longitudinal follow-up. Data are collected for all units of the target population; no sampling is done. Up to and including 2007, the target population was Canadian public and private not-for-profit postsecondary institutions (universities, community colleges and trade and vocational training centres). As of 2008, the target population is postsecondary institutions that are publicly funded by provincial ministries of education or their equivalent. Each postsecondary institution (the "collection unit") provides Statistics Canada with data pertaining to its programs and students.

Limitations

- From year to year, more institutions are reporting data using the Postsecondary Student Information System (PSIS) format. The institutions that report data using the PSIS format are asked to include students enrolled in non-programs. In general, this has resulted in institutions reporting a larger number of student enrolments.
- These figures on university enrolment should not be compared with those published before PSIS was introduced in 2000. Enrolments counts for 2004/2005 through 2007/2008 have been revised, and all PSIS data are subject to revision.
- To ensure the confidentiality of responses, all counts are randomly rounded to a multiple of 3. Since the total and subtotals are independently rounded, the total values may not match the sum of the individual values. Similarly, percentage distributions, which are calculated on rounded data, may not necessarily add up to 100%.
- The university enrolment figures for both sexes include enrolments for which sex was not reported; therefore, these figures may not match the totals obtained when the enrolments for males and females are added together.
- The denominator used to calculate the **percentage of females relative to total full-time university enrolment** excludes enrolments for which sex was not reported.
- Since 2005/2006, enrolments for University of Regina have not been available.
- The following institutions, previously colleges, now have the status of universities and are included in the 2008/2009 counts for British Columbia: Capilano University, Vancouver Island University, Emily Carr University of Art and Design, Kwantlen Polytechnic University and University of the Fraser Valley. The increase in enrolment for Canada in 2008/2009 was mainly due to the attribution of university status to these five colleges. Part of this increase in university enrolment was in "Trade/vocational and preparatory training certificate or diploma" and "Community college certificate or diploma or other community college level" programs.

Data Sources

- Postsecondary Student Information System (PSIS), Statistics Canada. For more information, consult "Definitions, data sources and methods", Statistics Canada Web site, survey 5017.

D2 Postsecondary completions

Registered apprenticeship completions

Overall, Indicator **D2** examines trends in postsecondary completions. This sub-indicator presents information on the number of individuals completing registered apprenticeship programs in Canada, and in its provinces and territories, including breakdowns by sex and major trade group (table 37-10-0128, formerly CANSIM 477-0120).

Concepts and definitions

- The information on **registered apprenticeship completions** is based on data provided by apprenticeship branches in the provinces and territories and includes registered apprentices who have completed their program. This information is collected through the Registered Apprenticeship Information System (RAIS), which gathers information on individuals who receive training and those who obtain certification in a trade for which apprenticeship training is being offered; specifically, the number of registered apprentices taking in-class and on-the-job training in trades that have either Red Seal or non-Red Seal endorsement, and for which apprenticeship training is either compulsory or voluntary. Multiple completions by an individual can exist. The RAIS survey also compiles data on the number of registered apprentices, which includes those still registered from the previous year (apprentices who have not yet completed and have not withdrawn from training), apprentices newly registered during the current year and those who had previously discontinued their apprenticeship but were reinstated in the same trade during the reporting year.
- The numbers of registered apprenticeship completions are presented for the following 25 **major trade groups**, by sex: automotive service; carpenters; early childhood educators and assistants; community and social service workers, electricians; electronics and instrumentation; exterior finishing; food service; hairstylists and estheticians; heavy duty equipment mechanics; heavy equipment and crane operators; interior finishing; landscape and horticulture technicians and specialists; machinists; metal workers (other); millwrights; oil and gas well drillers, servicers, testers and related workers; plumbers, pipefitters and steamfitters; refrigeration and air conditioning mechanics; sheet metal workers; user support technicians; welders; stationary engineers and power plant operators; construction workers (other); and other.[9] These 25 major trade groups comprise a special grouping that was created using the National Occupation Classification (NOC).

Methodology

- The **Registered Apprenticeship Information System (RAIS**) survey is an annual census. Data are collected for all registered apprentices and trade qualifiers (challengers); no sampling is done. Response is mandatory and data are collected directly from administrative files supplied by provincial apprenticeship branches. The information is requested in individual record format and each record represents a registered apprentice or trade qualifier (challenger); however, multiple registrations in more than one trade by an individual do exist in the data. The reference period is the calendar year, and the collection period is February through September of the reference year.
- The RAIS collected aggregate data by trade programs from 1980 to 1990. It included information on the number of new registrations, total registrations, leavers, completions and certificates granted. In 1991, in response to requests for more information on individual apprentices, the survey began collecting additional information on sex and age and requested information in individual record format. It should be noted that aggregate reporting still existed for some jurisdictions up until 2007. As of 2008, all provinces and territories report on an individual level.
- In 2008, the RAIS underwent a major survey redesign, and a number of new data elements were added and requested from the jurisdictions. Some of the new data elements being requested relate to the number of technical and on-the-job hours completed by apprentices during their training.
- Beginning with the 2008 data, the RAIS used the National Occupation Classification (NOC) to create a special grouping of 25 major trade groups. All RAIS historical data have been revised to reflect these 25 groups.

9. "Other" consists of miscellaneous trades and occupations not classified elsewhere.

Limitations

- To ensure the confidentiality of responses, all counts are randomly rounded to a multiple of 3. As a result, when the data are summed or grouped, the total value may not match the sum of the individual values, since the total and subtotals are independently rounded. Similarly, percentage distributions, which are calculated on rounded data, may not necessarily add up to 100%.
- Provinces and territories, which provide the data for this release, make operational and administrative changes related to the training and certification of the trades within their jurisdictions. Changes have occurred in all provinces and territories since 1991 that affect historical comparisons. For the 2013 reporting period in particular, these changes had an impact on all data collected by the survey, including the number of registrations, participation in Red Seal and non-Red Seal apprenticeship programs, and certificates awarded. Interpretation of the data should be made within the context of these administrative and operational changes. For further information on federal, provincial and territorial changes see the Registered Apprenticeship Information System (RAIS) Guide.

Data Sources

- Registered Apprenticeship Information System (RAIS), Statistics Canada. For more information, consult "Definitions, data sources and methods", Statistics Canada Web site, survey 3154.

Colleges

Overall, Indicator **D2** examines trends in postsecondary completions. This sub-indicator provides information on the number of college graduates, by sex, program type and field of study. Data are presented for Canada, and for the provinces and territories, by calendar year (table 37-10-0020 formerly CANSIM 477-0020).

It should be noted that sex was replaced by gender in the 2017/2018 Postsecondary Student Information System (PSIS) release therefore, the sub-indicators included under this section have been updated accordingly.

Concepts and definitions

- The information presented examines trends in postsecondary completions for **colleges**; that is, the **number of certificates, diplomas and degrees granted by colleges**. All counts reflect the academic year as defined by the college, which generally begins on the first day after the end of the winter semester.
- **Colleges** are created under the authority of either a province's Colleges Act or equivalent, or under a Society/Societies Act or equivalent, with education as a primary purpose. These institutions are created primarily to offer certificate, diploma, and transfer or continuing education and professional development programs requiring less than three years of full-time study. They are often circumscribed by government and often need to seek government approval to introduce new programs, especially degree programs. High school completion is generally required for admission.
- **College** refers to community colleges, CEGEPs (collège d'enseignement général et professionnel or college of general and vocational education in Quebec), technical institutes, hospital and regional schools of nursing, radiography, medical technology and health records, as well as establishments providing technological training in specialized fields. Programs related to pre-employment, apprenticeship, basic training or skills upgrading, second language training, job readiness or orientation programs are not included in these college completion counts.
- Information is presented for the following **program types** offered at colleges:
    - **College certificate or diploma and other credential at the college level** includes: college postsecondary programs; college post-diploma programs; collaborative degree programs; university transfer programs from a college or CEGEP (includes associate degree); and college preliminary year courses.
    - **Undergraduate** refers to programs leading to a bachelor's degree, an applied degree, a university preliminary year or pre-bachelor, or to an undergraduate-level certificate or diploma.
    - **Graduate** portrays programs leading to a master's degree or other university graduate-level certificates or diplomas.

- The **field of study** data are presented according to the Classification of Instructional Programs (CIP), the official classification used at Statistics Canada. The number of certificates, diplomas and degrees granted by colleges are presented for the following fields of study: agriculture, natural resources and conservation; architecture, engineering and related technologies; business, management and public administration; education; health, parks, recreation and fitness; humanities; mathematics, computer and information sciences; other; personal, protective and transportation services; personal improvement and leisure; physical and life sciences, and technologies; social and behavioural sciences and law; and visual and performing arts, and communications technologies.

Methodology

- The data on the number of certificates, diplomas and degrees granted by colleges were extracted from the **Postsecondary Student Information System (PSIS)**, a national survey that enables Statistics Canada to publish information on enrolments in and graduates of postsecondary education institutions in Canada. Implemented in 2000, PSIS replaced the following three surveys: the University Student Information System (USIS), the Community College Student Information System (CCSIS) and the Trade and Vocational Student Survey (TVOC).
- PSIS is a census with a cross-sectional design and a longitudinal follow-up. Data are collected for all units of the target population; no sampling is done. Up to and including 2007, the target population was Canadian public and private not-for-profit postsecondary institutions (universities, community colleges and trade and vocational training centres). As of 2008, the target population is postsecondary institutions that are publicly funded by provincial ministries of education or their equivalent. Each postsecondary institution (the "collection unit") provides Statistics Canada with data pertaining to its programs and students.
- The college data presented here exclude completions from programs related to pre-employment, apprenticeship, basic training or skills upgrading, second language training, job readiness or orientation.

Limitations

- From year to year, more institutions are reporting data using the Postsecondary Student Information System (PSIS) format. The institutions that report data using the PSIS format are asked to include undergraduate and graduate completions from colleges. In general, this has resulted in institutions reporting a larger number of completions. Starting in 1999/2000, completions from private non-subsidized institutions that were part of the survey were no longer included.
- These figures on college completions should not be compared with those published before PSIS was introduced in 2000. All PSIS data are subject to revision.
- To ensure the confidentiality of responses, all counts are **randomly rounded to a multiple of 3**. Since the total and subtotals are independently rounded, the total values may not match the sum of the individual values. Similarly, percentage distributions, which are calculated on rounded data, may not necessarily add up to 100%.
- The college completion figures for both sexes include individuals for whom sex was not reported; therefore, these figures may not match the totals obtained when the completions for males and females are added together.

Data Sources

- Postsecondary Student Information System (PSIS), Statistics Canada. For more information, consult "Definitions, data sources and methods", Statistics Canada Web site, survey 5017.

Universities

Overall, Indicator **D2** examines trends in postsecondary completions. This sub-indicator provides information on the number of university graduates, by sex and classification of instructional programs (CIP). Data are presented for Canada and the provinces (there are no universities in the territories), and by calendar year (table 37-10-0020 formerly CANSIM 477-0020).

It should be noted that sex was replaced by gender in the 2017/2018 Postsecondary Student Information System (PSIS) release therefore, the sub-indicators included under this section have been updated accordingly.

Concepts and definitions

- The information presented examines trends in postsecondary completions for universities. All counts reflect the number of graduates in the calendar year.
- Universities are created under the authority of a province's University Act or equivalent, or under a Society/ Societies Act or equivalent, with education as a primary purpose. These institutions are created primarily for the purposes of offering degree programs and to conduct research. They generally have complete authority to set their own academic standards and priorities. Within the institution, the supreme authority on all academic policy is generally a body on which faculty predominate.
- Information is presented for the following credential types offered at universities: certificates, diplomas, degrees (including applied degrees), attestations and other short program credentials, associate degrees and other types of credential associated with a program.
- The field of study data are presented according to the Classification of Instructional Programs (CIP), the official classification used at Statistics Canada. The number of certificates, diplomas and degrees granted by colleges are presented for the following fields of study: agriculture, natural resources and conservation; architecture, engineering and related technologies; business, management and public administration; education; health and related fields; humanities; mathematics, computer and information sciences; other; personal, protective and transportation services; personal improvement and leisure; physical and life sciences, and technologies; social and behavioural sciences and law; and visual and performing arts, and communications technologies.

Methodology

- These data were extracted from the **Postsecondary Student Information System (PSIS)**, a national survey that enables Statistics Canada to publish information on enrolments in and graduates of postsecondary education institutions in Canada. Implemented in 2000, PSIS replaced the following three surveys: the University Student Information System (USIS), the Community College Student Information System (CCSIS) and the Trade and Vocational Student Survey (TVOC).
- PSIS is a census with a cross-sectional design and a longitudinal follow-up. Data are collected for all units of the target population; no sampling is done. The target population is postsecondary public institutions that are financed by a provincial ministry of education and postsecondary private institutions for non-profit that are subsidized by a provincial ministry of education.

Limitations

- All PSIS data are subject to revision.
- To ensure the confidentiality of responses, all counts are **randomly rounded to a multiple of 3**. Since the total and subtotals are independently rounded, the total values may not match the sum of the individual values. Similarly, percentage distributions, which are calculated on rounded data, may not necessarily add up to 100%.
- The university completion figures for both sexes include individuals for whom sex was not reported; therefore, these figures may not match the totals obtained when the completions for males and females are added together.

Data Sources

- Postsecondary Student Information System (PSIS), Statistics Canada. For more information, consult "Definitions, data sources and methods", Statistics Canada Web site, survey 5017.

D3 University educators

Indicator **D3** presents information on university educators in Canada and the provinces. It outlines the number of full-time university educators, providing breakdowns by academic rank and by sex. The male–female distribution of educators, by age, is also examined, as well as the age distribution of educators compared with that of the overall labour force. Average salaries, by academic rank and by sex, are also presented.

Concepts and definitions

- **Full-time university educators** refers to all full-time teaching staff employed in universities in Canada.
- **Full-time** includes:
    - staff appointed on a full-time basis whose term of appointment is not less than 12 months (including any staff member on leave);
    - new appointees hired on a full-time basis (i.e., whose term of contract is greater than 12 months) and who are at the institution for less than 12 months in the first year; and
    - staff who were appointed to teach 12 months or more and at a later date entered into a formal agreement with the institution to work on a reduced load basis. This situation usually arises with staff members who are approaching retirement.
- **Teaching staff** refers to:
    - all teachers within faculties, whether or not they hold an academic rank;
    - academic staff in teaching hospitals;
    - visiting academic staff in faculties; and
    - research staff who have an academic rank and a salary scale similar to teaching staff.

In *Number and salary of full-time university teaching staff, by rank and sex, Canada and provinces*, the definition of full-time university staff is similar to that used in other D3 Tables, but excludes staff who are on unpaid leave, all religious and military personnel or similar staff paid according to salary scales lower than those applying to regular/lay staff, and staff having a salary of zero or unreported.

- The following **academic ranks** are used:
    - **full professors**, referring to the most senior rank;
    - **associate professors**, the mid-level rank (requirements vary considerably between institutions and departments);
    - **assistant professors**, the entry-level rank;
    - **other**, which refers to lecturers, instructors and other teaching staff.
- **Gender gap** is defined as the average salary of female university educators as a percentage of the average of males.

Methodology

- The information on full-time university educators is from the **University and College Academic Staff System (UCASS)**, which conducts an annual survey that collects national comparable information on the number and socio-economic characteristics of full-time teaching staff at Canadian degree granting institutions (universities and colleges). The information is collected for each individual staff member employed by the institution as of October 1st of the academic year, presenting a snapshot as of that date.
- The percentage distribution of university educators by age and median age is based on educators for whom age is known.

- Salaries and salary scales of full-time teaching staff at Canadian universities are based on the annual rate of salary plus stipends. The data are in current dollars. The Consumer Price Index should be used to convert the data to constant dollar amounts for comparison over time. For the index and further details on converting, please see Table F.1.3 in the "Reference statistics" section.
- The Labour Force Survey data used to compare the age distribution of the overall full-time employed labour force with that of full-time university teaching staff are based on a monthly average from September to April.

Limitations

- To ensure the confidentiality of responses, a random rounding process is applied to the data. As a result, when these data are summed or grouped, the total values may not match the sum of the individual values, since the total and subtotals are independently rounded. Similarly, percentage distributions, which are calculated on rounded data, may not necessarily add up to 100%.

Data Sources

- University and College Academic Staff Survey, Statistics Canada. For more information, consult "Definitions, data sources and methods", Statistics Canada website, survey 3101.
- Labour Force Survey, Statistics Canada. For more information, consult "Definitions, data sources and methods", Statistics Canada website, survey 3701.

D4 Research and development

Indicator **D4** presents information on research and development (R&D), focusing on the R&D performed by the higher education sector. The context for R&D activities carried out in the higher education sector is provided by examining total domestic expenditures on R&D as a percentage of GDP (table 27-10-0359-01) from an international and national perspective. Expenditures on R&D by performing sector (tables 27-10-0360-01 and 27-10-0273-02) are outlined, as are sources of funding for R&D expenditures in the higher education sector (table 27-10-0363-01).

Concepts and definitions

- The R&D data presented in this indicator are assembled based on guidelines presented in the Organisation for Economic Co-operation and Development's (OECD's) Frascati Manual.[10] These guidelines indicate that **research and development (R&D)** is considered to be any creative work undertaken on a systematic basis in order to increase the stock of scientific and technical knowledge and to use this knowledge in new applications. The central characteristic of R&D is an appreciable element of novelty and of uncertainty. New knowledge, products or processes are sought. The work is normally performed by, or under the supervision of, persons with postgraduate degrees. An R&D project generally should possess the following five criteria: a substantial element of uncertainty, novelty, creativity, and be systematic, transferable and/or reproducible.
- **Total domestic expenditures on R&D** represent the total value of domestic expenditures on R&D of all organizations in the performing sectors (categorized as government, business enterprise, higher education, and private non-profit organizations). It includes R&D performed within a country and funded from abroad, but excludes payments for R&D performed abroad.
- The definition of total domestic expenditures on R&D in a provincial/territorial context is similar to that provided above. The expenditures are assigned to the province or territory in which the performing establishment is located. Personnel may live in an adjoining province or territory (e.g., the National Capital Region) and materials and equipment may come from another province or territory or country; these factors must be taken into consideration when using this statistic as a provincial/territorial indicator of R&D activity.

10. The Frascati Manual is a document that lays out the methodology for collecting and using statistics about research and development in countries that are members of the OECD. For more information, see www.oecd.org.

- **R&D performing sectors** are categorized as follows:
    - **Federal government**, which includes departments and agencies known to participate in R&D activities.
    - **Provincial governments**, which include departments and agencies of provincial governments in Canada (currently estimated, except for the Quebec government), as well as provincial research organizations (which are surveyed annually).
    - **Business enterprise** is composed of all companies and industrial non-profit organizations that perform and/or fund research and development (R&D), or have had R&D expenditures in the past and continue to make or receive technology payments.
    - **Higher education**, in reference to the pan-Canadian R&D statistics, covers universities and affiliated institutions such as research hospitals, research institutes, experimental stations, and clinics under the direct control of or administered by higher education establishments. Although OECD guidelines request that R&D in the entire postsecondary sector be reported, data for Canada are limited to R&D activities in universities and affiliated institutions as data on R&D in colleges and similar institutions are not currently collected at Statistics Canada.
    - **Private non-profit** comprises all private non-profit organizations that perform and/or fund research and development (R&D), such as voluntary health organizations, private philanthropic foundations, associations and societies, and research institutes. These not-for-profit organizations serve the public interest by supporting activities related to issues of public welfare (such as health, education, and the environment).
- **Sources of funds for R&D in the higher education sector** are categorized as follows:
    - **Federal government**, through the Natural Sciences and Engineering Research Council (NSERC), the Social Sciences and Humanities Research Council (SSHRC), the Canadian Institutes of Health Research (CIHR), the Canada Foundation for Innovation, Canada Research Chairs, and other federal departments and agencies.
    - **Provincial governments**, including municipal governments.
    - **Business enterprises**, including donations, bequests and contracts from individuals and businesses;
    - **Private non-profit organizations**, including donations, bequests, and contracts from foundations and not-for-profit organizations.
    - **Foreign sources**, which are funding entities located abroad.
    - **Higher education sector**, which funds its own R&D using two revenue streams:
        - **General funds**: These represent government transfers (or block grants) to higher education institutions that are used to support R&D activity. Although these funds essentially represent indirect government spending on R&D, for the purposes of pan-Canadian statistics, they are allocated to higher education funding due to the difficulty of categorizing these funds as provincial or federal.
        - **Own revenue sources**: This refers to self-generated revenue of higher education institutions from sources such as tuition fees, investment income, revenue from sales of services and products by the institution, and license and patent incomes.

Methodology

- Total domestic expenditures on R&D in Canada are estimated annually by Statistics Canada, by type of sector, source of funds, and science type using a series of surveys supplemented by modelling. Data for the provincial government performing sector are currently modelled based on responses from the 2010 Provincial Scientific Activities Survey. This release includes data on R&D activities performed by the provincial government of Quebec, which conducts their own survey and provide this information annually to Statistics Canada.

- The expenditures for R&D performed by the higher education sector are derived from an estimation model, which uses the following components:

  1. direct sponsored research;
  2. direct non-sponsored research (the time spent on R&D when it is undertaken as part of the teaching function, taking into account the portion of faculty time spent on this type of R&D and faculty salaries)
  3. indirect costs of sponsored and non-sponsored research;

- Sources of funds for expenditures on research and development in the higher education sector are derived from an estimation model. The data used in the model are obtained from the Financial Information of Universities and Colleges survey. These data on sources of funds for R&D conducted require two main refinements before they can be used: reconciliation of sector definitions and discrepancies between expenditure and income data.
- The data on R&D in the higher education sector are based on an estimation procedure first incorporated for the 2000/2001 estimates.
- During the 2001/2002 estimation procedure, there was a one-time grant to universities awarded by the federal government to assist with university indirect costs. The estimation system had to be modified to ensure those costs were sourced to the federal government and not double-counted. In 2003/2004, the indirect costs grant for R&D in universities became an annual payment.
- R&D expenditures and source of funds data are shown in current dollars, and constant 2007 dollars. For comparison over time, constant dollars should be used.

Limitations

- One of the most important issues relating to R&D concerns its definition. There remains some ambiguity in defining precisely what constitutes R&D; for example, in a continuing project, determining the precise point at which the project passes the boundary of R&D and becomes commercialized as a process or product for which it may be said that the R&D stage has been completed. This ambiguity is perhaps less serious in internal time series, where it may be expected that the year-to-year application of the definition by the same reporting unit will be consistent.
- Estimates of total domestic expenditure on R&D, like any other social or economic statistic, can only be approximately true. Different components are of different accuracy, sector estimates probably vary from 5% to 15% in accuracy. However, estimates of total domestic expenditure are a sufficient indicator for their main use as an aggregate statistic for science policy.
- The source for internationally comparative statistics on R&D is the OECD. OECD guidelines request that R&D in the entire postsecondary sector (defined as all universities, colleges of technology, and other institutes of postsecondary education, whatever their source of finance or legal status) be reported. However, data for Canada are limited to R&D activities in universities and affiliated institutions (including research hospitals) and degree-granting university colleges as data on R&D in colleges and similar institutions are currently not available.
- In 2016 the OECD released an update to its R&D concepts and definitions in the Frascati 2015 manual. This manual provides additional detail on R&D measures.

Data Sources

- OECD StatsExtracts, Main Science and Technology Indicators database, Organisation for Economic Co-operation and Development.
- Table: 27-10-0273-01 (formerly: CANSIM 358-0001), Gross domestic expenditures on research and development, by science type and by funder and performer sector.
- Table: 27-10-0025-01 (formerly: CANSIM 358-0162), Provincial estimates of research and development expenditures in the higher education sector, by funding sector and type of science.

D6 Educational attainment

Indicator **D6** examines educational attainment among the Canadian population aged 25 to 64.[11] This indicator uses data from the **Census of Population and the National Household Survey (NHS)** to portray the distribution of the Canadian population by level of education and age group (table 37-10-0099-01 formerly CANSIM 477-0095), and by level of education and sex (table 37-10-0100-01 formerly CANSIM 477-0096), for Canada and its jurisdictions (table 37-10-0130-01 formerly CANSIM 477-0135). Information is also presented for the population aged 25 to 64 with Indigenous identity, by age group (table 37-10-0099-01), and by sex (table 37-10-0100-01). Furthermore, data from the **Labour Force Survey (LFS)** are used to present data for the off-reserve Indigenous population, the non-Indigenous population and the total population for Canada, the provinces and the territories (table 37-10-0117-01 formerly CANSIM 477-0116).

Census of Population and National Household Survey (NHS) Tables

Concepts and definitions

- "**Highest certificate diploma or degree**" is used to measure **educational attainment**, and is categorized as:
    - **No certificate, diploma or degree**.
    - **High school diploma or equivalent** refers to graduation from a secondary school or equivalent. It excludes persons with a postsecondary certificate, diploma or degree.
    - **Apprenticeship or trades certificate or diploma** includes trades certificates or diplomas such as pre-employment or vocational certificates and diplomas from brief trade programs completed at community colleges, institutes of technology, vocational centres, and similar institutions. Registered Apprenticeship certificate includes Certificate of Qualification, Journeyperson's designation.
    - **College, CEGEP or other non-university certificate or diploma**.
    - **University, certificate or diploma below bachelor level**. Comparisons with other data sources suggest that this category was over-reported in the National Household Survey (NHS) as it likely includes some responses that are actually college certificates or diplomas, bachelor's degrees or other types of education (e.g. university transfer programs, bachelor's programs completed in other countries, incomplete bachelor's programs, non-university professional designations). It is recommended that users interpret the results for this category with caution. For any other comments on data quality for this variable, refer to the Education Reference Guide, National Household Survey 2011, Catalogue no. 99-012-X2011006 and the Education Reference Guide, Census of Population, 2016, Catalogue no. 98-500-X2016013.
    - **University certificate, diploma or degree at bachelor level or above**.
- Prior to 2006 in similar tables in previous editions of PCEIP, educational attainment was presented using the census concept of "highest level of schooling" and those data should therefore not be directly compared with the data presented here for "highest certificate, diploma or degree," which reflects a revision in the 2006 Census. For more information on the census education variables, refer to the Education Reference Guide, National Household Survey, 2011, Catalogue no. 99-012-X2011006 and the Education Reference Guide, Census of Population, 2016, Catalogue no. 98-500-X2016013.
- "**Indigenous identity**" includes persons who reported being an Indigenous person, that is, First Nations (North American Indian), Métis or Inuk (Inuit) and/or those who reported Registered or Treaty Indian status, that is registered under the *Indian Act of Canada*, and/or those who reported membership in a First Nation or Indian band. Indigenous peoples of Canada are defined in the *Constitution Act*, 1982, section 35 (2) as including the Indian, Inuit and Métis peoples of Canada.

11. Please see Education Indicators in Canada: An International Perspective (https://www150.statcan.gc.ca/pub/81-604-x/81-604-x2017001-eng.htm) (Statistics Canada Catalogue no. 81-604-X) for information on educational attainment in an international context. Indicator A1, "Educational attainment of the adult population", presents figures for Canada, the provinces and territories, along with the international averages provided by the Organisation for Economic Co-operation and Development. All of these data are categorized using the International Standard Classification of Education (ISCED).

- "**Total Indigenous identity**" includes Indigenous group (i.e., whether the person reported being an Indigenous person, that is, First Nations (North American Indian), Métis, or Inuk (Inuit)), multiple Indigenous identities and Indigenous responses not included elsewhere.
- Some Indian reserves and settlements did not participate in the 2011 NHS or the 2016 Census of Population as enumeration was either not permitted, it was interrupted before completion or because of natural events (e.g., forest fires). For additional information, please refer to the Indigenous Peoples Reference Guide, National Household Survey 2011, Catalogue no. 99-011-X2011006 and the Indigenous Peoples Reference Guide, Census of Population, 2016, Catalogue no. 98-500-X2016009.

Methodology

- The percentage of the population aged 25 to 64 who had attained the highest certificate, diploma or degree was obtained by dividing the number of people aged 25 to 64 who had attained the highest certificate, diploma or degree by the total number of people aged 25 to 64, then multiplying by 100.

Limitations

- To ensure confidentiality, the values, including totals, are randomly rounded either up or down to a multiple of '5' or '10.' To understand these data, you must be aware that each individual value is rounded. As a result, when these data are summed or grouped, the total value may not match the individual values since totals and sub-totals are independently rounded. Similarly, percentages, which are calculated on rounded data, may not necessarily add up to 100%.

Labour Force Survey Table

Concepts and definitions

- The **off-reserve Indigenous population** refers to those persons who reported identifying with at least one Indigenous group; that is, First Nations (North American Indian), Métis or Inuk (Inuit). This is based on the individual's own perception of his or her Indigenous identity.[12]
- **Educational attainment** refers to the highest level of schooling completed. For this indicator, which is based on data from the Labour Force Survey (LFS), educational attainment[11] is categorized as:
    - **Less than high school**: No education or education below high school graduation.
    - **High school**: High school graduation or some postsecondary education (not completed).
    - **Post-secondary non-tertiary education**: Trades certificate or diploma from a vocational school or apprenticeship training.
    - **Tertiary education**: includes short-cycle tertiary education, Bachelor's level education and Master's or Doctoral level education;
    - **Short-cycle tertiary education**: non-university certificate or diploma from a community college, CEGEP, school of nursing and similar programs at this level; university certificate below bachelor's degree.

Methodology

- The **Labour Force Survey (LFS)** is a monthly household survey of a sample of individuals who are representative of the civilian, non-institutionalized population 15 years of age or older. It is conducted nationwide, in both the provinces and the territories. Excluded from the survey's coverage are: persons living on reserves and other Indigenous settlements in the provinces; full-time members of the Canadian Armed Forces, the institutionalized population, and households in extremely remote areas with very low population density. These groups together represent an exclusion of approximately 2% of the population aged 15 and over.

12. See "Section 3: Dictionary of concepts and definitions" in the Guide to the Labour Force Survey (Statistics Canada Catalogue no. 71-543-G).

- Canada-level estimates are derived using the results of the LFS in the provinces. LFS results for the territories are not included in the national estimates, but are published separately. Difficulties exist with respect to reaching small communities in the territories, and there are areas that are excluded. As well, since the sample design, rotation pattern and reliability criteria are different from those in the 10 provinces, estimates for the territories are not included with the provincial totals, but are calculated and reported separately.
- The data presented for this indicator are based on a 12-month average from January to December.
- The percentage of the population aged 25 to 64 who had attained a specific level of education was obtained by dividing the number of people aged 25 to 64 who had completed the given level of education by the total number of people aged 25 to 64, then multiplying by 100.

Limitations

- The figures presented may not add up to totals because of rounding.
- While survey coverage in the provinces is fully representative of the working-age population, LFS coverage in the territories excludes some communities. Survey coverage in Northwest Territories is about 96%, and the Yukon has about 92% coverage. Since 2008, Nunavut's survey coverage has been approximately 92%. The northern sample includes both Aboriginal and non-Aboriginal communities, while persons living on reserves and other Aboriginal settlements are not included in the sample for the provinces.
- The data presented are not directly comparable with National Household Survey data for the Aboriginal population.
- Caution should be exercised in interpreting the provincial/territorial ratios and differences in ratios between provinces/territories and over time, as small estimates may present fairly high sampling variability. Estimates for small geographic areas, for small age groups or for cross-classified variables will be associated with larger variability.

Data sources

- Census of Population 2016, Statistics Canada
- Labour Force Survey (LFS), Statistics Canada. For more information, consult "Definitions, data sources and methods", Statistics Canada Web site, survey 3701
- National Household Survey (NHS) 2011, Statistics Canada

Section E: Transitions and outcomes

E1 Transitions to postsecondary education

Participation in education

Indicator **E1** considers youth transitions from high school to postsecondary education based on data from the Labour Force Survey (LFS). The following tables are included:

- Table 37-10-0101-01 presents participation rates in education for Canada by single age for the population aged 15 to 29.
- Table 37-10-0102-01 presents participation rates in education for Canada by age group for the population aged 15 to 29.
- Table 37-10-0103-01 presents participation rates in education for Canada by age group for the population aged 18 to 34.

Furthermore, integrated data from the Census of Population are used to present:

- Table 37-10-0209-01 which considers postsecondary education participation of youth aged 19 to 23 by family characteristics (educational attainment, income, family type, area of residence and immigration status) measured five years earlier, in Canada and the provinces and territories.

Labour Force Survey tables

Concepts and definitions

- The Labour Force Survey (LFS) asks respondents about **school attendance** at a "school, college or university" in the week before the survey. Respondents are considered to be **students** if they are:
    - taking a "credit course"; that is, a course or program of instruction that could be counted towards a degree, certificate or diploma;
    - taking classroom instruction or undertaking research towards a degree, certificate or diploma;
    - taking correspondence courses that are affiliated with a school and will be counted as a credit course;
    - attending school as a student nurse (even when engaged in the practical portion of their training in a hospital setting);
    - taking a "credit course" sponsored by their employer, and the instruction is given at a public educational institution, such as a university or community college;
    - a person with a mental or physical disability who is enrolled in a special education program.
- For those who are students, information is collected on the type of school, and whether enrolment is full- or part-time, as designated by the educational establishment.
- The **participation rate in education** reflects the total enrolment in an **elementary/high school, college**, or **university** as a percentage of the total population for each age or in each age group.
- **Age** is collected for every household member in the Labour Force Survey, and information on labour market activity is collected for all persons aged 15 and over. For this indicator, the participation rate in education is presented by single age from 15 through 29 (table 37-10-0101-01) and for the following age groups: 15 to 19; 20 to 24; and 25 to 29 (table 37-10-0102-01) and 18 to 24, 25 to 29, and 30 to 34 (table 37-10-0103-01).
- The **type of institution attended** captures the public and private educational establishments categorized as **elementary/high school, college** or **university**: elementary, junior high school, high school or equivalent; community college, junior college or CEGEP; university. Information on attendance at other types of schools, such as private institutes or vocational or secretarial schools, is also collected; however, these schools are not reflected in the totals presented in the E1 tables.

Methodology

- The **Labour Force Survey (LFS)** is a monthly household survey of a sample of individuals who are representative of the civilian, non-institutionalized population 15 years of age or older. It is conducted nationwide, in both the provinces and the territories. Excluded from the survey's coverage are: persons living on reserves and other Indigenous settlements in the provinces; full-time members of the Canadian Armed Forces, the institutionalized population, and households in extremely remote areas with very low population density. These groups together represent an exclusion of approximately 2% of the population aged 15 and over.
- Canada-level LFS estimates are derived using the results of the LFS in the provinces. LFS results for the territories are not included in the national estimates, but are published separately. Difficulties exist with respect to reaching small communities in the territories, and there are areas that are excluded. As well, since the sample design, rotation pattern and reliability criteria are different from those in the 10 provinces, estimates for the territories are not included with the provincial totals, but are calculated and reported separately.
- The number of students, used to calculate the participation rate, is based on a monthly average from September to April. Full- and part-time students are captured.
- Adjustments are made to LFS data every five years after new population estimates become available following the most recent census. At that time, all LFS data back to the previous census is re-weighted using the new population estimates (since the new population estimates will cover the inter-censal period between the two most recent censuses), and all corresponding historical LFS estimates are revised. Therefore, at the beginning of 2021, all estimates were adjusted to reflect 2016 Census population counts and LFS estimates have been revised back to 2006.

Limitations

- The "type of institution attended" is based on the "kind of school" variable, where "other - specify" is an option that includes: English as a second language or French language courses that do not qualify as high school, college or university education; police academies; computer and business skills programs other than those offered by colleges or universities; culinary, hairdressing or bartending schools; and special education that focuses on community living and life skills for students with special needs.
- It is unclear where trade certificate programs are placed in the "kind of school" variable. Trade schools could be coded to the "community college, junior college, or "CEGEP" group or to "other – specify", depending on how the respondent answers the question and the interviewer's interpretation of the answer.
- Caution should be exercised in interpreting the ratios for provinces/territories and differences in ratios between provinces/territories and over time, as small estimates may present fairly high sampling variability. Estimates for small geographic areas, for small age-groups or for cross-classified variables will be associated with larger variability.

Integrated data from the Census of Population table

Concepts and definitions

- Youth who had attained the postsecondary level of education at the time of data collection (May of the census year) or those who had attended a postsecondary educational institution in the nine months prior to data collection (September to May) were considered as **having attended or completed a postsecondary education program** and are included in the numerator of the indicator.
- **Youth living with parent(s)** are defined as youth sharing the same household with at least one of their parents. Youth in two-parent households do not necessarily have to be living with both of their birth parents, as youth living with a birth parent and a step-parent would be considered as living with two parents. If the young person is living with a grandparent or another member of the family (and no parent is present), the young person is categorized as **not living with parents**.

- If two parents were present in the household, the family **educational attainment** is taken from the parent with the highest educational attainment.
    - **No parent with postsecondary education** designates that no parent living with the youth has completed postsecondary education.
        - **No high school diploma** indicates that the highest parental educational attainment is below a secondary (high) school diploma or equivalency certificate.
        - **High School diploma** indicates that the highest parental educational attainment corresponds to a secondary (high) school diploma or equivalency certificate.
    - **At least one parent with postsecondary education** designates that at least one of the parents has a postsecondary certificate, diploma or degree.
        - **Above a high school diploma and below a bachelor's degree** indicates that the highest parental educational attainment corresponds to one of the following: an apprenticeship or trades certificate or diploma; a certificate or diploma from a College, CEGEP or other non-university institution; or a university certificate or diploma below bachelor level.
        - **Bachelor's degree and above** indicates that the highest parental educational attainment corresponds to a university certificate, diploma or degree at bachelor level or above.
- **Family income**
    - **Highest half of the Canadian households' income** corresponds to the 5 top deciles from the national economic family after-tax income deciles for all persons.
    - **Lowest half of the Canadian households' income** corresponds to the 5 bottom deciles from the national economic family after-tax income deciles for all persons.
- **Family type** is based on the census family status of the parent(s):
    - **Lone parent** refers to a reference person who has no spouse but does have a child or children.
    - **2 parents, married couple** refers to those who are married and have not separated or obtained a divorce and whose spouse is living.
    - **2 parents, common-law couple** refers to a person living with another person as a couple but who is not legally married to that person.
- **Population centres** have a population of at least 1,000 and a population density of 400 persons or more per square kilometre. **Rural areas** include all territories lying outside population centres. Taken together, population centres and rural areas cover all Canada.
- **An immigrant** refers to a person who is or who has ever been, a landed immigrant, or a permanent resident. Such persons have been granted the right to live in Canada permanently by immigration authorities. Immigrants who have obtained Canadian citizenship by naturalization are included in this category. Non-permanent residents are not included in this category.

Methodology

Youth aged 19 to 23 in the second linked census cycle and who received the long-form questionnaire for both cycles were selected.[13] This age group was chosen in order to minimize the proportion of youth who were in a situation where it was not possible to determine if they had participated in postsecondary education or not,[14] while maximizing the proportion of youth living with their parents five years earlier. The family characteristics were measured from the first linked census cycle, when the vast majority of youth were living with their parents.

The percentage of youth who had started or completed postsecondary education, for a given family characteristic, was obtained by dividing the number of youth having attended or completed a postsecondary education program and having the given family characteristic by the total number of youth having the given family characteristic, then multiplying by 100.

For each census cycle, approximately 25% of Canada's population receives the long-form census questionnaire. Among the National Household Survey (NHS)[15] respondents in 2011, about 22% were matched to the 2016 long-form census. The weights were calculated to make the sample representative of the 2011 population still alive and living in Canada in 2016.

Limitations

To ensure confidentiality and data quality, minimum unweighted counts of 50 were required for the numerator and denominator. Difference between unweighted denominator and numerator was also required to be at least 50. Rounding was applied based on the unweighted count of the denominator. For unweighted denominator with >= 500 observations, percentage was computed using unweighted counts, and then rounded to 1%. For unweighted denominator below 500 observations, numerator and denominator were rounded (deterministic rounding, based 50) before the percentage was computed and the result was rounded to 1%.

To ensure that the population of interest was not significantly different in the linked file versus the unlinked file, participation rates were calculated for both files, and in general were very similar (within two percentage points) for all provinces and territories. The only exceptions were in New Brunswick and Yukon, where the difference between the two files were five and seven percentage points.

Caution should be exercised in interpreting the results obtained for the Northwest Territories and Nunavut, where the 2011-2016 linkage rate was lower than in other jurisdictions. Caution should also be exercised in interpreting the provincial/territorial differences as small estimates may present fairly high sampling variability.

Data sources

- Labour Force Survey, Statistics Canada. For more information, consult "Definitions, data sources and methods", Statistics Canada Web site, survey 3701.
- Integrated 2011 National Household Survey, survey 5178 and 2016 Census of Population data, survey 3901, Statistics Canada.

13. To increase the coherence of the longitudinal sample, youth with a different year of birth or sex in the two census cycles were not considered. In the 2011-2016 linked file, they represented about 2.1% (different year of birth) and 0.8% (different sexes).
14. Youth are classified into 3 categories with respect to their postsecondary participation: 1) Youth who have up to a high school diploma at the time data were collected and who have not attended school in the nine months prior to data collection. These youth are considered not to have transitioned to postsecondary education. 2) Youth who have up to a high school diploma and who attended elementary school or high school in the nine months leading up to data collection. These youth are considered to be in a situation where it is not possible to specify their status with respect to postsecondary education (they may be continuing their high school education or may even have recently graduated). 3) Youth who had a postsecondary level of education at the time the data were collected or those who attended a postsecondary educational institution in the nine months prior to data collection. These youth are considered as having begun or completed a postsecondary education program and they enter in the numerator of the indicator.
15. In 2011, the information usually collected by the long-form census questionnaire was collected as part of the voluntary National Household Survey.

E2 Transitions to the labour market

Students and work

Indicator **E2** covers the transition from postsecondary education to the labour market. This sub-indicator uses Labour Force Survey (LFS) data to examine the 15 to 29 population group. The following tables are included:

- Table 37-10-0104-01 and table 37-10-0106-01 look at the extent to which students in this age group combine school and work.
- Table 37-10-0107-01 presents the distribution of this population group, both students and non-students, by type of institution attended, age, and labour force status.
- Table 37-10-0196-01 presents the percentage of this age group in education and not in education, by labour force status (NEET). Highest level of education attained and sex is also presented.

Concepts and definitions

- The Labour Force Survey (LFS) asks respondents about **school attendance** at a "school, college or university" in the week before the survey. Respondents are considered to be **students** if they are:
    - taking a "credit course"; that is, a course or program of instruction that could be counted towards a degree, certificate or diploma;
    - taking classroom instruction or undertaking research towards a degree, certificate or diploma;
    - taking correspondence courses that are affiliated with a school and will be counted as a credit course;
    - attending school as a student nurse (even when engaged in the practical portion of their training in a hospital setting);
    - taking a "credit course" sponsored by their employer, and the instruction is given at a public educational institution, such as a university or community college;
    - a person with a mental or physical disability who is enrolled in a special education program.
- For those who are students, information is collected on the type of school, and whether enrolment is full- or part-time, as designated by the educational establishment.
- The LFS divides the population aged 15 and over into three mutually exclusive groups: **employed**, **unemployed**, and **not in the labour force**.
- **Employed** persons are those who, during the LFS reference week:
    - did any work at all at a job or business; that is, paid work in the context of an employer–employee relationship, or self-employment. It also includes unpaid family work, which is defined as unpaid work contributing directly to the operation of a farm, business or professional practice owned and operated by a related member of the same household; or
    - had a job but were not at work due to factors such as own illness or disability, personal or family responsibilities, vacation, labour dispute or other reasons (excluding persons on layoff, between casual jobs, and those with a job to start at a future date).
- **Unemployed** persons are those who, during the LFS reference week:
    - were on temporary layoff during the reference week with an expectation of recall and were available for work, or
    - were without work, had actively looked for work in the past four weeks, and were available for work, or
    - had a new job to start within four weeks from the reference week, and were available for work.

- The remainder of the population, those neither currently supplying nor offering their labour services, are referred to as persons **not in the labour force**.
- **Age** is collected for every household member in the Labour Force Survey, and information on labour market activity is collected for all persons aged 15 and over. For this indicator, the proportion of students who were also working is presented by single age for 15 through 29 (table 37-10-0104-01) and by three age groups: 15 to 19, 20 to 24 and 25 to 29 (table 37-10-0106-01). The distribution of the 15- to 29-year-old population, both students and non-students, by labour force status, is presented by single age for 15 through 29, and as a total for 15 to 29 (table 37-10-0107-01).
- The **type of institution attended** captures the public and private educational establishments categorized as **elementary/high school**, **college** or **university**: elementary, junior high school, high school or equivalent; community college, junior college or CEGEP; university; and other types of schools, such as private institutes or vocational or secretarial schools.
- **Student** and **labour force status** (table 37-10-0107-01) are presented as:

    - **non-students**: non-student employed; non-student not in the labour force; non-student unemployed.
    - **students**: university student employed; university student not in the labour force; college student employed; college student not in the labour force; elementary/high school student employed; elementary/high school student not in the labour force; and student unemployed/other, which includes all unemployed students who attend a school institution, as well as those students for whom the type of institution was not specified, regardless of their labour force status (employed, unemployed, or not in the labour force).

- In addition to those who are employed, the total "not in education" portion of the 15- to 29-year-old population also includes those who are neither employed nor in education (or training). Such individuals are sometimes referred to as the "NEET" population. This captures a somewhat diverse group of young people in a number of possible situations. Some may be part of this group by choice, perhaps taking time off work and/or school to travel or to start families and care for their young children. Some might prefer to be working, but have abandoned the job search temporarily. These people would be seen as "not in the labour force"[16] as opposed to those who are seeking work but are unemployed. The group of people who are not in education and are either "unemployed" or "not in the labour force" is a population that could potentially be at risk for economic and social difficulties.
- The NEET indicator focuses on transitions from education to the working world. The percentages of individuals between 15 and 29 years of age who are considered to be "in education" or "not in education" are presented, along with their respective employment situations. Such information can be helpful in understanding how young adults may combine school and work, or how they may transition from one to the other. The "not in education" portion of this population is further examined with a focus on those individuals who are neither employed nor in education (or training), a group sometimes referred to as the "NEET" population.
- The NEET indicator is calculated using cross-tabulations for the following variables: school attendance, labour force status, sex, age (15 to 29 overall; 15 to 19; 18 to 24; 20 to 24; and 25 to 29) and educational attainment (highest level of education attained). Individuals are categorized by their education status (in education or not in education) and their labour force status (employed, unemployed, or not in the labour force). Some historical data are also presented.

16. "Not in the labour force" means that they were not looking for a job, so were neither employed nor unemployed.

- The "in education" group of the NEET indicator captures both full- and part-time students, while "not in education" portrays those who are no longer pursuing a formal education. As per the OECD definition, the educational institutions considered for this indicator are primary and secondary educational institutions, colleges and universities. Employment status is based on International Labour Organization (ILO) guidelines. The *employed* are defined as those who during the survey reference week: (i) work for pay (employees) or profit (self-employed and unpaid family workers) for at least one hour; or (ii) have a job but are temporarily not at work (through injury, illness, holiday, strike or lock-out, educational or training leave, maternity or parental leave, etc.). The *unemployed* are defined as individuals who are, during the survey reference week, without work, actively seeking employment and currently available to start work. And *not in the labour force* captures individuals who are not working and who are not unemployed; i.e., individuals who are not looking for a job.

Methodology

- The **Labour Force Survey (LFS)** is a monthly household survey of a sample of individuals who are representative of the civilian, non-institutionalized population 15 years of age or older. It is conducted nationwide, in both the provinces and the territories. Excluded from the survey's coverage are: persons living on reserves and other Indigenous settlements in the provinces; full-time members of the Canadian Armed Forces, the institutionalized population, and households in extremely remote areas with very low population density. These groups together represent an exclusion of approximately 2% of the population aged 15 and over.
- Canada-level estimates are derived using the results of the LFS in the provinces. LFS results for the territories are not included in the national estimates, but are published separately. Difficulties exist with respect to reaching small communities in the territories, and there are areas that are excluded. As well, since the sample design, rotation pattern and reliability criteria are different from those in the 10 provinces, estimates for the territories are not included with the provincial totals, but are calculated and reported separately.
- The number of students is based on a monthly average from September to April. Full- and part-time students are captured.
- Regarding NEET, these data cover the first quarter or the average of the first three months of the calendar year, which excludes summer employment.
- Adjustments are made to LFS data every five years after new population estimates become available following the most recent census. At that time, all LFS data back to the previous census is re-weighted using the new population estimates (since the new population estimates will cover the inter-censal period between the two most recent censuses), and all corresponding historical LFS estimates are revised. Therefore, at the beginning of 2021, all estimates were adjusted to reflect 2016 Census population counts and LFS estimates have been revised back to 2006.

Limitations

- Caution should be exercised in interpreting the ratios for provinces/territories and differences in ratios between provinces/territories and over time, as small estimates may present fairly high sampling variability. Estimates for small geographic areas, for small age-groups or for cross-classified variables will be associated with larger variability.
- Regarding NEET, the LFS does not collect data on official work-study programmes in which students might participate; in Canada, these would be considered education in the form of a co-op or student intern programme.

Data source

- Labour Force Survey, Statistics Canada. For more information consult "Definitions, data sources and methods", Statistics Canada Web site, survey 3701.

E3 Labour market outcomes

Unemployment and employment rates

Overall, the **E3** indicator outlines labour market outcomes. This sub-indicator presents recent and historical Labour Force Survey (LFS) data on unemployment rates by educational attainment. The following tables are included:

- Table 14-10-0361-01 provides information on trends for the population aged 15 and over at the Canada level and also presents data on unemployment rates among Canada's off-reserve Indigenous population aged 15 and over, by educational attainment.
- Table 14-10-0362-01 provides a comparison of trends in unemployment rates by educational attainment for 25 to 29-year-olds in Canada and the provinces.
- Table 37-10-0197-01 presents data on employment rates of 25 to 64-year-olds, by highest level of education attained, age group and sex.

Concepts and definitions

- The concepts and definitions of "employment" and "unemployment" adopted by the Labour Force Survey (LFS) are based on those endorsed by the International Labour Organisation (ILO).
- **Unemployed** people are those who, during the LFS reference week, were available for work and were either on temporary layoff, had looked for work in the past four weeks, or had a job to start within the next four weeks.
- According to the Labour Force Survey (LFS), the **unemployment rate** refers to the number of unemployed persons expressed as a percentage of the labour force. The unemployment rate for a particular group (educational attainment, for example) is the number unemployed in that group expressed as a percentage of the labour force for that group.
- Unemployment rates are presented for the following categories of **educational attainment**: (which is measured according to the highest level of schooling completed): all levels of education; less than high school; high school; college or trade; and university.
    - **Less than high school**: No education or education below high school graduation.
    - **High school**: High school graduation or some postsecondary education (not completed).
    - **College or trade**: trade certificate or diploma from a vocational school or apprenticeship training; non-university certificate or diploma from a community college, CEGEP, school of nursing and similar programs at this level; university certificate below bachelor's level. That is, ISCED 5 programs.
    - **University**: bachelor's degree or university degree/certificate above bachelor's level. That is, ISCED 6 and higher programs.
- **Employed persons** are those who, during the reference week: (1) did any work at all at a job or business, that is, paid work in the context of an employer-employee relationship, or self-employment. It also includes unpaid family work, which is defined as unpaid work contributing directly to the operation of a farm, business or professional practice owned and operated by a related member of the same household; or (2) had a job but were not at work due to factors such as own illness or disability, personal or family responsibilities, vacation, labour dispute or other reasons (excluding persons on layoff, between casual jobs, and those with a job to start at a future date).
- The **employment rate** represents the percentage of employed people among the working aged population. To calculate the employment rate for a group with a particular level of educational attainment, the number of employed persons with the particular level of educational attainment is divided by the total number of persons in the population aged 25 to 64 who have attained that education level and then multiplying this quotient by 100.

- The employment rate indicator examines the relationship between educational attainment and the employment rates of 25-to 64-year-olds, overall, by sex, and by age group. It also provides insight into how this relationship has evolved over time.

- The **education level** is measured according to the highest level of schooling successfully completed, based on the International Standard Classification of Education (ISCED) categories.
- The **off-reserve Indigenous population** refers to individuals who reported being an Indigenous person; that is, First Nations (North American Indian), Métis or Inuk (Inuit). In the LFS, a person may report more than one Indigenous group; for example, a respondent could report being both First Nations and Métis.[17]

Methodology

- To calculate the employment rate for a group with a particular level of educational attainment, the number of employed persons with the particular level of educational attainment is divided by the total number of persons in the population of the reference age bracket who have attained that education level and then multiplying this quotient by 100.
- The **Labour Force Survey (LFS)** is a monthly household survey of a sample of individuals who are representative of the civilian, non-institutionalized population 15 years of age or older. It is conducted nationwide, in both the provinces and the territories. Excluded from the survey's coverage are: persons living on reserves and other Indigenous settlements in the provinces; full-time members of the Canadian Armed Forces, the institutionalized population, and households in extremely remote areas with very low population density. These groups together represent an exclusion of approximately 2% of the population aged 15 and over.
- Canada-level estimates are derived using the results of the LFS in the provinces. LFS results for the territories are not included in the national estimates, but are published separately. Difficulties exist with respect to reaching small communities in the territories, and there are areas that are excluded. As well, since the sample design, rotation pattern and reliability criteria are different from those in the 10 provinces, estimates for the territories are not included with the provincial totals, but are calculated and reported separately.
- The LFS unemployment rate is based on a monthly average from January to December.
- Starting in late 2003 in Alberta, and then in April 2004 for the rest of Western Canada, the LFS added questions to identify Indigenous respondents living off-reserve with the goal of producing provincial labour market statistics on the Indigenous population. The Indigenous identity questions were also asked in the territories in 2004. As of January 2007, the question on Indigenous identity was extended to all provinces. Labour market data for the Indigenous population have been available for all provinces since the fall of 2008.
- As of January 2021, Labour Force Survey (LFS) estimates reflect population counts based on the 2016 Census. LFS data for 2006 through 2020 have been revised based on these modifications. For more information, please see Improvements to the Labour Force Survey (LFS): *The 2021 Revisions of the Labour Force Survey (LFS),* Statistics Canada Catalogue no. 71F0031X.
- Figures from the Organization for Economic Co-operation and Development (OECD) are those reported by the OECD, and they are extracted from the OECD and Eurostat databases compiled from national labour force surveys for the OECD member countries.

Limitations

- Indian reserves have historically been excluded from the LFS due to the serious challenges in contacting and interviewing potential respondents, with many of them living in remote locations not easily accessible to LFS interviewers given the short data collection period each month, and the large effort and cost associated with traveling to these locations. Full-time members of the Canadian Forces and institutional residents are also excluded due to similar challenges in contacting and interviewing potential respondents.

17. See "Section 3: Dictionary of concepts and definitions" in the Guide to the Labour Force Survey (Statistics Canada Catalogue no. 71-543-G).

- Caution should be exercised in interpreting the provincial ratios and differences in ratios between provinces and over time, as small estimates may present fairly high sampling variability. Estimates for small geographic areas, for small age-groups or for cross-classified variables will be associated with larger variability.

Data source

- Labour Force Survey, Statistics Canada. For more information consult "Definitions, data sources and methods", Statistics Canada Website, survey 3701.

Employment income

This second indicator subset of Indicator **E3** explores the impact of the highest certificate, diploma or degree on earnings.

The following tables are included:

- Table 37-10-0151-01 presents Census of Population data on the distribution of earners.
- Table 37-10-0152-01 presents Census of Population data on average employment income.

Concepts and definitions

- **Earnings/Employment income** refers to total income received by persons aged 15 years and over during calendar year 2015 as wages and salaries, net income from a non-farm unincorporated business and/or professional practice, and/or net farm self-employment income.
- The distribution of earnings by highest certificate, diploma or degree is presented for the following **levels of earnings:** < $5000; $5,000 to < $9,999; $10,000 to < $14,999; $15,000 to < $19,999; $20,000 to < $24,999; $25,000 to < $29,999; $30,000 to < $34,999; $35,000 to < $39,999; $40,000 to < $44,999; $45,000 to < $49,999; $50,000 to < $59,999; $60,000 to < $69,999; $70,000 to < $79,999; $80,000 to < $89,999; $90,000 to < $99,999; $100,000 and more.
- **Highest certificate, diploma or degree** refers to the highest certificate, diploma or degree completed by an individual, and is sometimes used as a proxy for human capital. For comparisons using Census of Population data, it is classified as:

No certificate, diploma or degree - includes persons who have not obtained any certificates, diplomas or degrees or their equivalents;

Secondary (high) school diploma or equivalency certificate - includes persons who have graduated from a secondary school or equivalent. It excludes persons with a postsecondary certificate, diploma or degree;

Apprenticeship or trades certificate or diploma - includes Registered Apprenticeship certificates (including Certificate of Qualification, Journeyperson's designation) and other trades certificates or diplomas such as pre-employment or vocational certificates and diplomas from brief trade programs completed at community colleges, institutes of technology, vocational centres, and similar institutions;

College, CEGEP or other non-university certificate or diploma – includes persons who obtained a postsecondary certificate or diploma from a community college; a CEGEP (either general/pre-university or technical); an institute of technology; a school of nursing; a private business school; a private or public trade school; or a vocational school;

University certificate or diploma below bachelor level - includes persons who have obtained a university certificate or diploma below the bachelor level and who have not obtained any higher degrees, certificates or diplomas;

University certificate, diploma or degree at bachelor level or above - includes persons who have obtained a university (level) certificate or diploma or a degree from a degree-granting institution. This includes persons who obtained a bachelor's degree, a master's degree, a degree in medicine, dentistry, veterinary medicine or optometry or an earned doctorate. If a bachelor's degree is normally a prerequisite for a university certificate or diploma course, as may occur with teaching certificates, then persons who obtained that certificate or diploma are included here.

- Average employment income by educational level is presented for the following 10 five-year **age groups**: 15 to 19; 20 to 24; 25 to 29; 30 to 34; 35 to 39; 40 to 44; 45 to 49; 50 to 54; 55 to 59 and 60 to 64. An overall figure is also presented.

Methodology

- Employment income was derived based on administrative tax and benefit records received from the Canada Revenue Agency for the population aged 15 years and over in private households (excluding institutional residents). Income refers to income received during the calendar year of 2015 from the sources of paid employment (wages and salaries) and self employment (net farm income and net non-farm income from unincorporated business and/or professional practice).
- The 2016 Census of Population definition of average employment income refers to the weighted mean total employment income of individuals 15 years of age and over who reported income for 2015. Average income is calculated from unrounded data by dividing the aggregate income of a specified group of individuals (e.g., males 45 to 54 years of age) by the number of individuals with income in that group. Note that the words “mean” and “average” were used interchangeably in the text and tables in this indicator.

Limitations

Tables 37-10-0151-01 and 37-10-0152-01 are based on the Census of Population.

The Census of Population covers all persons who usually live in Canada, in the provinces and the territories. It includes persons who live on Indian reserves and in other Indian settlements, permanent residents, non-permanent residents such as refugee claimants, holders of work or study permits, and members of their families living with them. Foreign residents such as representatives of a foreign government assigned to an embassy, high commission or other diplomatic mission in Canada, members of the Armed Forces of another country stationed in Canada, and residents of another country who are visiting Canada temporarily are not covered by the Census of Population.

The survey also excludes persons living in institutional collective dwellings such as hospitals, nursing homes and penitentiaries; Canadian citizens living in other countries; and full-time members of the Canadian Forces stationed outside Canada. Also excluded are persons living in non-institutional collective dwellings such as work camps, hotels and motels, and student residences.

For comments on data quality for the Highest certificate, diploma or degree variable, refer to the Education Reference Guide, Census of Population, Catalogue no. 98-500-X2016013.

For comments on data quality for the earnings/employment income variable, refer to the Income Reference Guide, Census of Population, Catalogue no. 98-500-X2016004.

Data source

- Census of Population, 2016, Statistics Canada.

Appendix 1: Structure of education and training in Canada

On this page

- Pre-elementary programs
- Elementary and secondary education
- Postsecondary education

In Canada, education is under the jurisdiction of the provinces. Similarly, the territories were also granted comparable powers under their founding legislation. As a result, there are 13 education systems in Canada, with each province and territory having developed its own system to reflect its population and geographic circumstances, as well as its cultural and historical heritage. This appendix describes the different education and training structures that exist in the provinces and territories today.

Pre-elementary programs

Pre-elementary programs—pre-Grade 1 education offered by public and private schools, as well as schools for the visually impaired and hard of hearing—are available to young children, typically 4 or 5 years of age, in all jurisdictions.

Most jurisdictions offer one year of public pre-elementary programs, with Nova Scotia, Quebec,[18] Ontario, Manitoba, Saskatchewan, Alberta, and the Northwest Territories offering additional years (Figure 1). In most jurisdictions, pre-elementary programs in the year before Grade 1 are offered to children who turn 5 years of age by a certain date in the school year as specified in jurisdictional legislation. Attendance in these programs is optional in most jurisdictions, although it is mandatory in Nova Scotia for five-year olds and in New Brunswick. The intensity of these programs varies; some jurisdictions offer full-day programs, some offer half-day programs, and some offer both.

In Quebec, an additional year of public preschool education is offered to all 4-year-olds, regardless of socio-economic background, in an effort to act early to foster the development of their full potential. In Ontario, the provision of an additional year of pre-elementary for 4-year-olds is dependent on the choice of the local school board, and funding is provided by the Ministry of Education. Currently, in Ontario, all school boards offer this program for their students. In Manitoba, one additional year of pre-elementary programming is offered at the discretion of each school division, and two school divisions currently provide this program, which is not funded by the Department of Education. In Saskatchewan, two additional years of pre-elementary programming are funded in schools in communities where a significant portion of pre-school children are not ready to participate fully in the learning opportunities offered to kindergarten and Grade 1 students. These programs are not mandatory and are not universal. Alberta also offers two additional fully funded years of pre-elementary programming, targeted to students with disabilities or to those who are considered talented or gifted. The Northwest Territories offers 2 years of fully funded pre-elementary programming to all students.

In addition to publicly provided programs, in all jurisdictions, some private schools also offer one or more year(s) of pre-elementary programming. Private day-care programs or early childhood education programs, however, are not offered as part of the formal education systems and are not included in the data on pre-elementary programs.

Elementary and secondary education

Public education is provided free to all Canadian citizens and permanent residents until the end of secondary school, which normally occurs at age 18. The ages for compulsory schooling vary from one jurisdiction to another. Generally, schooling is required from age 6 or 7 as of a certain date as specified in jurisdictional legislation (age 5 in New Brunswick and British Columbia) to age 16. In New Brunswick, Ontario, Manitoba and Nunavut, schooling is compulsory to the age of 18 or until high school graduation.

18. As of the 2021-2022 school year, Quebec offers a cycle of preschool education for 4 and 5 year olds.

In most jurisdictions, elementary-secondary education consists of 12 years of study, Grades 1 through 12 (Figure 1). The only exception is Quebec, where the elementary-secondary system has 6 years of elementary school and 5 years of secondary school. Following a major change in policy, 2002/2003 was the last year for Grade 13 in Ontario. One immediate consequence of this change was the "double cohort" of students who entered the postsecondary system in 2003/2004 (comprising the last graduating class from the old system and the first graduating class from the new system).

The elementary-secondary continuum reflects different grade combinations in different jurisdictions, thus the point of transition between elementary and secondary school varies.

The organization of grades also varies by jurisdiction and can further vary at the local level within a jurisdiction. Elementary schools cover the first four to eight years of compulsory schooling. Afterwards, children may proceed to a middle school or to a junior high or intermediate school; these usually cover Grade 6 or 7 to Grade 8 or 9, or they may go directly to a secondary education program. In many northern and rural communities, one school building may house all levels, from kindergarten to Grade 11 or 12.

Depending on the jurisdiction, a variety of programs —vocational (job-training) as well as academic—is offered at the secondary level. Some jurisdictions offer dual credit courses that simultaneously give students both high school and postsecondary credits.

Secondary school diplomas are granted to students who pass the compulsory and optional courses of their programs.

Public funding at the pre-elementary and elementary-secondary levels is provided either directly via the provincial or territorial government or through a mix of provincial/territorial transfers and local taxes collected by the local government or by school service centers, school boards, or school councils with the power to impose taxes. Private school funding comes primarily from fees and endowments, except in Quebec, which also partially funds some private schools (which have discretion over admission criteria). Manitoba, Alberta, and Saskatchewan provide some provincial funding to private schools that meet specified provincial requirements. The federal government pays the tuition fees for Aboriginal children and for children of its employees who live on Federal Crown lands (e.g., National Defence, Agriculture and Agri-Food Canada, and Transport Canada).

Postsecondary education

Once secondary school has been successfully completed, students may apply to college or university programs in most Canadian provinces. Traditionally, enrolment in trade-vocational programs, such as apprenticeship or other programs geared towards preparation for employment in an occupation or trade, did not require graduation from secondary school. However, requirements have been evolving so that more and more programs, especially in trades dealing with advanced technology or having implications for public safety, now require high school graduation. In Quebec, training in preparation for a trade or profession is provided by vocational training centers, which are under the jurisdiction of school service centers and school boards, and general and vocational colleges (CEGEPs). In vocational training, candidates may be admitted to certain programs if they have acquired credits at the Secondary III (grade 9) level. Concurrent general and vocational training activities may also be offered, as well as prior learning and skills recognition services. For technical training programs offered by public and private colleges, students must have a high school diploma or its equivalent.

Apprenticeship training involves a contract between an apprentice and an employer, registered with the jurisdiction, in which the employer provides the apprentice with training and experience for a trade. Programs vary in length from two to five years, depending on the trade. Registered apprenticeship combines on-the-job experience with four- to eight-week periods of in-class training each year of the program. In most jurisdictions, the in-class portion is usually taken at a postsecondary institution during the apprenticeship training. However, in Quebec, the in-class training is taken prior to beginning an apprenticeship program.

There are over 200 registered trades in Canada, each with specific standards and training requirements outlined by each jurisdiction. In some of these trades, apprenticeship training and certification is compulsory to enter into and to practice the trade. In others, apprenticeship certification is not necessary, although an individual may voluntarily obtain it to indicate a certain level of competence in the trade. Compulsory and voluntary trades vary by jurisdiction; however, there are similarities across jurisdictions in that compulsory trades commonly include those

with advanced technology or that involve public safety. As of 2009, the provinces and territories had agreed on interprovincial standards for 50 of the registered trades. In these 50 trades, candidates who achieve an agreed-upon standard qualify for a Red Seal endorsement and are allowed to work anywhere in Canada without further training or examination.

In Quebec, data relating to trade-vocational programs that are administered at the secondary level are reported at that level.

Postsecondary education is available in both government-supported and private institutions, some of which award degrees. A major distinction at an institutional level across all jurisdictions is made between "degree-granting" and "non-degree-granting" institutions. Degree-granting institutions—both public and private—have authority under provincial legislation to grant degrees, and include universities, university colleges, and some community colleges.

Universities usually offer undergraduate degree programs, lasting three or four years, depending on the program and the province, leading to a bachelor's degree. Advanced degrees include master's degrees, generally requiring two years of study after a first degree, and doctoral degrees, which require three to five years of postgraduate study and research as well as a dissertation. Not all universities offer advanced degrees, particularly at the doctoral level. In addition to universities, university colleges are recognized degree-granting institutions that offer three- to four-year bachelor's programs. Both universities and university colleges also offer programs leading to diplomas and certificates, but the primary emphasis is on degree programs. A number of jurisdictions have also begun to give limited degree-granting authority to community colleges. These institutions, which still offer diploma and certificate programs, may also offer two-year associate degrees or three- to four-year applied degrees in an area of specialty particular to the institution.

A university or other institution may also be affiliated or federated with another university. Federated institutions are degree-granting institutions responsible for their own administration; however, under the federation agreement, the granting of degrees rests with the parent institution. Affiliated institutions have limited or no degree-granting authority, and the granting of degrees rests with the parent institution. A number of colleges have the authority to offer divinity degrees, but these colleges are not fully recognized as degree-granting institutions.

While the majority of degree-granting institutions are public, private institutions exist in a number of provinces. For many years, some private institutions have offered programs in divinity. Furthermore, private institutions that offer degree programs in liberal arts, business, and trades have become more common.

For the most part, the systems of public non-degree-granting institutions in Canada were created by provincial and territorial governments in the 1960s to provide labour market preparation programs as alternatives to the more theoretically oriented programs of universities. Depending on the province or territory, they are called colleges, regional colleges, centres, colleges of applied arts and technology, community colleges, institutes, schools, or, in Quebec, collèges d'enseignement général et professionnel (CEGEPs).

Public non-degree-granting institutions offer vocational programs in a wide variety of semi-professional and technical fields, leading to diplomas, certificates, and attestations. Diplomas are generally awarded after a two- or three-year program, while certificate programs are usually one year in length, although some certifications may be shorter in duration.

Several college systems offer university transfer programs, typically the first two years of a university undergraduate program. These transfer programs are usually offered in conjunction with a university, where the remainder of the program would be completed.

In Quebec, students who wish to attend university are generally required to successfully complete a two-year pre-university program. Students with a college diploma in a technical field are also eligible to attend university.

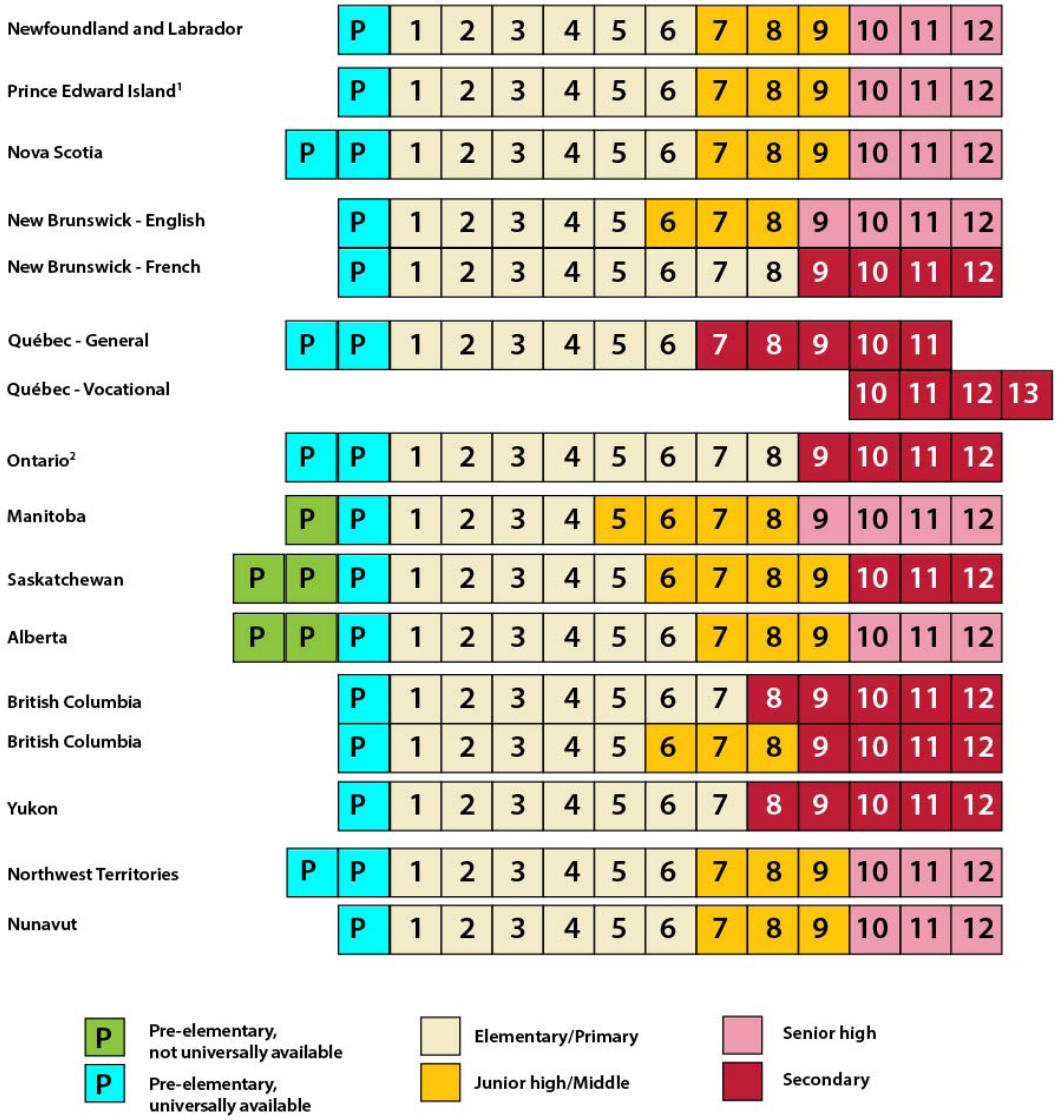
Private non-degree-granting institutions are subject to varying degrees of government regulation and can be classified in terms of the extent of government oversight. "Recognized institutions" are those that have been given authority to grant academic credentials by provincial or territorial governments through charters or legislation that provide mechanisms to ensure institutional and program quality. "Non-recognized, but licensed, institutions" are primarily monitored by governments with a view to consumer protection rather than institutional or program quality. Finally, "non-recognized, non-licensed institutions" are private institutions that are not regulated by government.

Private non-degree-granting institutions may be called “colleges”, “institutes”, “schools”, or “academies” depending on the jurisdiction. Credentials issued include diplomas, certificates and attestations. These programs tend to be much shorter and more intensive than programs in public institutions. In Quebec, private institutions may offer two-year pre-university programs, three-year technical programs, as well as shorter programs leading to an attestation.

The source of funds at the postsecondary level will depend on the nature of the institution. For universities and public non-degree granting institutions, public funding comes directly from the provincial/territorial government (mostly in the form of operating and capital grants). Private funding for those institutions is made up of tuition and other fees, donations (including bequests), investment, and non-government grants and contracts. Private non-degree-granting institutions receive very little or no public funding, except indirectly through support to students; funding for these private institutions comes mostly from tuition fees. In Quebec, some private institutions are subsidized.

For a more detailed overview of postsecondary systems in Canada, see the Web site of the Canadian Information Centre for International Credentials.

Figure 1
Levels within pre-elementary and elementary-secondary schools, by jurisdiction



1. Prince Edward Island introduced its pre-elementary program in 2000/2001.
2. 2002/2003 was the last year for the Ontarion Academic Course (Grade 13).

Notes: The elementary-secondary continuum reflects different grade combinations in different jurisdictions, thus the point of transition between elementary and secondary school varies. The organization of grades also varies by jurisdiction and can further vary at the local level within a jurisdiction. After elementary school, children may proceed to a middle school or to a junior high or intermediate school, or they may go directly to a secondary education program.
Updated November 1, 2021.

Appendix 2: Canadian and Organisation for Economic Co-operation and Development (OECD) indicators

Canada has participated in the OECD's Indicators of Education Systems (INES) programme since the project's inception in 1988. INES includes a set of indicators that allows comparisons of the education systems of its member countries. The OECD publishes the results annually in *Education at a Glance: OECD Indicators*.

Some of the indicators presented in the Pan-Canadian Education Indicators align with a selection of indicators from *Education at a Glance: OECD Indicators* and were selected based on policy relevance and the availability of data for Canada and its provinces and territories.

The data for Canada and the provinces/territories are presented along with the most recent OECD averages. The definitions and methodologies agreed upon in developing the international indicators were used to produce the data. These definitions and methodologies may differ from those used in a particular province/territory, thus the numbers produced for these indicators may differ from those published independently by the provinces/territories.

Canadian and Organisation for Economic Co-operation and Development (OECD) indicators

The following table outlines the indicators that align with corresponding indicators from Education at a Glance : OECD indicators.

Pan-Canadian Education indicators Program		*Education at a Glance : OECD Indicators*	
D6	Educational attainment of the adult population	**A1**	To what level have adults studied?
D1	International students	**B6**	What is the profile of internationally mobile students?
E2	Transitions to the labour market	**A2**	Transition from school to work: Where are today's youth?
E3	Labour market outcomes	**A3**	How does educational attainment affect participation in the labour market?
B1	Expenditure per student	**C1**	How much is spent per student on educational institutions?
B2	Expenditure on education as a percentage of GDP	**C2**	What proportion of national wealth is spent on education?
B3	Distribution of expenditure on education	**C6**	On what resources and services is education funding spent?

International Standard Classification of Education (ISCED) classifications and descriptions

Indicators are classified according to the ISCED-2011 categories. The ISCED standard, developed and maintained by the UNESCO Institute for Statistics, is used for reporting data to the OECD. ISCED provides a framework and methodology that allows information from different national education programs to be presented within a comparable set of broad indicators.

The following table provides a brief description for each ISCED category.[19]

International Standard Classification of Education (ISCED) 2011 classification	Description
Early childhood education/ Pre-primary education ISCED 0	ISCED level 0 refers to early childhood programmes that have an intentional education component. These programmes aim to develop socio-emotional skills necessary for participation in school and society. They also develop some of the skills needed for academic readiness and prepare children for entry into primary education. ISCED level 0 programmes target children below the age of entry into ISCED level 1. There are two categories of ISCED level 0 programmes: early childhood educational development and pre-primary education. The former has educational content designed for younger children (in the age range of 0 to 2 years), whilst the latter is designed for children from age 3 years to the start of primary education.
Primary education ISCED 1	Designed to provide a sound basic education in reading, writing and mathematics and a basic understanding of some other subjects. Entry age: between 5 and 7. Typical duration: 6 years.
Lower secondary education ISCED 2	Completes provision of basic education, usually in a more subject-oriented way with more specialist teachers. Entry follows 6 years of primary education; duration is 3 years. In some countries, the end of this level marks the end of compulsory education.
Upper secondary education ISCED 3	Stronger subject specialisation than at lower-secondary level, with teachers usually more qualified. Students typically expected to have completed 9 years of education or lower secondary schooling before entry and are generally around 15 or 16 years old.
Postsecondary non-tertiary education ISCED 4	Internationally, this level straddles the boundary between upper secondary and postsecondary education, even though it might be considered upper secondary or postsecondary in a national context. Programme content may not be significantly more advanced than that in upper secondary, but is not as advanced as that in tertiary programmes. Duration usually the equivalent of between 6 months and 2 years of full-time study. Students tend to be older than those enrolled in upper secondary education.
Short-cycle tertiary education ISCED 5	Programmes at ISCED level 5, or short-cycle tertiary education, are often designed to provide participants with professional knowledge, skills and competencies. Typically, they are practically based, occupationally-specific and prepare students to enter the labour market. However, these programmes may also provide a pathway to other tertiary education programmes. Academic tertiary education programmes below the level of a Bachelor's programme or equivalent are also classified as ISCED level 5. ISCED level 5 has a minimum duration of two years and is typically but not always shorter than three years. For education systems with modular programmes where qualifications are awarded by credit accumulation, a comparable amount of time and intensity would be required.
Bachelor's or equivalent level ISCED 6	Largely theory-based programmes designed to provide sufficient qualifications for entry to advanced research programmes and professions with high skill requirements, such as medicine, dentistry or architecture. Duration at least 3 years full-time, though usually 4 or more years. They are traditionally offered by universities and can also be offered at some colleges.
Master's or equivalent level ISCED 7	Programmes at ISCED level 7, or Master's or equivalent level, are often designed to provide participants with advanced academic and/or professional knowledge, skills and competencies, leading to a second degree or equivalent qualification. Programmes at this level may have a substantial research component but do not yet lead to the award of a Doctoral qualification.
Doctoral or equivalent level ISCED 8	Programmes that lead directly to the award of an advanced research qualification, e.g., Ph.D. The theoretical duration of these programmes is 3 years, full-time, in most countries (for a cumulative total of at least 7 years full-time equivalent at the tertiary level), although the actual enrolment time is typically longer. Programmes are devoted to advanced study and original research.

19. See the "Reader's Guide" in Education at a Glance 2021: OECD Indicators, published by the Organisation for Economic Co-operation and Development and available on the OECD Web site.

Mapping to ISCED

Indicators presented in this report that align with Education at a glance use the International Standard Classification of Education (ISCED-2011) to classify education programmes and the highest level of education successfully completed (educational attainment). The following tables show the correspondence between ISCED and the other data sources used for the indicators in this report.

Labour Force Survey (LFS)

ISCED	LFS (educational attainment)
ISCED 0/1	• Grade 8 or lower (Quebec: Secondary II or lower)
ISCED 2	• Grade 9 to 10 (Quebec: Secondary III or IV, Newfoundland and Labrador: 1st year of secondary) • Grade 11 to 13 (Quebec: Secondary V, Newfoundland and Labrador: 2nd to 4th year of secondary) (non-graduate)
ISCED 3	• Grade 11 to 13 (Quebec: Secondary V, Newfoundland and Labrador: 2nd to 4th year of secondary) (graduate) • Some postsecondary education (non-graduate)
ISCED 4	• Trade certificate or diploma from a vocational school or apprenticeship training
ISCED 5	• Non-university certificate or diploma from a community college, CEGEP, school of nursing, etc. • University certificate below Bachelor's level
ISCED 6	• Bachelor's degree
ISCED 7/8	• University degree or certificate above Bachelor's degree

Note: The following indicators are based on data from the LFS: D6, Educational attainment of the population aged 25 to 64; E2, Transitions to the labour market and E3, Labour market outcomes.

Postsecondary Student Information System (PSIS)

ISCED	PSIS enrolment (program type and credential type)
ISCED 5	• Career, technical or professional training program (diploma) • Post-career, technical or professional training program (certificate, diploma, other type of credential associated with a program)
ISCED 6	• Undergraduate program (certificate, diploma, degree [includes applied degree], attestation and other short program credentials, associate degree, other type of credential associated with a program) • Post-baccalaureate non-graduate program (certificate, diploma, degree [includes applied degree], other type of credential associated with a program) • Graduate qualifying program, second cycle (other type of credential associated with a program)
ISCED 7	• Graduate qualifying program, third cycle • Health-related residency program (certificate, diploma, degree [includes applied degree], other type of credential associated with a program) • Graduate program, second cycle (certificate, diploma, degree [includes applied degree], attestation and other short program credentials, other type of credential associated with a program)
ISCED 8	• Graduate program, third cycle (diploma, degree [includes applied degree], attestation and other short program credentials) • Graduate program, above the third cycle (diploma)

Notes: Information on enrolments from PSIS was used for Indicator A3, International students. Indicator, B1, Expenditure per student, is based on several data sources, including PSIS.

International Standard Classification of Education (ISCED) 2011		2021 Census: Highest certificate, diploma or degree
No schooling		Note that very few people in Canada have "no schooling".
Early childhood education (ISCED level 0)		No certificate, diploma or degree
Primary education (ISCED level 1)		
Lower secondary education (ISCED level 2)		
Upper secondary education (ISCED level 3)		High (secondary) school diploma or equivalency certificate
Post-secondary non-tertiary education (ISCED level 4)		Non-apprenticeship trades certificate or diploma[1]
		Apprenticeship certificate
		College, CEGEP or other non-university certificate or diploma from a program of 3 months to less than 1 year[2]
Tertiary education	Short-cycle tertiary education (ISCED level 5)	College, CEGEP or other non-university certificate or diploma from a program of 1 year to 2 years[2]
		College, CEGEP or other non-university certificate or diploma from a program of more than 2 years
		University certificate or diploma below bachelor level
	Bachelor's or equivalent level (ISCED level 6)	Bachelor's degree[3]
		University certificate or diploma above bachelor level
	Master's or equivalent level (ISCED level 7)	Degree in medicine, dentistry, veterinary medicine or optometry
		Master's degree
	Doctoral or equivalent level (ISCED level 8)	Earned doctorate
Missing data		Note that the Census database does not include missing values. Instead, missing responses are imputed with donors.

1. Quebec provides vocational trades training at vocational centres or, in French, centres de formation professionnelle; certificates and diplomas from these centres are classified as non-apprenticeship trades certificates and diplomas in the Census. ISCED classifies them as level 3.
2. ISCED classifies programs with a duration of between 6 months and less than two years as ISCED 4, while programs that have a minimum duration of 2 years are classified as ISCED 5. As the program duration in the Census is categorized into "3 months to less than 1 year", "1 to 2 years" and "more than 2 years", this mapping somewhat differs from ISCED.
3. Degrees in law (e.g. LL.B, J.D.) and pharmacy (e.g., B.Pharm) are classified as bachelor's degrees in the Census, and are therefore included in ISCED level 6 for this concordance, whereas ISCED classifies them as level 7 (Master's or equivalent).

Institution versus program-based levels of education

Historically, degree programs (levels ISCED 6 and higher) have been primarily delivered at universities. However, degree programs are increasingly being offered at community colleges, university colleges and technical institutes. In this text, references to 'university' level or degree programs include all ISCED 6 and higher programs offered at both universities and colleges. Conversely, 'college' programs refer to those ISCED 5 level programs that were traditionally offered at colleges and still make up the bulk of college program offerings.

The one exception to this terminology relates to the indicators in Chapter B of this report. Chapter B reports financial data which is collected from college and university institutions. Thus, when the text refers to college data in Chapter B, this would include any data relating to programs delivered at colleges, as it is not possible to separate the financial data directly related to the delivery of ISCED 6 and over programs from financial data directly related to the delivery of ISCED 5 programs.

Note that the ISCED term, 'tertiary' education includes the vast majority of university programs as well as any diploma (2 year plus) and degree level programs offered by colleges.

OECD averages

As stated in the OECD's *Education at a Glance 2021: OECD Indicators*[20]

The OECD average is calculated as the unweighted mean of the data values of all OECD countries for which data are available or can be estimated. The OECD average therefore refers to an average of data values at the level of the national systems and can be used to answer the question of how an indicator value for a given country compares with the value for a typical or average country. It does not take into account the absolute size of the education system in each country.

20. See the "Reader's Guide" in Education at a Glance 2021: OECD Indicators, published by the Organisation for Economic Co-operation and Development and available on the OECD Web site.

The OECD average can be significantly affected by missing data. Given the relatively small number of countries surveyed, no statistical methods are used to compensate for this. When a category is not applicable in a country or when the data value is negligible for the corresponding calculation, the value zero is imputed for the purpose of calculating OECD averages. When both the numerator and the denominator of a ratio are not applicable for a certain country, this country is not included in the OECD average.

Limitations

Indicators combine discrete education statistics and give them context. This report presents a selection of indicators that places Canada and the provinces/territories in an international perspective; however, it is only a partial picture of the performance of Canada, the provinces and territories. Although indicators show trends and uncover interesting questions, they cannot by themselves provide explanations or permit conclusions to be drawn. Additional research will always be required to determine causes and suggest solutions. The aim of this report is to stimulate thinking and promote debate on global education issues.

Although the data for Canada presented in this report are, for the most part, identical to those presented by the OECD in this year's *Education at a Glance (EAG)*, there are some instances where figures may differ slightly. This is not due to differences in methodologies or in data years, but it does reflect revisions to initial figures that were provided at earlier stages through the UNESCO/OECD/Eurostat data collection (UOE) required for the production of *EAG*.

It is preferable to avoid comparing, for any given indicator, the results presented in this report with those presented in previous editions because certain methodological adjustments may have been made in some cases, or because certain data used in the calculations for indicators may have been revised.

The OECD and other international organizations provide detailed guidelines and definitions to help member countries complete the complex data collection process in order to achieve the highest possible level of comparability. However, the countries must best apply these guidelines to their own data. Depending on the degree to which national concepts match these guidelines and to which national classifications of education map adequately to ISCED, the comparability may be affected. For more detailed information on the latest international statistics, please refer to *EAG*, available on the OECD Web site.