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Technical Reference Guides for the Education and Labour Market Longitudinal Platform (ELMLP)

Persistence and graduation indicators of postsecondary students, 2010/2011 to 2015/2016

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1. Introduction

Statistics Canada, in collaboration with the provinces and territories, Employment and Social Development Canada (ESDC), and other stakeholders, has developed the Education and Labour Market Longitudinal Platform (ELMLP).

The ELMLP allows longitudinal integration of administrative data related to education with other data sources to provide customized datasets for analytical purposes.

The ELMLP Program fills data gaps and enables a greater understanding of student and apprenticeship pathways, transitions to the labour market and outcomes over time.

Data from the ELMLP can help address a wide range of policy questions pertaining to student and apprenticeship persistence, completion, mobility and pathways as well as their labour market outcomes.

These data allow policy makers to understand the different types of trajectories that students can take through their postsecondary education or apprenticeship training as well as student characteristics that may be related to these trajectories.

The target audience for the ELMLP includes provincial ministries of education, apprenticeship authorities, postsecondary institutions, federal government departments, members of the academic community, researchers, students and parents interested in graduate outcomes and other stakeholder groups involved in education and the labour market.

2. The Education and Labour Market Longitudinal Platform (ELMLP)

2.1 The key features of the ELMLP

1. **Platform** – The Platform allows researchers to unlock information about past cohorts of college/university students and registered apprentices, to better understand their pathways and the ways in which education and training affected their career prospects.
2. **Securely integrated datasets** – These integrated datasets allow us to know more than what a single dataset or survey can provide. Integrated datasets means that all of the datasets in the ELMLP may be linked with each other using an anonymous linkage identifier located on each file. After identifying which ELMLP datasets are needed to answer a specific research or policy question, researchers can use the anonymous linkage identifier located on each file to bring these datasets together. The integration of datasets is carried out within the Statistics Canada Social Data Linkage Environment (SDLE), which maintains the highest privacy and data security standards.
3. **Longitudinal data** – The data available within the Platform are linked longitudinally, allowing researchers to better understand the behaviours and outcomes of students and apprentices over time.
4. **Accessible data** – All datasets prepared for the Platform are made available to researchers through the Research Data Centre network across Canada.

2.2 Accessibility, confidentiality and privacy

The integrated datasets in the ELMLP are deemed sensitive statistical information and subject to the confidentiality requirements of the *Statistics Act*. Statistics Canada employees who build the integrated datasets for research purposes have access to the data only after it has been stripped of personal identifiers. Furthermore, only Statistics Canada employees and deemed employees who have an approved need to access the data for their analytical work are allowed access to the linked analytical files.

These data are treated with the same level of confidentiality as surveys administered by Statistics Canada.

Findings from the ELMLP are released through Statistics Canada's website.

The ELMLP data are also available in Statistics Canada's Research Data Centres (RDC) to researchers with approved projects only. These researchers will be provided with access in a secure setting at the RDCs, which are staffed by Statistics Canada employees. The RDCs are operated under the provisions of the *Statistics Act* in accordance with all confidentiality rules, and are accessible to researchers once they have been sworn in under the *Statistics Act* as "deemed employees."

2.3 Core and supplementary datasets

The ELMLP consists of two types of datasets: **core** and **supplementary**.

Core datasets will be updated in the ELMLP on an annual basis and include:

1. **The Postsecondary Student Information System (PSIS) -** an administrative dataset of all Canadian public college and university enrolments and graduates by type of program and credential, and field of study for each reporting year. The ELMLP includes PSIS data from 2009 onwards for all provinces and territories, as well as from 2005 onwards for the four Atlantic provinces and from 2004 onwards for Alberta.
2. **The Registered Apprenticeship Information System (RAIS**) **-** an administrative dataset of all Canadian (provincial and territorial) annual data on registered apprentices and trade qualifiers. The ELMLP includes RAIS data from 2008 onward.
3. **Income tax from the T1 Family File (T1FF) -** select information from income tax data from 1992 onwards is available for all PSIS and RAIS records that were linked to the T1 Family File.

Supplementary datasets are additional datasets that are being integrated into the platform in order to add new indicators for research purposes. Over time, the number of supplementary datasets that are brought into the ELMLP will grow and could include survey data already collected by Statistics Canada, administrative data already obtained by Statistics Canada, and administrative data not yet available at Statistics Canada. The list of ELMLP files currently in the RDCs can be found at Statistics Canada website (type “ELMLP” in the *Filter Items* window).

3. Data sources used to derive postsecondary persistence and graduation indicators

The data used for calculation of the postsecondary persistence and graduation indicators were derived from the Postsecondary Student Information System (PSIS).

3.1 Postsecondary Student Information System (PSIS) data

The PSIS is a national annual administrative database that enables Statistics Canada to provide detailed information on enrolments and graduates of Canadian public postsecondary institutions in order to meet policy and planning needs in the field of postsecondary education. PSIS collects information pertaining to the programs and courses offered at an institution, as well as information regarding the students themselves and the program(s) and course(s) in which they were registered, or from which they have graduated. PSIS data have been linked longitudinally using the Education and Labour Market Longitudinal Platform (ELMLP).

The start date for each reporting year in the PSIS report is the day after the end of the institution's previous winter term, which is usually a date in April, May or June, however this may vary by institution. The reference period is one year from this start date. For ease of understanding, in this document the term 'academic year' is used in place of 'reporting year'.

For this project, the (PSIS) longitudinal file for academic years 2009/2010 to 2016/2017 (inclusive) was used for both entry cohort identification and for deriving the persistence and graduation indicators.[1]

1. Any institution that had imputed data in PSIS (to compensate for data gaps during the analysed period) was not included in the Student Pathways project. See **Section 5** Quality Analysis for more information.

4. Methodology to derive the persistence and graduation indicators

Six entry cohorts for each of the 2010/2011 to 2015/2016 academic years were derived using PSIS. These cohorts are included in tables 37-10-0136, 37-10-0138, 37-10-0139, 37-10-0140, 37-10-0143, 37-10-0145 and 37-10-0146.

4.1 Defining the target population

Selection of PSIS Programs

Students were grouped by educational qualification using the 'Classification of programs and credentials', a combination of the PSIS program type and credential type variables.

Students who enrolled for the first time to pursue the following educational qualifications were followed over time to produce indicators on persistence and graduation:

1. Career, technical or professional training certificates[2]
2. Career, technical or professional training diplomas[3]
3. Undergraduate degrees[4]
4. Master's degrees and
5. Doctoral degrees.

These were the five largest educational qualifications available in most provinces and territories and where the cohort size would allow detailed analysis. Students not pursuing an educational qualification were not included.

Defining cohorts of new entrants

An entry cohort (or cohort of new entrants) for this analysis was defined as those students 15 years old and over (as of the end of the calendar year) who first enrolled in their educational qualification in the specified academic year and who were enrolled full-time[5] on the fall snapshot date of that academic year. The fall snapshot date is a single date chosen by the postsecondary institution which falls between September 30th and December 1st. Therefore, the number of students in each entry cohort is less than the total number of new students entering over the full academic year. This methodology excludes a larger proportion of new entrants for colleges than universities, since colleges generally have a more continuous intake of students; more variation in enrolment periods (especially for shorter programs, for example, winter, spring); and a larger proportion of part-time students.

New entrants were defined as those students enrolled in a given academic year who were not enrolled in a program for the same educational qualification in the previous two years.[6]

A year of PSIS data includes all students enrolled, not just the new entrants. Thus the new entrants for a given cohort year were defined as those who were not found to be previously enrolled in the same type of educational qualification in the previous years of PSIS data.

2. This includes typical college-level certificates, which can also be offered at universities. Attestations and other short credentials were excluded.
3. This includes typical college-level diplomas, including Quebec CEGEP technical stream diplomas, which can also be offered at universities. The pre-university diplomas offered in Quebec colleges and CEGEPs were not included here.
4. Institutions and provinces/territories may choose to report programs related to professional degrees (e.g. Dentistry (DDS, DMD), Law (LLB, JD, BCL), Medicine (MD), Optometry (OD), Pharmacy (PharmD, BS, BSc, BPharm) or Veterinary medicine (DVM)) and Bachelor of Education programs either in undergraduate degrees or post baccalaureate non-graduate degrees, depending on whether the outcome of the program is seen as beyond a first undergraduate degree or "post-degree". This factor may add to the differences in undergraduate indicator results between provinces and territories and can be attributed to differences in education systems. The persistence and graduation indicators were not produced for the post baccalaureate non graduate degree programs, due to smaller overall counts.
5. The designation of full-time (or part-time) registration was defined by the reporting postsecondary institution that submitted PSIS data.
6. The PSIS variable for the original start date in a program could not be used to identify new entrants as some provinces or territories did not report it and other respondents used it inconsistently or for program changes other than overall educational qualification.

It was determined that looking two years back in the PSIS data was sufficient to exclude almost all the earlier entrants of a selected PSIS academic year for each educational qualification and for most age groups. This means that the first cohort of new entrants that could be followed for the persistence and graduation indicators was that of 2011/2012, since the 2009/2010 and 2010/2011 data were used to identify which of the 2011/2012 students are actually new entrants. The new entrants could then be followed through to the fall of 2016/2017, the most recent year of PSIS data available at the time.

Note that there could be a small potential bias in certain indicator results since this method of looking back up to two years did not identify the small proportion of students who actually started their educational qualification before that, but had taken a break in the previous two years. It also did not identify new students who had credits from another educational qualification that could be transferred to the new program, possibly reducing their total time to graduation. This bias was also larger for older students, who might be more likely to flow in and out the educational system over time due to various life-course events.[7]

Tests showed that for students younger than 20 years old, almost all new entrants could be found by looking only one year back in time. This allowed to add separate cohorts of new entrants for 2010/2011, including only the students aged 15 to 19 years in the entry year who could be followed up to six years after entry (to 2016/2017). The benefit of adding these special cohorts is that more years of longitudinal data give more informative results about graduation for longer programs such as undergraduate degree programs. The special 2010/2011 cohorts of 15 to 19 year-old new entrants are also used for indicators for the career, technical or professional training certificate and diploma programs. Eventually, with more years of longitudinal data, going back further in time will become possible and will be preferable.

The cohorts of new entrants were followed in this analysis from the year of first entry as defined above, as long as they were enrolled full- or part-time, in subsequent academic years.

Missing information and out-of-scope individuals

Student records with missing key demographic information (gender or age) for all years were removed since not enough information was present to classify them. Student records where the “Student status in Canada” information was not reported during the year of first enrolment in the program, were also excluded. The number of such records varied by year, institution and type of educational qualification.

Final target population

The final target population of student data contained all new enrolments of students aged 15 and older starting one of the five selected postsecondary educational qualifications in the cohort year, and excluded individuals missing key demographic variables (gender,age or student status in Canada). Indicators were calculated for all cohort years 2010/2011 to 2015/2016, where sufficient numbers of follow-up years of data were available.

4.2 Persistence and graduation indicator calculations

Periods of observation and time points for measuring the indicators

The indicators presented below — persistence rate, graduation rate and average time to graduation — are calculated at several time points or over certain periods of observation for each educational qualification. These measurement time points depend on the typical duration of educational programs and availability of longitudinal data, and will be extended in future releases as more data become available.

Specifically, persistence rate is calculated at several time points and only for educational programs of longer duration. In turn, the graduation rate and average time to graduation are calculated for certain periods of observation. For graduation rate, these periods of observation are generally defined within the timeframe of 1 and 1.5 times the typical program duration of each educational qualification, while for average time to graduation they are equal to 1.5 times the typical program duration.[8] Some periods of observation are limited by the availability of longitudinal data. For instance, the graduation rates for undergraduate degree programs are calculated at

7. The size of the bias varied according to the educational qualification, the typical program duration and student age.
8. The observation periods are only rough estimates, since program durations vary across qualifications and provinces or territories.

4 and 6 years, but for doctoral degrees they are currently available only at 5 years, due to a shorter time series. More information on measurement time points/periods of observation are included with each indicator definition.

Presentation of indicators in the tables

The indicators presented in this release are calculated for all available cohorts, at specific time points/periods of observation, and for each educational qualification. Appendix A presents a summary of cohorts, indicators and time points/periods of observation used in the current tables.

Please note that an indicator is shown in the data tables only when a cohort is actually defined; only when the indicator is calculated for a given educational qualification; and only when the chosen period of observation/ measurement time point is possible within the years of data available. Simply put, if there is not enough data to calculate an indicator for a given cohort, the cell for that cohort will be left empty.

For example, for the qualification of career, technical and professional training certificate, two indicators are calculated: graduation rate (measured at 1 and 3 years after entry) and average time to graduation (measured at 3 years after entry). For the cohort of 2010/2011, these indicators are presented only for the age group of 15 to 19 years of age, since the cohort of 20 years old and older is not defined for that year. Similarly, the graduation rate 3 years after entry and average time to graduation are not presented for the cohorts of 2014/2015 and 2015/16, since the data for these cohorts is not yet available. The cells for these cohorts are therefore left empty.

Persistence rate

The persistence rate is defined as the percentage of the entry cohort that was still enrolled, full-time or part-time, in subsequent years after first entry. In this analysis, the count of persistent students also includes a small[9] proportion of students who had graduated with their educational qualifications by the time of measurement. This allows us to account for all students who were actually persistent during a period of observation, regardless of whether they graduated or not.

Persistence rates were measured in the fall, one and two years after the year of first entry.

Persistence rates are provided for two educational qualifications only, undergraduate degree and doctoral degree students. These rates are not provided for the following educational qualifications due to their shorter program durations: career technical or professional training certificates; career technical or professional training diplomas; and master's degree programs. Cohorts, time measurement points, and educational qualifications for which the persistence rates are calculated are summarized in Appendix A.

The indicator tables look at whether a student was persistent in either the same educational qualification that they began in the cohort entry year, or in a different educational qualification.

Graduation rate

The graduation rate, measured at a given number of years after the fall of first enrolment, is the percentage of an entry cohort that had completed their specified qualification within that time.

In this analysis, the rate was determined based on whether someone had a graduation date before the end of the calendar year. The rate shown is cumulative since it includes individuals from the entry cohort who had graduated in the current and previous calendar years.

Graduation rates were measured over a period of observation set at 1 and 1.5 times the typical program duration for each educational qualification, with the exception of doctoral degrees, for which the graduation is currently measured at only 1 times the typical program duration due to the short time series. For an undergraduate degree, the period of observation was set at four and six years after entry since most undergraduate programs are

9. For example, for undergraduate degree and doctoral degree students, the proportion of these graduates was less than 0.1%. Students could have graduated earlier than expected from their programs, if they already had credits from another program or from studies in earlier years (prior to the years checked to identify new entrants) that could be counted toward the graduation requirements. The proportion of students who graduate after one year may be larger for educational qualifications of shorter duration.

offered with a length of four years.[10] The periods of observation for other educational qualifications are detailed in Appendix A. The periods of observation for calculating the graduation rates will be lengthened once additional years of longitudinal data become available.

Some adjustments have been made to the graduation dates reported by respondents[11] to improve consistency and comparability between institutions. For the calculation of the graduation rate indicators, if a student was both enrolled in a fall term and also had a graduation date in the same fall term, then their graduation year was revised to the following calendar year. For example, a student who completed all requirements during the fall session of 2014, and graduated in December of 2014, would have been included in the persistence rate for fall 2014/2015, and in the graduation rate of 2015.[12] In addition to improving consistency and comparability, this adjustment permits to divide the new entrant cohorts into three mutually exclusive groups: 'still enrolled', 'graduated' or 'not enrolled, not graduated', when such analysis is needed.

Average time to graduation

The average time to graduation indicator represents the average number of elapsed academic years new students took to complete the credential in a given educational qualification. It looks at graduations over a specified period of observation, while completion of the qualification requirements is measured using the PSIS variable GradYear.[13]

It should be noted that in this analysis, the total time to graduation for each student was measured by counting the *total number of years elapsed* between their year of first enrollment and that of their graduation, rather than counting the years of *student's active enrolment* in an educational qualification. Hence any time off taken after enrolling in an educational qualification and before graduation is included in the total number of years to graduation for each student.

In addition, the elapsed time to graduation is measured in full years.[14] This means that students enrolled in the fall in college certificate programs of less than one year in length can never have a calculated time to graduation of less than a year, and thus the average time to graduation will never be less than a year.

The average time to graduation for each educational qualification was calculated as the weighted average of individual student times to graduation for all students who graduated within a specified period of observation.

In mathematical terms,

$$\textbf{\textit{Average time to graduation}} = \sum_{i=1}^{l} n_i t_i \Big/ \sum_i n_i$$

where n_i is the number of students completing their educational qualification in number of years t_i and l is the total number of years of data selected for observation. In other words, each possible number of academic years taken to graduation (during the period of observation) was weighted by the proportion of the graduates who completed the educational qualification in that amount of time. By extension, students who did not complete the educational qualification within the period of observation were excluded from the average time to graduation calculation.

For example, if ten students first entered an undergraduate degree program in the fall of the 2010/2011 academic year, and if four of them graduated from their qualification by the end of year three, while another four students

10. Some first bachelor's programs may be 3 or 5 years in length. Some undergraduate degree programs can be entered only with previous postsecondary education and may have other lengths. Additionally, some degrees such as Bachelor of Education programs are 1 or 2 years in length and may be included with undergraduate degrees by some institutions, but included with post-baccalaureate non graduate degrees (not included in this current analysis) by other institutions.
11. PSIS collects both a program end date and a graduation date. The graduation date was found to be more consistently reported by respondents and was thus used for the development of these indicators. Some institutions base the graduation date on the completion of the qualification requirements (like program end date), while others base it on the graduation ceremony or distribution of the paper conferring the credential.
12. This mirrors what some universities do when students who complete their qualifications in the fall after a certain date, do not actually graduate (receive the credential) until the following spring.
13. GradYear is defined as the year the student received the degree, diploma or certificate for completing the program, however institutions may interpret this in different ways. It represents either the date the requirements were fulfilled or the date of convocation.
14. This is because gaps in the PSIS data do not allow the use of program start and end months, and the program duration can best be captured in full years rather than months.

graduated by the end of the year four, the average time to graduation is [(4x3+4x4)/8] = 3.5 years for these eight undergraduate students. In this case, the four year period between the 2010 entry and the fall 2014/2015 (four years after entry) is the period of observation. The remaining two students may have left before graduating or may graduate later, but if even they do, they are excluded from this calculation.[15]

The average time to graduation in this analysis is calculated over a single period of observation equal to 1.5 or 2 times typical program duration for each educational qualification (for details, see Appendix 1). Insufficient length of data series does not currently allow calculation of average time to graduation for doctoral degree programs.

4.3 Types of analysis

Various types of analysis can be done according to the way new entrants are followed in each cohort, and depending on which variables are held constant when identifying persistence and graduation. The following list defines each type of analysis done for the data tables:

1) 'Within Canada'– The students were followed over time to see whether they persisted and/or graduated with the same type of educational qualification as the one they started at entry (e.g. undergraduate degree) anywhere in Canada, even if they switched province/territory, institution or field of study.

2) 'Changes in educational qualification' - persistence/graduation in an educational qualification other than the one started at entry (no detail by new qualification), within Canada – to complement the analysis within an educational qualification, the proportion of students who left the qualification of first entry but continued to pursue another qualification and/or graduated in another program of study leading to a different educational qualification, was also included. These indicators are provided where sufficient years of data were available.[16]

3) 'Changes in field of study grouping (STEM or BHASE)' - change from STEM to BHASE[17] and vice versa – to complement the analysis within a field of study, the proportion of students who left the field of study of first entry, but continued to pursue their qualification and/or graduate in another field of study with the same type of qualification, was also included. These indicators are provided where sufficient years of data were available.[18,19]

4) 'Within province or territory'– The student was followed over time to see whether they persisted and graduated with the same type of qualification as the one of first entry within the same province or grouped territories (even if they switched institution or field of study). For this level of analysis, a student who enrolled in the same educational qualification in the same year in more than one province or territory was counted in each of them.

5) 'Changes in educational qualification within the same province or territory'- persistence/graduation in an educational qualification other than the one started at entry (no detail by new qualification), within the province or territory of first enrolment – to complement the analysis within an educational qualification, the proportion of students who left the qualification of first entry, but continued to pursue another qualification and/or graduated with another program of study leading to a different educational qualification in the same province, was included. These indicators are provided where sufficient years of data were available.'[20]

6) 'Within province or territory and field of study grouping (STEM or BHASE)' - The student was followed over time to see whether they persisted and graduated with the same type of qualification and same field of study grouping (STEM or BHASE) as the one of first entry, as well as in the same province or grouped territories. At this level of analysis, students who enrolled in the same educational qualification in the same year in more than one province or territory and/or more than one field of study grouping were counted in each of them.

15. Although average time to graduation calculated in this way is expressed with decimal points to allow relative comparisons between the different population sub-groups, the decimal points should not be interpreted as actual months.
16. In some cases, the proportions and the original number of students are so small that these indicators must be treated with caution.
17. For more information, see 'Classification of Instructional Programs (CIP) 2016 Variant, STEM and BHASE groupings'.
18. In some cases, the proportions and the original number of students are so small that these indicators must be treated with caution.
19. To measure change in field of study grouping, the persistence and graduation indicators were calculated excluding any student enrolled in a STEM program and a BHASE program of the same educational qualification type in the same entry year.
20. In some cases, the proportions and the original number of students are so small that these indicators must be treated with caution.

7) 'Changes in field of study grouping (STEM or BHASE) within the same province or territory' - change from STEM to BHASE and vice versa – to complement the field of study analysis, the proportion of students who left the field of study of first entry, but continued to pursue their qualification and/or graduated in another field of study with the same type of qualification, was included. These indicators are provided where sufficient years of data were available.[21]

A few additional decisions were applied in the analysis above and should be mentioned. The first decision concerns the treatment of multiple records. The PSIS data can contain more than one record per student in a given year, if for example they were enrolled in more than one educational qualification or at more than one institution. For each type of analysis above, the rules on what is held to be the same (e.g. graduation within the same educational qualification and/or within the same province or territory) determined how the multiple records were dealt with. This means that results differ somewhat according to each type of analysis above and they are not strictly comparable due to how students with multiple records are treated.

Secondly, the small proportion of students who pursued or graduated with their qualification outside the province or territory of first enrolment were not counted as persistent or as graduates in the original province or territory.[22]

21. In some cases, the proportions and the original number of students are so small that these indicators must be treated with caution.
22. Across the five educational qualifications and all provinces or territories, the highest proportion of students who pursued or graduated with their qualification in a different province or territory was for undergraduate degree students at 6%. For most other educational qualifications and provinces and territories, the proportion was 2% or less.

5. Quality analysis

Data records for any fully imputed institutions cannot be linked longitudinally, thus any institution with data gaps during the follow-up period were excluded from this analysis (see 5.1 Data gaps below).

The number of students in each entry cohort should not be compared over time for the career, technical or professional training qualifications since the institutions included in the analysis may vary from one cohort to the next.

For most degree qualifications, the first entry cohort for which indicators are available is the 2011/2012 academic year. Indicators are also available for the 2010/2011 cohort of students aged 15 to 19 years old in educational qualifications of undergraduate degree; career, technical or professional training certificate; and career, technical or professional training diploma. The availability of data for college-level[23] entry cohorts varies by province or territory as outlined below.

5.1 Data gaps

PSIS data exhibit some institution-level non-response for some years with the newer years generally being more complete. These gaps are mostly concentrated by province or territory and by type of institution. These gaps are imputed, and fully imputed records were excluded from this analysis. The gaps thus affect which entry cohorts and educational qualifications were included in the tables for each province or territory. Improvements to response and linkage rates for these institutions are ongoing and time will yield more complete years of longitudinal data.

Canada

The Canada-level indicators data were subject to the gaps and limitations for the individual provinces or territories. For the college qualifications in particular, there were data gaps for several provinces or territories and academic years. These gaps are listed below by province or territory.

In particular, the indicators for the college-level certificate and college-level diploma qualifications may not be comparable across entry cohorts because data for some institutions were not available or had quality limitations in selected years.

New Brunswick

For the college-level certificates and college diplomas, the first entry cohort analysed was 2012/2013 for students 15 to 19 years old and 2013/2014 for students 20 years old and over.

Quebec

Quebec does not offer educational qualifications that are classified with the college-level certificate programs in PSIS. Instead they offer attestation programs at this level. The attestation programs were not included in this study due to the low counts in most other provinces or territories.

Similarly, the pre-university diploma students from CÉGEPs were not included in the analysis since they are not classified with the other college-level diplomas, and are thus not included in the five educational qualifications selected from PSIS for the study.

As a result of data limitations, two small Quebec colleges were removed from the 2009/2010 to 2016/2017 academic longitudinal file.

23. Career, technical and professional training certificates and career, technical and professional training diplomas are referred to here as college-level certificates and college-level diplomas for simplicity, although some may be offered at universities.

Ontario

As a result of limited data availability, the Ontario college data could not be used for all years from the 2009/2010 up to 2016/2017 academic years (inclusive). This gap has an impact on national-level indicators for college-level certificates and diplomas, as well as undergraduate degrees.[24] It also affects the records of students who begin a college-level qualification outside of Ontario and then complete it within Ontario. Statistics Canada is working toward obtaining missing data so that the Ontario colleges may be included in future releases.

Manitoba

For the college-level certificates and college diplomas, the first entry cohort analysed was 2012/2013 for students 15 to 19 years old and 2013/2014 for students 20 years old and over. Additionally, two institutions were removed from the longitudinal analysis for all cohorts and educational qualifications due to data gaps.

The Territories

For the college-level certificates and college diplomas, the first entry cohort analysed was 2013/2014 for students 15 to 19 years old and 2014/2015 for students 20 years old and over.

5.2 Confidentiality and rounding

All data are subject to the confidentiality procedures of rounding and suppression.

5.3 Limitations

The following limitations for the data interpretation should be acknowledged.

- Administrative data, like survey data, are not free of errors and inconsistencies: There may be differences in the way in which some institutions report different variables or program records for PSIS. For some variables, some institutions may provide best proxies rather than not respond at all. Recognized inconsistencies can sometimes be dealt with by adapting the indicator methodology.
- Incorrect linkages: There may be a possible bias or measurement errors to persistence and graduation indicators due to a small proportion of incorrect links between records and the presence of unlinked records caused by missing linkage information.

24. There is ongoing work at Statistics Canada to quantify the proportion of undergraduate degrees that are completed at colleges in Canada, which will be available for context in future years.

Appendix A Table summary and list of tables

Summary of cohorts, indicators and time points used in current tables for each educational qualification:

Table Summary

	Career, technical and professional training certificate	Career, technical and professional training diploma	Undergraduate degree	Master's degree	Doctoral degree
New entrant cohorts (indicators shown where data is available)	2010/2011 to 2015/2016	2010/2011 to 2013/2014	2010/2011 to 2015/2016	2011/2012 to 2014/2015	2011/2012 to 2015/2016
Persistence rate measured in the Fall:	n/a	n/a	1 and 2 years after entry	n/a	1 and 2 years after entry
Graduation rate measured at the end of the calendar year:	1 and 3 years after entry	3 and 4 years after entry	4 and 6 years after entry	2 and 4 years after entry	5 years after entry
Average time to graduation measured over the following period of observation:	3 years after entry	4 years after entry	6 years after entry	4 years after entry	n/a
Changes in educational qualification or field of study	**Persistence rates** in different educational qualification or a different field of study are measured for the first year after entry for undergraduate and doctoral degree students. **Graduation rates** in different educational qualification or a different field of study are measured in the the last year for each educational qualification (i.e., 3 years for college certificates, 4 years for college diplomas, 6 years for undergraduate degrees, 4 years for master's degrees, and 5 years for doctoral degrees).				

Source: Statistics Canada.

List of tables

The following tables of indicators are available for each province or territory where data permits:

1. Table 37-10-0136: Persistence and graduation of postsecondary students, within Canada, by student characteristics, new entrants of 2010/2011 to 2015/2016

2. Table 37-10-0138: Proportion of postsecondary students who started in an educational qualification and persisted in or graduated with a different educational qualification, within Canada, by student characteristics, new entrants of 2010/2011 to 2015/2016

3. Table 37-10-0139: Persistence and graduation of postsecondary students in a STEM/ BHASE (non-STEM) grouping other than that of first enrolment, within Canada, by student characteristics and educational qualification, new entrants of 2010/2011 to 2015/2016

4. Table 37-10-0140: Persistence and graduation of postsecondary students, within the province or territory of first enrolment, by student characteristics, new entrants of 2010/2011 to 2015/2016

5. 37-10-0143: Proportion of postsecondary students who started in an educational qualification and persisted in or graduated with a different educational qualification, within the province or territory of first enrolment, by student characteristics, new entrants of 2010/2011 to 2015/2016

6. Table 37-10-0145: Persistence and graduation of postsecondary students, within the STEM/BHASE (non-STEM) grouping and province or territory of first enrolment, by student characteristics, new entrants of 2010/2011 to 2015/2016

7. Table 37-10-0146: Persistence and graduation of postsecondary students in a STEM/ BHASE (non-STEM) grouping other than that of first enrolment, within the province or territory of first enrolment, by student characteristics and educational qualification, new entrants of 2010/2011 to 2015/2016

Appendix B: Glossary of Terms

BHASE: field of study grouping (CIP 2016 variant) that includes the Business and administration, Arts and humanities, Social and behavioural sciences, Legal professions and studies, Health care, Education and teaching, and Trades, services, natural resources and conservation sub-groupings.

Credential type: The type of formal qualification awarded for successful completion of a program, (e.g. degree, diploma or certificate). This definition excludes certificates of attendance.

Educational qualification: This variable classifies the kind of formal qualification a student obtained or pursued (e.g., undergraduate degree, master's certificate) according to the 'Classification of programs and credentials' which essentially combines the two PSIS variables of program type (e.g., undergraduate program, master's program) and credential type (e.g., degree, diploma or certificate) and also creates a separate category for professional degree. Some combinations were renamed for easier identification by data users (e.g., master's degree, and doctoral degree).

Formal qualification: a qualification that is recognized by an official body such as ministries of education, boards of governors or other ministry appointed bodies, federal departments or ministries, industry associations or sectors, apprenticeship and trades commissions, regulatory bodies or licensing agreements.

Field of study and Classification of Instructional Programs (CIP) 2016: The CIP is used to classify the main field of study of postsecondary programs at four standardized levels of aggregation (classes, sub-series, series and 13 Primary Groupings). The 'Variant of CIP 2016 – Alternative primary groupings' is used in the release tables and is the most aggregated of these. CIP is most useful for analysis when combined with information on educational qualification.

Program type: A classification of programs that is based on a combination of factors such as the general purpose of the program; the type of instruction offered in terms of educational content; and the expected outcome of the program (e.g. career, technical or professional training program; undergraduate program; graduate program).

STEM: field of study grouping (CIP 2016 variant) that includes the Science and science technology, Engineering and engineering technology, and Mathematics and computer and information sciences sub-groupings.

Student Status in Canada: Student status in Canada is defined at the end of the winter term, during the year of enrolment. 'Canadian students' include Canadian citizens and permanent residents. 'International students' include students studying in Canada on student visas, non-Canadian students in Canada on other types of visas, non-Canadians whose status is unknown, and students studying from outside Canada (e.g., by Internet).