

EDUCATION PATHWAYS OF HIGH SCHOOL GRADUATES AND NON- GRADUATES

A Longitudinal Study from the
Student Transitions Project

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Executive Summary

About this Research

This report provides key research findings from a recent analysis of 51,831 students who first entered grade 8 in the B.C. K-12 education system in academic year 2004/2005. These students who entered B.C. public and independent schools were tracked over a period of ten years, to the end of the Fall 2014 term. The numerous and diverse education pathways of these students were followed from grade 8 entry, to grade 12 graduation or non-graduation, to post-secondary entry and finally to credential completion. This study was conducted by the Student Transitions Project (STP), a collaborative research partnership involving B.C.'s education and advanced education ministries and post-secondary institutions.

The study addresses a number of research questions about the different routes students may take beyond initial entry to grade 8. Some students ultimately achieved their grade 12 graduation and subsequently enrolled in post-secondary education where they earned a credential. Other students did not achieve their grade 12 graduation, but did successfully enroll in B.C. public post-secondary institutions where many also earned a post-secondary credential. Numerous other education routes were possible for these students. This report describes their diverse range of education achievements along a multitude of pathways over varying lengths of time, with specific comparisons between grade 12 graduates and non-graduates, as well as Aboriginal and non-Aboriginal students.

Who are the 2004/2005 grade 8 entrants in this study?

This study includes 51,831 students who first enrolled in the B.C. K-12 education system (in public and independent schools) in academic year 2004/2005 – primarily in September 2004. Recent enhancements to the Student Transitions Project database in Fall 2014 have made this research possible. The STP database now includes education information on students who first entered the B.C. K-12 system as early as grade 8 and ultimately tracks high school graduates and non-graduates into B.C. public post-secondary education.

Both domestic and international students are included; students without a Personal Education Number (PEN) are excluded.

Where can I find more detailed information?

More detailed information at the institution and program level is available to authorized users at post-secondary institutions.

This report was prepared by Joanne Heslop, Manager, Student Transitions Project. The report is available on the public Student Transitions Project web site at: http://www.aved.gov.bc.ca/student_transitions

About the Student Transitions Project

The Student Transitions Project is British Columbia's collaborative research project that measures student success from the K-12 to post-secondary systems. This effective system-wide partnership, involving B.C.'s education and advanced education ministries and public post-secondary institutions, is tracking student success by reporting on student transition rates to post-secondary education, student mobility among post-secondary institutions, and post-secondary completion and retention rates. STP is managed by a steering committee with representation from the two education ministries, public institutions and the B.C. Council on Admissions and Transfer (BCCAT).

STP Steering Committee

Members:

Robert Adamoski, STP Steering Committee Chair, Associate Director, BCCAT.

Brian Beacham, Director, Institutional Research, Vancouver Community College.

Tony Eder, Director, Institutional Planning and Analysis, University of Victoria.

Claire Miller, Director, Knowledge Management Branch, Ministry of Education.

Jacqui Stewart, Executive Director, Post-Secondary Audit and Accountability, Ministry of Advanced Education

Quick Facts

What proportion of the 2004/2005 grade 8 entry cohort graduated from grade 12 by 2013/2014? A total of 41,180 students (79.5%) of the grade 8 entry cohort graduated from grade 12 by Fall 2014 (within ten years of entering grade 8). The proportion who graduated was higher for females than males (82.2% vs 76.9%) and higher for non-Aboriginal than Aboriginal students (82.8% versus 54.8%). [\[Page 14\]](#)

What was the highest grade level achieved in high school? The vast majority of the grade 8 entry cohort (89.5%) reached grade 12 by Fall 2014, but not all who enrolled in grade 12 completed that grade level. Among the 20.5% of the grade 8 cohort who have not yet graduated, roughly half reached grade 12 and the remaining non-graduates reached grade 11 or lower grade levels. Of those who reached grade 12, 10% have not yet graduated, including 9% of Aboriginal and 28% of non-Aboriginal grade 12 registrants. [\[Page 16\]](#)

Did grade 12 graduates have higher rates of entry into B.C. public post-secondary education than non-graduates? Roughly two-thirds of the full cohort (67.0%) entered B.C. public post-secondary education by Fall 2014, within ten years of starting grade 8. A higher proportion of grade 12 graduates (76.3%) enrolled in post-secondary than non-graduates (30.9%). Non-Aboriginal students enrolled in post-secondary education at higher rates than Aboriginal students (68.3% versus 56.9%). [\[Page 18\]](#)

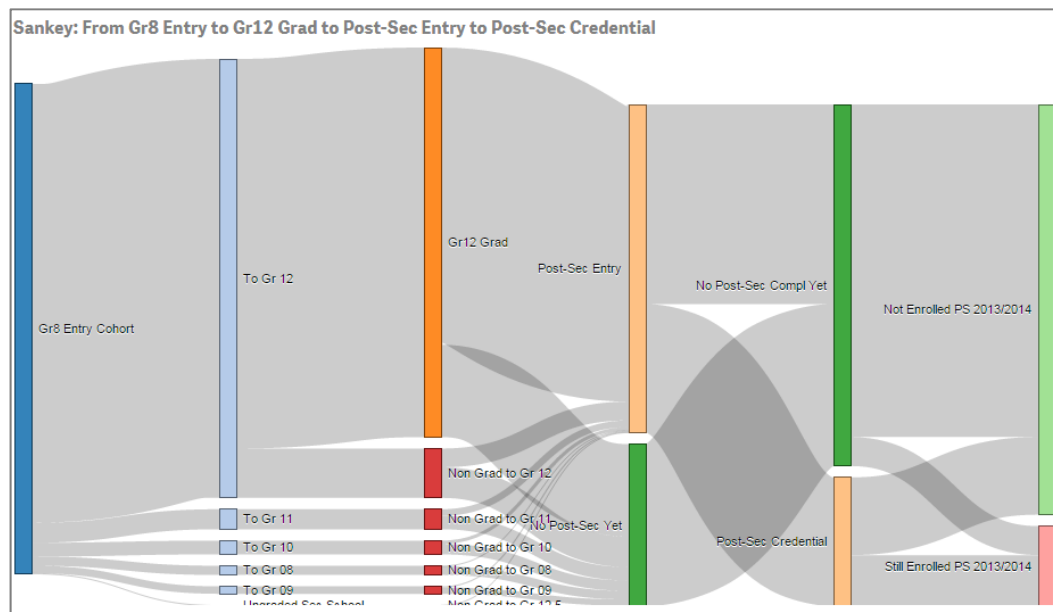
Do students persist or leave after their first entry into post-secondary education? If they persist, how soon do they re-enroll? A significant proportion (90%) of the 34,704 who enrolled in a post-secondary registration term returned for at *least* one more registration term in any subsequent time period, by Fall 2014. A greater proportion of grade 12 graduates than non-graduates (91.5% vs 72.6%) returned for at least a second term. Grade 12 graduates (82.6%) were also more likely to return for a third term than non-graduates (52.1%). [\[Page 19\]](#)

What proportion of the grade 8 entry cohort of 2004/2005 completed a post-secondary credential by Fall 2014? Just over one-quarter of the full cohort (26.3%) earned a post-secondary credential within ten years of entering grade 8. This represents 39.2% of the 34,704 students who enrolled in post-secondary education. By estimating from an earlier entry cohort, it is expected that more than half of this grade 8 cohort will have achieved a post-secondary credential over the next three years. Roughly twice the proportion of post-secondary entrants with grade 12 graduation completed a post-secondary credential (41.4%) than non-graduates (18.0%). Similarly, about twice the proportion of non-Aboriginal students earned a post-secondary credential, as compared to Aboriginal students (27.9% versus 14.2%). [\[Page 20\]](#)

Is it possible to earn a post-secondary credential without grade 12 graduation? Among non-graduates from the grade 8 entry cohort, 30.9% entered post-secondary education and 5.6% completed a credential. This implies the credential completion rate of non-graduate post-secondary entrants was 18.1%. [Page 21]

What was the highest level of education achieved by grade 8 entrants of 2004/2005, by Fall 2014? By Fall 2014, the distribution of the grade 8 entry cohort by their *highest* education achieved by was: some high school (14.2%), grade 12 graduation (18.8%), some post-secondary education (40.7%) and post-secondary credential (26.3%). The comparable figures for Aboriginal students are 26.6%, 16.5%, 42.7% and 14.2% respectively. [Page 22]

FIGURE A: SANKEY DIAGRAM OF STUDENT FLOWS THROUGH SIGNIFICANT EDUCATION EVENTS



How do students flow from grade 8 entry, to grade 12 graduation, to post-secondary education and credential completion? The Sankey diagram (see Figure A) provides a visual perspective of student flows: 89.5% reached grade 12; then 79.5% of grade 12 graduates and 30.9% of non-graduates enrolled in post-secondary education; 39.2% of the full cohort achieved a post-secondary credential; 18% are still enrolled in the post-secondary system. [Page 23]

How similar or different are the ten-year student retention funnels for grade 12 graduates and non-graduates? Grade 12 graduates have a wider funnel throughout high school and post-secondary education than non-graduates, thus indicating that a greater proportion of grade 12 graduates are retained in B.C.'s education systems than non-graduates. [Page 24]

Among grade 12 graduates, how long did it take to graduate? On average, it took 5.1 years to progress from grade 8 entry to grade 12 graduation. Grade 12 completion was faster for students with higher iGPA scores. The average elapsed time for Aboriginal students to graduate from grade 12 was slightly longer at 5.4 years. [Page 25]

What proportion of the cohort graduated within five years of entering grade 8? Are these rates improving over time? The fixed five-year graduation rate (72.3%) is derived from the number of students who completed grade 12 in five years or less, expressed as a proportion of the fixed total 2004/2005 grade 8 entry cohort. No adjustments to the calculation are made for students who may have graduated in other jurisdictions, thus potentially under-reporting the graduation success rate of the cohort. The fixed five-year graduation rate was lower for Aboriginal students (41.3%) than non-Aboriginal students (76.5%). Fixed five-year graduation rates have been gradually increasing over time. [Page 26]

What are the high school academic performance (iGPA scores) of the 2004/2005 grade 8 entry cohort? Based on a maximum of twelve high school courses required for grade 12 graduation, the grade 8 entry cohort achieved an average iGPA score of 75.2, or 76.3 for graduates and 66.7 for non-graduates. [Page 27]

Does academic performance in high school (iGPA) influence the fixed five-year graduation rate? There is evidence of a positive relationship between iGPA scores and the fixed five-year graduation rate – as iGPA scores increased, students were more likely to graduate from grade 12 in five years or less. [Page 29]

How do average grades achieved in selected high school courses compare between high school graduates and non-graduates? In each subject area, non-graduates achieved lower grades and completed fewer courses than grade 12 graduates. [Page 30]

In each of the high school subject areas embedded in the iGPA scores, what is the distribution of course grades?

There is some variation in the distribution of grades across the twelve different subject areas included in the iGPA. The academic subjects show proportionately more B grades (in Language Arts, Math, Science and Social Studies) than the non-academic subject areas which show proportionately more A grades (Fine Arts/Applied Skills, Planning 10 and PE 10). All but 3% of grade 12 graduates completed the requirements for Languages Arts 12 and received a grade in the course, but a significant proportion (87%) of non-graduates did not complete Language Arts 12. [Page 31]

Are students who completed English 12 more likely to enroll in post-secondary education than students who completed Communications 12? Students who completed English 12 achieved higher academic outcomes in secondary school than those who completed Communications 12. They also had higher transition rates into B.C. public post-secondary education (79.3% vs 52.7%) and higher post-secondary credential completion rates (33.6% vs 17.3%). [Page 32]

Did students first enter post-secondary education before, after or without grade 12 graduation? Of the 34,704 students from the 8 entry cohort who enrolled in post-secondary education, 16.1% first enrolled in post-secondary education before they graduated from grade 12, 74.4% enrolled after grade 12 graduation and 9.5% enrolled in post-secondary without any subsequent grade 12 graduation known to the STP, by Fall 2014. [Page 33]

What factors might affect the types of post-secondary institutions high school graduates and non-graduates first enroll in? Among the 34,704 students who enrolled in B.C. public post-secondary education by Fall 2014, 40% first enrolled in B.C. colleges, 29% in teaching-intensive universities, 24% in research-intensive universities and 7% in institutes. Some factors that affect student destinations are grade 12 graduation status, number of years to graduate and length of time between grade 12 graduation and post-secondary entry. [Page 34]

Which post-secondary institutions did high school graduates and non-graduates first enroll in? Details of the 25 post-secondary institution destinations are provided in this report. Many of the Colleges in Northern B.C. were more common destinations for non-graduates than graduates. [Page 35]

Do high school graduates and non-graduates enroll in different post-secondary programs? Three program areas were more common among grade 12 non-graduates, than graduates: Trades, Developmental and Personal Improvement and Leisure. Collectively these three program areas attracted 73.9% of all non-graduates and 80.6% of all Aboriginal non-graduates. Arts and Sciences programs were the primary destination for nearly half (44.8%) of all grade 12 graduates, but only 9.7% of non-graduates. [Page 36]

Do high school graduates and non-graduates enroll in different post-secondary credentials after leaving high school? Of all 34,704 students from the cohort who enrolled in post-secondary education, the most popular credential of first entry was a Bachelor's degree and this was dominated by grade 12 graduates. High school non-graduates were likely to enroll in other lower-level credentials, such as upgrading or developmental credentials. [Page 37]

Among post-secondary credential completers, did high school graduates and non-graduates complete different credentials? The majority of credential completers from the grade 8 cohort with grade 12 graduation completed a Bachelor's degree (17%), followed by certificate (14%) and diplomas (7%). By comparison, non-graduates were more likely to earn certificates (10%) and developmental credentials (5%). [Page 38]

How do the students flow through different levels of post-secondary education towards credential completion? A Sankey diagram is provided in the report to show how students may enter the B.C. public post-secondary education system either via a continuing education program, developmental or traditional academic post-secondary program. Each of these different entryways offer students different education pathways they may take to earn post-secondary credential(s). [Page 39]



When do students flow from grade 8 entry, to grade 12 graduation, to post-secondary education and credential completion? Another Sankey diagram shows that the majority of students graduated from grade 12 in 2008/2009, subsequently enrolling in post-secondary education in 2009/10 and 2010/11. The majority of the cohort is no longer enrolled by Fall 2014. [Page 40]

Introduction

Overview

This report highlights key research findings from a recent analysis of 2004/2005 entrants to grade 8 in B.C.'s K-12 education system. These students entered B.C. public and independent schools and were tracked over a period of ten years, to the end of the Fall 2014 term. The numerous and diverse education pathways of these students were followed from grade 8 entry, to grade 12 graduation or non-graduation, to post-secondary entry and finally to credential completion. The study was conducted by the Student Transitions Project (STP), a collaborative research partnership involving B.C.'s education and advanced education ministries and post-secondary institutions.

Previous research on students without B.C. grade 12 graduation, but with some record of attendance in the B.C. K-12 system and subsequent enrollment in the B.C. public post-secondary education system, was conducted by former members of the STP Steering Committee, Patty Beatty-Guenter and Bob Cowin. Their research, conducted in March of 2013, was constrained by limitations of the STP data set in that they were unable to conduct a cohort study nor quantify and compare the post-secondary attendance/non-attendance rates of grade 12 graduates to non-graduates. Their study focused exclusively on the post-secondary education outcomes of a sub-population of B.C. public post-secondary registrants - those who had no previous record of grade 12 graduation.

In this study, the STP tracks a cohort of students who entered high school in 2004/2005 and addresses a number of research questions about the different routes these students take beyond initial entry to grade 8. Some students ultimately achieved their grade 12 graduation and subsequently enrolled in post-secondary education where they earned a credential. Other students did not achieve their grade 12 graduation, but did successfully enroll in post-secondary education where many also earned a post-secondary credential. Numerous other education routes were possible for these students and this report describes their diverse range of education achievements along a multitude of pathways over varying lengths of time. Unlike the earlier study in 2013, this cohort study allows us to calculate grade 12 graduation rates, student transition rates into B.C. public post-secondary education, and post-secondary credential completion rates of the grade 8 entry cohort. Comparisons of education outcomes between grade 12 graduates and non-graduates will be provided throughout this report. For clarity on terminology and definitions, please refer to the [Glossary](#) at the end of this report.

Literature Review

Numerous research studies show that B.C. and other Canadian high school and post-secondary students achieve relatively high graduation/completion rates, when compared to other jurisdictions. There are many advantages to students who complete their education, but research also shows that a proportion of high school non-graduates return to their education to increase their opportunities for success.

According to *How Canada Performs*¹, a 2015 report by the Conference Board of Canada, British Columbia (along with Ontario and Alberta) earns a “B” on the Education and Skills report card. A number of recent indicators, derived from various sources between 2011 and 2013, are provided in this report for Canada’s age 25 to 64 population:

- B.C.’s high school attainment rate at 91.4% is the highest of all Canadian provinces and higher than other peer countries around the world. This is the proportion of the age 25-65 population with at least a high school diploma.
- B.C.’s college attainment rate is 22%. Although lower than the average for Canada overall (24.6%), B.C.’s college attainment rate still ranks higher than each of Canada’s peer countries.
- B.C.’s university attainment rate (29.1%) is almost as high as Ontario (30.1%) and other world-wide leaders, Norway (35.8%) and U.S.A. (32.2%).
- In every Canadian province, women comprise a larger share of the population with tertiary education, than their actual share in the population would suggest. “A growing *boy gap* in education can be seen across Canada and many OECD countries, with the problem beginning long before students reach university or college age”. Furthermore, “boys, as a group, rank behind girls by nearly every measure of scholastic achievement”.
- Individuals with a college education have an income advantage over those with a high-school education only and this advantage is greater in Newfoundland and Labrador than other provinces. University graduates also have an income advantage over high school graduates, but this varies by province with B.C. reporting the smallest income advantage.

According to Statistics Canada’s 2010 report, *Interrupting High School and Returning to Education*², not completing high school represents a great loss to society and the individual, but numerous second-chance opportunities exist for students to complete high school and progress to post-secondary education at older ages.

- 17% of young adults, who were followed in the Youth in Transition Survey (YITS) between 1999 and 2007, had interrupted or left their high school education at some point before the age of 18 to 20. By the ages of 26 to 28, 11% of the YITS cohort had returned to education and completed high school or entered post-secondary education; only 6% had not graduated from high school and had no further education.
- High school leavers may return to education along various pathways. Of all of those who left high school, what was their education status by age 26 to 28? About 55% graduated from high school, of which 34% subsequently enrolled in post-secondary education; 43% did not graduate from high school, although 9% of these non-graduates subsequently enrolled in post-secondary education; 2% were attending school.

¹ How Canada Performs, <http://www.conferenceboard.ca/hcp/default.aspx>. Each of the attainment rates are derived from the proportion of the age 25-64 population with at least a high school diploma, college diploma or university degree.

² Interrupting High School and Returning to Education, <http://www.cmec.ca/Publications/Lists/Publications/Attachments/224/81-599-x2010005-eng.pdf>.

The STP research results summarized here produced results consistent with the above findings³:

- The majority (72%) of students who first enrolled in grade 8 in 2004/2005 completed high school within five years, or by the time they were age 16-17, but given more time, we find that 77% of these students graduated within six years, 78% within seven, 79% within eight and nearly 80% within ten years (by the end of academic year 2013/2014).
- The *boy gap* is also evident in B.C., although it is quite narrow. Boys have a lower fixed five-year grade 12 graduation rate (69%) than girls (75%). Males, compared to females, also have lower post-secondary participation rates after roughly 10 years⁴ since entering grade 8 (66% vs 69%) and lower post-secondary credential completion rates by Fall 2014 (25% vs 28%). The post-secondary credential completion rate gap between males and females will likely narrow over time as a slightly greater proportion of males were still attending post-secondary education in Fall 2014 (6.3% vs 5.5%).
- Of those who graduated from grade 12, 76% pursued post-secondary education and 32% completed a post-secondary credential by Fall 2014, about ten years since first entering grade 8. By comparison, of those students who had not graduated from grade 12 by the end of 2013/2014, 31% had attended a B.C. public post-secondary institution and nearly 6% had completed a post-secondary credential by 2013/2014.
- Of those who entered post-secondary education in the B.C. public post-secondary system, nearly 15% were still enrolled in B.C. public post-secondary education in Fall 2014 without a post-secondary credential yet. Post-secondary education seekers who had not achieved grade 12 graduation were still enrolled in post-secondary studies in Fall 2014 at higher rates (17%) than grade 12 graduates (15%).

³ Direct comparisons of summary statistics derived from different data sources are always challenging. Education achievements by 2014/2015 reported from the STP are derived from the cohort of young students who entered grade 8 in 2004/2005, whereas the Conference Board attainment rates reported on the previous page are derived from the broader B.C. population aged 25-64.

⁴ Post-secondary participation for the 2004/2005 grade 8 entry cohort was measured up Fall 2014, or nearly 10 years after first entering grade 8.

Which students are included in this study?

This study includes 51,831 students who first enrolled in the B.C. K-12 education system (in public and independent schools) in academic year 2004/2005 – primarily in September 2004. The following categories of students were included:

- Any student with a Personal Education Number in the STP table, COMPLETION_RATE_COHORT, with a cohort start year of '2004/2005' and a cohort entry grade of grade 8.
- Both domestic and international students are included in this study.
- In some cases in this report, grade 8 entry cohorts from other years will be examined and reported for comparison purposes and trend analyses.
- Students in this study are tracked through their various education pathways in the BC K-12 and the BC public post-secondary education systems. Students may leave B.C.'s education system(s) at any time throughout the study period, but their volume and possible education achievements elsewhere cannot be quantified or reported here.
- Some students might graduate from grade 12 more than ten years after entering grade 8 (after the end of the 2013/2014 academic year), but this study does not include K-12 data beyond that date. The post-secondary education pathways of all students in this study, including those who did not complete grade 12, are tracked until the end of Fall 2014.

Which students are excluded from this study?

The number of students excluded from this study is minimal.

- To ensure the most accurate tracking of student pathways throughout the B.C. public post-secondary system via STP data, students without a Personal Education Number (PEN) are excluded from this study. Although each of the 51,831 students who entered grade 8 in the B.C. public post-secondary system had a PEN, some of these students may have enrolled in post-secondary institutions without providing a PEN.⁵
- To ensure consistency of education background and timeline expectations among cohort members, those students whose 2004/2005 cohort entry grade was higher than grade 8 are excluded from this study. In other words, students who entered the B.C. K-12 system in grade 9 or later, although deemed to have entered grade 8 in 2004/2005 in another jurisdiction, are excluded.

⁵ Roughly 7% of all distinct domestic post-secondary registrants in the B.C. public post-secondary system with enrollments between 2004/2005 and Fall 2014 and with birthdates in 1990 or 1991, did not have a PEN on their post-secondary enrollment record (6,424 / 92,249 = 7%). Many of these students without PENS in post-secondary are not likely to have been members of the 51,831 B.C. grade 8 entry cohort because PENS are normally assigned to post-secondary registrants through a separate and secure PENning process and linkage with K-12 records during the STP merge process. The unPENned post-secondary records are probably registrants from out-of-province.

What is the demographic profile of 2004/2005 grade 8 entrants to the B.C. K-12 education system?

A demographic summary of the group of 51,831 entrants to grade 8 in 2004/2005 is provided below, including a breakdown by gender, aboriginal status, international status and age.

- The grade 8 entrants of 2004/2005 consisted of slightly more males (51.5%) than females (48.5%). This is consistent with the current proportion of all males and females enrolled in grade 8 in 2014/2015 in B.C. public and independent schools (51.5% male and 48.5% female).⁶
- The proportion of Aboriginal students⁷ in this study was 11.8% and this is roughly consistent with the current proportion of 2014/2015 Aboriginal students enrolled in grade 8 in the B.C. K-12 system (11%⁶).
- The grade 8 entry cohort consisted mainly of students enrolled in B.C. public schools (92%), with just 8% of the cohort enrolled in B.C. independent schools. Currently, in 2014/2015, 12% of grade 8 students are enrolled in B.C. independent schools, up from 10% five years ago.
- The average age of the 2004/2005 grade 8 entry cohort was 12.7 and the majority of these students (67%) were age 13; 29% were age 12; 2% were age 14. A relatively small number (39 students) were younger than age 12 when they entered grade 8.

⁶ https://www.bced.gov.bc.ca/reports/pdfs/student_stats/prov.pdf, January 2015, accessed October 21, 2015.

⁷ If the self-declared Aboriginal status obtained for a student from either education system (K-12 or post-secondary) indicated Aboriginal student status, then the student was deemed to be an Aboriginal student in this study. For approximately one third of the cohort (about 17,000 students) who did not attend the B.C. public post-secondary system, the Aboriginal status of the student was derived exclusively from their B.C. K-12 record.

Key Research Results

What proportion of the 2004/2005 grade 8 entry cohort graduated from grade 12 by 2013/2014?

Among the 51,831 students who first entered grade 8 in the B.C. K-12 education system in 2004/2005, a total of 41,180 or 79.5% graduated from grade 12 by 2013/2014 (within ten years of entering grade 8). This leaves 10,651 students (20.5%) who have not yet graduated from grade 12 (by the end of the 2013/2014 academic year). Throughout this report, the education achievements of the 41,180 grade 12 graduates will be compared to the 10,651 non-graduates.

The proportion of students who graduated from grade 12 was slightly higher among females (82.2%) than males (76.9%) and significantly higher among non-Aboriginal students (82.8%) than Aboriginal students (54.8%). A summary of the number and proportion of grade 12 graduates is provided in **Figure 1** below for selected demographic characteristics.

FIGURE 1: GR12 GRADUATION RATES BY DEMOGRAPHIC GROUP

Demographic Characteristic	# of Gr12 Graduates	% Graduated	# Students in Entry Cohort	% of Cohort
Entry Cohort Headcount	41,180	79.5%	51,831	100%
Female	20,644	82.2%	25,123	48.5%
Male	20,536	76.9%	26,708	51.5%
Aboriginal Students	3,355	54.8%	6,126	11.8%
Non-Aboriginal Students	37,825	82.8%	45,705	88.2%

- Compared to the cohort of all 2004/2005 grade 8 entrants, the sub-population of 41,180 **grade 12 graduates** includes proportionately more female students (50.1% vs 48.5%), non-Aboriginal students (91.9% vs 88.2%) and students from B.C. independent schools (8.6% vs. 7.9%).
- Conversely, the sub-population of 10,651 **non-graduates**, when compared to the full grade 8 entry cohort, contains a greater proportion of male students (57.9% vs 51.5%), Aboriginal students (26.0% vs 11.8%) and students from B.C. public schools (94.9% vs 92.1%).
- Of the 6,126 Aboriginal students in this study, representing 11.8% of the grade 8 entry cohort, nearly half (2,771 or 45.2%) did not graduate from grade 12. Non-graduation from grade 12 was a more common issue for male Aboriginal students (50.0%) than female Aboriginal students (40.5%).
- Among the 2,771 Aboriginal non-graduates from this cohort, nearly half (48%) or 1,331 students did successfully enroll in grade 12, but they did not earn their “Dogwood” certificate of graduation. Some of these students may have earned a School Completion or “Evergreen” Certificate.
- From the group of 6,126 Aboriginal students, a total of 5,686 reached grade 12 (including 3,366 who graduated with a “Dogwood” certificate and 1,331 who did not). From this information, the STP is able to estimate the number of students who

earned an “Evergreen” certificate. Based on available statistics⁸, roughly 4% of Aboriginal students who enroll in B.C. grade 12 earn an “Evergreen” certificate of completion. Therefore, roughly 227 of these Aboriginal students had likely earned an “Evergreen” certificate ($4\% \times 5,686 = 227$).

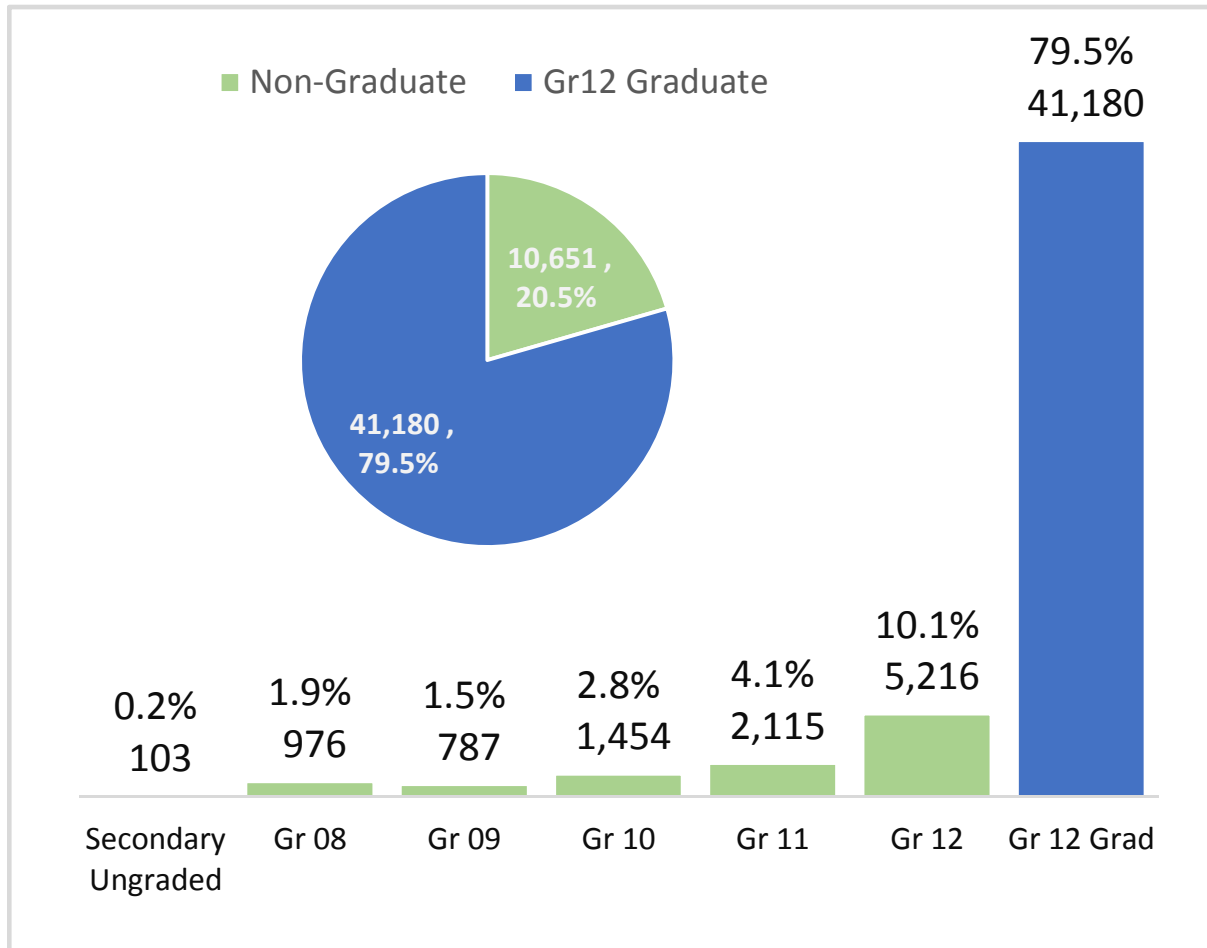
- Similarly, among non-Aboriginal students who reached grade 12, the same published statistics from the Ministry of Education indicate that 1% of non-Aboriginal students who reach grade 12 earned an “Evergreen” certificate, and this equates to 417 students ($1\% \times 41,710 = 417$).
- Based on the estimates derived above for Aboriginal and non-Aboriginal students combined, it is estimated that a total of 644 students in this study completed an “Evergreen” certificate. This represents about 1.4% of the total entry cohort of 51,831 students.

⁸ How Are We Doing? Aboriginal Performance Data, <https://www.bced.gov.bc.ca/abed/performance.htm>.

What was the highest grade level achieved in high school?

Roughly 90% of the cohort had enrolled in grade 12 by Fall 2014, but not all of these students graduated in that ten-year period. With a ten-year grade 12 graduation rate of 79.5% for the 2004/2005 grade 8 entry cohort, we see that the distribution of the non-graduates, representing 20.5% of the 51,831 students, generally increases with grade level. From the cohort of grade 8 entrants, only 1.9% went as far as grade 8, while incrementally larger shares of the cohort reached grades 9, 10 and 11. The largest group of non-graduates (10.1%) successfully reached grade 12, but they have not yet graduated from the B.C.'s secondary school system (see [Figure 2](#)).

FIGURE 2: DISTRIBUTION OF GRADE 8 ENTRY COHORT OF 2004/2005, BY HIGHEST GRADE ACHIEVED IN HIGH SCHOOL, BY FALL 2014



A comparison of highest grade level achievement between Aboriginal and non-Aboriginal students (by Fall 2014) is provided in [Figure 3](#). The chart shows that these two groups of students proceed to each successive grade in high school at different rate. The grade level achievement for Aboriginal students does not keep pace with non-Aboriginal students, especially beyond grade 10. As a result of their different rates of progress, 83% of non-Aboriginal students graduated from grade 12 by Fall 2014, compared to 55% of Aboriginal students.

The difference in graduation rates between these two groups can be partly explained by two factors:

- 1) These two groups did not reach grade 12 in equal proportions: 91% of the non-Aboriginal students reached grade 12, compared to 76% of Aboriginal students (including those who subsequently graduated). In other words, 9% of non-Aboriginal students did not make it beyond grade 11 (compared to 23% of Aboriginal students).
- 2) Among those students in the cohort who did reach grade 12 by Fall 2014, the two groups did not graduate from grade 12 at the same rate: 9% of non-Aboriginal grade 12 registrants have not yet graduated from grade 12 versus 28% of Aboriginal grade 12 registrants (as derived from the relative proportions of Gr12 Grads to Gr12 registrants in [Figure 3](#)).

FIGURE 3: HIGHEST GRADE ACHIEVED IN HIGH SCHOOL, ABORIGINAL VS. NON-ABORIGINAL STUDENTS

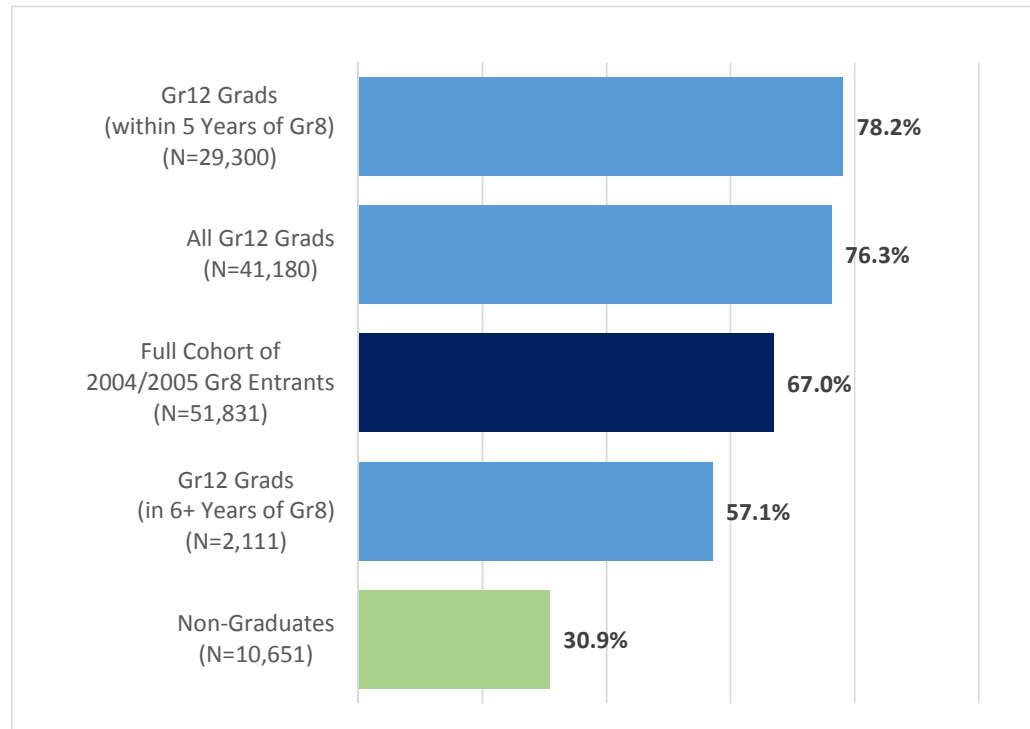


Did grade 12 graduates have higher rates of entry into B.C. public post-secondary education than non-graduates?

From the full cohort of 51,831 students who entered grade 8 in 2004/2005, roughly two-thirds (67.0%) entered B.C. public post-secondary education by Fall 2014 (within ten years from starting grade 8), but this varies by grade 12 graduation status and other factors (see [Figure 4](#)).

- Grade 12 graduates were more likely to enroll in B.C. public post-secondary education than non-graduates (76.3% versus 30.9%). Upon first entry into post-secondary education, nearly half of the non-graduates first enrolled in developmental programs (48.9%), compared to less than one-tenth of graduates (9.7%).
- The majority group of students who graduated from grade 12 within five-years of entering grade 8, had higher post-secondary entry rates than the smaller group of students who took longer than five years to graduate (78.2% versus 57.1%).
- Although male and female grade 12 graduates had similar post-secondary entry rates (76.3%), non-graduate males were less inclined to enroll in post-secondary education (29.7%) than non-graduate females (32.6%).
- Non-Aboriginal students enrolled in post-secondary education, within ten years of entering grade 8, at higher rates than Aboriginal students (68.3% versus 56.9%). About one-third (32.0%) of Aboriginal students first enrolled in developmental programs when they first entered post-secondary education, compared to 11.3% of non-Aboriginal post-secondary entrants.
- Among non-graduates, Aboriginal students had higher transition rates into post-secondary institutions than non-Aboriginal students (41.1% versus 27.3%); however, among grade 12 graduates, Aboriginal students have lower transition rates than non-Aboriginal students (69.9% versus 76.8%). This means that 12 graduation offers a smaller improvement in post-secondary transition rates to Aboriginal students (at 28.8 percentage points) than it does for non-Aboriginal students who see a 49.5 percentage point boost to transition rates due to grade 12 graduation.

FIGURE 4: % OF STUDENTS WHO ATTENDED B.C. PUBLIC POST-SECONDARY EDUCATION, BY FALL 2014



Do students persist or leave after their first entry into post-secondary education? If they persist, how soon do they re-enroll?

A total of 34,704 students from the grade 8 entry cohort enrolled in at least one term in B.C. public post-secondary education, after leaving or graduating from high school. Among these students, a significant proportion (90%) returned to the post-secondary system by Fall 2014, for at least one more term in the B.C. public post-secondary system.

- A greater proportion of grade 12 graduates (91.5%) returned to the B.C. public post-secondary system for at least a second term (by Fall 2014) than the proportion of non-graduates (72.6%) who returned. Grade 12 graduates (82.6%) were also more likely to return for a third term than non-graduates (52.1%). See [Figure 4](#).

Only 10% of post-secondary entrants did not re-register by Fall 2014. They registered for only one term of post-secondary education.

- A greater proportion of grade 12 non-graduates (27%), compared to grade 12 graduates (8%), left the post-secondary system after just one term.
- It is difficult to interpret the significance of these findings without more information about student educational objectives and program length.

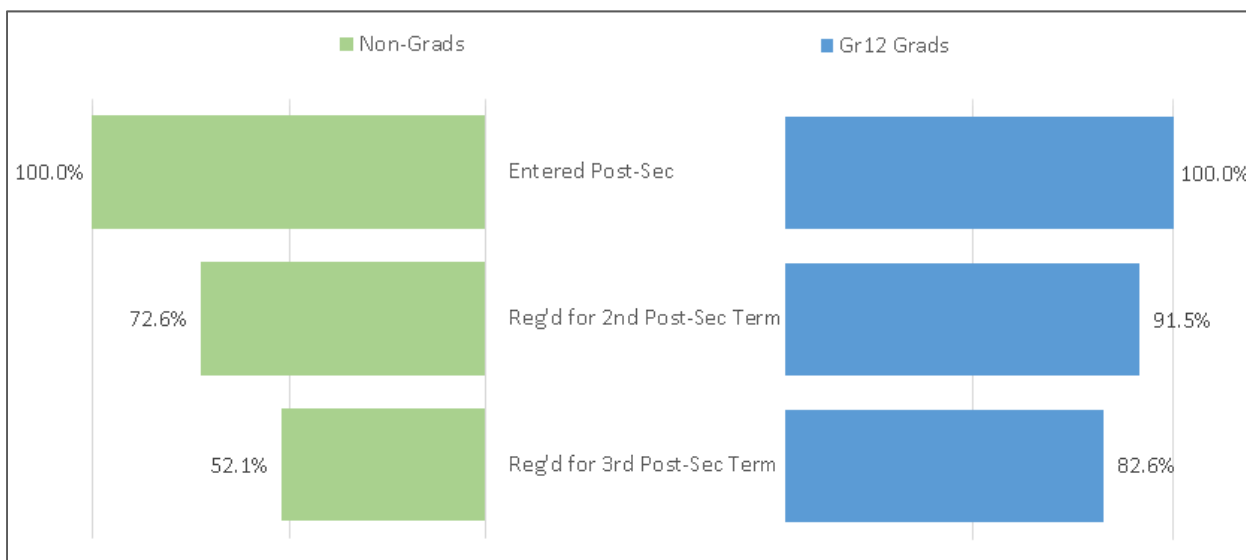
With regard to the timing of their return to post-secondary education for a second registration term, the vast majority of students (71%) returned immediately following their first registration. The remaining 18% returned to the post-secondary system in a later time period.

- Grade 12 graduates (74%) were more likely than non-graduates (50%) to re-enroll in post-secondary education immediately after their first post-secondary registration term.

Post-secondary retention funnels that focus exclusively on the first three registration terms are shown in [Figure 5](#). The retention funnel for grade 12 graduates is wider than the funnel for grade 12 non-graduates. The vast majority of grade 12 graduates (83%) had returned or persisted in post-secondary education for a third term (sometime before Fall 2014), compared to roughly half (52%) of the non-graduates.

By the end of the study period in Fall 2014, roughly twice the proportion of post-secondary entrants with grade 12 graduation had completed a post-secondary credential (41.4%), compared to non-graduates (18.0%).

FIGURE 5: POST-SECONDARY RETENTION FUNNEL FOR 1ST THREE REGISTRATION TERMS: NON-GRADS VS. GRADS



What proportion of the grade 8 entry cohort of 2004/2005 completed a post-secondary credential by Fall 2014?

Just over one-quarter (26.3%) of the full cohort of 51,831 students who entered grade 8 in 2004/2005 earned a post-secondary credential within ten years of entering grade 8, by Fall 2014. This represents 39.2% of the 34,704 students enrolled in post-secondary education.

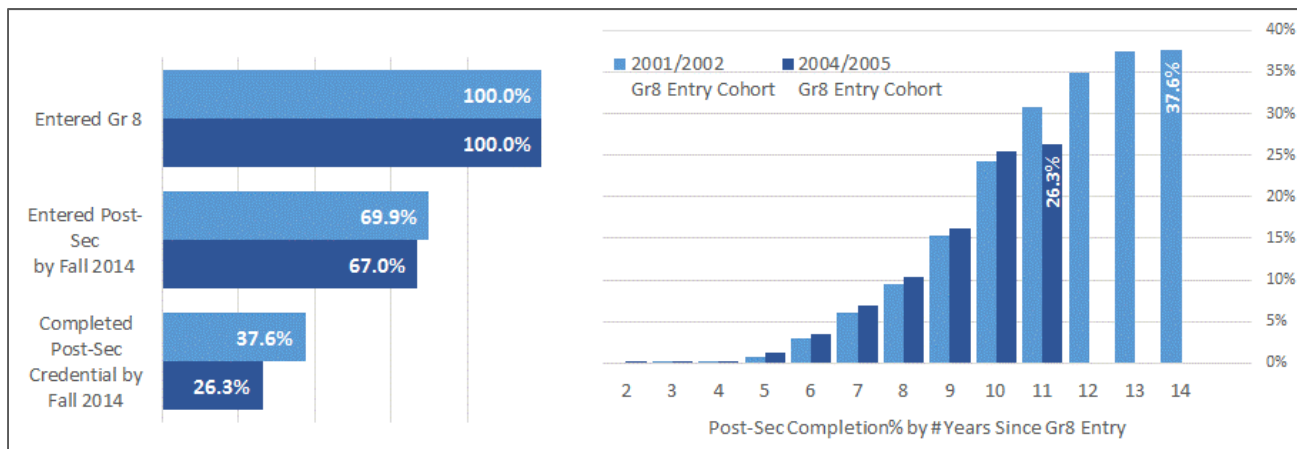
- Roughly twice the proportion of post-secondary entrants with grade 12 graduation completed a post-secondary credential (41.4%), compared to non-graduates (18.0%).
- Similarly, about twice the proportion of non-Aboriginal students earned a post-secondary credential, as compared to Aboriginal students (27.9% versus 14.2%), but the gap between these two groups narrows slightly, among those who had also graduated from grade 12. The post-secondary credential completion rates of non-Aboriginal grade 12 graduates reaches 32.5%, or roughly 1.5 times the completion rate for Aboriginal graduates (21.4%).

Since the majority of the cohort who entered post-secondary education did so in 2009/2010, this study time frame allows students a maximum of five years for these post-secondary entrants to complete a credential by Fall 2014. Many other students did not enter the post-secondary system until later and would thus have less time to complete a credential.

Other STP research has shown that students typically take more than five years to complete a degree, so given more time, the post-secondary credential completion rate for this 2004/2005 grade 8 cohort is expected to rise. Other evidence of a long-run improvement in the credential completion rate is the fact that roughly 6% of the cohort were still enrolled in the post-secondary system in Fall 2014. This represents about 15% of those who enrolled in post-secondary education without yet earning a credential, but they are still persisting.

As a proxy for allowing 3 more years of elapsed time to complete a post-secondary credential, the grade 8 cohort of 2001/2002 was analyzed. It was found that 37.6% of the grade 8 entrants had completed a post-secondary credential by Fall 2014. This represents more than half (53.8%) of the cohort who had enrolled in post-secondary education. For this earlier cohort, a small proportion (3.6%) were still enrolled in Fall 2014, representing 11% of post-secondary entrants without a completed credential, but still persisting in the system. This suggests that a longer time horizon for the 2004/2005 cohort would likely result in improvements in the credential completion rate (see [Figure 6](#)).

FIGURE 6: PROJECTING POST-SECONDARY COMPLETION RATES FROM THE 2001/2002 GR8 ENTRY COHORT



Is it possible to earn a post-secondary credential without grade 12 graduation?

It *is* possible to earn a post-secondary credential in the B.C. public post-secondary system without grade 12 graduation, although the results from this study show that grade 12 graduates achieved significantly higher post-secondary entry and credential completion rates than non-graduates.

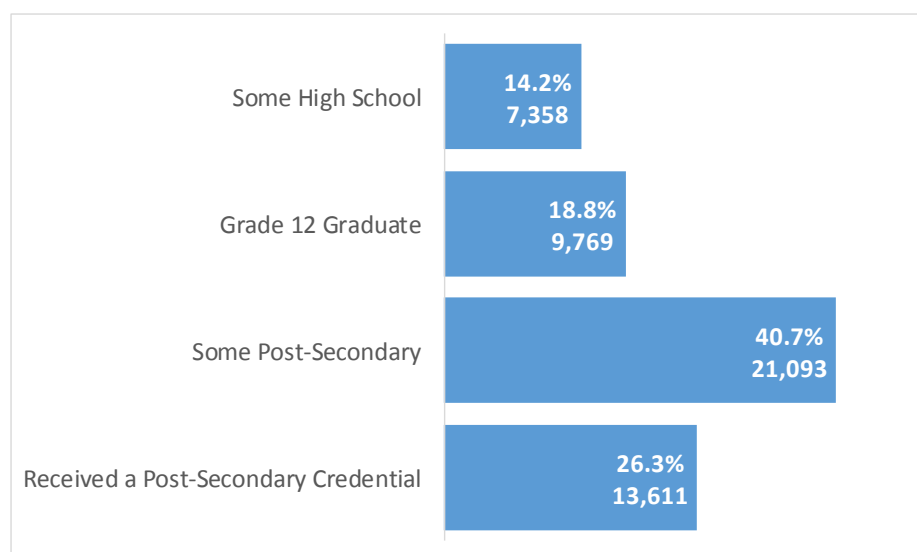
- Grade 12 graduates from the grade 8 entry cohort had post-secondary entry and completion rates of 76.3% and 31.6%. The adjusted credential completion rate, exclusively among post-secondary participants with grade 12 graduation, was 41.4%.
- By comparison, non-graduates from the grade 8 entry cohort had lower post-secondary entry and completion rates, at 30.9% and 5.6% respectively. The adjusted credential completion rate, exclusively among post-secondary participants without grade 12 graduation, was about half the rate of grade 12 graduates (18.0%).
- The proportion of Aboriginal and non-Aboriginal students who earned a post-secondary credential without grade 12 graduation was roughly equal at 5.4% and 5.6% respectively, although Aboriginal non-graduates had higher rates of post-secondary attendance (41.1%) than non-Aboriginal non-graduates (27.3%). Credential completion is not always a student's objective, nor a possible outcome in developmental programs at some institutions. Given that many of the non-graduates in this study initially enrolled in developmental programs, it is difficult to interpret these results without further insight into student intentions.
- Grade 12 graduates and non-graduates enroll in and complete different types of credentials in different program areas. Among the credentials awarded, for example, grade 12 graduates were much more likely to earn a Bachelor's degree (42%) than non-graduates (5%). More detailed information at the program level will be provided later in this report.

What was the highest level of education achieved by grade 8 entrants of 2004/2005, by Fall 2014?

The *highest* of four broad levels of education is identified and quantified in this study for each student in the grade 8 entry cohort by Fall 2014 in **Figure 7**, as follows:

- 14.2% of students went only as far as **some high school**; they have not yet graduated, nor have they pursued any post-secondary education in B.C.;
- 18.8% attended high school and **graduated from grade 12**, but they did not pursue any further education;
- 40.7% registered in **some post-secondary education**, but did not complete it yet (and some of these students may not have graduated from high school before attending post-secondary education);
- 26.3% of the cohort **earned a post-secondary credential** and this includes students and mix of grade 12 graduates and non-graduates.
- The comparable figures for Aboriginal students are 26.6%, 16.5%, 42.7% and 14.2% respectively.

FIGURE 7: % DISTRIBUTION OF STUDENTS BY HIGHEST LEVEL OF EDUCATION ACHIEVED BY FALL 2014



When interpreting the highest level of education achieved, it is important to keep in mind that the *highest* education level is not the same as grade 12 graduation rates, post-secondary entry rates and post-secondary completion rates provided earlier in this report:

- 20.5% of the grade 8 entry cohort did not graduate from grade 12 by Fall 2014. Note that this includes 6.4% of the cohort who later pursued some post-secondary education, despite not graduating from grade 12.
- 79.5% of the grade 8 entry cohort achieved grade 12 graduation (and the majority of these students later pursued further education).
- 67.0% of the cohort attended post-secondary education. This includes both grade 12 graduates and non-graduates (and many of these attendees have not yet completed their post-secondary education);
- 26.3% of the cohort earned a post-secondary credential by Fall 2014.

A comparison between graduates and non-graduates shows that roughly one-quarter of graduates did not go beyond grade 12 graduation, while more than two-thirds of non-graduates did not go beyond some high school attendance.

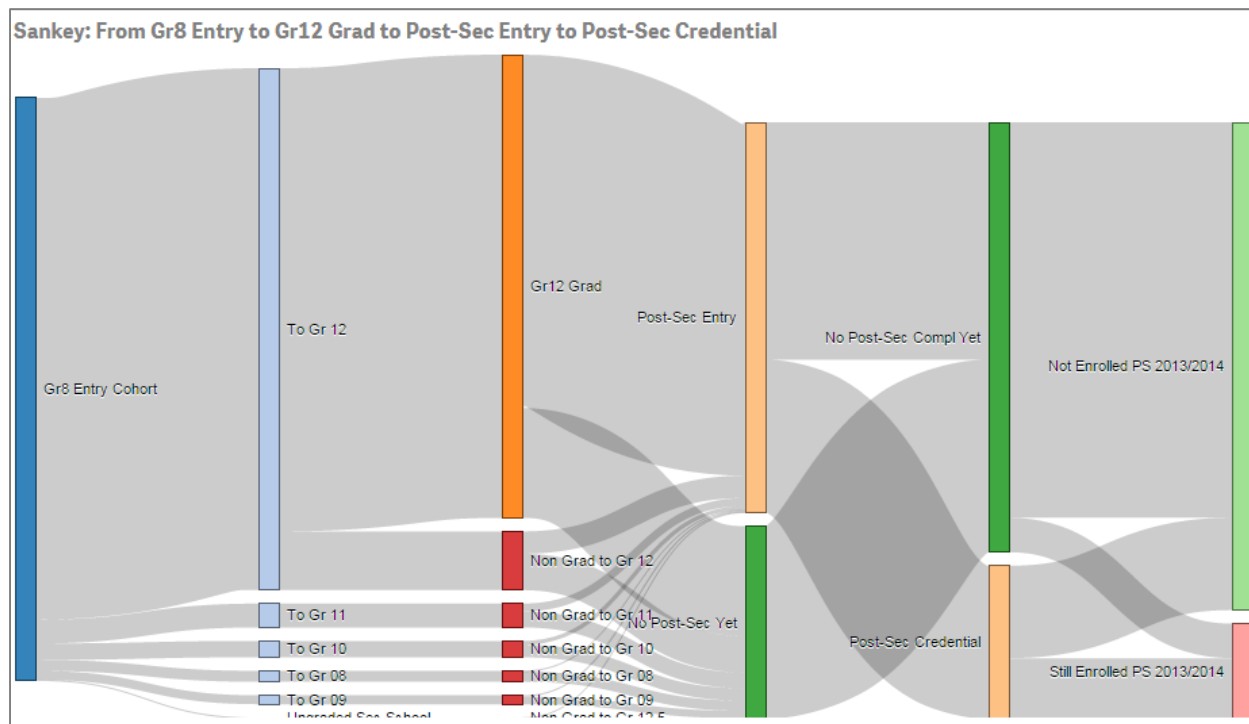
- Highest education achieved by *grade 12 graduates*: attended some post-secondary education (44.6%, of which 6.5% was developmental), received post-secondary credential awarded (31.6%) and grade 12 graduation (23.7%).
- Highest education achieved by *non-graduates*: attended some high school (69.2%), attended some post-secondary education (25.4%, of which 30.2% was developmental education), and 5.6% post-secondary credential completion.

How do students flow from grade 8 entry, to grade 12 graduation, to post-secondary education and credential completion?

The Sankey diagram in **Figure 8** shows the volume of students flowing through different education milestones, including grade 8 entry, highest grade in high school, grade 12 graduation or non-graduation, post-secondary entry, post-secondary credential completion and still persisting in post-secondary education by 2013/2014. This Sankey diagram highlights some of the following information:

- The majority of students from the grade 8 entry cohort (89.6%) reached grade 12.
- A significant proportion (76.3%) of grade 12 graduates did enroll in post-secondary education.
- Of those students from the grade 8 entry cohort who did not enroll in post-secondary education yet, approximately half of them are non-graduates.
- Less than half of those who entered post-secondary education (39.2%) have achieved a post-secondary credential by 2013/2014.
- Approximately 18% of the initial grade 8 entry cohort are still enrolled in the post-secondary system.
- Of those in the grade 8 entry cohort who are still enrolled in post-secondary education in 2013/2014, approximately two thirds had already completed a post-secondary credential.

FIGURE 8: SANKEY DIAGRAM OF STUDENT FLOWS THROUGH SIGNIFICANT EDUCATION EVENTS



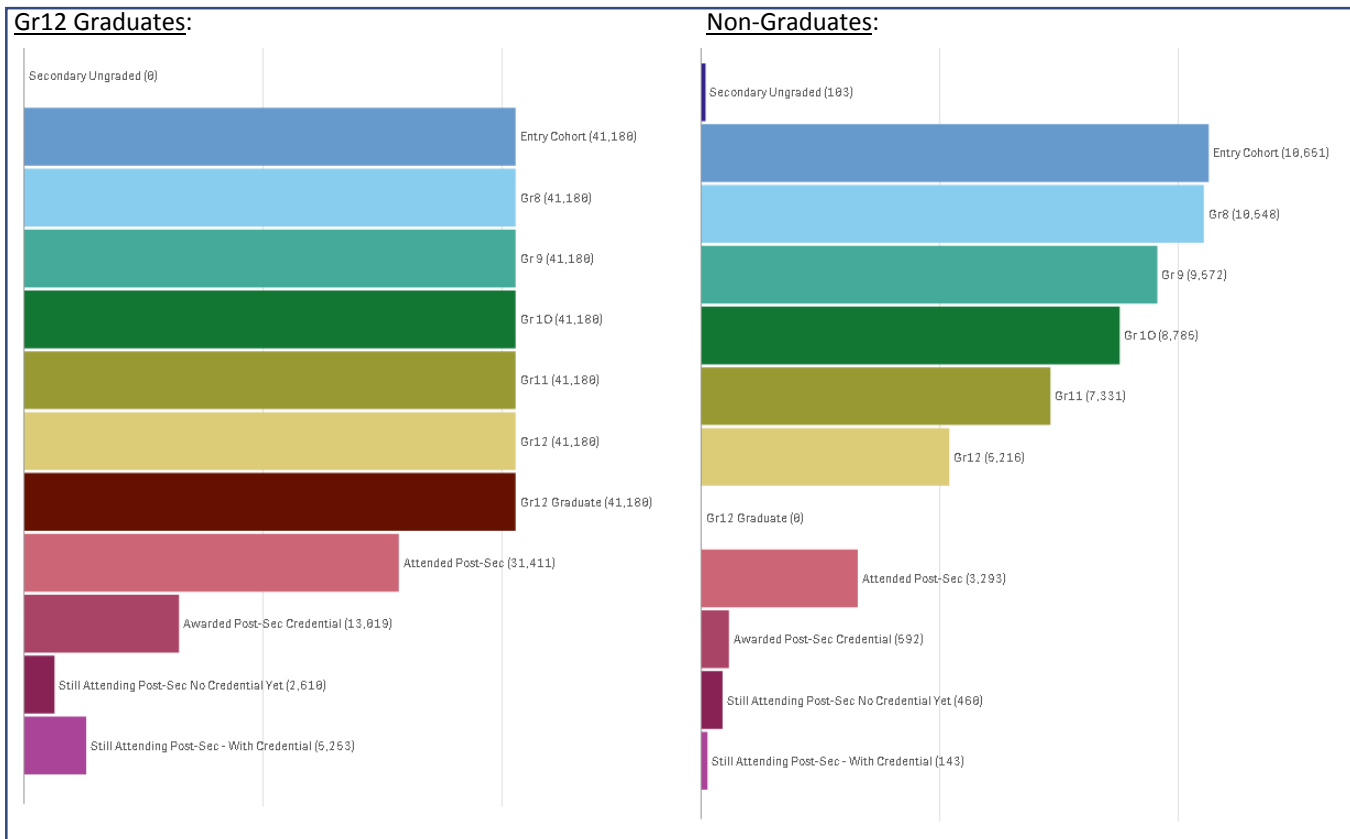
How similar or different are the ten-year student retention funnels for grade 12 graduates and non-graduates?

A student retention funnel across B.C.'s two education systems can be produced from the data in this study. Based on the retention of students from grade 8 entry through to post-secondary participation, credential completion and post-secondary persistence, the grade 12 graduates and non-graduates collectively produce retention funnels of a dissimilar shape. The grade 12 graduates produce a much wider funnel than non-graduates, thus suggesting that a greater proportion of grade 12 graduates are retained across the two education systems than non-graduates.

As shown in **Figure 9**, the grade 12 graduates have a wider funnel throughout high school because every grade 8 student who entered the cohort is retained through grade 12 graduation. Their funnel also continues to be wider after post-secondary entry because a greater proportion of grade 12 graduates are retained in post-secondary education than non-graduates.

The retention funnel for non-graduates shows that roughly half of the students who began in the grade 8 entry cohort did not graduate from reaching grade 12 enrollment. This group of non-graduates did enroll in post-secondary education, but their credential completion rates are lower and therefore the funnel for this group of students becomes quite narrow after the point of post-secondary entry.

FIGURE 9: COMPARISON OF STUDENT RETENTION FUNNELS: NON-GRADS VS. GRADS



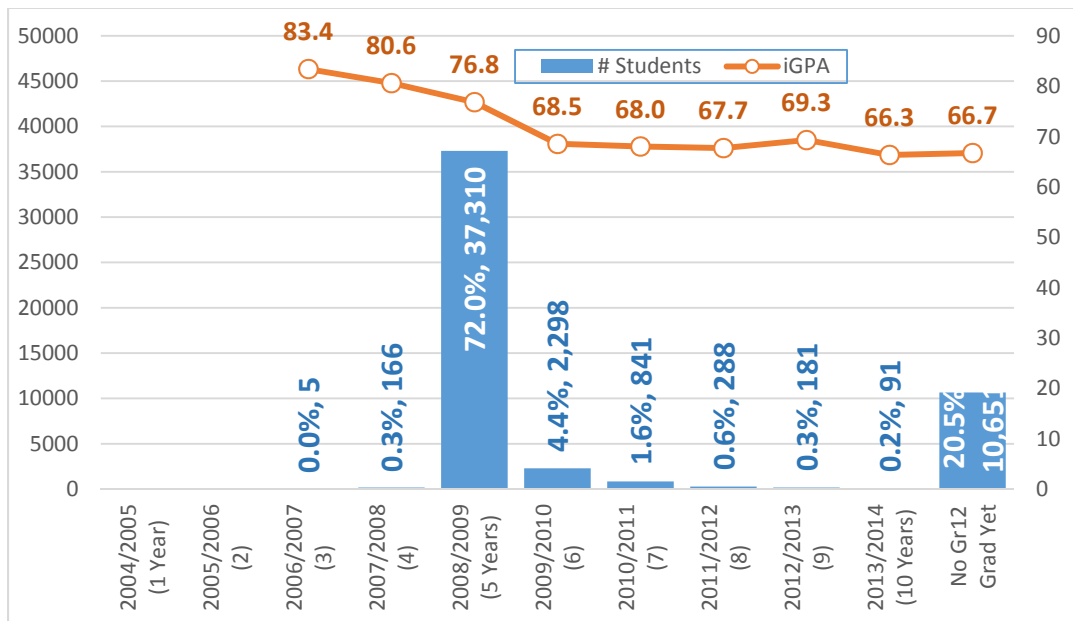
Enriched Research Results

Among grade 12 graduates, how long did it take to graduate?

Students progress through high school at different rates. Although 79.5% of the grade 8 entrants of 2004/2005 had graduated from grade 12 by 2013/2014, they did not all graduate at the same time. The distribution of the 41,180 grade 12 graduates by year of grade 12 graduation is shown in **Figure 10**.

- The majority of the cohort (72%) graduated within five years of entering grade 8 and this is the typical achievement pattern for students who transition from one grade to the next in each academic year over their five-year high school career.
- Some students (less than 1%) finished in fewer than five years, while others (7%) took longer than five years to complete the requirements to graduate from grade 12.
- Among those who entered grade 8 in 2004/05 and graduated from grade 12 by 2013/2014, the average time to grade 12 graduation was 5.1 years. The average elapsed time for Aboriginal students was slightly longer at 5.4 years.
- Also provided in **Figure 10** is an academic performance measure called the inclusive grade point average, or iGPA. This measure is the average grade across a range of courses required for grade 12 graduation in the twelve different graduation subject areas, such as English, Math, Social Studies, Science, etc. (See glossary for more detailed information). On average, students who graduated from grade 12 in five years or less had higher iGPA scores (77 to 83) than students who graduated in more than five years (66 to 69).
- Among the 20.5% or 10,651 students who have not yet graduated from grade 12, their iGPA scores were calculated from as many of the twelve high school courses as possible, depending on which courses they had completed. On average, the iGPA for non-graduates was calculated on 6.9 courses per student, for an average iGPA score of 66.7. By comparison, grade 12 graduates achieved a higher average iGPA score than non-graduates, calculated on 11.9 courses per student, for an average iGPA of 76.1.

FIGURE 10: DISTRIBUTION OF 2004/2005 GRADE 8 ENTRY COHORT, BY YEAR OF GRADE 12 GRADUATION



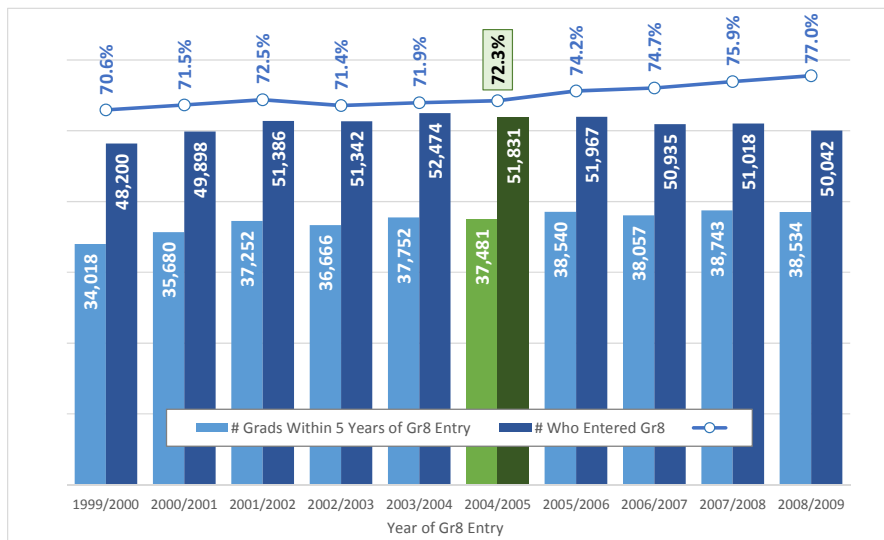
What proportion of the cohort graduated within five years of entering grade 8? Are these rates improving over time?

As previously shown in this report, students completed their grade 12 graduation requirements over different lengths of time, but the majority of students graduated five years from entering grade 8. In this study, the STP has derived a **fixed five-year graduation rate**⁹ for the grade 8 entry cohort, where the cohort membership is fixed and the rate is calculated five years after entering grade 8.

- For this cohort of students who entered grade 8 in 2004/2005, 72.3% graduated from grade 12 within five years (by 2008/2009). This rate is calculated as the number of students who completed grade 12 in five years or less (37,481), expressed as a proportion of the total 2004/2005 grade 8 entry cohort (51,831).
- The fixed five-year graduation rate was lower for Aboriginal students (41.3%) than non-Aboriginal students (76.5%).
- The fixed five-year graduation rate has been increasing over time and continues to increase for subsequent grade 8 entry cohorts (see [Figure 11](#)).

Note: Please use caution when interpreting and comparing the fixed five-year graduation rate to other officially reported graduation and completion rates in B.C., Canada or around the world. Not all rates are calculated precisely the same way in all jurisdictions. Across Canada, for example, the high school grade of entry varies from province to province; there are subtle variations in the definition of a “grade 12 graduate”, disparities exist in the timeframes allowed for completion; and differences are inherent in the handling of in- or out-migration of students over time. Even within the province of B.C., the Ministry of Education uses three different measures of grade 12 graduation and completions rates and each of these measures are used appropriately for specific purposes¹⁰.

FIGURE 11: FIXED FIVE-YEAR GRADUATION RATES, BY YEAR OF ENTRY TO GRADE 8



⁹ In the **fixed five-year graduation rate**, the cohort membership is fixed throughout the duration of the study period – there are no adjustments to the cohort size during the study period for in- and out-migration of entering or departing students. Furthermore, the rate is calculated five years after entering grade 8, the normally expected graduation time period for students who complete one grade level per academic year.

¹⁰ **Six-Year Completion Rate** is the proportion of students who graduated with a B.C. Certificate of Graduation or B.C. Adult Graduation Diploma, within six years from the first time they enrolled in Grade 8, adjusted for migration in and out of British Columbia. **Eligible Grade 12 Graduation Rate** is the proportion of eligible-to-graduate Grade 12 students who graduated in that school year. Students are eligible to graduate if they have enrolled in sufficient courses to meet the requirements to graduate during that school year. **Full-Time Grade 12 Graduation Rate** is the proportion of students who graduated in the same school year as the year in which they entered Grade 12 for the first time in September.

For more information, please see: <https://www.bced.gov.bc.ca/reports/pdfs/graduation/prov.pdf>

What are the high school academic performance (iGPA scores) of the 2004/2005 grade 8 entry cohort?

By 2013/2014, the grade 8 entry cohort of 2004/2005 achieved an average iGPA score of 75.2, based on a maximum of twelve high school courses required for grade 12 graduation. See **Figure 12** for a frequency distribution of iGPA scores for the full cohort of 51,831 students.

FIGURE 12: iGPA DISTRIBUTION OF 2004/2005 GR8 ENTRY COHORT, BY 2013/2014

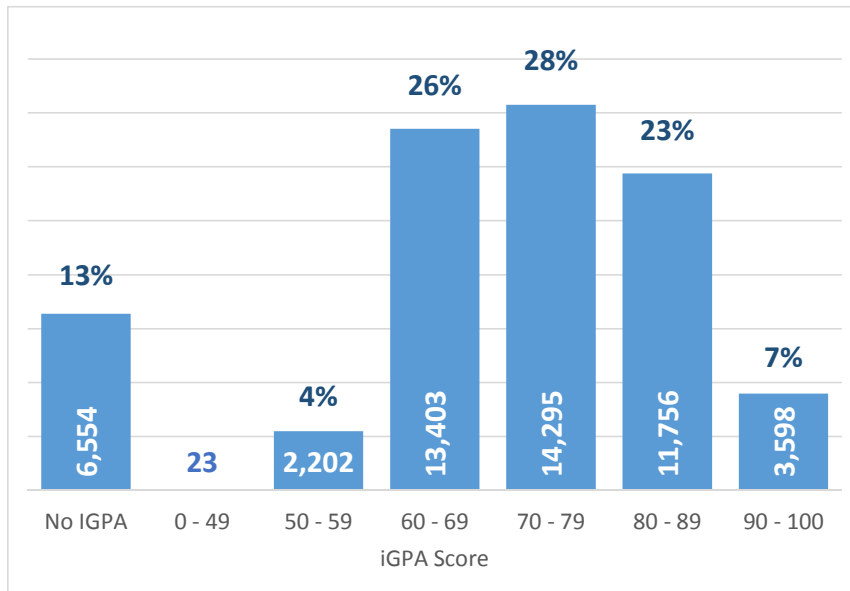


Figure 13 compares the iGPA distribution of grade 12 graduates versus non-graduates. The grade 12 graduates had an average iGPA score of 76.3, based on an average of 12 courses. By comparison, the non-graduates had a lower iGPA (66.7), based on an average of just 7 courses.

FIGURE 13: iGPA DISTRIBUTION OF GR 12 GRADUATES VS. NON-GRADUATES

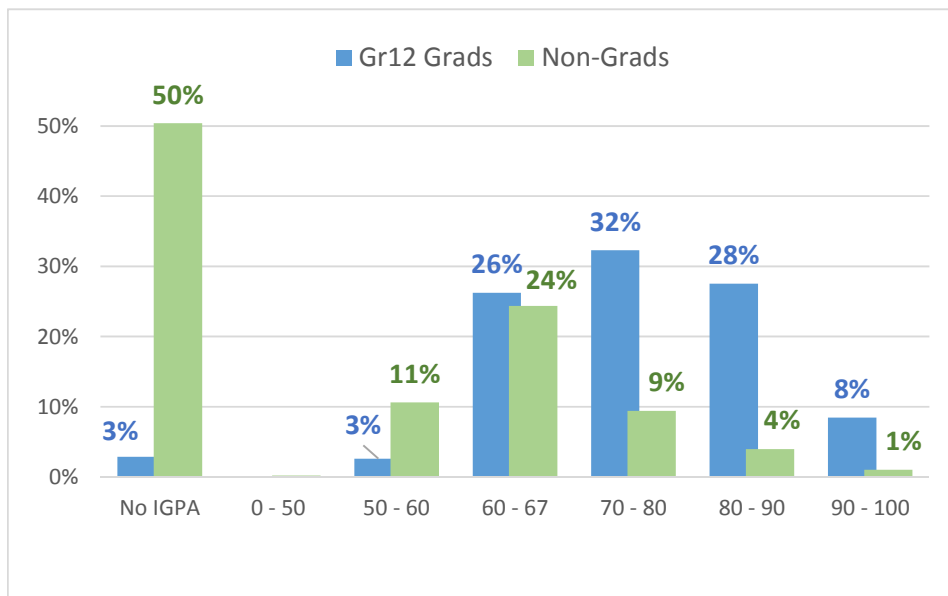
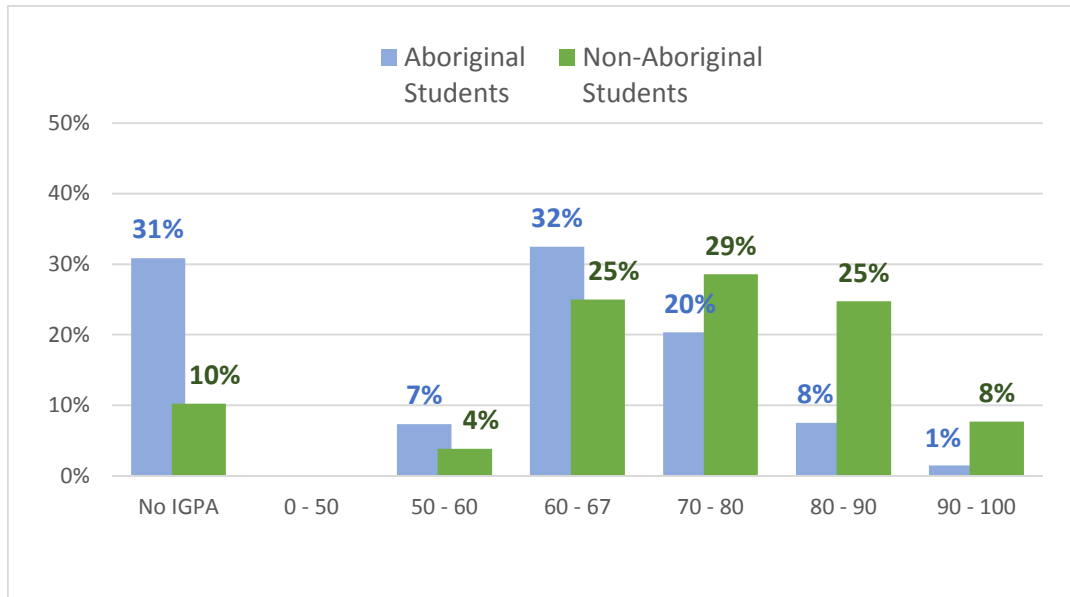


Figure 14 compares the iGPA distribution of Aboriginal versus non-Aboriginal students. Aboriginal students had an average iGPA score of 69.5, based on an average of 10.2 courses. By comparison, the non-Aboriginal students had a higher iGPA (75.8), based on an average of 11.4 courses.

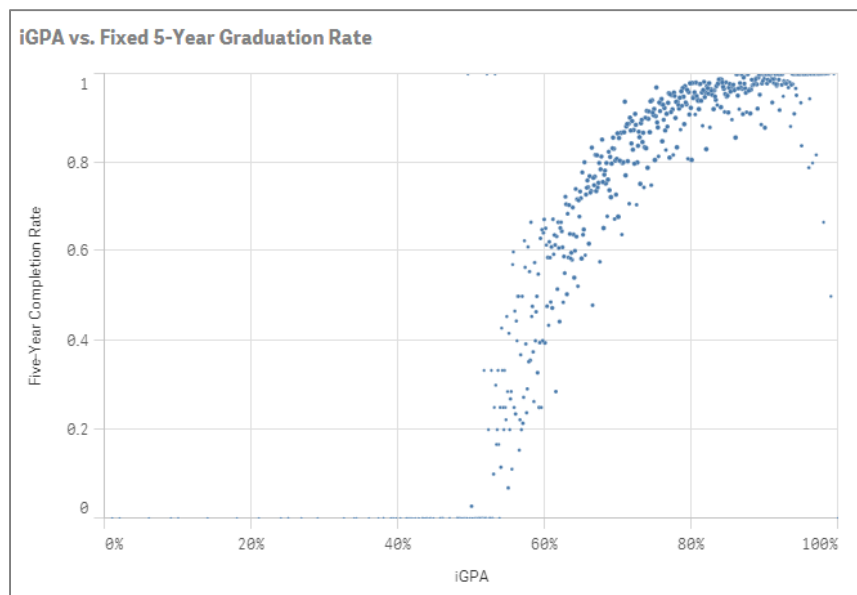
FIGURE 14: iGPA DISTRIBUTION OF ABORIGINAL VS NON-ABORIGINAL STUDENTS



Does academic performance in high school (iGPA) influence the fixed five-year graduation rate?

The fixed five-year graduation rate for the entire 2004/2005 grade 8 entry cohort is 72.3%. **Figure 15** provides a scatter plot of iGPA scores versus the fixed five-year graduation rate. The plot reveals a positive relationship between iGPA scores and the fixed five-year graduation rate: Students with higher iGPA scores were more likely to graduate from grade 12 in five years or less.

FIGURE 15: FIXED FIVE-YEAR GRADUATION RATES VS IGPA SCORES



As we drill down into sub-populations of the grade 8 entry cohort, we find that there is significant variation in the fixed five-year graduation rate across groups of students and this may be partially explained by the variation in iGPA scores.

- Among 20,947 students with average iGPA scores of 75 or higher, their fixed five-year graduation rate was 93.8%, compared to 72.0% for those 16,496 students with iGPA scores between 50 and 75.
- Compared to the overall average fixed five-year graduation rate of (72.3%), the rate was higher for non-Aboriginal students (76.5%) than Aboriginal students (41.3%). This is consistent with the higher average iGPA of non-Aboriginal students (75.8 based on an average of 11.4 courses) and the lower average iGPA of Aboriginal students (69.5 based on an average of 10.2 courses).
- Compared to male students, females had higher average iGPA scores (77.1 versus 73.3), consistent with their higher fixed five-year graduation rates (75.4% versus 69.7%).

How do average grades achieved in selected high school courses compare between high school graduates and non-graduates?

While the iGPA provides an overall average measure of academic performance, the STP can also examine the average course grades in selected courses. Embedded within the iGPA score are twelve categories of courses, with a maximum of one course from each course category. For the grade 8 entry cohort of 2004/2005, their average course grades (**Figures 16**) and the % of students with grades in each of the twelve course categories (**Figures 17**) are provided below. In each subject area, non-graduates achieved lower grades and completed fewer courses than grade 12 graduates.

FIGURE 16: AVERAGE COURSE GRADES IN TWELVE HIGH SCHOOL SUBJECT AREAS, GRADE 12 GRADUATES VS NON-GRADUATES

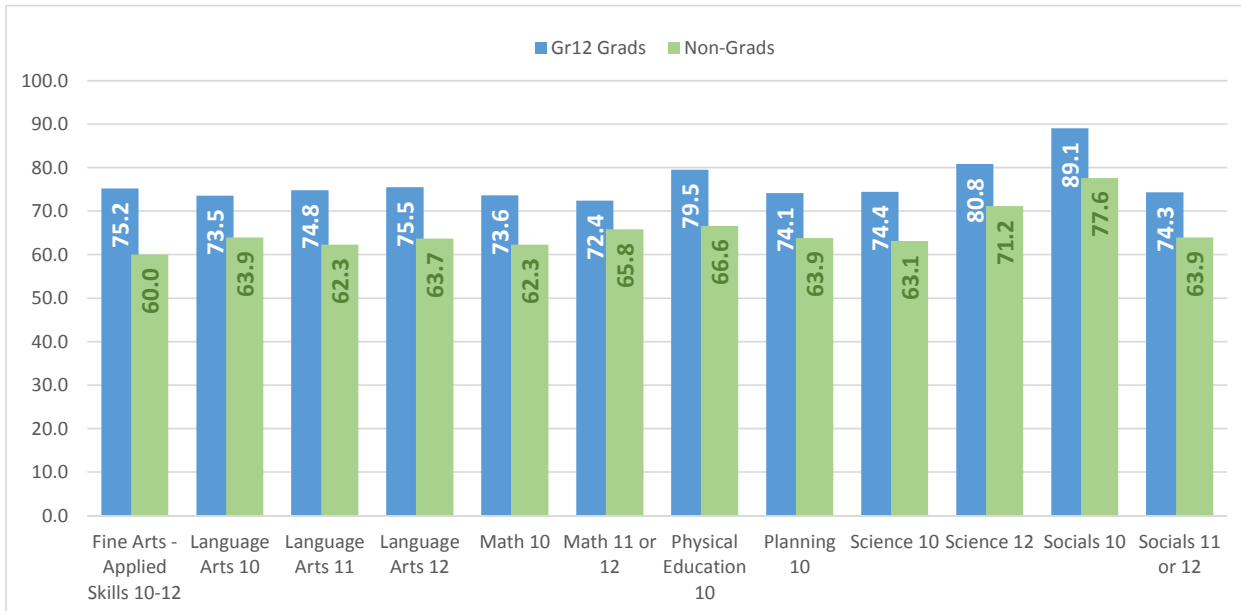
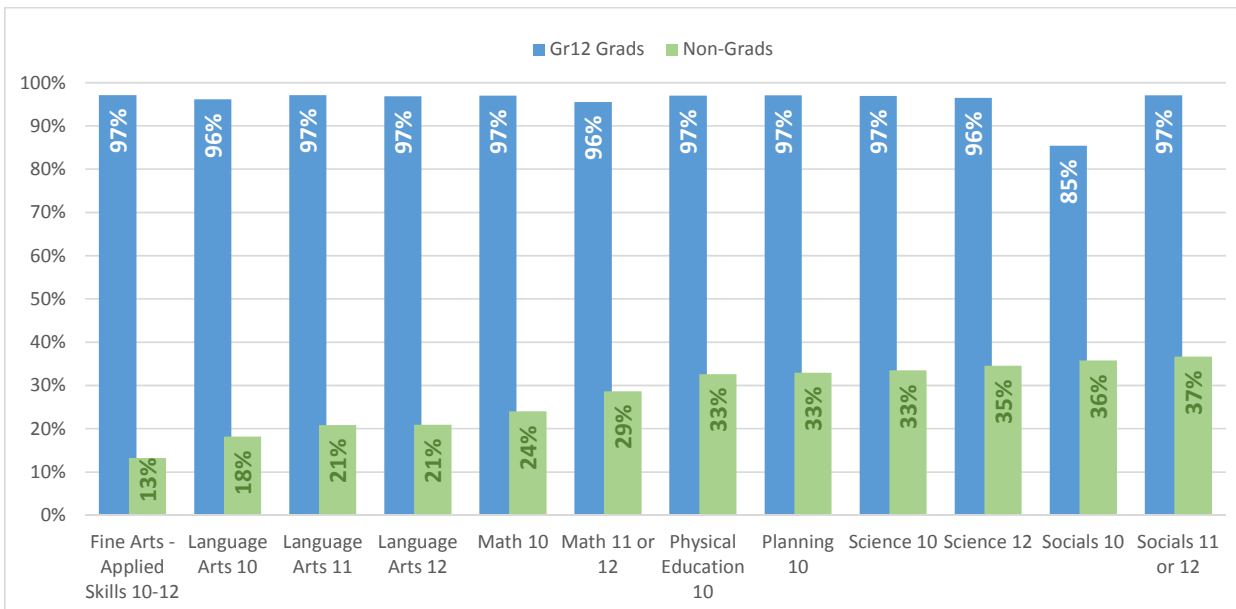


FIGURE 17: % OF STUDENTS WITH COURSE GRADES IN TWELVE HIGH SCHOOL SUBJECT AREAS, GRADE 12 GRADUATES VS NON-GRADUATES

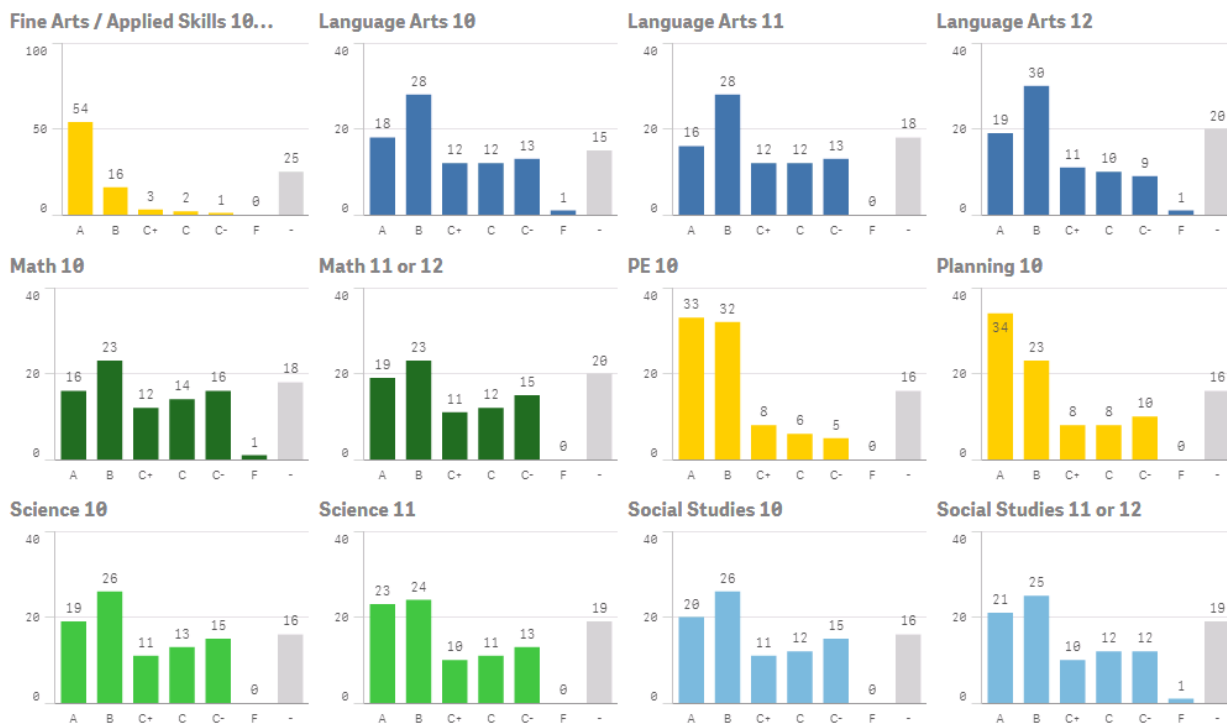


In each of the high school subject areas embedded in the iGPA scores, what is the distribution of course grades?

As shown in **Figure 18**, there is some variation in the distribution of grades across the twelve different subject areas included in the iGPA. The academic subjects show proportionately more B grades (in Language Arts, Math, Science and Social Studies) than the non-academic subject areas which show proportionately more A grades (Fine Arts/Applied Skills, Planning 10 and PE 10).

Language Arts 12 has the greatest proportion of students (20%) that did not attempt or complete the course, but this figure is influenced by the presence of non-graduates. All but 3% of grade 12 graduates completed the requirements for Languages Arts 12 and received a grade in the course, but a significant proportion (87%) of non-graduates did not complete Language Arts 12.

FIGURE 18: % DISTRIBUTION OF COURSE GRADES IN TWELVE HIGH SCHOOL SUBJECT AREAS (N=51,831)



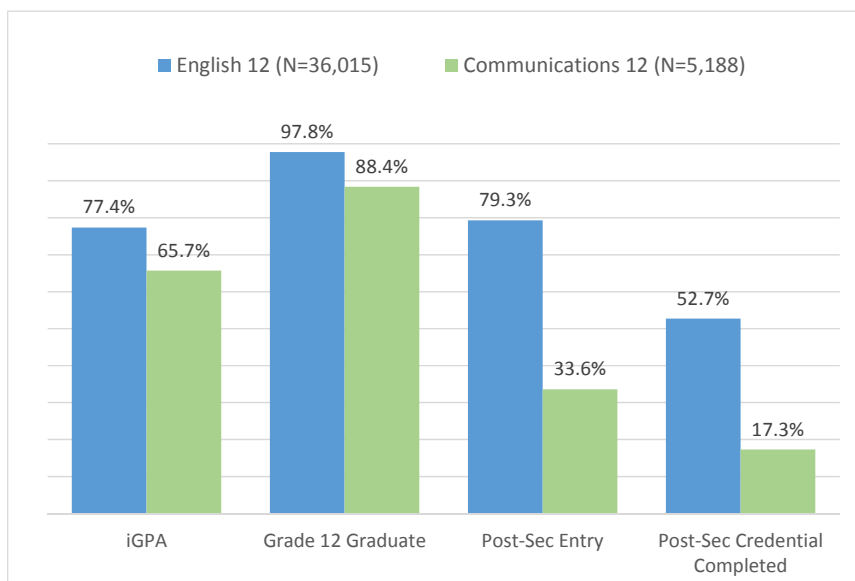
Are students who completed English 12 more likely to enroll in post-secondary education than students who completed Communications 12?

Completion of a Language Arts 12 course is one of the requirements for grade 12 graduation in B.C. Students may choose to complete English 12, Communications 12, English First Peoples 12 or Français Langue Première 12 to fulfill this graduation requirement. The courses that students choose often reflects their career and personal planning and this leads us to question whether students who took English 12 are more likely to transition to post-secondary education than those who took Communications 12.

From the full cohort of grade 8 entrants, 80% (or 41,395 students) completed the Language Arts 12 requirement towards grade 12 graduation. From this group, the majority (36,015 or 87%) completed English 12, while a minority completed Communications 12 (5,188 or 12.5% of students). The remaining 193 students completed other courses to satisfy their Language Arts 12 course. Some students may have completed more than one Language Arts 12 courses, but only one of the courses was included in the iGPA calculation and evaluated here.

- Students who completed English 12 achieved higher academic outcomes in secondary school than those who completed Communications 12. They earned higher iGPA scores (77.4 vs 65.7) from roughly the same number of courses in their iGPA (11.8 vs 11.7 courses) and they achieved higher graduation rates by Fall 2014 (97.8% vs 88.4%) (see [Figure 19](#)).
- In terms of post-secondary transitions, English 12 completers were more likely than Communications 12 completers to enroll in B.C. public post-secondary education by Fall 2014 (79.3% vs 52.7%) and more likely to earn a post-secondary credential (33.6% vs 17.3%).
- Of those students who completed the Language Arts 12 graduation requirement, Communications 12 was a much more popular course of choice among non-graduates (43.0%) than graduates (11.5%). Therefore, a more rigorous comparison of post-secondary transition rates between the two Language Arts course completers should include grade 12 graduates only. Upon doing so, it was found that graduates who completed English 12 had higher post-secondary entry rates (80.0% vs 55.0%) and higher credential completion rates (34.2% vs 18.7%) than students who completed Communications 12.

FIGURE 19: PERFORMANCE COMPARISON OF ENGL 12 VS COMM 12 COMPLETERS IN SECONDARY AND POST-SECONDARY EDUCATION

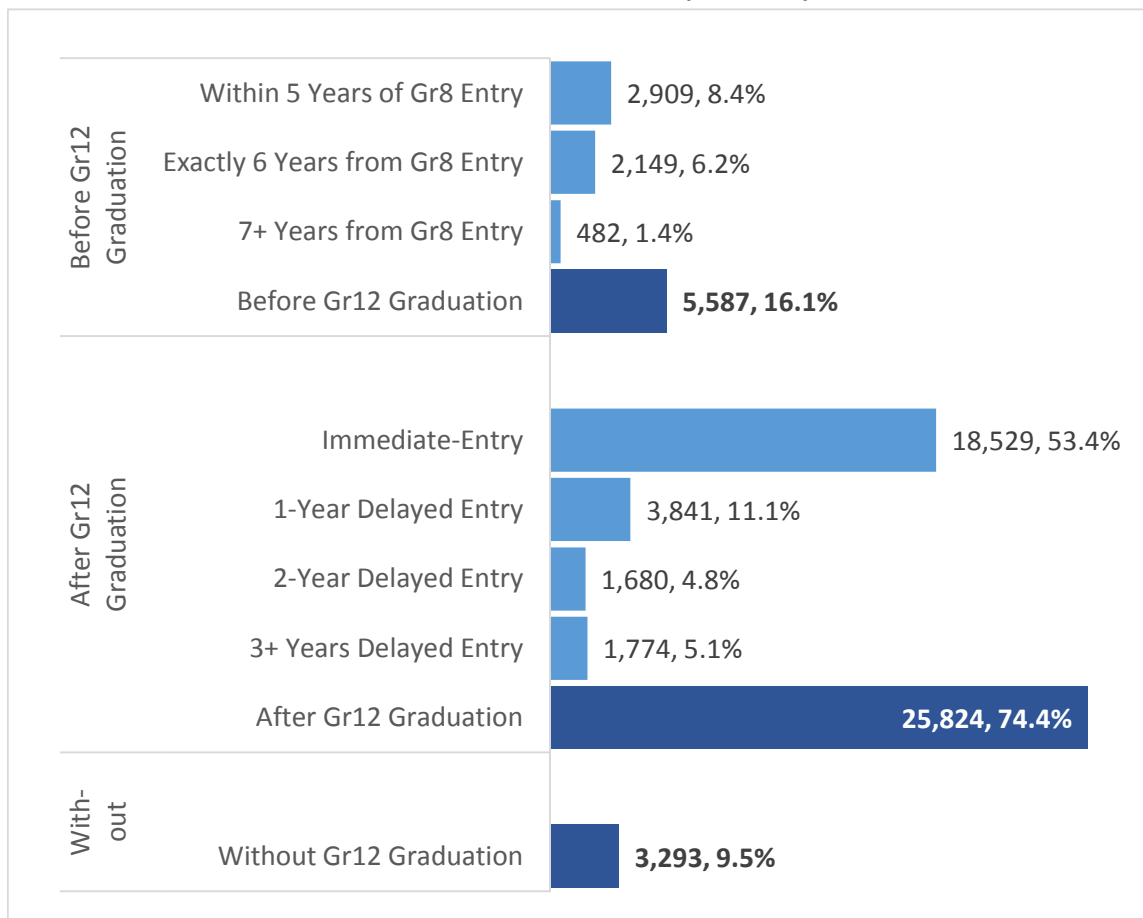


Did students first enter post-secondary education *before*, *after* or *without* grade 12 graduation?

From the subset of all 34,704 students who enrolled in B.C. public post-secondary education, this longitudinal study allows us to identify whether these registrants enrolled *before* their upcoming grade 12 graduation, *after* graduation or *without* any known subsequent grade 12 completion (see [Figure 20](#)).

- 16.1% of post-secondary registrants first enrolled in post-secondary education *before* they graduated from grade 12, including 6.2% who enrolled in post-secondary in the same year we would expect them to graduate from grade 12 (five years after entering grade 8, in 2008/2009). All of these students did ultimately graduate from grade 12 by Fall 2014, with the majority entering Trades (31%) and Developmental (21%) programs, mainly in B.C. Colleges.
- The largest group, or 74.4% of the post-secondary entrants, enrolled at the typical juncture in their education, *after* grade 12 graduation. The majority of these post-grade-12-graduation registrants enrolled immediately (within one year of high school graduation), rather than delaying their post-secondary entry by one or more years after graduation. These students enrolled in traditional academic programs in any B.C. post-secondary institution type.
- A total of 9.5% of the post-secondary entrants enrolled *without* any reported subsequent grade 12 graduation by Fall 2014, including 5.0% who enrolled in 2008/2009 or later and 1.8% who enrolled before their expected grade 12 graduation year. Nearly half (49%) of these non-graduates enrolled in developmental programs, mainly in B.C. Colleges.

FIGURE 20: TIME OF FIRST ENTRY TO POST-SECONDARY EDUCATION (N=34,704)

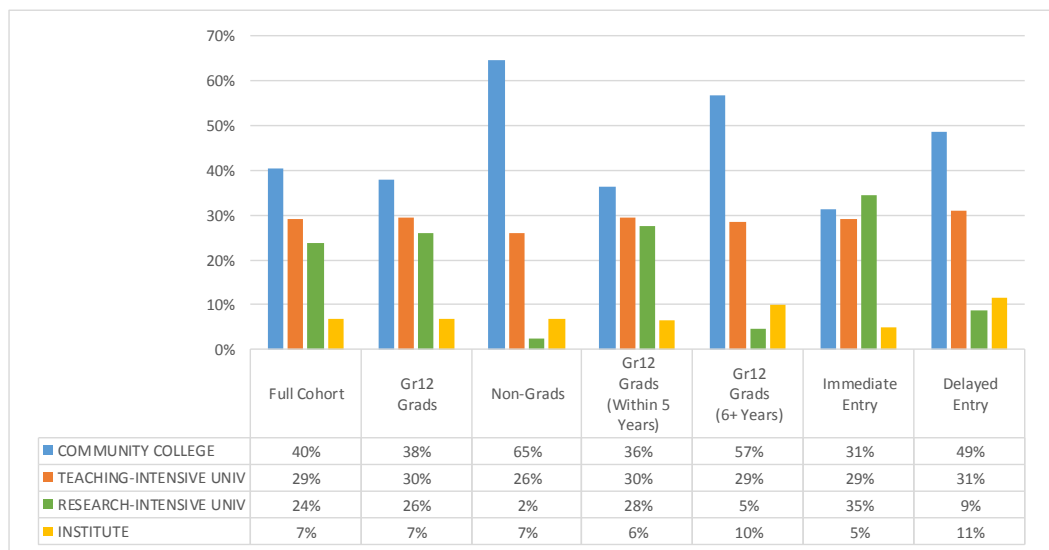


What factors might affect the types of post-secondary institutions high school graduates and non-graduates first enroll in?

Among the 34,704 students who enrolled in B.C. public post-secondary education by Fall 2014, 40% first enrolled in B.C. colleges, 29% in teaching-intensive universities, 24% in research-intensive universities and 7% in institutes. Besides location, student destinations tend to be influenced by their academic qualifications and the institutional admission requirements and we see evidence of this in the study results. Students’ initial destinations after high school vary by grade 12 graduation status, number of years to graduation and amount of time between graduation and post-secondary entry (see **Figure 21**).

- When comparing grade 12 graduates to non-graduates, it is evident that non-graduate entrants to post-secondary education are less likely to enroll in a B.C. research-intensive university (2%) than grade 12 graduates (26%). B.C. Colleges are the primary destination (65%) for non-graduates.
- A significantly greater proportion of Aboriginal students enrolled in B.C. colleges (60%), compared to other institution types: teaching-intensive universities (28%), institutes (6%) and research-intensive universities (5%). The proximity of colleges to a relatively large Aboriginal population in Northern B.C. might have an influence here with 11% enrolling at NWCC, 7% at NLC, 8% at CNC.
- Among those students who graduated from grade 12 within five years or less, they were more likely to enroll in a B.C. RIU than students who took longer to graduate from grade 12 (28% versus 5%).
- Immediate-entry students were distributed fairly equally, at about one-third each, in a colleges, TIUs and RIUs. By comparison, students who delayed their entry into post-secondary education by a year or more after grade 12 graduation were much more likely to enroll in a college (49%) than TIU (31%), RIU (9%) or institute (11%).
- Although not shown in the figure below, 51% of students with iGPA scores of 80% and above enrolled in B.C. research-intensive universities, compared to 23% each at colleges and TIU’s and 3% at institutes.

FIGURE 21: % DISTRIBUTION OF STUDENTS BY B.C. INSTITUTION TYPE FIRST ATTENDED AFTER HIGH SCHOOL, BY GRADE 12 GRADUATION OR POST-SECONDARY ENTRY STATUS

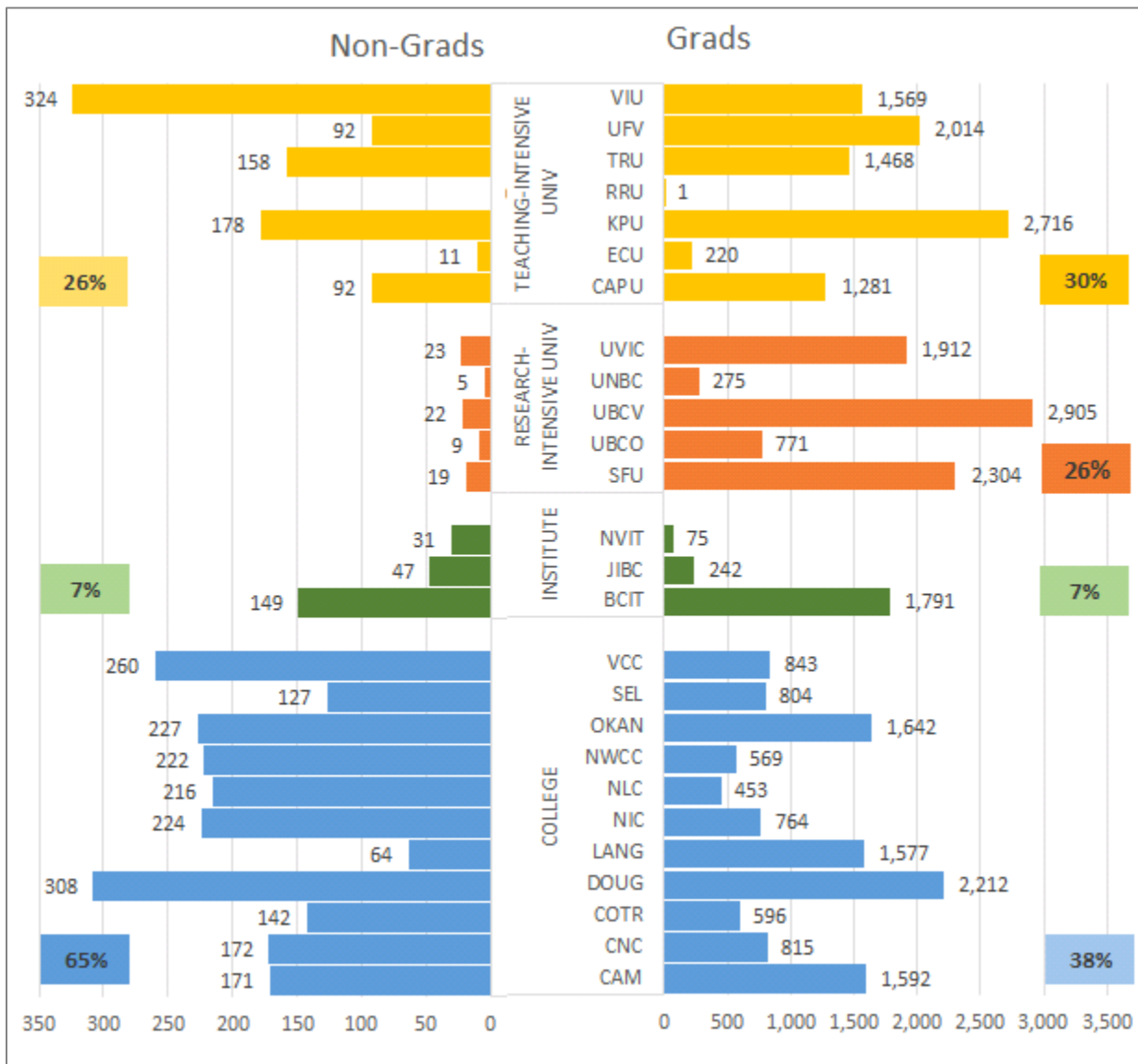


Which post-secondary institutions did high school graduates and non-graduates first enroll in?

Among the 34,704 students who enrolled in B.C. public post-secondary education by Fall 2014, the post-secondary institution destinations of grade 12 graduates and non-graduates are provided in Figure 22. As previously shown, student destinations vary by institution type, as influenced by their academic qualifications and the admission requirements at institutions. The distribution of graduates and non-graduates across institutions is roughly similar within each of the institution types, but with some exceptions:

- Vancouver Island University (VIU) is the most common TIU destination among non-graduates, but Kwantlen Polytechnic University (KPU) is the most common TIU destination among grade 12 graduates.
- The primary college destination for grade 12 graduates and non-graduates is Douglas College (DOUG).
- Northern Colleges (NWCC, NLC, NIC) are more common destinations for non-graduates than graduates.

FIGURE 22: % DISTRIBUTION OF STUDENTS BY B.C. PUBLIC POST-SECONDARY INSTITUTION FIRST ATTENDED AFTER HIGH SCHOOL, GRADE 12 GRADS VS. NON-GRADS

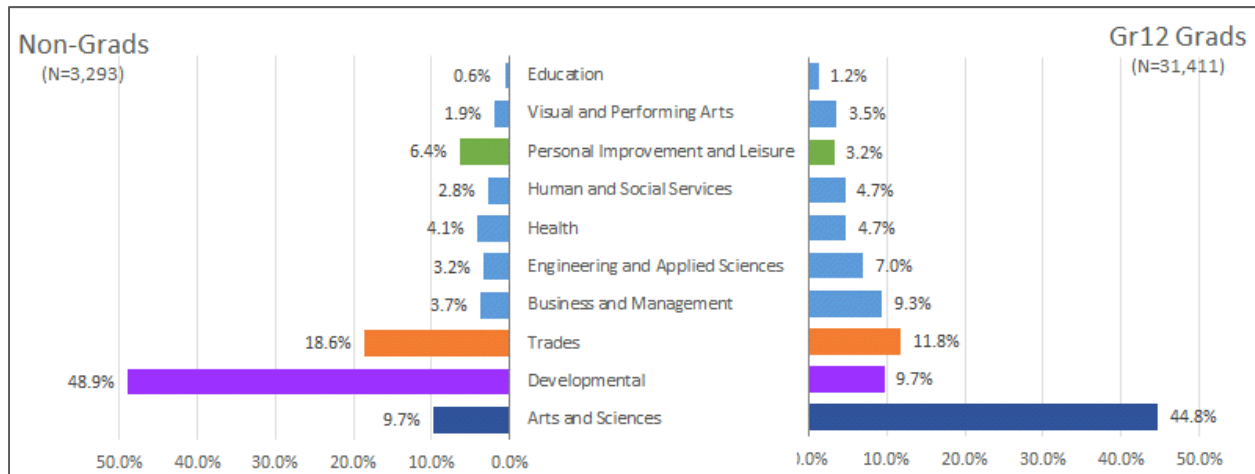


Do high school graduates and non-graduates enroll in different post-secondary programs?

Among the 34,704 students who enrolled in B.C. public post-secondary education by Fall 2014, the largest proportion (41.4%) enrolled in Arts and Sciences programs. The next two most popular program destinations were Developmental programs (13.4%) and Trades (12.5%). As shown in **Figure 23**, grade 12 graduates and non-graduates did not enroll in programs at the same rates.

- Three program areas were more popular among grade 12 non-graduates, than graduates: Trades, Developmental and Personal Improvement and Leisure. Collectively, these three program areas attracted nearly three-quarters (73.9%) of all non-graduates, but only one-quarter (24.7%) of all grade 12 graduates, among those who enrolled in post-secondary education. A significant proportion of Aboriginal non-graduates (80.6%) were also attracted to these three program areas.
- Arts and Sciences programs were the primary destination for nearly half (44.8%) of all grade 12 graduates, but only 9.7% of non-graduates.
- All other academic program areas (Education, Visual and Performing Arts, Human and Social Services, Health, Engineering, Business and Management) attracted about twice the share of grade 12 graduates (30.5%) than non-graduates (16.4%).

FIGURE 23: % DISTRIBUTION OF STUDENTS BY B.C. PROGRAM FIRST ATTENDED AFTER HIGH SCHOOL, NON-GRADS VS. GRADS

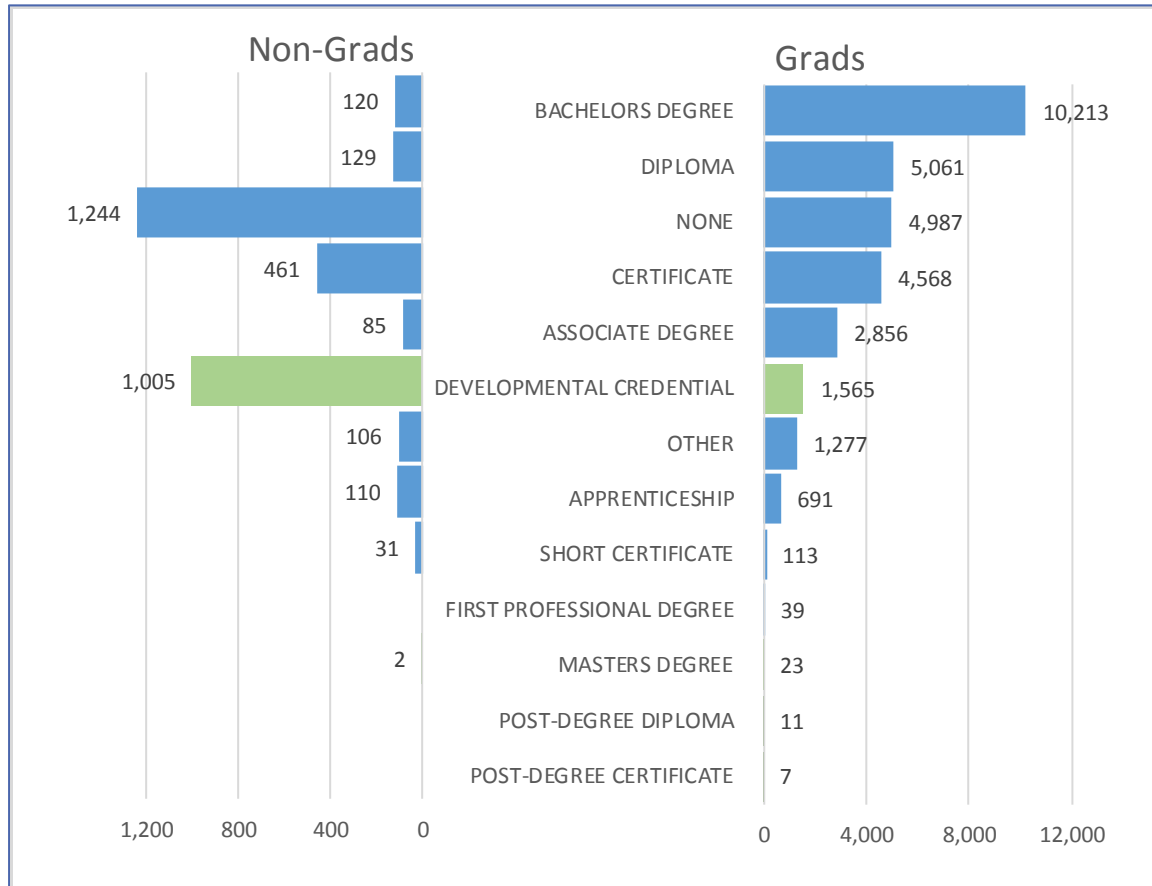


Do high school graduates and non-graduates enroll in different post-secondary credentials after leaving high school?

Among the 34,704 students who enrolled in B.C. public post-secondary education by Fall 2014, the most popular credential of first entry was a Bachelor’s Degree, with more than ten thousand students enrolled. Grade 12 graduates and non-graduates enrolled in different types of credentials (see [Figure 24](#)).

- Among the 31,411 grade 12 graduates who enrolled in post-secondary education, one-third (33%) enrolled in a Bachelor’s degree program; and equal proportions (roughly 15% each) enrolled in Diplomas, “none”¹¹ or Certificates.
- The 3,293 high school non-graduates were much more likely to enroll in “none” (38%), developmental programs (31%) and certificates (14%). A total of 120 (4%) of high school non-graduates enrolled in a Bachelor’s degree program. The STP data does not provide sufficient information to allow us to probe the circumstances of this small population of non-graduates enrolled in Bachelor’s degree programs.

FIGURE 24: % DISTRIBUTION OF STUDENTS BY FIRST B.C. CREDENTIAL SOUGHT AFTER LEAVING HIGH SCHOOL, NON-GRADS VS. GRADS



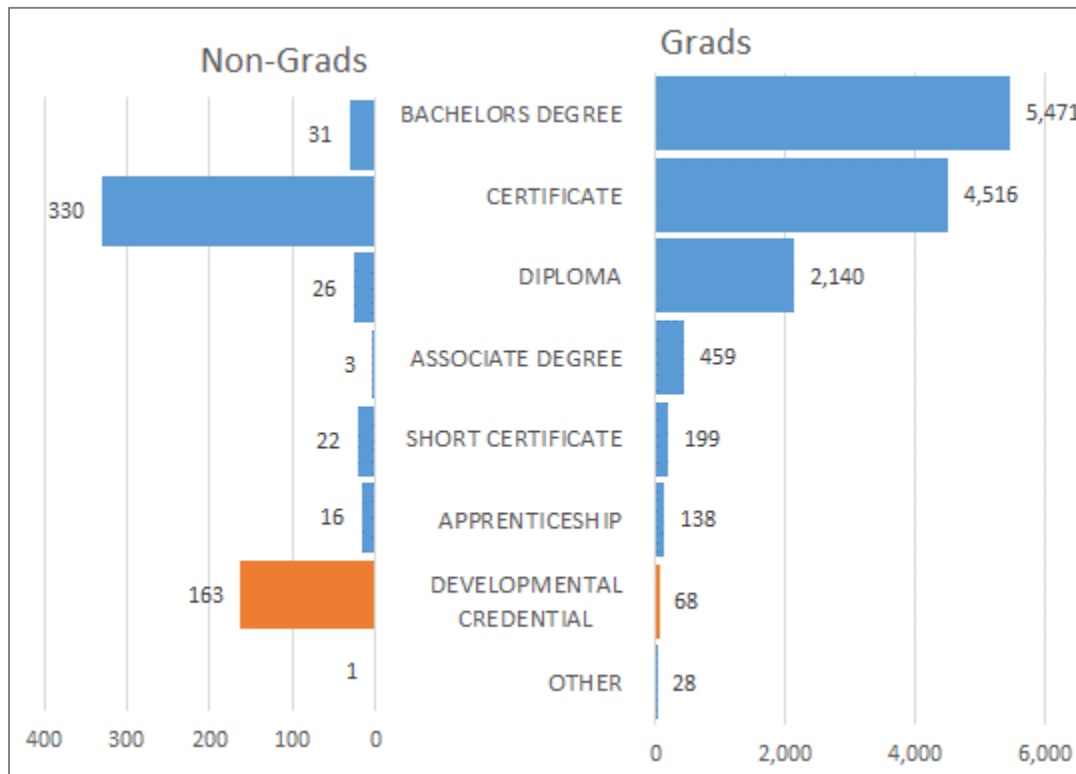
¹¹ Students enrolled in credential category “none” may be undeclared students, or students taking general interest or academic upgrading courses. Alternatively, these students could be enrolled in a program that does not offer or result in an awarded credential; or the program might ladder or bridge to a subsequent program that does result in a credential.

Among post-secondary credential completers, did high school graduates and non-graduates complete different credentials?

Among all 34,704 students who enrolled in B.C. public post-secondary education by Fall 2014, the largest proportion (16%) earned a Bachelor’s degree program as their first credential awarded. The next two most popular credentials earned were certificate (14%) and diploma (6%) programs. As shown in **Figure 25**, grade 12 graduates and non-graduates earned different types of credentials.

- Among the 31,411 grade 12 graduates who enrolled in post-secondary education, 17% earned a Bachelor’s degree, 14% earned certificates and 7% earned diplomas by Fall 2014. Aboriginal graduates who enrolled in post-secondary were more inclined to earn a certificate (19%) than a Bachelor’s degree (5%) or diploma (4%). Differences in student qualifications for entry to a Bachelor’s degree may partially explain differences in credential outcomes: roughly 38% of all grade 12 graduates (versus 14% of Aboriginal graduates) achieved an average Academic GPA of 75% in high school, as a proxy for the minimum cut-off for entry to a Bachelor’s program.
- The 3,293 high school non-graduates were much more likely to earn or complete certificates (10%) and developmental programs (5%)¹². Despite lacking B.C. grade 12 graduation, 1% or thirty-one high school non-graduates successfully earned a Bachelor’s degree. It is possible that some of these non-graduates earned a Bachelor’s degree after completing grade 12 in another province or country, and subsequently returned to B.C. to complete their Bachelor’s degree.

FIGURE 25: DISTRIBUTION OF STUDENTS BY POST-SECONDARY CREDENTIAL AWARDED, NON-GRADS VS. GRADS



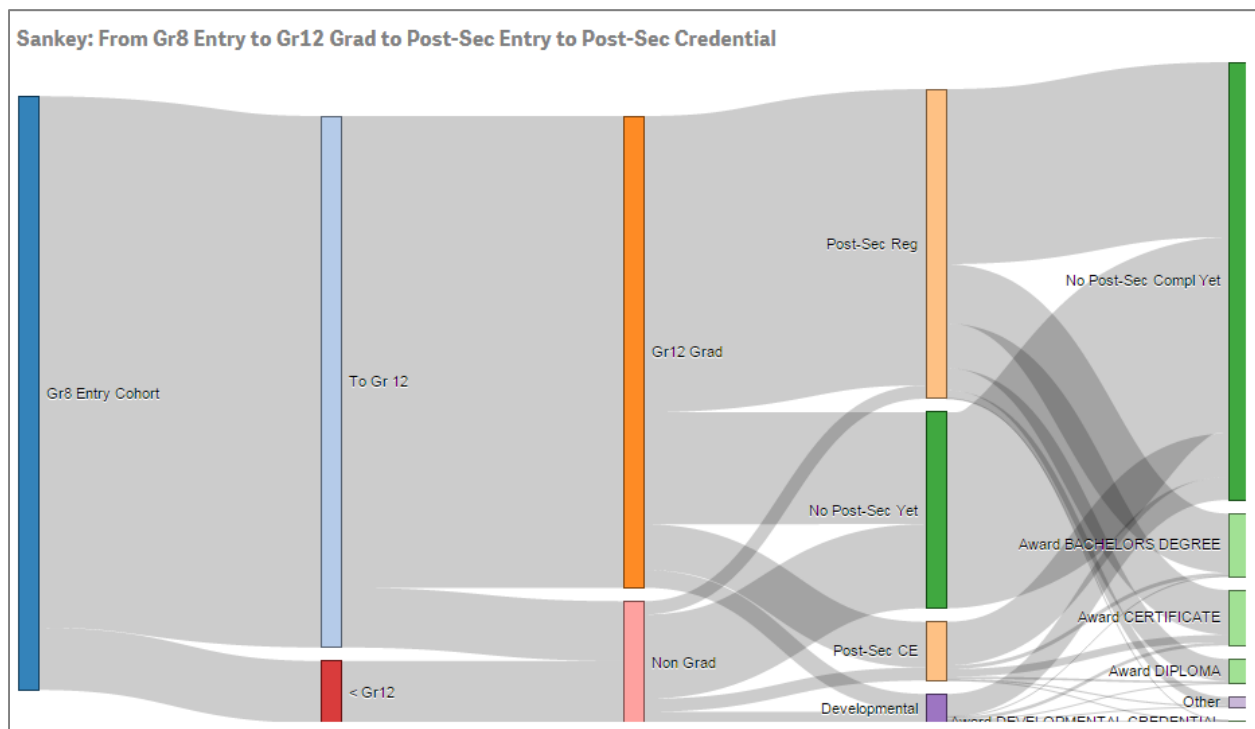
¹² Due to differences in programs and business practices post-secondary institutions across the B.C. public system, not all developmental programs result in the receipt of a credential.

How do the students flow through different levels of post-secondary education towards credential completion?

The Sankey diagram in **Figure 26** shows that students may enter the B.C. public post-secondary education system in a continuing education (CE) program, developmental program or traditional academic post-secondary education program level, but each of these different entry ways still allow for students to earn a post-secondary credential.

- Of those students who enrolled in post-secondary education, but did not graduate from grade 12, roughly equal numbers entered the post-secondary system via traditional post-secondary registration, continuing education (CE) and developmental programs.
- Of those who first entered the post-secondary system via continuing education or developmental programs, the majority of these students have not yet earned a post-secondary credential. It should be noted that continuing education and developmental programs do not normally result in a credential, so these students would normally need to move on to other post-secondary programs in order to earn a post-secondary credential.
- Of those who first entered traditional post-secondary programs, roughly half have completed a post-secondary credential by Fall 2014, and these are dominated by Bachelor's degrees, Certificates and Diplomas.

FIGURE 26: SANKEY DIAGRAM OF STUDENT PATHWAYS THROUGH DIFFERENT POST-SECONDARY LEVELS

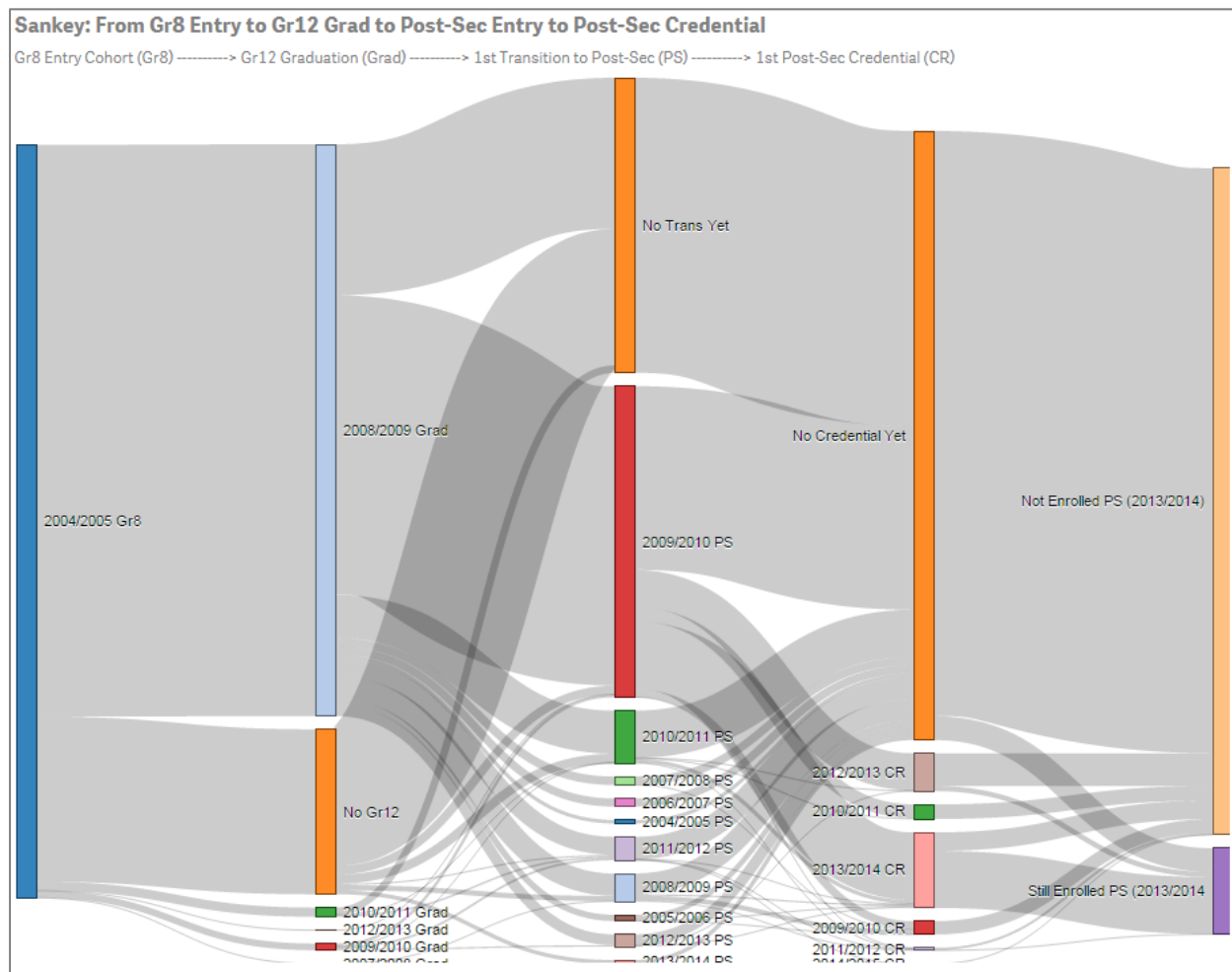


When do students flow from grade 8 entry, to grade 12 graduation, to post-secondary education and credential completion?

As shown in the Sankey diagram in **Figure 27**, the volume of students that flow through each of the major junctures of their education are relatively complex as each of the education events may occur at different times for different groups of students.

- The largest group of students from the cohort of 51,831 grade 8 entrants in 2004/2005 graduated from grade 12 in 2008/2009. The next largest group of students was the non-graduates.
- The majority of non-graduates did not transition to B.C. public post-secondary education (yet).
- Among grade 12 graduates and non-graduates who enrolled in post-secondary education, the most popular time to do so was in 2009/10 and 2010/11.
- About half of the students who first enrolled in post-secondary education in 2009/2010 had not yet earned a credential (by Fall 2014).
- The vast majority of the cohort is no longer enrolled in post-secondary education, by Fall 2014.

FIGURE 27: SANKEY DIAGRAM OF STUDENT FLOWS THROUGH EDUCATION EVENTS, BY YEAR



Conclusion

The 51,831 students in this study entered grade 8 in the B.C. K-12 education system in academic year 2004/2005. They were followed for a period of ten years, until the end of the Fall 2014 term. These students followed numerous and diverse education pathways through the education systems.

Nearly 80% of the grade 8 entry cohort graduated from grade 12; roughly two-thirds entered B.C. public post-secondary education and just over one quarter earned a post-secondary credential by Fall 2014. Given more time, many of the post-secondary entrants who have not yet completed a credential, are likely to continue enrolling in the post-secondary system and their credential completion rates are expected to rise.

Grade 12 graduates and non-graduates achieved different education outcomes, with grade 12 graduates enrolling and completing post-secondary education at higher rates than non-graduates. In light of the differences in their academic qualifications, grade 12 graduates and non-graduates generally enrolled in different post-secondary institutions, different credentials and different programs, but both groups were reasonably successful in their education achievements.

B.C.'s post-secondary system continues to demonstrate that it offers opportunities for students, either with or without grade 12 graduation, so they may pursue and complete an appropriate post-secondary program at a suitable pace in a relevant field of study. This study has also identified, but not fully quantified the role of developmental programs in creating pathways for students, particularly non-graduates.

For More Information

A wealth of additional information is also available to post-secondary institutions seeking more detailed information on 2013/2014 Bachelor's degree graduates.

STP Highlights newsletters and reports are available on the public Student Transitions Project web site at:

http://www.aved.gov.bc.ca/student_transitions



Glossary

Aboriginal Student

A student who has self-identified as being of Aboriginal ancestry (First Nations: status and non-status, Métis and Inuit) in the B.C. K-12 education system and/or the B.C. post-secondary system.

Cohort Study

In a cohort study, the study participants begin their treatment at the same time and with some common characteristics (i.e. entered grade 8 in the B.C. K-12 system in 2004/2005). They are followed over time (i.e. 10 years) with a goal of understanding the relationship between various cohort attribute(s) at the beginning of the study to outcome(s) that occur later in the study. To minimize the effects of introducing uncontrolled external influences to the study that might affect the results, it is good research practice to avoid adding any new members to the cohort after the cohort study begins.

Continuing Education

Continuing Education (or CE) is broadly defined to include part-time studies offered to adult students in many B.C. public post-secondary institutions. The programs of study are typically non-academic and the fee structure may vary. Continuing Education might include any of the following types of course offerings: contract training, non-recurring courses, short duration courses, non-credit courses, evening/weekend course offerings, etc. For more information, refer to: [Continuing Education in BC's Public Postsecondary Institutions](#), by Bob Cowin.

Credential Categories

The following post-secondary credentials are awarded in the B.C. public post-secondary system. These credentials are listed in order by rank, where the highest ranked credential (Doctorate) is assigned a rank of 1 and the lowest ranked credential (Developmental) is assigned a rank of 19.

Study Level	Credential Rank	Credential Category	Description
Graduate	1	Doctorate	Example: PhD
	2	Master's Degree	Example: MA, MSc
	3	Graduate Diploma	Requires a Baccalaureate degree for entrance; normally greater than 12 months of full-time equivalent study.
	4	Graduate Certificate	Requires a Baccalaureate degree for entrance; normally between 3 and 12 months of full-time equivalent study.
Undergraduate	5	Post-degree Diploma	Requires a Baccalaureate degree for entrance; normally greater than 12 months of full-time equivalent study.
	6	Post-Degree Certificate	Requires a Baccalaureate degree for entrance; normally between 3 and 12 months of full-time equivalent study.
	7	First Professional Degree	This designation is limited to programs in law, medicine, dentistry, optometry, pharmacy, and veterinary medicine.
	8	Bachelor's Degree	Baccalaureate Degree
	9	Advanced Diploma	Requires a diploma for entrance; normally greater than 12 months of full-time equivalent study.

Study Level	Credential Rank	Credential Category	Description
	10	Advanced Certificate	Requires a certificate for entrance; normally between 3 and 12 months of full-time equivalent study.
	11	Associate Degree	Awarded on completion of provincially defined academic arts or science programs consisting of 60 semester credits of first and second year transferable courses across a range of disciplines.
	12	Diploma	Awarded on completion of programs at the post-secondary level normally between 12 and 36 months of full-time equivalent study.
	13	Certificate	Awarded on completion of programs at the post-secondary level normally between 3 and 12 months of full-time equivalent study.
	14	Apprenticeship	Awarded on completion of a formal apprenticeship program (excludes entry level trades training). The credential is awarded by an external accrediting agency (ITA), rather than the institution, thus awarded apprenticeships are generally not reported to the STP.
	15	Short Certificate	Awarded on completion of programs at the post-secondary level of less than the equivalence of 3 months of full-time study. May include short programs for which the institution awards 'certificates' and non-credit credentials, and includes short professional certificates.
	16	Other	Program offers a credential based on evaluative components, but not one of the others in this list.
	17	None	Program does not offer a credential under these definitions.
	18	Recommendation for Certification	This credential category is for students who complete a teacher education program and are recommended for certification by the Teacher Regulation Branch.
Developmental	19	Developmental Credential	Awarded as a certificate or diploma upon completion of a developmental level program (e.g., high school diploma, ESL certificate). Includes the BC Adult Dogwood.

Domestic Student

Students who do not have an international student visa status and pay domestic fees to attend a B.C. public post-secondary institution.

Dogwood Certificate

The B.C. Certificate of Graduation or "Dogwood" Certificate is awarded to a student who successfully completes the B.C. secondary school graduation requirements.

Evergreen Certificate

The B.C. School Completion or "Evergreen" Certificate is awarded to a student who has successfully completed the goals and objectives in his or her Individual Education Plan in the B.C. K-12 education system. This certificate is intended for students with a special needs designation. It is not a graduation certificate like the Dogwood and is usually not sufficient for direct entry into most post-secondary programs.

Fixed Five-Year Graduation Rate

The proportion of students from an entry cohort who graduated from grade 12 within five years of entering grade 8. The cohort membership is fixed throughout the duration of the study period – there are no adjustments to the cohort size during the study period for in- and out-migration of entering or departing students. The rate is

calculated five years after entering grade 8, the normally expected graduation time for students who complete one grade level per academic year.

Graduate

A student who has achieved a B.C. Certificate of Graduation, granted by the Ministry of Education to students who meet the British Columbia secondary school graduation requirements (sometimes referred to as the "Dogwood Diploma" or "Dogwood").

Inclusive GPA (iGPA)

A broadly defined measure of academic performance for both grade 12 graduates and non-graduates. The iGPA is calculated from the average of twelve course grades selected from each of twelve subject areas in grades 10, 11 and 12 required for graduation. The best grade from each of the twelve subject areas is included in the iGPA calculation. In those cases where a student has not yet completed the requirements in all twelve subject areas, the iGPA is calculated on as many courses as are available for that student, from a minimum of one to a maximum of twelve courses per student. The twelve subject areas are based on the current grade 12 graduation requirements: Planning 10; Language Arts 10; Language Arts 11; Language Arts 12; Math 10; Math 11 or 12; Skills and Fine Arts 10, 11, 12; Social Studies 10; Social Studies 11 or 12; Science 10; Science 11 or 12; Physical Education 10.

Independent School

A school that is maintained and operated in British Columbia by an authority that provides an education program to 10 or more school-aged students as outlined in the Independent School Act.

International Student

At research-intensive universities, an international student is identified according to the student's visa status (student visa, visitor, international exchange, diplomat, minister, other). At other B.C. public post-secondary institutions (colleges, institutes and teaching-intensive universities), an international student is a student who pays international student fees.

Non-Aboriginal Student

A student who has self-identified as a non-Aboriginal student; or a student who has not self-identified as being of Aboriginal ancestry (First Nations: status and non-status, Metis or Inuit).

Non-Graduate

A student who has not achieved a B.C. Certificate of Graduation from the Ministry of Education because they have not yet met all of the British Columbia secondary school graduation requirements.

Persistence

The continuation of education over time. In this study, education persistence is tracked across two education systems (the B.C. K-12 education system and the B.C. public post-secondary education system) from initial grade 8 entry and over the next ten years.

Personal Education Number

The Personal Education Number (PEN) is a nine-digit number assigned to each student as they enter the British Columbia education system. This identification number follows the student through their Early Learning, B.C. K-12 and post-secondary education. An encrypted PEN allows the STP to track students for research purposes over time and across education system in a way that protects personal privacy.

Public Post-secondary Institutions in B.C., by Institution Type

The B.C. public post-secondary education system consists of twenty-five institutions, categorized into one of four different institution types:

- 1) **Colleges** – Camosun College, College of New Caledonia, College of the Rockies, Douglas College, Langara College, North Island College, Northern Lights College, Northwest Community College, Okanagan College, Selkirk College, Vancouver Community College.
- 2) **Institutes** – British Columbia Institute of Technology, Justice Institute of B.C., Nicola Valley Institute of Technology.
- 3) **Research-Intensive Universities (RIUs)** – Simon Fraser University, University of British Columbia, University of British Columbia Okanagan, University of Northern British Columbia, University of Victoria.
- 4) **Teaching-Intensive Universities (TIUs)** – Capilano University, Emily Carr University of Art + Design, Kwantlen Polytechnic University, Royal Roads University, Thompson Rivers University, University of the Fraser Valley, Vancouver Island University.

Public School

A body of students, teachers, other staff and facilities, organized as a unit for education purposes under the supervision of an administrative officer and administered by a district school board.

Retention Funnel

A visual model showing key milestones with measures of persistence and progression of students through various stages of their education, such as grade 8 entry, grade 12 graduation, post-secondary entry, post-secondary credential awarded.

Sankey Diagram

A data visualization used to depict a flow from one state to another. The flows are visually displayed in proportion to the total flow volume and the various routes or pathways from one state to another are depicted by these flow patterns. The STP frequently uses Sankey diagrams to show the mobility and flow of students between education levels, time periods, credential categories, regions, etc.

Secondary Ungraded Student

Students who are taking courses at the Grade 8-12 level and the school personnel do not consider them to be in a specific grade.

Student Transition Rate

The proportion of a base population of students that enrolls in a post-secondary institution in a specified time period. For example, the immediate-entry student transition rate is derived from the number of students who enrolled in B.C. public post-secondary education within one year of grade 12 graduation, from the population of grade 12 graduates who graduated and were deemed eligible to graduate at the beginning of the school year. Other forms of a student transition rate can be derived from other base populations and over different time periods.