

Seneca College's Degree and Credit Transfer Office: A Profile of users and an examination of outcomes

Ursula McCloy, Victoria Baker, Kathleen Williams & Henry Decock
Seneca College

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Seneca

DEGREE AND CREDIT
TRANSFER OFFICE

List of contacts

Ursula McCloy

Director, Centre for Research in Student Mobility

Seneca College

ursula.mccloy@senecacollege.ca

Victoria Baker

Manager, Degree and Credit Transfer Office

Seneca College

victoria.baker@senecacollege.ca

Henry Decock

Associate VP, Academic Partnerships

Centre for Research in Student Mobility

Seneca College

henry.decock@senecacollege.ca

Kathleen Williams

Research Analyst, Centre for Research in Student Mobility

Seneca College

kate.williams@senecacollege.ca

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Executive Summary

Seneca College is a recognized leader in the field of student transfer and pathways, both nationally and internationally, not just because of its focus on numbers of agreements, but also because of its comprehensive student advising, advocacy, assessment, and development of quality pathways. The Degree and Credit Transfer Office (DCTO) at Seneca provides a variety of integrated services to prospective and current students and alumni. These services include degree transfer advisement on new and existing program pathways – diploma to diploma, diploma to degree, and degree to graduate studies – and connecting students with other resources and information to support their academic goals.

The transfer outcomes of Seneca students who have used the DCTO services makes for an ideal case study, with findings that could benefit other colleges and universities. Seneca's DCTO was established in 2001 after some investigation pointed to a gap in the provision of information for students. At the time, nearly 44% of incoming students indicated that they planned on pursuing further education after completing their program at Seneca (36% at a university) and yet few services existed to support students interested in obtaining further education.

Previous reviews of DCTO services have focused on the experiences of students using the DCTO, particularly its flagship publication, the Degree Transfer Guide, providing the DCTO with useful but limited feedback. The purpose of the current study is to understand which segments of the Seneca student body are making use of the advising services, and which are not, particularly among those who indicated aspirations for university when they entered Seneca. Secondly, the study aims to understand the transfer rates and experiences of those who used the DCTO advising services versus those who did not. These two research components are discussed in Part 1 and Part 2, respectively, of this report.

Research questions

Part 1. What is the profile of students who use the DCTO transfer advising services?

- How do the sociodemographic and academic backgrounds upon college entry differ between DCTO users and non-users?
- Do motivations for college and program selection differ upon college entry for DCTO users and non-users?
- How many students who aspire to university use the DCTO services? How many students who use the services entered college without plans for transfer? How do the profiles of these groups of students differ?
- How do academic outcomes (graduation rates and grades) differ between DCTO users and non-users?

Part 2. Transfer rate to university and transfer experiences

- What is the transfer rate to university for those who used the DCTO versus those who did not?
- For graduates who transferred to university, did DCTO users differ from non-users in terms of their reasons for transfer, sources of information on transfer, or reported satisfaction with the transition experience?
- For transfers, does the choice of university or university program differ for those who used the DCTO versus those who did not?

Methodology

The study used a linked student-level database containing the full student population at Seneca. Students whose first semester was between the summer of 2007 and the fall of 2014, and whose first program was not a degree or a graduate certificate program, were included in the study. Visits to the DCTO were captured up until October 13, 2016. In total, 59,942 students fit these criteria and were included in the profile of DCTO users (Part 1 of study). Part 2 of the study, transfer outcomes, included a subset of the Part 1 sample of those who had graduated from a Seneca diploma or certificate program, had completed the provincially mandated Graduate Satisfaction Survey, and whose first visit to the DCTO was less than two months after graduation. This resulted in a sample of 13,607 graduates.

Results

Part 1: Profile of students who used the DCTO advising service

- Users of the DCTO were much more likely to have had plans for university when they first entered college, compared to those who did not use the DCTO services (65% vs. 37%).
- Younger students, females, and those with a parent with a degree were more likely to use the DCTO, whereas Canadian citizens and those whose first language was English were less likely. There were no differences by income or OSAP¹ receipt.
- Students who used the DCTO had somewhat stronger academic backgrounds, with 67% of users and 56% of non-users taking mostly university preparatory high school courses, and were somewhat more likely to have a high school average over 70% (50% vs. 45%). However, they were less likely to have previously attended college or university.
- Users of the DCTO were much more likely to have entered a three-year advanced diploma program compared to non-users (47% vs. 30%) and to have entered a business program (53% vs. 35%).
- Students who used the DCTO were much more likely to obtain higher grades at Seneca and to graduate, even when student aspirations, sociodemographic, previous academic, and program factors are taken into consideration.

Part 2. Transfer rate and experiences

- Overall, 58% of DCTO users furthered their education within six months of graduation compared to 25% of graduates who did not use the DCTO; 44% of graduates who transferred to university had used the DCTO advising services, whereas 10% of non-users transferred. This difference held true even when controlling for differences in academic performance, student aspirations and a variety of other factors.
- In total, 20% of transfers to university used the DCTO. Although this share differed little by student characteristics, 32% of university transfers from business programs and 29% of transfers from advanced diploma programs used the DCTO, compared to the average program rate of 20%.
- Of those who aspired to university at college entry, half of DCTO users transferred to university, compared to 22% of non-users.
- Overall, York and Ryerson predominate as universities of choice. Transfers who used the DCTO were much more likely than non-users to transfer to Ryerson (30% vs. 17%), with users and non-users equally likely to transfer to York.

¹ The Ontario Student Application Program (OSAP) provides eligible postsecondary education students with various types of assistance based on financial need.

- Graduates who use the DCTO are much more likely than non-users to transfer into business at university (52% vs. 25%) and less likely to transfer into humanities or the social sciences.
- Users of the DCTO are equally as likely as non-users to transfer into a related program.
- The reasons for transferring to university were similar between users and non-users, with career advancement and obtaining a credential cited by almost nine in ten transfers. DCTO users were more likely than non-users to cite the potential for higher income (76% vs. 70%) and the presence of a transfer agreement (55% vs. 49%) as major reasons.
- DCTO users make more use of most information sources, particularly college sources.
- Graduates' satisfaction with the transition experience (83%) and their academic preparation (87%) for transfer is high for both DCTO users and non-users, with little difference between the two groups.

Conclusions

Overall, students who use the DCTO services have similar sociodemographic and academic backgrounds to other college students, indicating that the services have a fairly equitable reach. However, users seem to be concentrated in programs with a large number of transfer agreements, and therefore the provision of outreach may be necessary for those who are navigating pathways with few or no agreements. Those who use the services perform extremely well academically in college compared to non-users, likely because they are highly motivated to obtain the grades required to transfer, and possibly because they benefit from DCTO advising services as well as referrals to academic advising. The most significant and positive finding of the study is the high transfer rates to further education and specifically to university for users of the DCTO advising services. Recommendations to enhance usage include reaching out to students (with aspirations for transfer) early on in their program, as well as to faculty and programs whose students are under-represented among DCTO users.

Introduction

Seneca College is a recognized leader in the field of student transfer and pathways, both nationally and internationally, not just because of its focus on numbers of agreements, but also because of its comprehensive student advising, advocacy, assessment, and development of quality pathways. The Degree and Credit Transfer Office (DCTO) at Seneca provides a variety of integrated services to prospective and current students and alumni. These services include degree transfer advisement on new and existing program pathways – diploma to diploma, diploma to degree, and degree to graduate studies – and connecting students with resources and information to support their academic goals.

As a central repository for transfer agreements, the DCTO works closely with academic departments to establish and develop partnerships with universities and colleges, negotiates new articulation agreements, and updates existing ones to reflect curriculum changes and improvements. The DCTO facilitates a College-wide transfer credit process that enables students who present previous postsecondary education to obtain transfer credit; promotes and establishes pathways from other institutions into certificate, diploma and degree programs; and continues to build its online equivalency database of transfer credit rules in Seneca's student information system.

At present, no other postsecondary institution in the province has a comparable centralized system of degree and credit transfer, one that also services the needs of prospective and current students and alumni through advisement, access to resources, and detailed pathway information. The transfer outcomes of Seneca students who have used the DCTO services makes for an ideal case study, with findings that could benefit other colleges and universities.

History and background

Seneca's DCTO was established in 2001 following an investigation that revealed the need for more comprehensive information on transfer for students. At the time, nearly 44% of incoming students indicated they planned on pursuing further education after completing their program at Seneca (36% at a university) and yet few services were available to support students interested in further education. The DCTO was among the first of its kind in Ontario to act as a central repository for all agreements, and to offer a high level of advisement on pathway options for students. The Office evolved from a single staff member, with Student Services providing degree transfer advisory and support services, to include a full-time, degree and credit transfer coordinator with support from Career Services.

In September 2011, provincial infrastructure changes took effect: The College University Consortium Council (CUCC) became known as the Ontario Council on Articulation and Transfer (ONCAT). The Ontario College University Transfer Guide (OCUTG) was replaced by a new online system, ONTransfer.ca, designed to showcase available pathways between Ontario colleges and universities, and to include course-to-course equivalencies between institutions. At this time, colleges and universities throughout the province began to use Ministry² funding to establish their own pathways and/or credit transfer departments, in alignment with the Ontario's focus on expanding the number of transfer pathways available to students.

² Ontario Ministry of Advanced Education and Skills Development (MAESD).

In 2012, Seneca moved the DCTO from Student Services to the Academic portfolio, to better align with the College's academic goals. This change in structure allowed Seneca to leverage its knowledge and experience in the area of pathways and to expand its already robust department, with pathway opportunities catapulting as a key differentiator for prospective and current students and alumni. The implementation of Seneca's new Student Information System (SIS) in 2015, spearheaded the creation of the College's internal transfer credit system for processing incoming credits and pathways. This initiative enabled the DCTO, in collaboration with the Registrar's Office, to provide a centralized service for all related pathways and transfer credit inquiries, both incoming and outgoing. The priorities of the DCTO and supports offered are described in Appendix 1.

Previous evaluation

The DCTO recently began evaluating its services, particularly its flagship publication, the Degree Transfer Guide. A 2015 survey delivered to students who had seen a degree transfer advisor during the academic year, asked a series of questions related to the student's advisement experience. More than three-quarters (76%) of respondents stated that they had read the guide prior to their degree transfer advisement appointment; 65% of those who had read the guide reported that it was "useful" to "very useful." In response to the question about the usefulness of their individual advising appointment, 63% found it "useful" or "very useful," with 31% finding it "very useful."

In the following year, the DCTO and Seneca's Marketing and Communications department organized two focus groups to better understand how the Degree Transfer Guide was being utilized and whether such a detailed hard copy resource was needed on an annual basis. The first focus group included students who had recently consulted with transfer advisors at the DCTO, and were likely familiar with the Guide because of their connection to advisors. The second group comprised students who worked within the Student Services department and were likely seeing the book for the first time at the focus group. The results showed that students are using the Guide, and consider it to be a valuable resource, and that it is typically used in conjunction with one-on-one degree transfer advisement or with web/online searches.

Research Questions

Part 1 of this report analyzes data from Seneca's Student Information System to identify which segments of the student population use the DCTO services. Part 2 looks at graduate outcomes, and compares the transfer rates and experiences of those who use the DCTO advising services versus the outcomes for graduates who do not. The research questions for Parts 1 and 2 are as follows:

Part 1. What is the profile of students who use the DCTO transfer advising services?

- How do the sociodemographic and academic backgrounds upon college entry differ between users and non-users?
- Do motivations for college and program selection differ upon college entry for non-users and users?
- How many students who aspire to university use the DCTO services? How many students who use the service entered college without plans for transfer? How do the profiles of these groups of students differ?
- How do the academic outcomes (graduation rates and grades) differ between users and non-users?

Part 2. Transfer rate to university and transfer experiences

- What is the transfer rate to university for those who used the DCTO versus those who did not?
- For graduates who transferred to university, did DCTO users differ in terms of their reasons for transfer, sources of information on transfer, or reported satisfaction with the transition experience?
- For transfers, does the choice of university or university program differ for those who used the DCTO versus those who did not?

Methodology

Analysis sample

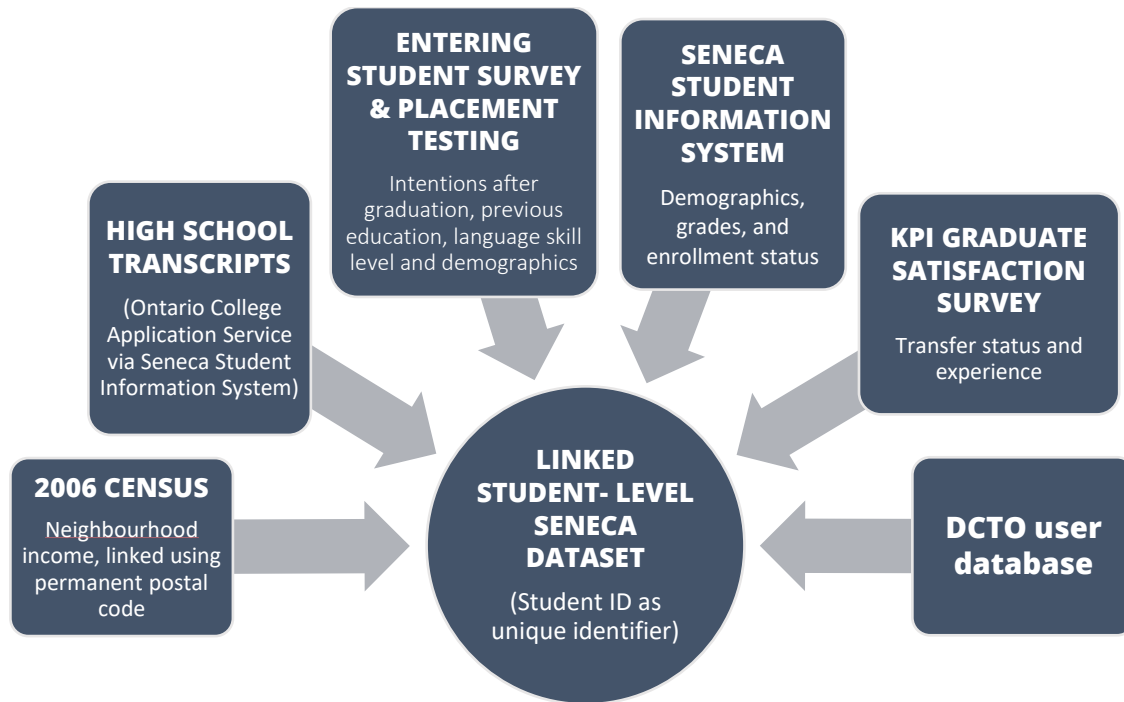
The study included students who met all of the following criteria: They were in their first semester of a Ministry-approved program between the summer of 2007 and the fall of 2014; they had completed the entering-student survey; and their first program was not a degree or a graduate certificate program. Students' visits to the DCTO were captured up until October 13, 2016. In total, 59,942 students met these criteria and were included in Part 1 of the study, the profile of DCTO users. Part 2 of the study drew from the same sample of students, focussing on those who had graduated by 2014 (n=19,029). Of those who graduated, 72% completed the GSS (13,776). Further excluding those who had switched programs and graduated from a degree or a graduate certificate program (n=64), or whose first visit to the DCTO was more than two months after graduation³ (n=105) resulted in a final sample of 13,607 graduates.

Data sets

Figure 1 depicts the datasets that were linked for this study, and the details and variables contained in each. To facilitate the linking of datasets, a master ID was assigned to match as many records between the datasets as possible and to remove duplicates. This process entailed verifying a student's identity using a combination of first name, last name, date of birth, and postal code, as well as the alternate IDs already identified within the College's system.

³ The two month cap was set based on the time frame between graduation and the survey date (6 months). After visiting the DCTO students would only have approximately 2 months from the visit to apply and enrol in university.

Figure 1. Linked student-level dataset, Seneca College



High school records

For every Seneca student who attended an Ontario high school, the College's student information system contains one record for every high school course taken from Grade 9 through to Grade 12. The subset used for this study's analysis included only those students who had a minimum of six courses from Grade 11 or 12. The overall senior high school average was calculated from all Grade 11 and 12 course grades. To get a sense of whether the student struggled in high school, the total number of Grade 11 or 12 courses failed was also calculated. Two variables were created to indicate whether a student took a mainly university preparatory course stream or a college preparatory course stream, defined as "mostly U" and "mostly C" respectively. The variable "mostly U" was defined as having a minimum of half of Grade 11 and 12 courses that were of the university (U) or university/college (M) preparatory type, whereas "mostly C" was defined as having a minimum of half of Grade 11 and 12 courses that were of the college preparatory type (C). Additionally, an "eligible for admission to an Ontario university" variable was created.

For university admission, Ontario high school students are required to have at least six Grade 12 U or M courses, with the high school average requirement at the discretion of the institution. A review of entrance high school averages reported by Ontario universities in the Common University Data Ontario (CUDO) indicates that the minimum reported secondary school average is approximately 70%. Therefore, high school students are considered eligible for university entrance if their high school average is at least 70% in their top six Grade 12 U/M courses.

Income

For a proxy of each student's household income, the student's permanent postal code was matched to household income data from the 2006 Census. Using the six-digit permanent postal code in the College's

student information system, each student from Ontario was assigned to a 2006 Dissemination Area (DA) using a 2011 Statistics Canada postal code conversion file (PCCF). If a student's permanent postal code was missing or invalid, the Ontario high school postal code was used. A student's neighbourhood income group was derived by splitting the DAs into income terciles of low, medium and high, based on the average pre-tax household income for Ontario households. In addition to neighbourhood income, whether a student ever received a loan from the Ontario Student Assistance Program (OSAP) at any point in their college program was used as an individual marker of demonstrated financial need.

English-language placement testing

Most entering students at Seneca, depending on their program, are required to complete an English-language placement test (comprising a 300-word essay) to assess writing proficiency. Students are also required to complete a computerized placement test (Accuplacer) that assesses reading comprehension (120-point scale). Based on the test results, students are placed in one of several levels of English-language proficiency and corresponding courses.⁴

- 1) ELL-1 & ELL-2 (non-credit): English for English Language Learners whose test scores are two or three levels of proficiency below college-level English
- 2) ELL-3 (non-credit): English for native-English speakers and for ELL learners whose test scores are one level of proficiency below college-level English (at the more proficient end of the ELL scale)
- 3) College-level English (credit) and above. College-level English is required for all certificate/diploma programs. Includes degree-level English and those exempted (high scorers)

Entering-student survey

During the mandatory placement testing, all entering Seneca students must complete a background survey, which includes the following questions:

- University aspirations upon entry to the College: "After graduation from my program, I plan to"
- Previous university: "The last school I attended was"
- First language: "The language I learned first was"
- Whether either parent has a university degree: "The highest level of education completed by my father/guardian is" (includes a separate question for maternal education)
- "Main reason for choosing Seneca," and specifically, "main reason for choosing program at Seneca"
- "My main activity in the past twelve months"

In cases where two or more completed surveys existed, the earliest record was used to reflect a student's true entering status. The "previous university" variable is limited in scope because entering students are asked only about the last school they attended and not whether they have ever attended university or have completed a credential.

Program of entry and graduation

Only students who enrolled in full-time programs approved by the Ministry of Advanced Education, Skills and Development (MAESD) were included in the study. Seven program area groupings were derived from MAESD's occupation cluster classification system and have been described previously (McCloy & Liu,

⁴ See Seneca College website, <http://www.senecacollege.ca/testcentre/assessment.html>

2010). For the analysis of the student profile (Part 1), the first program and credential enrolled in were used. For Part 2, the analysis of graduates who transferred, the program of graduation was used.

College performance

Overall GPA was calculated from the average of all credit courses ever taken at Seneca up to the first credential a student completed. In Part 1, the student profile, GPAs were grouped into four categories: below 2.0, 2.0 to less than 3.0, 3.0 to 3.49, and 3.5 and above.⁵ In Part 2, for the transfer analysis of graduates, GPAs were grouped into three categories: less than 3.0, 3.0 to 3.49, and 3.5 and above.

Graduation rates

Graduation rates were calculated in two ways. One rate represents the share of students who had graduated from their first program within the standard program length; the other represents the share who had graduated from their first program within one year of the standard program length.

Degree and Credit Transfer Office database

Degree transfer advisement takes place on a weekly basis across all four of Seneca's main campuses. Seneca's Newnham Campus (one of the largest college campuses in Canada) offers advisement appointments one to two times per week, as well as a day of walk-in advisement when no appointment is necessary. Prior to the first advisement appointment, each individual is asked to complete an appointment card which gathers information about contact information (name, student ID), demographics (age, gender, international status), college GPA, current program, previous education, top four institutions and programs being considered, and intention to complete/not complete the current Seneca program. The back of the appointment card has an open ended area for the advisor to write notes based on the discussion, attach any email correspondence, and to indicate whether the appointment was formal, scheduled appointment, an appointment over the phone, or a drop-in. This information has been tracked and housed within an internal database dating back to October 2003.

For the current study (with ethics approval), the DCTO user database was linked via the student ID to the existing research database maintained by the Centre for Research in Student Mobility (CRSM) for all students who first started at Seneca between 2007 and 2014.

Transfer rates and the experiences of transfer students

Additional outcomes were obtained from the Graduate Satisfaction Survey (GSS) administered by MAESD for the years 2007–08 to 2013–14.⁶ The survey asks graduates about their education and labour market activity during a specified reference week six months after graduating.

⁵ These categories were used in a previous study on Seneca students, and were intended to correspond approximately to being at risk of not graduating, average, and honours (Lopez-Rabson & McCloy, 2013). Seneca's current academic policy requires a 1.7 GPA to graduate, and a 3.55 GPA to graduate with honours. See www.senecacollege.ca/academic-policy/

⁶ The GSS is administered to all college graduates with an Ontario College Credential from a publicly funded College of Applied Arts and Technology (CAAT) in Ontario. The survey is administered approximately six months after graduation through telephone surveys conducted by an external service provider to whom the colleges provide contact information and graduate characteristics such as age, gender, and program of study. The graduate record file of each college is examined by college auditors and reported to MAESD. See <http://www.tcu.gov.on.ca/pepg/documents/GraduateandEmployerKPIsurveys2015-16SurveyCycle.pdf>

The first question on the GSS asks whether the respondent is enrolled in full- or part-time education in the reference week. If the response is yes, the following information is gathered:

Institution name and type: A drop down list of names of Ontario publically funded postsecondary institutions is provided to the interviewer. These institutions are subsequently grouped into university, college, or other education. Starting in 2010–11, specific institution names were provided as open-ended responses to “other” university, “other” college, and “other education”. The current study, reviewed, cleaned and recoded all of these open field responses as needed. Some responses were found to be on the list of Ontario postsecondary institutions, whereas others were mislabeled as colleges or universities. Unknown institution names were researched online to determine the appropriate institution type.

College or university credential: Survey responses were classified as degree, certificate/diploma, degree offered jointly with a college or university, or as no credential specified.

University program of study entered: These were classified according to the University Student Information System (USIS).⁷

Reasons for furthering their education: A series of questions, each with a response option of “major,” “minor,” or “not a reason”.

Transfer experience: Respondents who indicated they were enrolled full time in further education were asked in detail about their transfer experience, perceptions, and information sources:

- Transfer credit: reported amount, satisfaction with, and timing of notification
- Relatedness of university program entered to program of graduation
- Whether student would have been accepted without college graduation
- When decided to transfer
- Information sources (major, minor, not a source)
- Satisfaction with academic preparation and the transition experience

Analytic Methods

Both descriptive and regression techniques were used to estimate the effect of use of the DCTO on college performance and transfer to university after graduation. Descriptive results for each outcome of interest are presented for these analyses by selected characteristics. To control for the independent effects of each variable, regression models were used for each outcome of interest. Either, linear regression with robust standard errors or logistic regression was used to estimate the effect of DCTO use on each outcome of interest. Linear regression with robust standard errors was used when the outcome of interest was a continuous variable and logistic regression was used when the outcome of interest was a dichotomous categorical variable. For all regression analyses, the dataset was restricted to individuals with complete data for all variables included in the regression model.

Model Building

For each multivariable regression model, the inclusion of each variable was assessed independently by removing each variable from the multivariable model one at a time. If the independent variable of interest or its corresponding standard error changed by greater than or equal to 10% upon removal of a

⁷ http://www23.statcan.gc.ca/imdb-bmdi/document/3124_D3_T4_V1-eng.pdf

variable, the variable was included in the model. Additionally, the likelihood-ratio (LR) test was used to assess whether inclusion of the variable significantly improved model fit. A variable was kept in the multivariable model if its inclusion statistically improved the fit of the model as determined by a LR test p-value of <0.05 . Variables for students' gender and age were included in all regression models regardless of their statistical significance.

Limitations

The Graduate Satisfaction Survey asks graduates to report on their status during a specified reference week six months after graduating, which may result in a limited sampling for the following reasons:

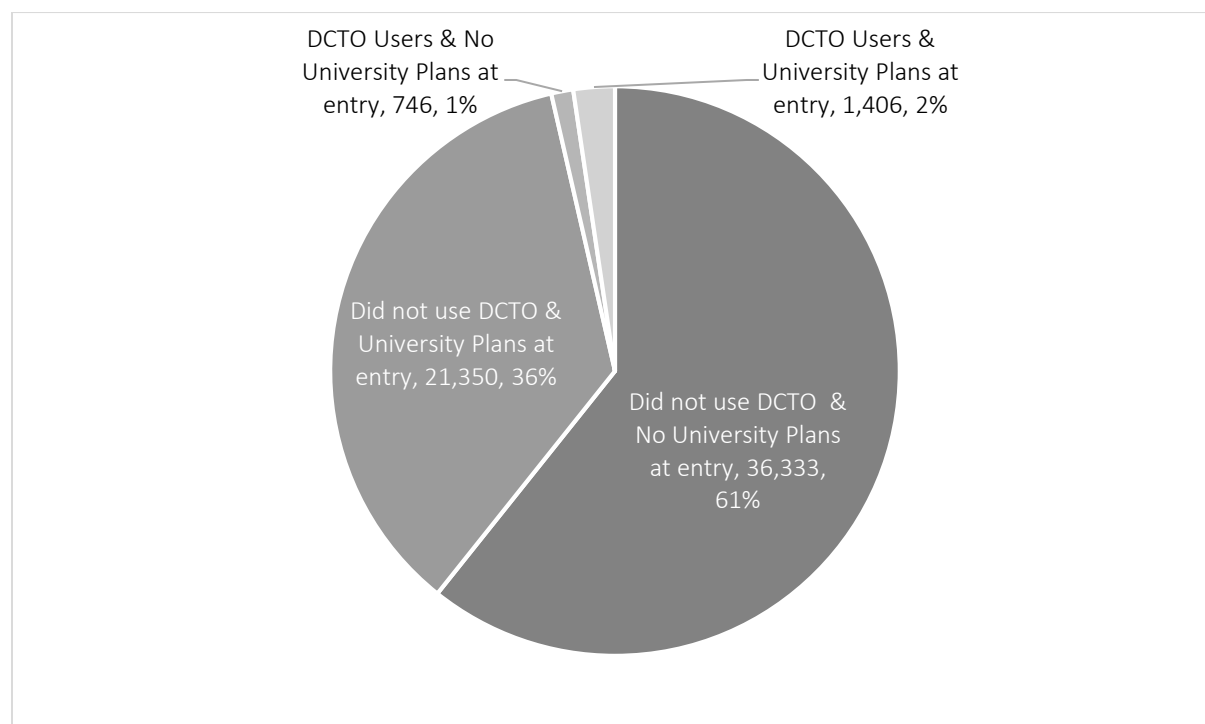
- An underestimate of a transfer rate, particularly for students who graduate in the fall term because their reference week would be in June/July, a non-traditional enrolment semester.
- The six-month timeframe would not include those who enrolled in university after that time.
- As this is a graduate survey, students who transferred without graduating are not counted. Other research has shown (e.g., Smith et al., 2016) that as many as half of those who transfer from college are not graduates.

This intent of this research is not to measure the quality of DCTO advising, nor to evaluate its effectiveness. DCTO users may include those dealing with challenging issues, such as aspiring for university when an alternate route, individualized to their specific circumstances, maybe more appropriate. However, accounting for those who have aspirations for transfer serves to reduce some of the selection bias in the GSS.

Results

Part 1. Profile of entering students by university aspirations and subsequent use of DCTO
The majority (61%) of students both did not plan to attend university and did not register with the DCTO (Figure 2). A further 36% of students, despite aspiring to university, did not register with the DCTO. In total, 2,156 students over the eight-year study received one-on-one advising from the DCTO. The majority (65%) of these users stated they had plans for attending university at college entry compared to 37% of non-users at entry who had plans for university. Detailed numbers by year of entry are in Appendix 2.

Figure 2. Seneca students' use of DCTO and aspirations for university at entry, 2007–2014



Between 3% and 4% of all students make use of the DCTO, a rate that is fairly consistent over time (Table 1). Students with plans for university are far more likely to use the DCTO, averaging 6.2% compared to 2% of those originally without plans for university.

Table 1. Share of students who use the DCTO, by university plans at entry, 2007–2014

Entry year	% all students	% students without university plans at entry	% students with plans for university
2007	3.6%	1.7%	6.1%
2008	4.1%	2.0%	6.9%
2009	3.5%	1.7%	6.6%
2010	3.2%	2.0%	5.4%
2011	3.4%	1.9%	5.9%
2012	4.1%	2.6%	6.7%
2013	3.7%	2.3%	6.3%
2014*	3.1%	1.8%	5.6%
Total	3.6%	2.0%	6.2%

Notes: Each academic year contains summer, fall and winter. *The winter semester is not included for 2014. Entry students for later years had less time to access the DCTO and therefore the usage numbers may be lower.

The DCTO asks students to list their top choices for postsecondary institution and program. Table 2 shows the distribution for their first choice by geographic region and institution type. Most students who visit the DCTO have plans for university, with 85% having a university in mind, 5% a college, and 10%

undecided about their specific choice. Of those whose first choice is a university, most are planning on studying in Ontario (94%), with 3% choosing other regions in Canada, and another 3% choosing to study outside of Canada.

Table 2. First choice of institution, by institution type and region, DCTO users, 2007–2014

Region	College	University	Total	%
Ontario	106	1,725	1,831	84.9%
British Columbia	--	26	27	1.3%
Quebec	--	11	12	0.6%
Prairie region	0	10	10	0.5%
Atlantic region	0	11	11	0.5%
USA	0	20	20	0.9%
Outside North America	0	36	36	1.7%
Unknown/ undecided			209	9.7%
Total	108	1,839	2,156	100.0%

--Too low to report

Sociodemographic characteristics

Younger students, females, and those with a parent with a degree were more likely to use the DCTO (Table 3). Canadian citizens and those whose first language was English were less likely to use the DCTO. There were no evident patterns for income level, with neighbourhood income and the incidence of OSAP receipt not differing by DCTO usage. Younger students and those who had at least one parent with a degree were more likely to have planned for university. There was little difference in university plans for the other characteristics studied such as gender, status in Canada, or income.

Table 3. Sociodemographic characteristics of Seneca entrants, by use of DCTO and aspirations for university, 2007–2014

		Did not use DCTO			DCTO users		
		No Univ Plans at entry	Univ Plans at entry	Total	No Univ Plans at entry	Univ Plans at entry	Total
Number		36,333	21,350	57,786	746	1,406	2,156
Age at entry (yr.)	<19	24.4%	37.3%	29.2%	30.4%	44.8%	39.7%
	19	16.0%	22.9%	18.5%	15.0%	21.1%	19.1%
	20 & over	59.6%	39.8%	52.3%	54.6%	34.1%	41.2%
Gender	Male	49.6%	50.4%	49.9%	44.8%	45.9%	45.5%
	Female	50.3%	49.6%	50.0%	55.2%	54.1%	54.5%
Status in Canada	Citizen	73.3%	75.3%	74.0%	68.4%	70.8%	69.8%
	Student Visa	13.5%	11.5%	12.8%	13.1%	14.4%	14.1%
	Other*	13.2%	13.2%	13.2%	18.5%	14.9%	16.2%
	Yes	59.2%	56.4%	58.1%	52.0%	52.2%	52.0%
English as a first language	Yes	59.2%	56.4%	58.1%	52.0%	52.2%	52.0%
	Degree	26.1%	29.4%	27.3%	29.6%	35.1%	33.2%
	No Degree	61.1%	58.5%	60.1%	60.1%	54.6%	56.5%
Parental education	Unknown	12.8%	12.2%	12.6%	10.3%	10.2%	10.3%
	Low	39.1%	39.0%	39.1%	40.4%	35.7%	37.4%
	Middle	34.4%	35.2%	34.7%	34.6%	36.6%	35.9%
Neighbourhood income	High	26.4%	25.8%	26.2%	25.0%	27.7%	26.7%
	OSAP recipient	44.0%	47.6%	45.3%	50.9%	46.9%	48.3%

Note: Total columns include the 61 survey participants (1 DCTO user and 60 non-users) who did not respond to the questions on graduate plans. *"Other" status in Canada includes non-Canadian citizens who pay domestic student fees, including those with non-student visas, refugees, or permanent residents.

Academic background

Students who used the DCTO had stronger academic backgrounds in high school (Table 4). DCTO users were much more likely than non-users to have taken mostly university preparatory courses, at 67% versus 56% respectively, which may indicate early aspirations for university. Users were somewhat more likely to have over a 70% average and to have failed fewer courses, and subsequently were more likely than non-users to have been eligible for university acceptance based on their high school grades.⁸

For both users and non-users, those who had planned on attending university were more likely to have taken mainly university preparatory courses, but were also more likely to have achieved poorer grades and failed more courses. Those who had both plans for university at entry and did not use the DCTO, had the poorest grades and the highest course failure rate of all four groups.

⁸ Note that the definition used here for university eligibility is a minimal standard. Prerequisites and grades differ greatly by university and program, and therefore some students may not have been eligible for their specific program of interest.

Table 4. High school background of Seneca students, by use of DCTO and aspirations for university at entry, 2007–2014

		Did not use DCTO			Used DCTO		
		No Univ Plans at entry	Univ Plans at entry	Total	No Univ Plans at entry	Univ Plans at entry	Total
Number		23,110	15,767	38,937	463	1,018	1,482
High School Course Type	Mostly U/M	52.6%	60.4%	55.8%	62.2%	69.4%	67.1%
High School Aver. (Gr. 11 & 12)	<70%	50.0%	61.6%	54.7%	45.1%	51.6%	49.5%
	70–80%	40.0%	33.2%	37.3%	44.1%	40.3%	41.5%
	>80%	10.0%	5.2%	8.0%	10.8%	8.2%	9.0%
Number of HS Course Failures (Gr. 11 & 12)	None	56.8%	45.6%	52.2%	59.0%	56.0%	57.0%
	1–3	32.4%	38.5%	34.9%	32.4%	35.2%	34.3%
	4+	10.8%	15.9%	12.9%	8.6%	8.8%	8.8%
Eligible for Univ.	Yes	21.1%	18.5%	20.0%	24.4%	25.7%	25.3%

With regard to language proficiency and subsequent DCTO use, non-users who did not have university plans at college entry had a marginally higher reading comprehension score, and a slightly higher likelihood of being placed in college level English (Table 5). The language proficiency of DCTO users differed little by plans for university. Overall, DCTO users and non-users had similar levels of language proficiency.

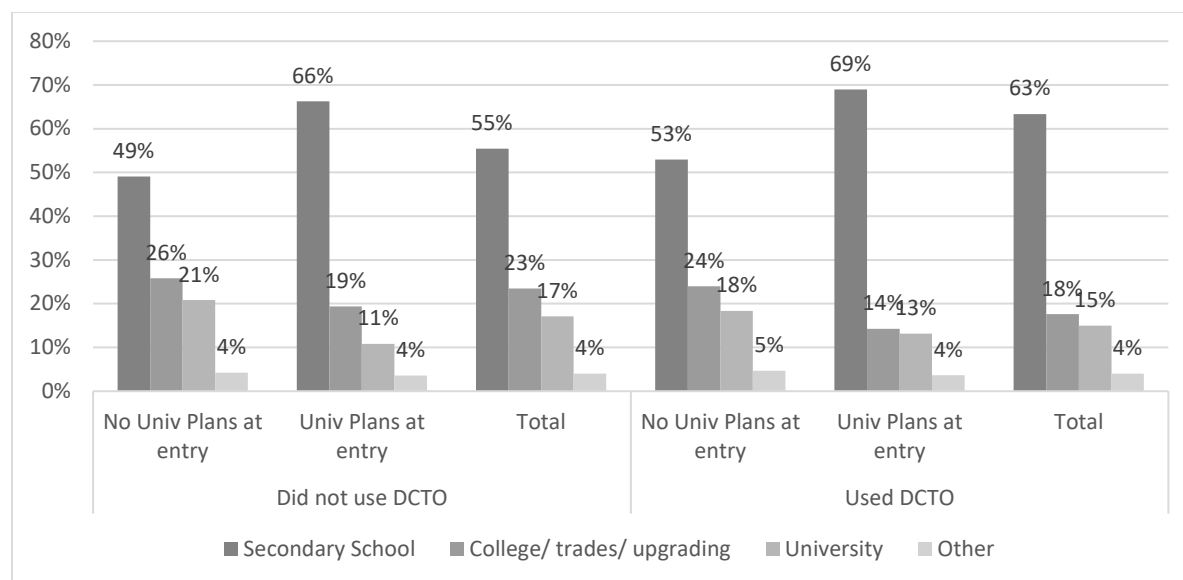
Table 5. Language proficiency of Seneca students, by use of DCTO and aspirations for university at entry, 2007–2014

		Did not use DCTO			Used DCTO		
		No Univ Plans at entry	Univ Plans at entry	Total	No Univ Plans at entry	Univ Plans at entry	Total
Reading Comprehension	Average Accuplacer Score	71.1	67.8	69.9	72.4	69.5	70.5
Writing Assessment	Average Writing Score (essay)	2.27	2.25	2.26	2.25	2.26	2.25
College English Course Placement	ELL Level 1 & 2	16.5%	14.4%	15.8%	16.0%	13.4%	14.4%
	ELL-3*	37.1%	42.8%	39.2%	38.6%	41.2%	40.3%
	College-Level English & Exempt	46.4%	42.8%	45.0%	45.4%	45.4%	45.3%

Note: *Both English-language learners and native English speakers who scored one level of proficiency below college-level English entered the same course and could not be distinguished; labelled here as ELL-3.

In addition to high school grades and language proficiency, previous education is also a key element of academic background.⁹ Users of the DCTO were more likely than non-users (63% vs. 55%) to have no previous postsecondary education (Figure 3). Students with plans for university were more likely to have last attended high school and much less likely to have attended college/trades/ upgrading or university, for both users and non-users. The high rate of previous university attendance for the group who used the DCTO but did not start college with plans for university (18%) is interesting, and could be an area for further research.

Figure 3. Last school attended, by use of DCTO and aspirations for university at entry, 2007–2014



Program area and credential

Plans for university and subsequent use of the DCTO both varied greatly by credential type (Table 6). Students who entered one-year certificate programs were both less likely to have had plans to enter university upon entry and to use the DCTO. In contrast, 47% of students who used the DCTO were enrolled in advanced diploma programs compared to only 30% of non-users. Almost half of those who both had plans for university and used the DCTO were enrolled in advanced diploma programs, compared to just over a quarter of those who neither had plans for university nor used the DCTO.

Distinctive patterns of DCTO use and plans for university were also seen for the program area. Business programs, irrespective of plans for university, comprised over half of the DCTO users, compared to 35% of non-users. Preparatory/upgrading programs are also of note, with as high a rate of aspirations for university, but a lower share of those using the DCTO. Students in the Liberal Arts Transfer (LAT) program, the largest of the preparatory/upgrading programs and offered jointly with several universities, are already well informed about their university pathway and therefore require less external support and advice.

⁹ The survey is limited in that it asks only about the most current education attended, not the highest, and therefore it is unknown whether a credential has been completed.

Table 6. First program area and credential, by use of DCTO and aspirations for university at entry, 2007–2014

		Did not use DCTO			Used DCTO			Total
		No Univ Plans at entry	Univ Plans at entry	Total	No Univ Plans at entry	Univ Plans at entry	Total	
Credential Type	Certificate 1-yr	15%	9%	12%	11%	5%	7%	12%
	Diploma 2-yr	59%	54%	57%	45%	46%	46%	57%
	Advanced Diploma 3-yr	26%	37%	30%	45%	49%	47%	31%
Program Area	Business	34%	36%	35%	50%	54%	53%	36%
	Community Services	15%	18%	16%	18%	19%	19%	16%
	Creative and Applied Arts	17%	7%	13%	6%	2%	4%	13%
	Health	5%	3%	5%	2%	2%	2%	5%
	Hospitality	5%	2%	4%	4%	1%	2%	4%
	Preparatory/ Upgrading	9%	18%	12%	9%	8%	9%	12%
	Engineering/ Technology	15%	16%	16%	11%	12%	12%	15%

The entering student survey asks students to indicate the single main reason for choosing Seneca College (Table 7). As expected, students who indicated they planned to attend university were most likely to cite university preparation as their main reason and less likely to cite program availability and career as the main reason. Of those with initial plans for university, those who eventually used the DCTO were more likely than those who did not to cite university preparation as their main reason, indicating they were likely more certain of their plans. University preparation was the least cited reason for those who entered college without plans for university, both for DCTO users and non-users. It is interesting to note that the group of students who did not have plans for university but subsequently used the DCTO, were most likely to cite faculty reputation (17%) as their main reason, indicating a group that is likely highly motivated by academic reasons. A possible reason for this finding is that students' interest in their chosen field of study fuels aspirations to continue on after college.

Table 7. Main reason for choosing Seneca, by subsequent use of DCTO and aspirations for university at entry, 2012–2014

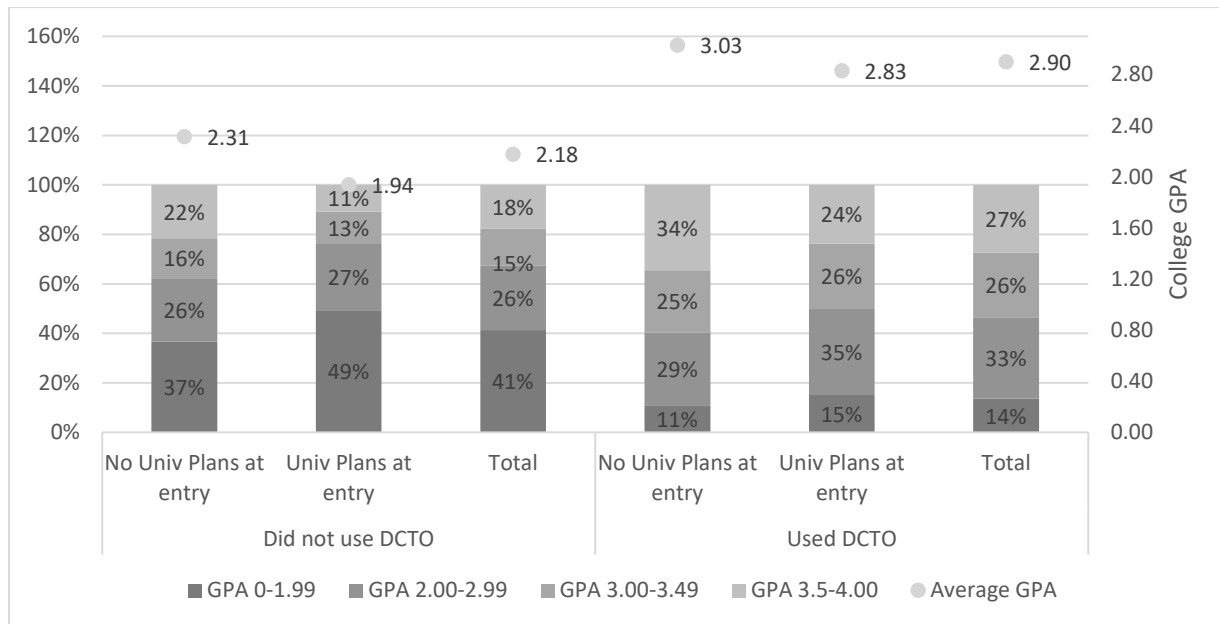
	Did not use DCTO			Used DCTO			Grand Total
	No Univ Plans at entry	Univ Plans at entry	Total	No Univ Plans at entry	Univ Plans at entry	Total	
My first choice program was available at Seneca	39%	25%	34%	32%	21%	25%	34%
To further advance my career	22%	12%	19%	23%	11%	16%	19%
To prepare for university	3%	35%	14%	4%	44%	28%	15%
Campus is close to home	12%	11%	12%	13%	9%	11%	12%
Good reputation of the faculty	12%	9%	11%	17%	8%	12%	11%
I have family and friends who attended or are currently attending Seneca	6%	5%	6%	5%	4%	5%	6%
Seneca's campus is attractive to me	5%	4%	4%	5%	2%	4%	4%

Note: This question were only asked since 2012 (n=24,405)

Academic outcomes by university aspirations and use of DCTO

Students who used the DCTO obtained much higher grades in college than non-users, with 53% obtaining a GPA of over 3.0 compared to 33% of non-users (Figure 4). This held true whether or not the student had aspirations for university at college entry. Most provincial pathways require a minimum GPA of 3.0 to be considered for transfer. Those who had used the DCTO and had indicated their choice of an Ontario university would have been informed of this requirement. Students with plans for university achieved slightly lower grades, likely associated with a slightly weaker academic background upon college entry. The highest performers were those who did not have plans for university at college entry, but who subsequently used the DCTO. Their strong performance in college may have contributed to their decision to attend university. The group that had plans for university, but did not use the DCTO, performed the poorest; this group had the weakest academic background at college entry, and continued to struggle in college.

Figure 4. Cumulative GPA (up to first credential), by university aspirations at entry and use of DCTO, 2007–2014



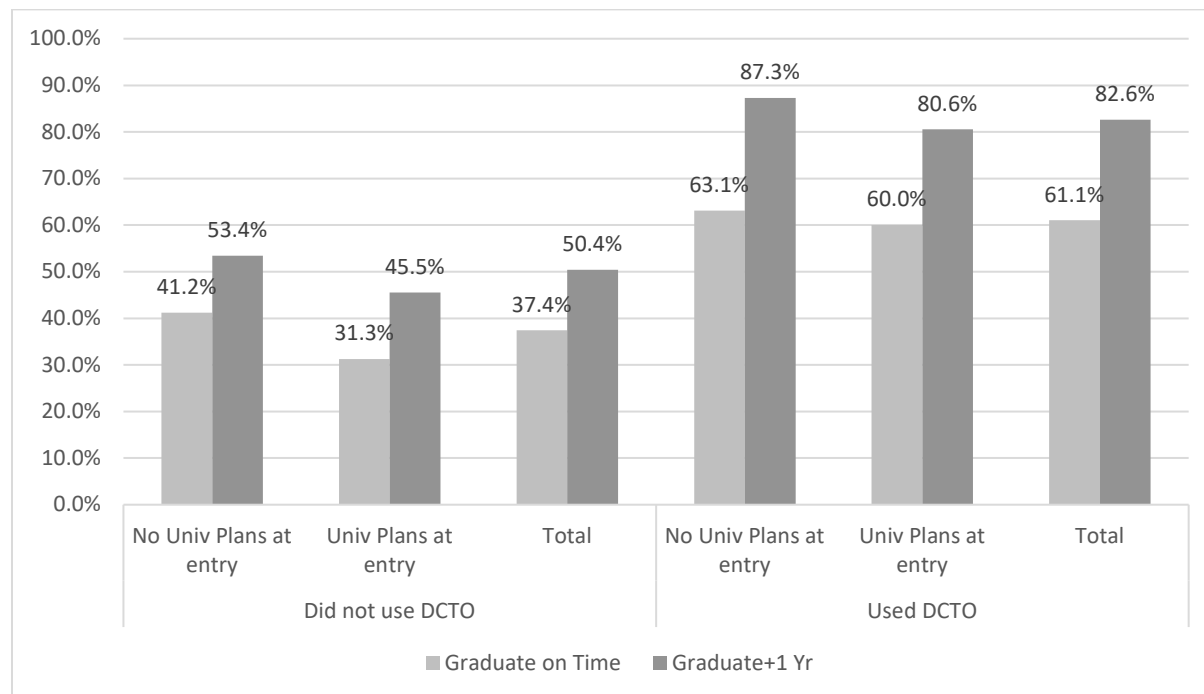
Note: 523 students in sample had missing GPAs and are not shown; one was a DCTO user and 522 were non-users.

As would be expected, graduation rates show a similar pattern as grades when considering university aspirations and DCTO usage. Users are much more likely than non-users to graduate within a year of the expected date (83% vs. 50%), and those with plans for university (both users and non-users) are also somewhat less likely to graduate (Figure 5). A similar pattern is seen for graduating on time.

The students who are further along in their program have been in the college longer and therefore have had more time to access the DCTO services, which partially accounts for the stronger academic outcomes of DCTO users. In contrast, poorly performing students likely are aware that they are not performing well enough to qualify for transfer, and therefore they do not seek out the DCTO services. However, the nature of the advising services may also serve to enhance academic performance. The DCTO will review a student's grades with them, advise them to re-take specific courses to improve their overall GPA if necessary, and refer them to other services such as academic advising. As well, the DCTO encourages students to complete their program before transferring, emphasizing the differential transfer credit and transfer agreement options that accompany the credential.¹⁰ The DCTO may discuss the value in obtaining the college credential for employability purposes, as a "back-up" plan should the transfer to university not work out because of a change of student plans, or because of academic difficulties in university. In addition, the DCTO provides advisement around switching programs to a two year from a three year diploma so that a student can still graduate if their goal is to transfer sooner than their anticipated graduation date.

¹⁰ For example, transfer agreements between Ryerson and Seneca require graduation from Seneca.
<http://www.senecacollege.ca/degreetransfer/guide/ryerson-university.html>

Figure 5. Graduation rates, by university aspirations and use of DCTO, 2007–2014



Notes: In total, 23,056 students in the sample had not yet completed the standard program length and were excluded from the analysis. For the calculation providing one extra year to graduate, 23,561 students were excluded.

The simple relationship between use of the DCTO and college grades and graduation rates, as described above, is more complex when high school background is examined closely. Previously it was shown that users of the DCTO had slightly higher high school grades and were more likely to have taken university preparatory courses (Table 4), which generally translates into improved academic outcomes in college. Additionally, the comparison of GPA for students by use of the DCTO may be somewhat misleading because students who do very poorly early in their program and withdraw will have had less opportunity to access the DCTO services. To control for this factor, those students who left within their first semester are excluded from the analysis (Table 8) of academic outcomes by high school grades for DCTO users and non-users. Across high school course grades and course types, users of the DCTO still achieved higher GPAs than non-users and were more likely to graduate, with the exception of students with high school grades over 80%. This group was equally likely to graduate on time regardless of DCTO use. The gap between users and non-users is particularly large for those with lower high school grades and for those who did not take mostly university prep courses in high school.

Table 8. Academic outcomes, by high school background and use of DCTO, 2007–2014.

		College GPA			Graduation Rate (on time)		
		Used DCTO	Did not use DCTO	Total	Used DCTO	Did not use DCTO	Total
High School Course Type Mostly U/M	No	2.78	1.97	2.00	57.6%	32.1%	32.9%
	Yes	2.86	2.40	2.42	62.2%	45.2%	45.9%
High School Aver. (Gr. 11 & 12)	<70%	2.57	1.81	1.84	52.0%	27.7%	28.6%
	70–80%	3.04	2.57	2.59	70.6%	51.2%	52.0%
	>80%	3.34	3.21	3.22	68.6%	69.2%	69.2%
Total		2.83	2.22	2.24	60.6%	39.5%	40.4%

Note: Excludes those who left in their first semester of college program.

DCTO users have higher graduation rates than non-users across all program areas and credentials (Table 9). In particular, the largest gap in graduation rate between users and non-users is for those in advanced diploma programs, at 66% versus 38%.

Table 9. Graduation within standard program length, by university aspirations and use of DCTO, 2007–2014 (program and credential)

		Did not use DCTO			Used DCTO		
		No Univ Plans at entry	Univ Plans at entry	Total	No Univ Plans at entry	Univ Plans at entry	Total
Credential Type	Certificate 1-yr	28.6%	17.3%	25.5%	34.9%	30.9%	33.1%
	Diploma 2-yr	45.2%	32.3%	40.5%	64.6%	61.2%	62.2%
	Advanced Diploma 3-yr	41.1%	34.4%	37.9%	73.6%	63.0%	66.0%
Program Area	Business	43.5%	31.4%	38.6%	72.4%	62.2%	65.1%
	Community Services	48.9%	39.2%	44.8%	73.3%	75.3%	74.7%
	Creative and Applied Arts	41.6%	31.2%	39.6%	53.8%	50.0%	52.0%
	Health	61.3%	42.8%	56.7%	NA	57.1%	42.9%
	Hospitality	45.4%	39.6%	44.3%	64.7%	72.7%	67.9%
	Preparatory/Upgrading	17.3%	23.3%	20.6%	31.6%	35.6%	34.0%
	Engineering/Technology	36.9%	29.7%	34.3%	58.6%	46.8%	50.0%
	Total	41.2%	31.3%	37.4%	63.1%	60.0%	61.1%

Note: n size too low to report

Part 2. Transfer outcomes

Transfer rates

Results from the Graduate Satisfaction Survey¹¹ provide information on whether students subsequently transferred to further education, where they transferred to, and their experience of transfer.

DCTO users: transfer intentions versus transfer outcomes

Two data sources were used to provide information on a student's choice of institution, including a questionnaire administered to students prior to meeting with a DCTO advisor and the Graduate Satisfaction Survey which asks about the university college graduates who transferred. Focussing specifically on DCTO users, degree pathways by first choice of institution at the DCTO visit are shown in Table 10. Of DCTO users who indicated their first choice of institution was a university, 46% transferred to a university degree program. Of those whose first choice of institution was college, or who were unsure, 24% transferred to a college degree program, and a further 27% transferred to a college non-degree program.

Table 10. Transfer to degree or non-degree programs by first-choice institution, DCTO users, 2007–2014

	University	College & unknown	University	College & unknown	Total
	Count		Percent		Total Percent
Transferred to degree	295	17	45.8%	23.9%	43.6%
Transferred to non-degree	87	19	13.5%	26.8%	13.8%
Not in further ed.	262	35	40.7%	49.3%	41.5%
Total	644	71	100%	100%	100%

Note: Degree programs include college and university-college collaborative degrees. Non-degrees include college and university certificates and diplomas, continuing education courses, and any "other" education taken outside of a college or university.

Graduates who had indicated at their DCTO visit that their first choice of institution was a university were more likely to eventually transfer (Table 11), at 47% compared to 18% for those who chose a college or were undecided. Those whose first choice was a university in Ontario were more likely to transfer than those whose first choice was outside Ontario (48% vs. 27%).

¹¹ The GSS is administered by telephone six months after graduation.

Table 11. Transfer rate to university, by first choice plans at DCTO visit, 2007–2014

		Did not transfer	Transferred	Total	Transfer rate to university
First choice institution*	College & unknown	58	13	71	18.3%
	University	343	301	644	46.7%
	Total	401	314	715	43.9%
First choice university region	Ontario	318	292	610	47.9%
	Outside Ontario	25	9	34	26.5%
	Total	343	301	644	46.7%

Note: *Numbers too low to separate those whose first choice was a college from those whose first choice was unknown or undecided

Table 12 contains a comparison of the distribution of first choice universities at the DCTO visit versus the distribution of the “actual” chosen university based on the GSS. York and Ryerson universities predominate, both as the initial first choices for students visiting the DCTO and the ultimate institutions of transfer. Within DCTO users, the distribution of institutions of transfer is fairly similar to students’ original plans, although some differences exist. Relative to initial plans, graduates are somewhat less likely to transfer to University of Toronto, an “other” university, or McMaster, and are more likely to attend York, Ryerson, University of Ontario Institute of Technology (UOIT), Lakehead, or Windsor. Interestingly, this finding also reflects the high number of transfer opportunities available at these institutions.

When comparing the actual transfer pathways by DCTO use, York, University of Toronto, and “other” universities comprised a larger share of non-users than users. For York and University of Toronto, a likely reason (as previously discussed) is the movement within the LAT program, a large structured articulated program in which students need less external transfer advising. A much higher share of those who used the DCTO transferred to Ryerson, likely because a large number of DCTO users are in business, a key program focus among Ryerson’s transfer pathways.

Table 12. Distribution of university choice, by DCTO use, initial plans versus ultimate transfer outcome, 2007–2014

	First choice of university	University of transfer, % of total university transfers		
	DCTO users - first choice university	DCTO users	Did not use DCTO	Total
York	48.8%	50.3%	53.2%	52.6%
Ryerson	27.5%	30.3%	16.8%	19.4%
Toronto	4.6%	2.2%	7.6%	6.5%
University (Other)	6.5%	1.9%	6.7%	5.8%
UOIT	2.1%	4.1%	3.1%	3.3%
Lakehead	1.2%	1.9%	2.7%	2.6%
Guelph	1.8%	1.9%	2.1%	2.1%
McMaster	1.5%	0.3%	1.3%	1.1%
Brock	0.5%	1.0%	1.1%	1.1%
Trent	0.2%	0.6%	1.2%	1.1%
Carleton	0.5%	0.6%	0.5%	0.6%
Ontario College of Art and Design	0.2%	0.0%	0.7%	0.6%
Algoma	0.1%	0.3%	0.6%	0.6%
Western	0.5%	0.3%	0.5%	0.5%
Windsor	0.3%	1.3%	0.3%	0.5%
Nipissing	0.3%	0.3%	0.5%	0.4%
Wilfrid Laurier	0.8%	0.6%	0.3%	0.4%
Waterloo	0.7%	0.0%	0.4%	0.3%
Laurentian	0.3%	0.6%	0.2%	0.3%
Ottawa	0.8%	1.0%	0.1%	0.3%
Queens	0.3%	0.0%	0.2%	0.1%
Guelph Humber	0.5%	0.3%	0.1%	0.1%

Note: The “first choice” sample is restricted to those who indicated their first choice was a university. Results are shown as a share of the total.

Further education pathways by DCTO use

Overall, 58% of DCTO users went on to some type of further education compared to 25% of graduates who did not use the DCTO (Table 13). Graduates who had used the DCTO’s advising services were much more likely to transfer to university than non-users (44% vs. 10%), and somewhat more likely to transfer into a college degree program (2.5% vs. 1.1%). Non-DCTO users were somewhat more likely to transfer into a college non-degree program.

Table 13. Further education pathways of graduates, six months after graduation, by DCTO use, 2007–2014

Institution	Credential	Count	Used DCTO		Did not use DCTO		
			%	Total by institution type	Count	% DCTO users	Total by institution type
University	University degree	266	37.2%	43.9%	1,051	8.2%	10.0%
	University certificate/ diploma	18	2.5%		92	0.7%	
	Degree offered jointly with a college	25	3.5%		92	0.7%	
	University: no credential specified	5	0.7%		59	0.5%	
College	College degree	18	2.5%	13.6%	146	1.1%	14.7%
	College certificate/ diploma	75	10.5%		1,638	12.7%	
	Degree offered jointly with a university	**	**		84	0.7%	
	College: no credential specified	**	**		26	0.2%	
Other Education		7	1.0%	1.0%	93	0.7%	0.7%
Not in Further Education		297	41.5%	41.5%	9,611	74.6%	74.6%
Total		715	100%	100%	12,892	100%	100%

Note: **counts too low to show

Overall, 12% of graduates in the sample transferred to university within six months, of those, almost 20% visited the DCTO (Figure 6). In contrast only 2% of those who didn't transfer visited the DCTO.

Figure 6. Transfer rate to university by DCTO use, six months after graduation, 2007–2014

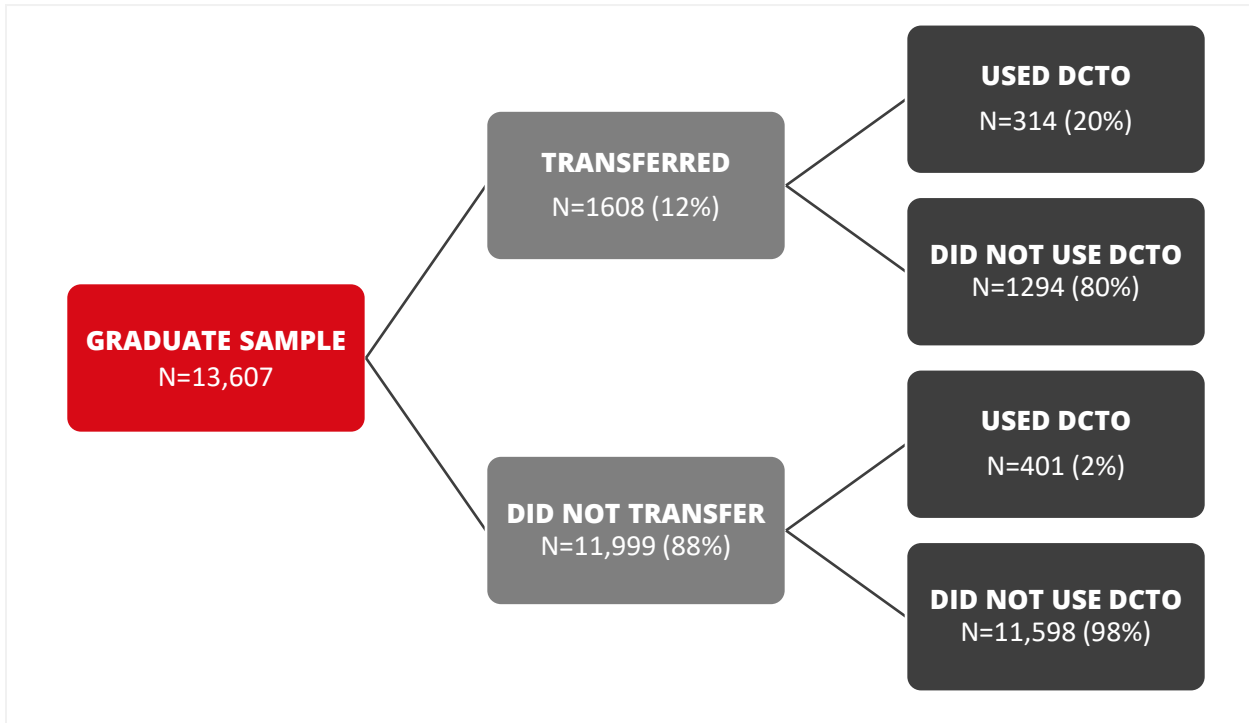


Table 14 shows the transfer rate to university by initial plans for university and use of the DCTO any time up to two months after graduation. These rates also differ by initial plans for university and term of graduation. One-quarter of those with plans for university transferred compared with just 5% of those who did not have plans upon entry. Half of those who used the DCTO and started college with plans to transfer transferred, compared with 33% of those without initial plans but who subsequently used the DCTO. Within the group who did not use the DCTO, aspirations still mattered, with 22% of those who aspired to university subsequently transferring, compared to 4% of transfers who did not aspire at college entry.

Table 14. Transfer rate to university, by university aspirations at entry and use of DCTO, 2007–2014

			Count	% total population	Transfer rate
Plans for university at entry	Did not use DCTO	Did not transfer	3,239	24%	22.4%
		Transferred	935	7%	
	DCTO users	Did not transfer	241	2%	49.5%
		Transferred	236	2%	
No plans for university at entry	Did not use DCTO	Did not transfer	8,333	61%	4.1%
		Transferred	358	3%	
	DCTO users	Did not transfer	159	1%	32.9%
		Transferred	78	1%	
Total			13,579	100%	11.8%

The timing of the survey, at six months after graduation, leads to some spurious results, particularly for fall graduates. Graduates who complete in December will be surveyed in June, a non-traditional semester, and will be asked about their current enrolment.¹² The differences in transfer rates by semester of graduation are accounted for in Table 15. Overall, those who graduated in winter, the traditional semester of graduation, had higher transfer rates (14.8%), followed by summer graduates (10%). Of DCTO users who graduated in the winter semester, 52% were enrolled in university the following fall, compared with 13% who did not use the DCTO. When the results are subdivided according to whether the graduate had plans for university at entry, the trend by semester still holds.

Table 15. Transfer rate to university, by university aspirations, use of DCTO, and semester graduated, 2007–2014

		Summer	Fall	Winter	Total
Plans for university at entry	Did not use DCTO	19.3%	6.2%	28.5%	22.4%
	DCTO users	47.8%	16.4%	56.2%	49.5%
	Total	22.0%	6.9%	31.7%	25.2%
No plans for university at entry	Did not use DCTO	3.3%	1.1%	5.2%	4.1%
	DCTO users	30.2%	2.7%	41.5%	32.9%
	Total	4.0%	1.1%	6.2%	4.9%
Total	Did not use DCTO	8.0%	3.0%	13.0%	10.0%
	DCTO users	41.0%	11.0%	52.0%	44.0%
Grand total		10.0%	3.2%	14.8%	11.8%
	Count	2,956	2,295	8,356	13,607

Transfer to university by sociodemographic characteristics and DCTO use

Across all sociodemographic characteristics, the users of the DCTO had much higher transfer rates than non-users (Table 16). For both users and non-users, graduates who entered college at a younger age had a higher transfer rate, with the largest gap in transfer between DCTO users and non-users being those who entered under the age of 19. Over half (52%) of those who started college under the age of 19 and who used the DCTO subsequently transferred, compared to 43% of 19-year-old entrants and 35% of entrants ages 20 years and over. Graduates on a student visa had a much lower transfer rate for both users and non-users, partially because of their high rates of previous university attendance (data not shown). Similarly, graduates who reported English as their first language had a somewhat higher transfer rate, particularly within the DCTO users group.

Transfer rates differed little by parental education, neighbourhood income, or OSAP receipt. Graduates who had a least one parent with a degree were slightly more likely to transfer overall (13% vs. 11%), as were those from higher income neighbourhoods. However, within the DCTO users group, there was a slightly different pattern, with middle income students having slightly higher transfer rates, and those who did not report on their parents' education having lower transfer rates.

¹² A number of universities such as Ryerson (which receives a high share of Seneca transfers) only offer a fall semester intake.

Table 16. Transfer rate to university, by sociodemographic characteristics and use of DCTO, 2007–2014

		Did not use DCTO	DCTO users	Total	% transfers who used DCTO
Total		12,892	715	13,607	19.5%
Age at entry (yr.)	<19	13.6%	51.6%	16.5%	24.4%
	19	13.0%	43.4%	14.8%	17.8%
	20 & over	7.4%	35.4%	8.4%	15.3%
Gender	Male	10.1%	43.0%	11.8%	18.6%
	Female	10.0%	44.5%	11.8%	20.3%
Status in Canada	CDN Citizen	10.8%	46.3%	12.7%	19.0%
	Student Visa	5.2%	33.8%	6.5%	22.6%
	Other*	10.2%	40.6%	12.1%	20.8%
English as a first language	Yes	10.3%	47.2%	12.1%	19.1%
	No	9.7%	40.1%	11.4%	20.2%
Parental education	Degree	11.5%	44.7%	13.4%	20.8%
	No Degree	9.3%	44.8%	11.2%	18.9%
	Unknown	10.4%	35.8%	11.5%	14.1%
Neighbourhood income**	Low	9.8%	42.2%	11.6%	20.0%
	Middle	10.9%	50.0%	12.9%	19.5%
	High	11.6%	42.9%	13.4%	18.4%
OSAP recipient	No	9.4%	46.8%	11.3%	21.1%
	Yes	10.8%	40.4%	12.4%	17.6%

Notes: *Other status includes permanent residents, refugees, and those eligible to pay domestic student fees (non-student visas). **Visa students excluded from neighbourhood income analysis

Transfer to university by program and DCTO use

Across all credentials and most program areas, those who used the DCTO had much higher transfer rates (Table 17). The transfer rate for graduates of certificate programs was three times higher than the rate for those who did not use the DCTO. The rate was 4.5 times higher for diploma graduates and 3.4 times higher for advanced diploma graduates. Overall, graduates from more advanced credentials also have higher transfer rates, for both users and non-users of the DCTO. Across program areas, almost half of graduates from business and community services who used the DCTO transferred to university, at a rate three to five times higher than non-users. The lack of gap in transfer rates between DCTO users and non-users in preparatory/upgrading programs largely reflects the particular nature of Seneca's preparatory programs. In the current sample, LAT program comprises 30% of graduates in the preparatory programs and 68% of transfers. As described previously, LAT has a structured articulated pathway with several universities, and therefore students are not as likely to require advising services external to what their program or university partner offers.

Transfers to university who had graduated from three-year diploma programs were much more likely to have used the DCTO compared to those who had transferred from other credentials. Almost a third of business transfers were DCTO users, the highest proportion of transfers of all program areas. These differences in usage may serve to highlight specific program areas requiring additional transfer outreach.

Table 17. Transfer rate to university, by credential and program area and use of DCTO, 2007–2014

		# Transfers		Transfer rate		% transfers who used DCTO
			Did not use DCTO	Used DCTO	Total	
Credential type	Certificate 1-yr	132	8%	23%	8%	5%
	Diploma 2-yr	1,003	9%	42%	11%	17%
	Advanced Diploma 3-yr	473	14%	48%	18%	29%
Program area	Business	590	9%	48%	12%	32%
	Community Services	447	14%	48%	17%	19%
	Creative and Applied Arts	92	5%	19%	5%	5%
	Health	16	2%	20%	2%	13%
	Hospitality	13	2%	22%	3%	15%
	Preparatory/Upgrading	288	28%	31%	29%	3%
	Engineering/Technology	162	8%	32%	9%	12%
Total		1,608	10%	44%	12%	20%

Table 17 shows the top 10 programs ranked by number of transfers to university, the results aligning with those seen previously with the broader program categories. The two-year General Arts and Science program had the highest transfer rate, but because it is a structured articulated program, DCTO use was very low. DCTO use by business programs is also high, with the business administration programs having a higher rate of DCTO use compared to accounting programs. The community service programs have high rates of transfer, but of those who transferred, fewer used the DCTO compared to users who transferred from business programs.

Table 18. Top 10 transfer programs, by number of transfers and use of DCTO, 2007–2014

	# Transfers	Transfer rate		% transfers who used DCTO	
		Did not use DCTO	DCTO Users	Total	
General Arts and Science - 2yr	197	65%	57%	64%	2%
Early Childhood Education	140	13%	39%	15%	19%
Social Service Worker	134	21%	66%	25%	23%
Business Administration - Management	102	23%	59%	31%	43%
Police Foundations	101	16%	48%	18%	16%
Accounting	80	10%	51%	13%	23%
General Arts - 1 yr	66	25%	33%	25%	8%
Business Administration - Human Resources	53	18%	60%	27%	45%
Accounting and Finance	51	14%	38%	16%	25%
Business Administration - Marketing	48	27%	59%	36%	46%
Total all programs	1608	10%	44%	12%	20%

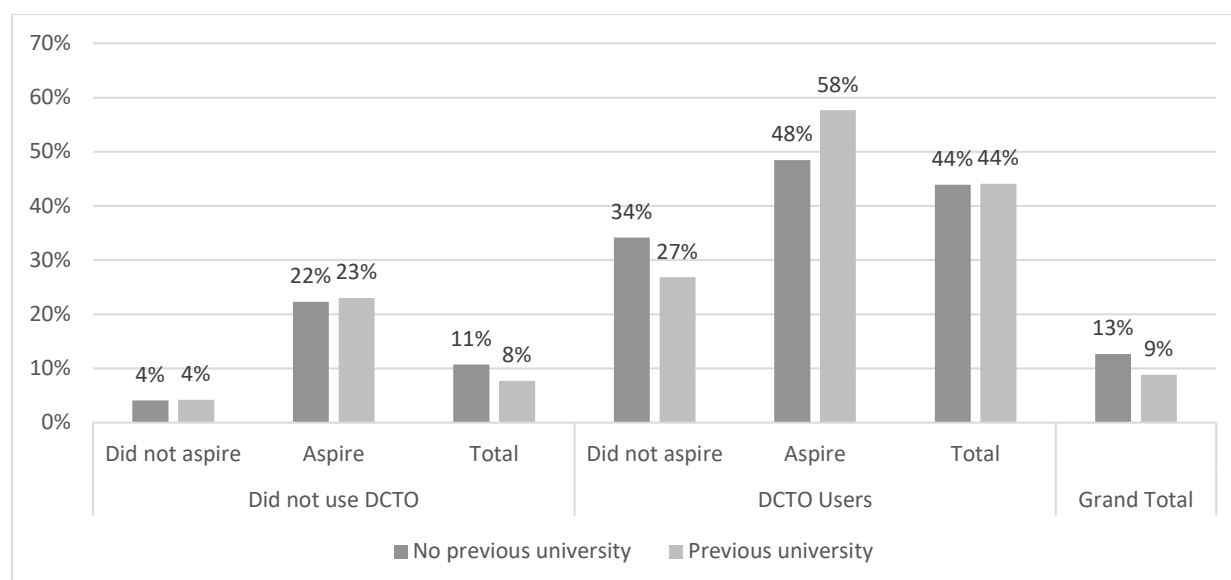
Note: Programs are classified using MAESD's APS program title.

Transfer to university by previous university and DCTO use

Overall, the transfer rate to university was lower for those who had previously attended university, at 9% compared to 13% for transfers with no previous university (Figure 7). However, within the group of DCTO users, there was no difference in the transfer rate by previous university. Non-users who had previously attended university had a lower transfer rate than DCTO users, but when initial plans for university at college entry are taken into consideration, transfer rates do not differ by previous university. Those with previous university are less likely to aspire to university after graduation, resulting in the lower transfer rate overall for those with previous university.

However, different patterns emerge within the DCTO users group, with no overall difference in transfer between those with or without previous university. Those with aspirations for university at entry are also more likely to transfer, but within that group those with previous university are more likely to transfer. Within the group of DCTO users who did not originally plan on university, those without previous university were more likely to transfer. For the DCTO users who did not plan for university at entry, those without university may have been more motivated to continue. However, those who both had plans at entry and had used the DCTO were highly motivated. The differences in transfer rate likely were related to academic outcomes because those with previous university in this group (aspirants/DCTO users) obtained a higher GPA compared to with no previous university (3.19 vs. 3.08).

Figure 7. Transfer rate by previous university, plans for university at entry and use of DCTO, 2007–2014



Note: The survey does not distinguish between incomplete or complete university or by Canadian versus non-Canadian university.

Transfer to university by Seneca grades and DCTO use

Those who transferred to university had a higher college GPA than those who did not transfer, at 3.23 compared to 3.06 (Table 18). This gap in GPA also holds when looking at DCTO usage, with the gap in college GPA between transfers and non-transfers slightly larger for DCTO users (at 0.21 vs. 0.16 for non-users).

Table 19. College GPA, by transfer to university and use of DCTO, 2007–2014

		Did not use DCTO	DCTO Users	Total
Cumulative College GPA	Did not transfer	3.06	3.04	3.06
	Transferred	3.22	3.25	3.23
	Total	3.08	3.13	3.08

Graduates who used the DCTO had higher transfer rates than non-users at each GPA level, with graduates who obtained a GPA under 3.0 having lower transfer rates than graduates with higher GPAs (Table 19). Interestingly, despite a lower rate of transferring, DCTO users with a GPA below 3.0 were almost as likely to use the DCTO as those with higher GPAs.

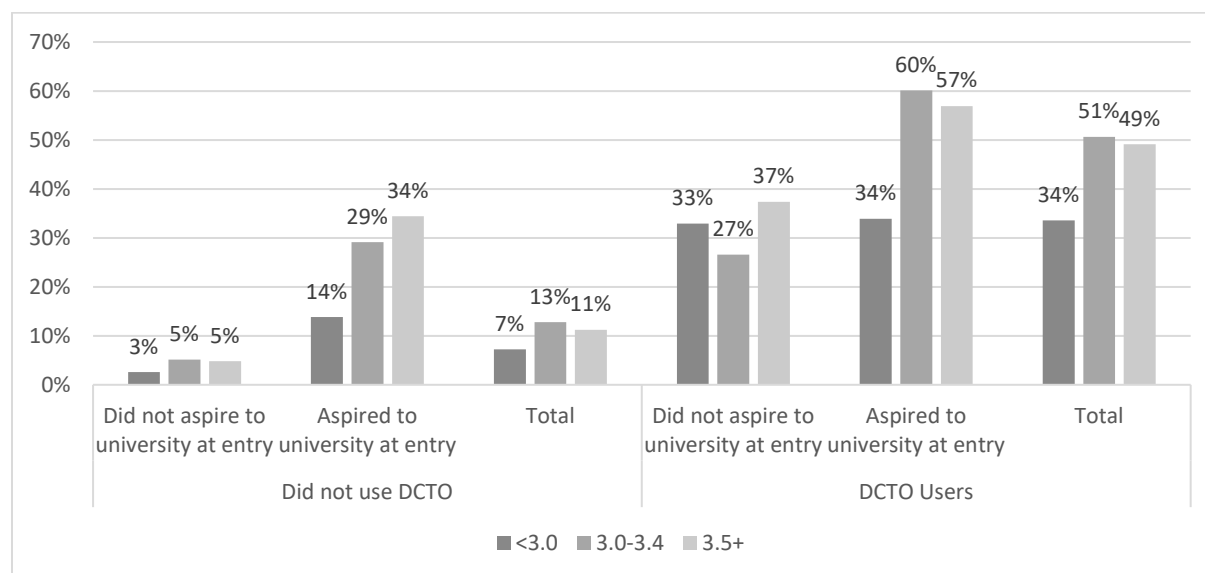
Table 20. Transfer rate to university by college GPA and use of DCTO, 2007–2014

		Did not use DCTO	DCTO users	Total	% transfers who used DCTO
Total # transfers		1,294	314	1,608	
College GPA	<3.0	7.2%	33.6%	8.5%	18.8%
	3.0-3.49	12.8%	50.4%	15.1%	20.3%
	3.5+	11.3%	49.1%	13.2%	19.3%
	Total	10.0%	43.9%	11.8%	19.5%

With the exception of the group that did not aspire to university at entry, but did use the DCTO, the transfer rate was almost double for those who obtained a college GPA of 3.0 or over¹³ compared to those with a GPA under 3.0. The group that did not use the DCTO and that did not indicate aspirations for university at college entry had very low transfer rates, indicating a lack of interest in transferring throughout their college program. As mentioned previously, a high proportion (27%) of this group had previously attended university, which likely contributed to the low interest in transfer. The transfer rates were similar for DCTO users whose college GPAs were under 3.0 regardless of whether or not they aspired to university at college entry. However, only about half of those who transferred had GPAs above 3.0, indicating that a large proportion of eligible, potential transfers still were not motivated to transfer despite registering with the DCTO. To summarize, initial aspiration to university remained a factor in transfer.

The highest transfer rates, at almost 60%, were for the group that aspired for university at entry, used the DCTO, and had a GPA of 3.0 or over. The numbers did not change materially when the transfer rates of DCTO users were further broken down by university as first choice of institution.

Figure 8. Transfer rate to university, by university plans, college GPA and use of DCTO, 2007–2014



Institution and program of transfer

Geographically, users and non-users of the DCTO are much more likely to transfer locally, with almost four of five transferring to a university in the Metro Toronto area (Table 21). The main difference between DCTO users and non-users is in the distribution of transfer to universities either outside of Ontario or to non-publicly funded Ontario universities.

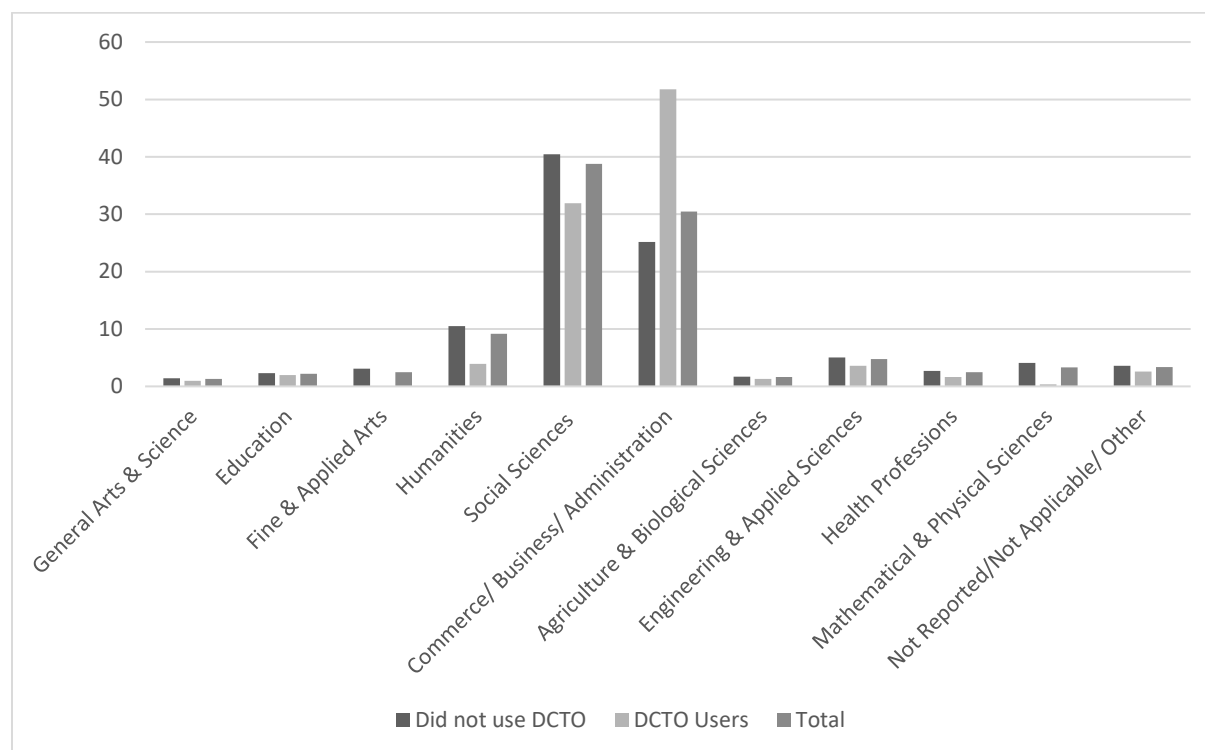
¹³ A GPA of 3.0 is the minimum published standard for most Ontario universities.

Table 21. Distribution of university transfers, by region and DCTO use, 2007–2014

	Did not use DCTO	DCTO Users	Total
Metro Toronto, Ontario	78.2%	82.8%	79.1%
Central Ontario	5.6%	5.7%	5.6%
Northern Ontario	3.9%	3.2%	3.8%
Southwestern Ontario	3.6%	4.1%	3.7%
Eastern Ontario	1.9%	2.2%	2.0%
Ontario - private	1.2%	0.0%	0.9%
Canada - outside Ontario	2.6%	0.3%	2.1%
International	1.6%	0.3%	1.4%
Unknown	1.4%	1.3%	1.4%
	100%	100%	100%

Graduates who use the DCTO are much more likely to transfer into business at university and less likely to transfer into humanities or the social sciences, at 52% vs. 25% (Figure 9 & Table 22).

Figure 9. Distribution of university transfers, by university program and DCTO use, 2007–2014



The top transfer pathways shown in Table 22 are a combination of the college program from which the student graduated and the university program entered. Overall, both DCTO users and non-users are transferring within related programs. DCTO users are concentrated in two transfer pathways – college business to university commerce fields, and college community services to university social sciences fields. These two pathways alone comprise 72% of all DCTO users. For transfers who did not use the DCTO, pathways are more diversified, and as described previously, with a much lower share of business students and a higher share of students from preparatory programs. Movement from preparatory

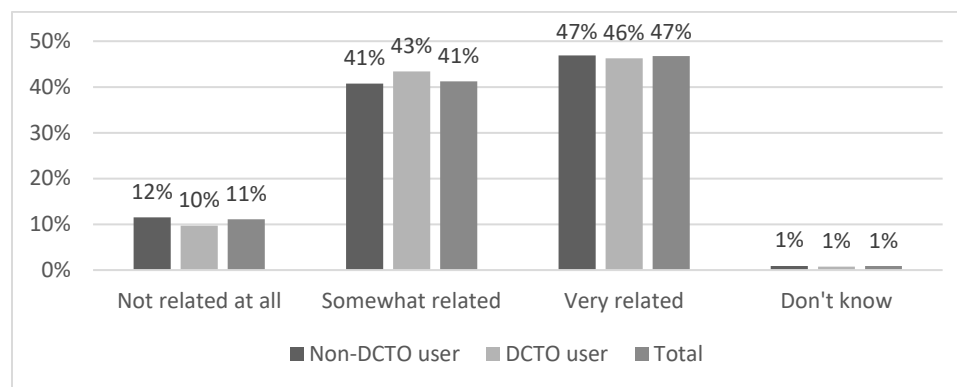
upgrading to social sciences or the humanities is again reflective of the LAT program, in which students are unlikely to require advice on transferring.

Table 22. Distribution of top 10 college-to-university program transfer pathways, by DCTO use, 2007–2014

College-to-university program pathway	Used DCTO	Did not use DCTO	Total
Business to Commerce	49.0%	22.0%	27.4%
Community Services to Social Sciences	22.5%	23.4%	23.2%
Preparatory/ Upgrading to Social Sciences	1.3%	9.3%	7.7%
Business to Social Science	7.2%	6.0%	6.3%
Preparatory/Upgrading to Humanities	1.0%	6.2%	5.1%
Engineering to Engineering & Applied Sciences	2.6%	4.2%	3.8%
Creative and Applied Arts to Humanities	0.0%	2.4%	2.0%
Engineering to Math & Physical Sciences	0.3%	2.2%	1.8%
Creative and Applied Arts to Fine arts	0.0%	2.1%	1.7%
Community Service to Humanities	2.0%	1.1%	1.2%
% of all college to university pathways	85.8%	78.8%	80.3%

Figure 10 contains the results of the survey question on the relatedness of the graduate's university program with their college program. Transfers who had used the DCTO were no more likely to enter a related program, with almost 90% of users and non-users moving into related programs.

Figure 10. Relatedness of university program to college program of graduation, by DCTO usage, 2007–2014

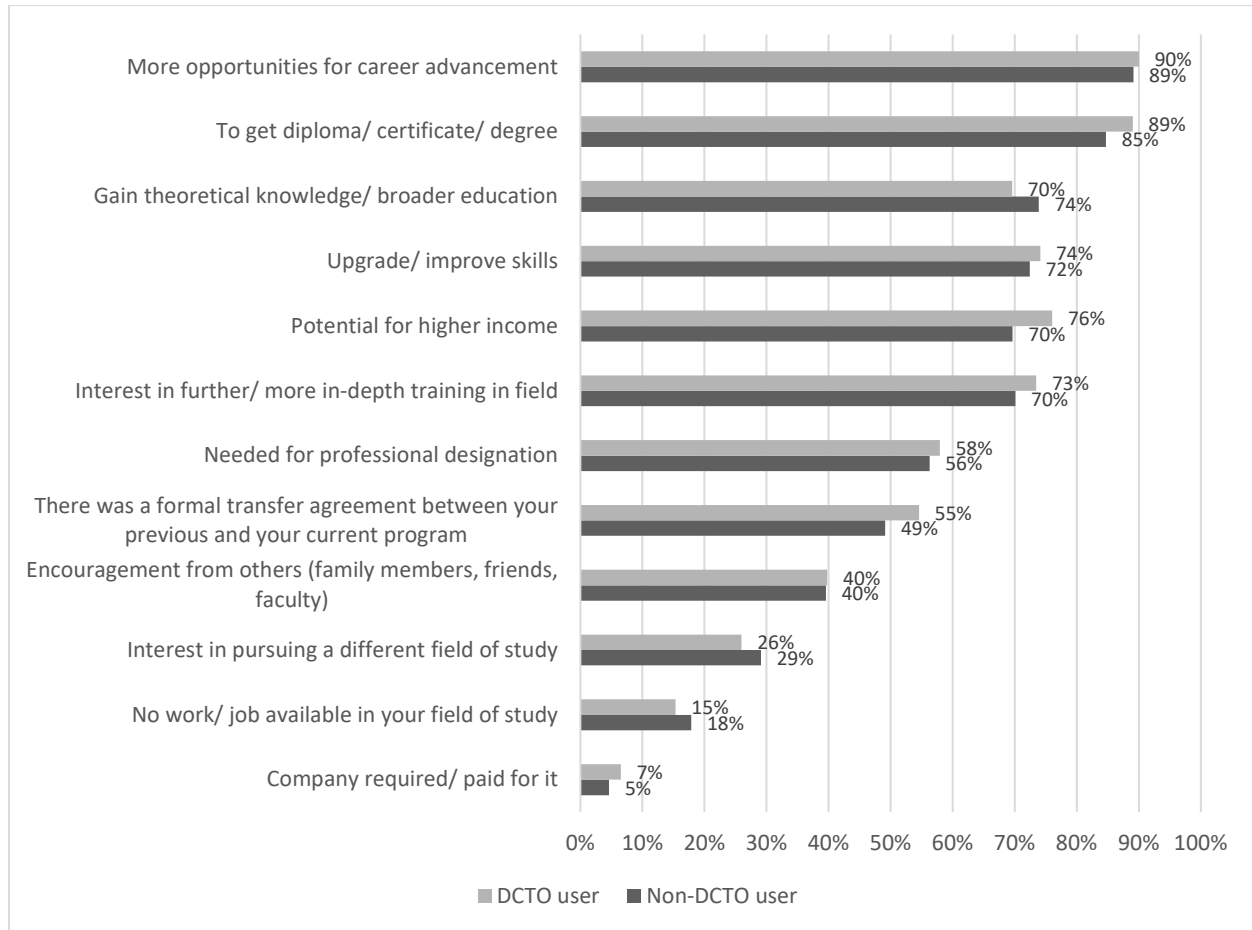


Transfer experience

Reasons for continuing

DCTO users and non-users have very similar motivations for transfer, with career advancement and obtaining a credential cited for almost nine in ten transfers (Figure 11). DCTO users are more likely than non-users to cite the potential for higher income (76% vs. 70%) and the presence of a transfer agreement (55% vs. 49%) as major reasons. It seems plausible that users of the DCTO would be somewhat more motivated by a transfer agreement, or that more would be transferring within a formal agreement; however, it is unclear why they would be more likely to cite a higher income as a major reason for transfer.

Figure 11. Reasons for continuing to further education, % major, university transfers, 2007–2014



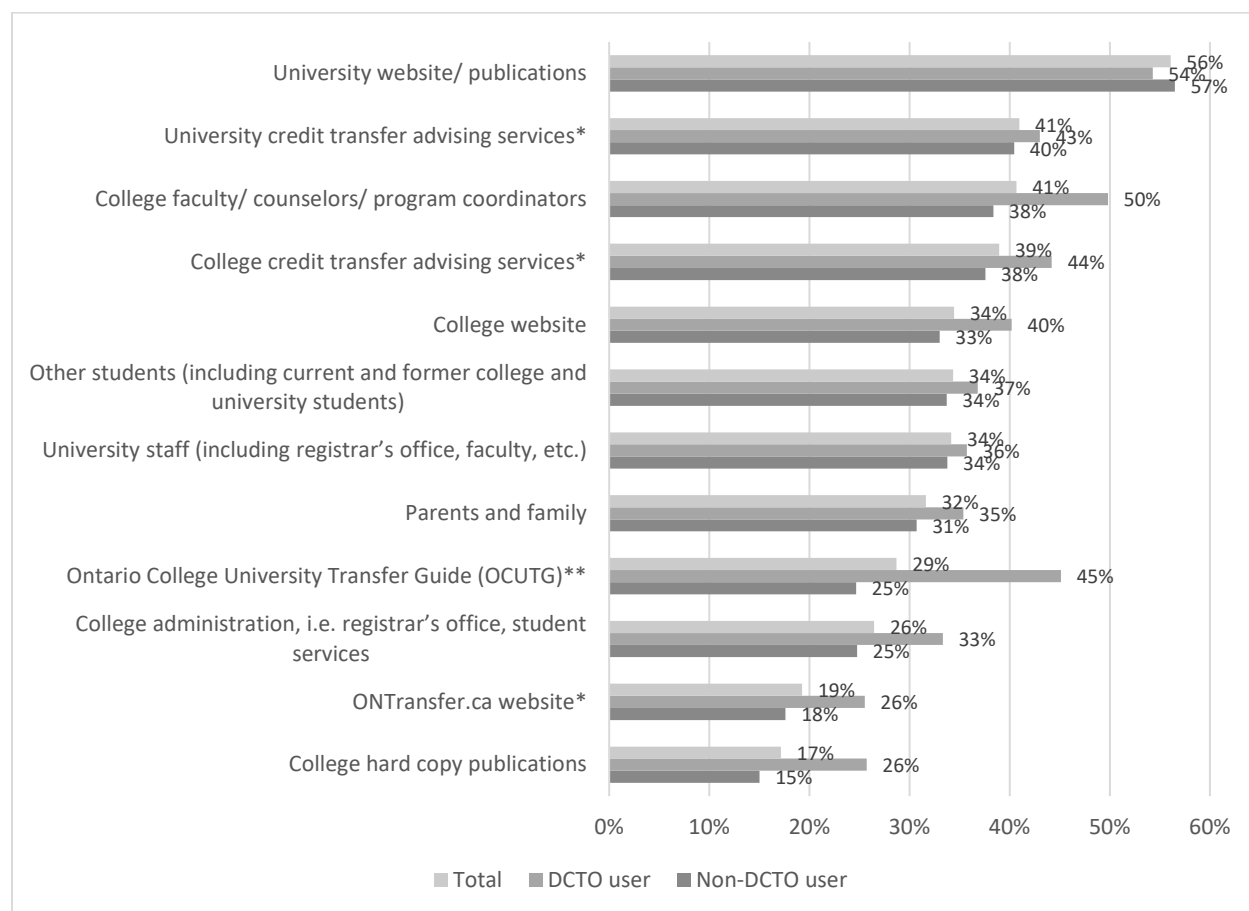
Information sources

Graduates who transfer to university make a fairly high use of a variety of sources of information. University website or publications is the most commonly used source for both DCTO users and non-users, with 56% citing it as a major source (Figure 12). For all other information sources, DCTO users were more likely than non-users to indicate that each source was major. However, the largest gap between users and non-users is the use of college sources of information, whereas the gap is much smaller for university and personal sources such as family or other students. It would appear that users of the DCTO are actively seeking out information from several sources at the college. The high proportion of non-DCTO users (38%) who indicated that college credit transfer advising services was a major source of information highlights the broader role of the DCTO. In addition to one-on-one advising, which is captured in the present study, the Office also maintains a website and hosts degree fairs and information sessions. As well, the advising services offered by the DCTO were likely captured in the responses to use of college faculty/ counselor/program coordinators (50% vs 38%, DCTO users vs non-users), and college administration (33% vs 25% DCTO users vs non-users).

The largest gap in use of information sources between DCTO users and non-users is the Ontario College University Transfer Guide (OCUTG), at 45% versus 25% as a major source. This question was designed to capture use of the OCUTG. However, it is very likely that in response to the question on OCUTG usage,

transfers are referring to Seneca's own Degree Transfer Guide, which is not listed as an information source in the questionnaire, but is published annually, both on the DCTO website and in hard copy, and is used as a key reference by advisors at the DCTO and the college at large (faculty, academic advisors, etc.). "College hard copies," also listed on the questionnaire, likely refers to the Seneca's Degree Transfer Guide.

Figure 12. Information sources for graduates transferring to full-time university programs, % major, 2007–2014



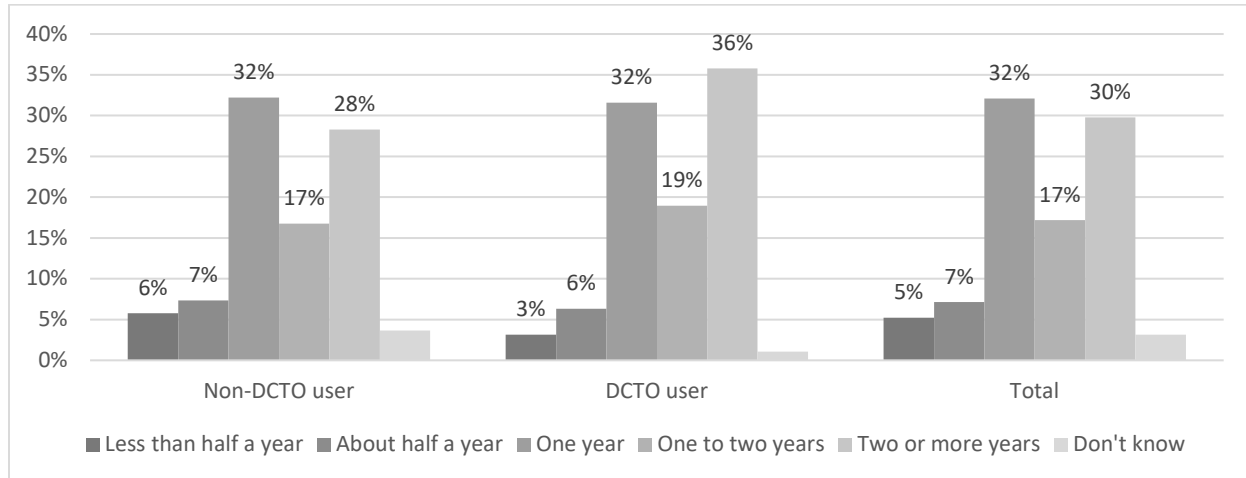
Note: The question was as follows: "When making your plans for further education, were each of the following a major source of information, minor source of information or not used at all? *asked since 2013 only; **asked before 2013 only; In 2013 the OCUTG question was replaced with the OCUTG website address (ONTransfer.ca).

Transfer credit

In the absence of university administrative data on the college graduates (transfers) they received, a comparison of DCTO users and non-users is therefore based on the graduates' estimate of the amount of transfer credit they received. Graduates who used the DCTO reported receiving more transfer credit, with 55% of users reporting more than a year compared to 45% of non-users (Figure 13). This result may imply that the DCTO users are making more informed decisions about where to transfer based on credit options. However, as already shown, users and non-users differ by types of credential, program area,

selection of university, and academic performance, and therefore care should be taken in interpreting the results.¹⁴

Figure 13. Estimated amount of credit of university transfers, %, 2007–2014

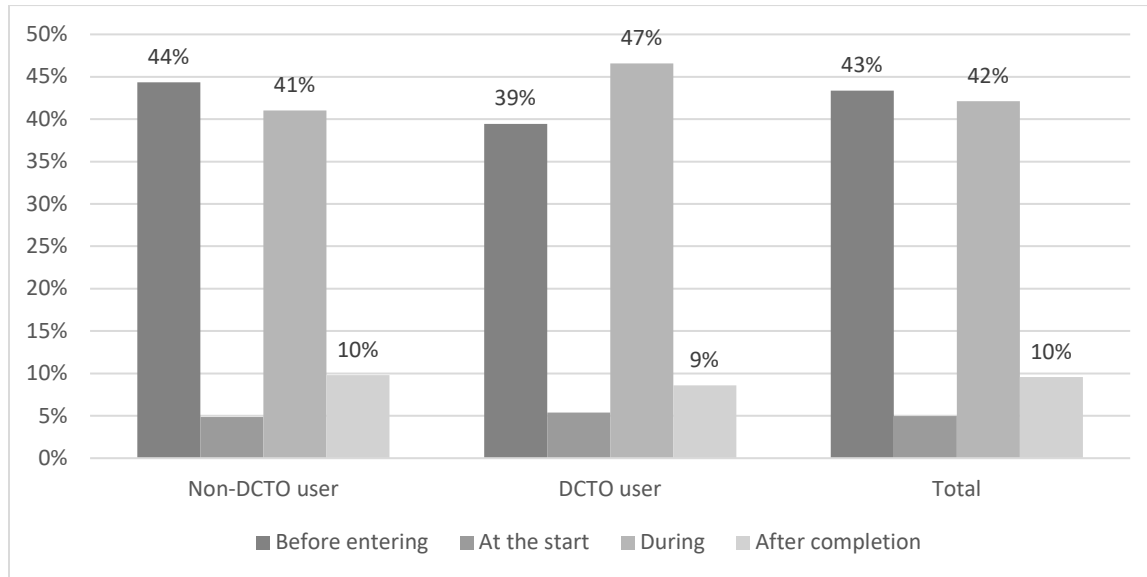


Note: For survey years 2009 to 2012, a logic skip error led to university transfers not being asked this question. After 2008, the category two years or more was split into separate categories: two years, and more than 2 years. From 2013 onward, these two categories were combined.

Graduates who did not register with the DCTO made the transfer decision earlier compared to users, with 44% versus 39% having decided before entering their college program (Figure 14). In contrast, 47% of users compared to 41% of non-users decided during their program. This finding may indicate that those who use the DCTO are still in the decision making and planning stage while at college. However, as mentioned previously, the rate of DCTO use is much lower for those in the LAT program, into which students enter with the intention of transferring. When LAT graduates are taken out of the analysis, DCTO users are marginally more likely than non-users (42.5% vs. 44.2%) to have decided before or after the start of college.

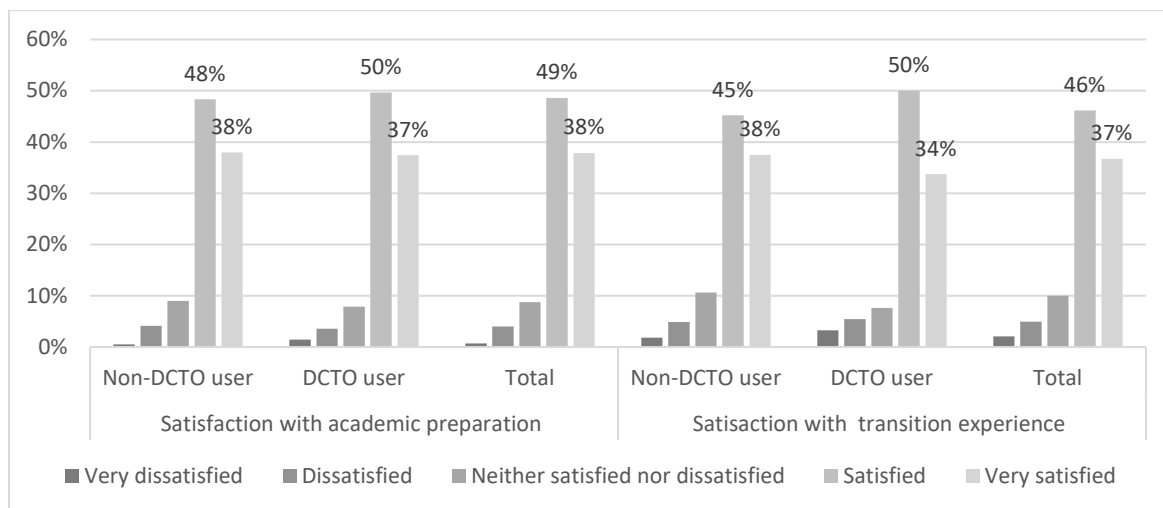
¹⁴ An attempt was made to parse out these different variables by transfer credit; however n sizes became too small for effective analysis.

Figure 14. Timing of decision to further their education, DCTO users and non-users, 2007–2014



Graduates are asked about their satisfaction with the transition experience and their academic preparation for transfer. For both questions, respondents indicated high rates of satisfaction, with 87% satisfied or very satisfied with their academic preparation for university, and 83% satisfied or very satisfied with the transition experience (Figure 15). There is little difference in satisfaction between users of the DCTO and non-users. Regression analysis of this question at the provincial level has shown that many variables influence satisfaction with the transition, including, gender, age, transfer factors, and reasons for transferring, and therefore it is not surprising that use of the DCTO alone would show an effect (McCloy et al., 2017).

Figure 15. Satisfaction with academic preparation and the transition experience, by use of DCTO, 2007–2014



Regression Analysis

Use of DCTO

Younger students, females, students with a parent with a degree, non-Canadian citizens, and OSAP recipients (when neighbourhood income is controlled for) are more likely to use the DCTO (Appendix 4, Appendix 5). Academically, placing into college level English, taking mainly university preparatory courses in high school, and obtaining a high school average over 70% also increased the likelihood of using the DCTO. In particular, students who indicated that they planned to attend university when they started college, were 2.7 times as likely to seek out advising at the DCTO. Students enrolled in three year diplomas, and business areas were also more likely to use the DCTO.

Academic performance and graduation rate

The descriptive analysis showed large differences in college grades and graduation rates between users and non-users of the DCTO (Appendix 4, Appendix 5). However, since it was also shown that users of the DCTO also had stronger academic backgrounds entering college, regression models were run to see if there was an independent effect of using the DCTO. The results showed that even when controlling for a variety of socioeconomic, program and academic factors known to affect academic performance, use of the DCTO had an independent effect on college grades and the graduation rate. DCTO users were approximately three times as likely to graduate on time, and had a college GPA approximately .7- .8 points higher than those who did not use the DCTO.

Transfer to university

College graduates who had visited the DCTO were four times as likely to attend university, even when controlling for academic performance in high school and college, initial plans for transfer to university, and college program and credential chosen, all of which have been shown to have major roles in the likelihood of transfer (Appendix 9). Older students, students whose first language was English, and who did not have a parent with a degree were less likely to transfer. Graduates of preparatory/ upgrading and community services were more likely to transfer than graduates of business programs, which in turn were more likely to transfer than all other program areas. Graduates of two and three year programs were three times and five times as likely, respectively, to transfer than graduates of one year credentials.

Key Findings

Part 1. Profile of DCTO users

Students' background

- Users of the DCTO were much more likely to have had plans for university when they first entered college, compared to those who did not use the DCTO (65% compared to 37%).
- Younger students, females, and those with a parent with a degree were more likely to use the DCTO, whereas Canadian citizens and those whose first language was English were less likely to use the DCTO. There were no evident patterns by income.
- Students who used the DCTO had somewhat stronger academic backgrounds, with 67% of users versus 56% of non-users taking mostly university preparatory high school courses (an early indication of university aspirations), and were somewhat more likely to have over a 70% average

(50% vs. 45%). There were, however, only minimal differences in language test scores at entry. DCTO users were less likely to have previously attended college/trades/ upgrading (18% vs. 23%), or to have attended university (15% vs. 17%).

- Users of the DCTO were much more likely than non-users to enter a three-year advanced diploma program (47% vs. 30%) and less likely to enter a one- or two-year program. DCTO users were also much more likely to have entered a business program (53% vs. 35%) than those who did not use the DCTO.
- Reasons for initially choosing Seneca were similar between DCTO users and non-users. However, those who indicated they had plans for university (both users and non-users) were less likely to cite availability of program and career advancement as major reasons, and much more likely to cite university preparation than those who did not have plans for university.

Academic outcomes

- Students who used the DCTO were academically much more successful than non-users, both in terms of graduation rates and grades. Users obtained a much higher GPA (2.90 vs. 2.18), with 83% graduating within one year of their program's standard length, compared to only 50% of non-users. These differences hold even when accounting for differences in the composition of the two groups, such as academic background, or program and credential of entry, and when removing all those who withdrew in their first semester.
- The egression models showed that controlling for socioeconomic and academic factors, users of the DCTO were three times as likely to graduate on time, and obtained a college GPA of approximately 0.8 points higher than those who did not use the DCTO.

Part 2. Transfer outcomes

Transfer rates

- Overall, 58% of DCTO users furthered their education within six months of graduation compared to 25% of graduates who did not use the DCTO; 44% of graduates who transferred to university had used the DCTO's advising services, whereas 10% of non-users transferred.
- Transfer rates to university are higher for those who graduated in the traditional spring semester (enter university in the fall), with 52% of spring graduates who were DCTO users transferring, compared with 13% of non-users.
- Within the group who indicated they had plans for university at entry, half of DCTO users transferred compared to 22% of non-users. Almost one-third of those who entered college without plans for university, but subsequently used the DCTO, ultimately transferred. Only 4% of those who neither had plans for university, nor visited the DCTO, subsequently transferred.
- Having previously attended university did not affect the propensity to transfer within the group of DCTO users. However, non-users who previously attended university had a lower transfer rate than non-users with no previous university (8% vs. 11%).
- DCTO users who indicated their first choice of institution was a university in Ontario were more likely than non-users to transfer.
- Cumulative college GPA was similar for users and non-users, with average GPAs higher for the groups who transferred. Only one-third of DCTO users with GPAs below 3.0 ultimately transferred

compared with half of those with GPAs of 3.0 and over. However, the percentage of transfers who used the DCTO was similar at each GPA level.

- Overall, 20% of transfers to university used the DCTO. This percentage differs little by student characteristics, with the exception of younger transfers who were more likely to use the DCTO. There were, however, large differences by credential and program area: 29% of three-year diploma transfers used the DCTO compared to 17% and 5% for one- and two-year programs respectively. Across program areas, the highest usage of DCTO was in business, at 32% of transfers, whereas preparatory/upgrading programs had the lowest rate of usage, at 3%.
- Regression analysis shows that when controlling for sociodemographic, academic and program factors, as well as plans for university users of the DCTO were four times as likely to transfer to university after graduation.

Institutions and programs of transfer

- Overall, York and Ryerson predominate as universities of choice. Transfers who used the DCTO were much more likely to transfer to Ryerson than non-users (30% vs. 17%), and less likely to transfer to the University of Toronto or a university outside of Ontario.
- Graduates who use the DCTO are much more likely than non-users to transfer into business at university (52% vs. 25%) and less likely to transfer into humanities or the social sciences.
- Users of the DCTO are equally as likely to transfer into a related program as non-DCTO users.

Transfer experience

- The reasons for transferring to university were similar between users and non-users, with career advancement and obtaining a credential cited for almost nine in ten transfers. DCTO users were more likely than non-users to cite the potential for higher income (76% vs. 70%) and the presence of a transfer agreement (55% vs. 49%) as major reasons.
- DCTO users make more use of a variety of information sources. However, the gap between users and non-users in making use of information sources is the largest for college sources, with a much smaller gap for university and personal sources. DCTO users are also more likely to make use of the transfer guide and hard copy publications. Users and non-users indicate similar usage of university sources and personal sources (family, other students).
- Graduates' satisfaction with the transition experience (83%) and their academic preparation (87%) for transfer is high for both DCTO users and non-users, with little difference between the two groups.

Conclusion and Recommendations

Overall, students who used the advising services at Seneca's DCTO differ little upon entry to Seneca in terms of their academic backgrounds and sociodemographic factors. However, DCTO users are more likely to have enrolled in business and advanced diploma programs, and the vast majority had plans for university at entry. The high usage of DCTO by business students and those from advanced diploma programs is likely related to the high number of transfer agreements in these areas. A similar pattern is seen within the population who ultimately transferred to university. Transfers who used the DCTO had similar characteristics as non-users; however three-year diploma and business transfers were much more likely to have used the DCTO. Therefore, DCTO users seem to be concentrated in programs with a large

number of agreements, and outreach may be necessary to provide support for those who are navigating pathways with few agreements.

Once at Seneca, students who registered with the DCTO performed far better academically than non-users, even when controlling for academic background and program area. There are likely several subpopulations in this group: 1) those who started college highly motivated to transfer and therefore performed well; 2) those who did not have plans for transfer but as a result of doing well, decided to continue on to university; and 3) those with high aspirations for university who may have not been doing particularly well at the time of the DCTO visit, but who received academic advising either from the DCTO or by referral and improved as a result.

The most significant and positive finding of this study is the high transfer rates to further education and specifically to university for users of the DCTO. Expanding the services to reach more students would therefore be of great benefit. Recommendations to accomplish this include:

- 1) Reaching out to students early in their program who are interested in transfer. The entering student survey, which was used to identify entrants who aspired to university in this report, could be used to reach those who indicated interest in university. The survey is completed after admission, but just before entry to college, with information identifying individuals who expressed an interest in transfer, and who could be contacted and informed about the College's provision of transfer services.
- 2) Targeting program areas in which students, despite an interest in transferring, utilize the DCTO to a lesser degree. This includes areas outside of business, such as engineering and creative and applied arts. As faculty were a major source of information for students who transferred, targeting faculty and programs within these areas may serve to bridge the gap in DCTO usage.
- 3) Enhance focus on career opportunities associated with transfer pathways. Graduates who transfer indicate career opportunities as the number one reason for transferring, and likely would benefit from more information on these options.

References

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Appendices

Appendix 1. Priorities of the Degree and Credit Transfer Office and supports offered to students

The DCTO has three main priorities, which taken together, unify its service delivery model:

1. Collaboration with internal stakeholders
2. Fostering strategic relationships and partnerships
3. Supporting students

Supports provided to students include:

- On-campus opportunities including annual events, fairs, workshops, and information sessions to engage students and connect them directly with partner institutions.
- A robust website featuring student and alumni stories on the experience of transfer, and an e-copy version of the “Degree Transfer Guide” (also available in hard copy) with detailed information on all informal and formal pathways available to Seneca students, by program.
- An active social media presence to advance outreach and connectivity to students.
- Degree transfer advisors to assist students throughout the transfer process, and to liaison with partner institutions, ensuring that the information on transfer is clear and aligns with the respective articulation agreement (should one exist).

Appendix 2. Seneca students' use of DCTO and aspirations for university by year of entry, 2007–2014

	Did not use DCTO			DCTO Users		
	No Univ Plans at entry	Univ Plans at entry	Total	No Univ Plans at entry	Univ Plans at entry	Total
2007	3811	2925	6736	65	190	255
2008	3791	2739	6530	76	202	278
2009	4816	2657	7506	82	187	271
2010	5053	2966	8056	101	168	269
2011	4786	2737	7554	94	171	267
2012	5011	2798	7809	136	200	336
2013	5037	2574	7612	117	172	289
2014*	4028	1954	5983	75	116	191
Total	36,333	21,350	57,786	746	1,406	2,156

Notes: Each academic year contains summer, fall and winter. *The year 2014 does not include the winter semester. For later entry years, students have not had as much time to access the DCTO and therefore the usage numbers may be lower. Total column numbers include 107 respondents who did not respond to the graduate plans question (4 DCTO users, and 103 non-DCTO users)

Appendix 3. College GPA and previous university of DCTO users who graduated, 2007–2014

	Did not use DCTO			Used DCTO		
	No Univ Plans at entry	Univ Plans at entry	Total	No Univ Plans at entry	Univ Plans at entry	Total
GPA 0-1.99	7.1%	14.6%	9.6%	4.8%	6.9%	6.1%
GPA 2.00-2.99	31.8%	41.6%	35.1%	31.5%	38.1%	35.8%
GPA 3.00-3.49	26.2%	25.1%	25.9%	27.0%	30.0%	29.0%
GPA 3.5-4.00	34.9%	18.7%	29.4%	36.7%	25.1%	29.0%
Average GPA	3.10	2.80	3.00	3.17	3.01	3.06
Last school attended was university	27.4%	13.1%	22.1%	15.6%	12.5%	13.7%

Appendix 4. Regression analysis: factors influencing use of DCTO, college GPA, and time to graduation; students with an Ontario high school record

VARIABLES	Labels	Outcome of interest		
		Visited DCTO	College GPA	Grad On Time
DCTO User (Ref=No)	Yes		0.735*** (0.021)	3.033*** (0.233)
Age at Entry (yr) (Ref=<19)	19	0.793*** (0.058)	-0.008 (0.014)	0.968 (0.039)
	20 & over	0.698*** (0.047)	0.277*** (0.013)	1.477*** (0.052)
Sex (Ref=Female)	Male	0.824*** (0.049)	-0.159*** (0.011)	0.709*** (0.022)
Status in Canada (Ref=Canadian)	Non-Canadian Citizen	1.257** (0.113)	0.060*** (0.019)	
First Language Learned (Ref=English)	Other		0.026** (0.012)	
Parental Education (Ref: parent has no degree/unknown)	Degree	1.161** (0.071)		
Neighbourhood Income (Ref=Low)	Middle		0.064*** (0.012)	
	High		0.075*** (0.013)	
OSAP Recipient (Ref=No)	Yes	1.173*** (0.065)	0.074*** (0.011)	
Program Area (Ref=Business)	Community Service	0.949 (0.078)	0.414*** (0.017)	1.900*** (0.091)
	Creative and Applied Arts	0.241*** (0.034)	0.283*** (0.018)	1.131** (0.057)
	Health	0.318*** (0.060)	0.283*** (0.023)	1.853*** (0.130)
	Hospitality	0.558*** (0.111)	0.354*** (0.028)	1.890*** (0.156)
	Preparatory/Upgrading	0.468*** (0.061)	-0.078*** (0.022)	0.874** (0.054)
	Engineering/Technology	0.481*** (0.041)	0.014 (0.016)	0.850*** (0.043)
Credential Type (Ref=Certificate 1yr)	Diploma (2 yr)	0.889 (0.130)	-0.064*** (0.020)	1.158*** (0.062)
	Advanced Diploma (3 yr)	1.401** (0.220)	-0.095*** (0.023)	1.572*** (0.099)

High School Course Type Mostly U/M (Ref=No)	Yes	1.465*** (0.089)	0.350*** (0.012)	1.667*** (0.057)
High School Average (Ref=<70%)	70-80%	1.224*** (0.076)	0.507*** (0.013)	1.959*** (0.066)
	>80%	1.348*** (0.143)	1.003*** (0.020)	3.176*** (0.192)
Number of HS Course Failures gr. 11&12 (Ref=None)	1-3	0.901 (0.057)	-0.299*** (0.012)	0.644*** (0.022)
	More than 3	0.653*** (0.069)	-0.597*** (0.018)	0.391*** (0.022)
Eligible for University (Ref=No)	Yes		0.122*** (0.015)	1.114** (0.047)
College English Course Placement (Ref=College English/Exempt)	ELL level 1 or 2	0.785** (0.092)	-0.394*** (0.022)	0.557*** (0.033)
	Below College/ ELL – Level 3	0.876** (0.053)	-0.248*** (0.012)	0.730*** (0.024)
Did the Student plan to go to University? (Ref: No)	Yes	2.707*** (0.165)	-0.074*** (0.011)	0.880*** (0.028)
Constant	Constant	0.028*** (0.005)	1.702*** (0.029)	0.307*** (0.023)
		0.0774	0.304	0.1253
Observations	Observations	39,945	38,993	24,331

Notes: Standard errors in parentheses; ***p<0.01, **p<0.05; Empty cells indicate dropped variables due to insignificance; A linear model was run for college GPA (continuous outcome), whereas a logistic model was run for DCTO use and graduation rate (0/1 outcome); Graduation rate is the proportion of students who graduated any program on time.

Appendix 5. Regression analysis: factors influencing use of DCTO, college GPA, and time to graduation; all students

VARIABLES	Labels	Outcome of interest		
		DCTO User	College GPA	Grad On Time
DCTO User (Ref=No)	Yes		0.800*** (0.018)	3.006*** (0.191)
Age at Entry (yr) (Ref=<19)	19	0.755*** (0.048)	-0.177*** (0.014)	0.781*** (0.027)
	20 & over	0.651*** (0.035)	0.107*** (0.012)	1.121*** (0.033)
Sex (Ref=Female)	Male	0.746*** (0.036)	-0.371*** (0.010)	0.580*** (0.014)
Status in Canada (Ref=Canadian)	Other*	1.345*** (0.095)	0.387*** (0.015)	1.534*** (0.057)
	Student Visa	1.192** (0.090)	0.389*** (0.016)	2.103*** (0.086)
First Language Learned (Ref=English)	Other	1.166*** (0.061)	0.077*** (0.011)	
Parental Education (Ref: parent has no degree/unknown)	Degree	1.256*** (0.061)	0.024** (0.011)	
Program Area (Ref=Business)	Community Service	0.961 (0.068)	0.353*** (0.014)	1.552*** (0.059)
	Creative and Applied Arts	0.244*** (0.030)	0.342*** (0.015)	1.104** (0.044)
	Health	0.354*** (0.061)	0.426*** (0.021)	2.003*** (0.119)
	Hospitality	0.654***	0.184***	1.304***

		(0.100)	(0.025)	(0.082)
	Preparatory/Upgrading	0.480***	-0.153***	0.626***
		(0.053)	(0.016)	(0.031)
	Engineering/Technology	0.450***	0.112***	0.957
		(0.033)	(0.014)	(0.037)
Credential Type (Ref=Certificate 1yr)	Diploma (2 yr)	0.708***		1.336***
		(0.082)		(0.058)
	Advanced Diploma (3 yr)	1.274		1.666***
		(0.160)		(0.084)
College English Course Placement (Ref=College English/Exempt)	ELL level 1 or 2	0.693***	-0.554***	0.456***
		(0.055)	(0.016)	(0.018)
	Below College/ ELL – Level 3	0.814***	-0.397***	0.595***
		(0.041)	(0.011)	(0.015)
Did the Student plan to go to University? (Ref: No)	Yes	2.656***	-0.210***	0.743***
		(0.130)	(0.010)	(0.019)
Last School Attended a University or Degree Polytechnic? (Ref=No)	Yes		0.588***	2.011***
			(0.013)	(0.066)
Constant	Constant	0.048***	2.291***	0.637***
		(0.007)	(0.015)	(0.036)
		0.0733	0.178	0.0831
Observations		58,909	58,400	36,088

Notes: Standard errors in parentheses; ***p<0.01, **p<0.05; Empty cells indicate dropped variables due to insignificance; A linear model was run for college GPA (continuous outcome), whereas a logistic model was run for DCTO use and graduation rate (0/1 outcome); Graduation rate is the proportion of students who graduated any program on time. "Other" status in Canada includes non-Canadian citizens who pay domestic student fees, including those with non-student visas, refugees, or permanent residents.

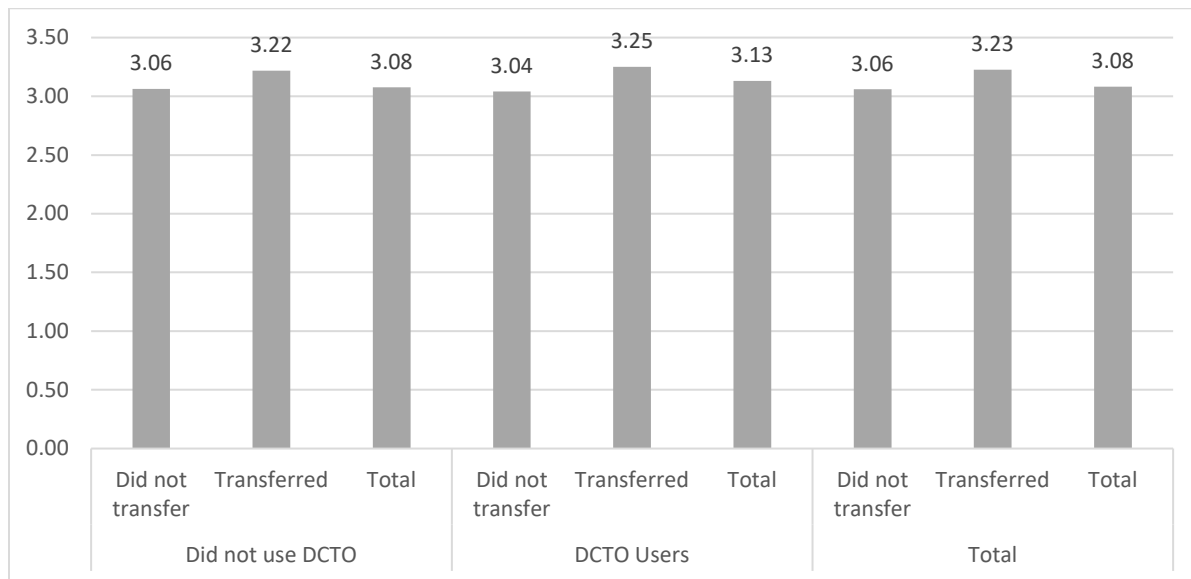
Appendix 6. Socioeconomic profile, by transfer to university and use of DCTO, 2007–2014

		Did not use DCTO			DCTO users		
		Non-transfer	Transfer	Total	Non-transfer	Transfer	Total
Number		11,598	1,294	12,892	401	314	715
Age at entry (yrs.)	<19	27%	39%	29%	38%	51%	44%
	19	15%	20%	15%	18%	18%	18%
	20 & over	58%	41%	56%	44%	31%	38%
Gender	Male	42%	43%	42%	42%	40%	41%
	Female	58%	57%	58%	58%	60%	59%
Status in Canada	Citizen	72%	78%	72%	68%	77%	72%
	Student Visa	13%	6%	12%	12%	8%	10%
	Other	16%	16%	16%	20%	16%	18%
English as a first language	Yes	58%	60%	58%	51%	58%	54%
Parental education	Degree	27%	32%	28%	30%	31%	30%
	No Degree	62%	57%	61%	60%	62%	61%
	Unknown	11%	11%	11%	11%	8%	9%
Neighbourhood income	Low	38%	34%	37%	39%	34%	37%
	Middle	35%	35%	35%	30%	36%	33%
	High	28%	31%	28%	32%	30%	31%
OSAP recipient	Yes	43%	47%	44%	48%	41%	45%

Appendix 7. Percentage with previous university, by university plans and transfer, 2007–2014

		Aspire	Did not aspire	Total
Did not use DCTO	Did not transfer	13%	27%	23%
	Transferred	13%	28%	17%
	Total	13%	27%	22%
DCTO users	Did not transfer	9%	19%	13%
	Transferred	13%	14%	13%
	Total	11%	17%	13%
Total	Did not transfer	12%	27%	16%
	Transferred	13%	25%	23%
	Total	13%	27%	22%

Appendix 8. College GPA of graduates, by transfer status and use of DCTO, 2007–2014



Appendix 9. Regression analysis: influences on transfer to university.

VARIABLES	Labels	Graduates with Ontario HS records	All Graduates
DCTO User (Ref=No)	Yes	4.147*** (0.459)	4.085*** (0.387)
Age Starting College (yr) (Ref=<19)	19	0.881 (0.085)	0.998 (0.087)
	20 & over	0.678*** (0.059)	0.668*** (0.051)
Status in Canada (Ref=Canadian citizen)	Other*		1.082 (0.106)
	Student visa		0.581*** (0.074)
First Language Learned (Ref=English)	Other	1.291*** (0.101)	1.236*** (0.090)

Parental Education (Ref: parent has no degree/unknown)	Degree	1.260*** (0.104)	1.215*** (0.082)
Program Area (Ref=Business)	Community Service	1.251** (0.136)	1.144 (0.104)
	Creative and Applied Arts	0.426*** (0.064)	0.466*** (0.060)
	Health	0.216*** (0.063)	0.208*** (0.056)
	Hospitality	0.256*** (0.096)	0.303*** (0.090)
	Preparatory/Upgrading	5.292*** (0.842)	5.627*** (0.761)
	Engineering/Technology	0.805 (0.102)	0.726*** (0.077)
	Diploma (2 yr)	2.635*** (0.435)	3.181*** (0.466)
	Advanced Diploma (3 yr)	3.940*** (0.737)	4.890*** (0.804)
Credential Type (Ref=Certificate 1yr)			
High School Course Type Mostly U/M (Ref=No)	Yes	1.198** (0.107)	
High School Average (Ref=<70%)	70-80%	0.740*** (0.062)	
	>80%	0.722** (0.096)	
Eligible for University (Ref=No)	Yes	1.344*** (0.126)	
College English Course Placement (Ref=College English/Exempt)	ELL level 1 or 2		0.677*** (0.084)
	Below College/ ELL – Level 3		0.838** (0.058)
Did the Student plan to go to University? (Ref: No)	Yes	3.940*** (0.316)	4.866*** (0.334)
Term Graduated (Ref=Winter)	Summer	0.803** (0.078)	0.840** (0.068)
	Fall	0.137*** (0.024)	0.201*** (0.026)
College GPA (<3.0)	3.0-3.4	2.670*** (0.242)	2.322*** (0.180)
	3.5+	2.987*** (0.309)	2.521*** (0.207)
Constant	Constant	0.015*** (0.003)	0.014*** (0.002)
		0.2484	0.2484
Observations		8,728	13,364

Notes: Standard errors in parentheses; *** p<0.01, ** p<0.05; *"Other" status in Canada includes non-Canadian citizens who pay domestic student fees, including those with non-student visas, refugees, or permanent residents. All graduates includes international students as well as domestic students who did not attend an Ontario High School; therefore HS variables are not included in the model.