



Higher Education
Quality Council
of Ontario

An agency of the Government of Ontario

Succeeding with Disabilities: Graduates with Disabilities and the Factors Affecting Time-to- Completion

Kelly L. Woods, Marjorie Cook, Georgian College,
Lindsay DeClou, Ursula McCloy, HEQCO



Published by

The Higher Education Quality Council of Ontario

1 Yonge Street, Suite 2402
Toronto, ON Canada, M5E 1E5

Phone: (416) 212-3893
Fax: (416) 212-3899
Web: www.heqco.ca
E-mail: info@heqco.ca

Cite this publication in the following format:

Woods, K. L., Cook, M., DeClou, L., & McCloy, U. (2013). *Succeeding with Disabilities: Graduates with Disabilities and the Factors Affecting Time-to-Completion*. Toronto: Higher Education Quality Council of Ontario.



Table of Contents

Abstract	3
Introduction.....	4
Literature Review	4
Study Background.....	5
Methodology.....	6
Results and Analysis.....	8
Conclusions.....	17
References.....	19

List of Tables

Table 1. Distribution of Disability Types, 2007-2010 (%).....	8
Table 2. Demographics (%)	10
Table 3. GPA.....	12
Table 4. Number of Extra Terms (%).....	13
Table 5. Mean TTC	13
Table 6. Difference in Mean TTC.....	13
Table 7. Number of Extra Terms by Field of Study (%).....	14
Table 8. Number of Extra Terms by Disability Type (Grouped) (%)	14
Table 9. Number of Extra Terms Required (TTC).....	15
Table 10. Use of Services and Accommodations by Number of Extra Terms (%)	16

List of Figure

Figure 1. GPA by Disability Type (%)	11
--	----

Acknowledgements

We would like to express our gratitude to all those who gave us the opportunity to complete this report. We are deeply indebted to those whose help, suggestions, knowledge, experience and encouragement helped us at all the times of study.

Cambrian College: Susan Alcorn-MacKay – former Director, The Glenn Crombie Centre for Disability Services. Preliminary report and data contributions.

Conestoga College: Anne Moore, Manager, Student Services; Bev Denyes, Learning Skills Advisor, Disability Services. Data collection.

Georgian College: Chris Gunnell, Manager, Centre for Access and Disability Services. Data collection and for his guidance and patience throughout all stages of the report.

Loyalist College: Jennifer Vincent, Manager, Disability Services Office. Data collection.

Sheridan College: Joe Henry, former Manager, Accessible Learning and Student Development. Data collection.

Abstract

This report presents the results of a study examining the experiences of students with disabilities who graduated from five Ontario colleges between 2007 and 2010. The five colleges were representative of four geographical areas (central, eastern, western and northern) and of differing sizes, from small to large. The study used administrative data obtained from each college's disability service office to examine two groups: graduates with disabilities (GwD) and graduates without disabilities (GwoD). These groups were compared in order to determine whether GwD required a longer time to graduate than GwoD. Program and academic factors related to the length of time taken to complete the program, such as the type of disability and the use of accommodations and services, were examined. The results show that when graduates with disabilities are compared to a similar group of students without disabilities, they require slightly but significantly more time to graduate. In addition, regression models show that within the GwD population, the credential type, program area, type of disability and GPA score all influence whether a graduate takes extra time to complete his or her program.

Introduction

Overall, 15.5 per cent of Ontario's population reports living with a disability (HRSDC, 2006). Only 19 per cent of adults with disabilities in Ontario have university degrees, compared to over 27 per cent of those without a disability (Statistics Canada, 2011). Forty-five per cent of adults with disabilities are not in the labour force in Ontario, compared to 19 per cent of those without a disability (Statistics Canada, 2008a). In addition, average employment income for those with disabilities is only 72 per cent of that for adults without disabilities (Statistics Canada, 2008b). This information suggests that people with disabilities experience more barriers to education and employment.

In particular, persons with disabilities can face considerable barriers to accessing postsecondary education. These can include physical inaccessibility, lack of understanding of learning disabilities, insufficient financial support, unmanageable and time-consuming processes associated with registration and accessing disability support services, and negative attitudes. In addition, some students with disabilities may take a reduced course load to compensate for the impact of their disability, thereby requiring additional academic semesters to complete their postsecondary program. To address this issue, the Ministry of Training, Colleges and Universities (MTCU) instituted a tuition subsidy in 2007 to assist these students. The proposed outcome of the subsidy was to ensure that students with disabilities who needed additional time to complete their program and who met the qualifying criteria did not pay tuition over and above the program costs paid by students without disabilities. However, it has been found that only a small number of students with disabilities were eligible for the subsidy. Also, the subsidy only assisted with tuition. Those GwD who incurred living expenses could extend their OSAP funding, but consequently increased their debt load after graduation.

Literature Review

There is minimal literature concerning the time-to-completion of graduates with disabilities. Finnie, Childs, and Qui (2012) reported that students with disabilities have higher rates both of leaving and switching programs/schools, and lower graduation rates both in Ontario and in the rest of Canada. Specifically, annual leaving rates are three to four per cent higher than for those students without disabilities (Finnie et al., 2012). Similarly, research also indicates that 14 per cent of students with disabilities attend and then leave postsecondary education, as opposed to 8 per cent of those without disabilities (Sattler, 2010).

A preliminary study of GwD was conducted by Cambrian College to determine how long it took GwD to complete a college certificate or diploma and to identify the factors that contributed to their success (Alcorn MacKay, 2009). The pilot project was funded by the Higher Education Quality Council of Ontario (HEQCO) and conducted in 2009. Analyzing graduates from 2007-2008 and 2008-2009, the study compared two groups of Cambrian College graduates: GwD and a randomly generated comparable sample from the same cohort and programs (GwoD). Key findings from this study indicated that approximately half of the GwD did not require additional time to graduate and often used various services and accommodations throughout their college career. These students also graduated with grade point averages similar to those in the GwoD sample. The remaining half of GwD required additional time to complete their program due to a variety of factors, including a necessary reduction in course load to compensate for the impact of their disability, under-preparedness, academic difficulties, and not effectively using accommodations or other services. Sattler and the Academics Group (2010) also showed that GwD reported making greater use of counselling, disability services, financial aid, academic advising, and peer tutoring services.

Based on this pilot study and on the gaps in the literature, the current study was undertaken at five Ontario colleges to address the following research questions:

- What are the factors that affect GPA within the population with disabilities?
- Do college graduates with disabilities (GwD) require more time to graduate than their non-disabled peers?
- What program/academic factors affect time-to-completion?
- Does the type of disability affect time-to-completion?
- Does the use of services or accommodations affect the length of time to complete?

Study Background

The College Committee on Disability Issues (CCDI) proposed this study at a provincial meeting. The pilot study data was presented and further discussed in a meeting with administrative managers. The group agreed that this data would be of significant benefit to individual colleges, HEQCO and MTCU. The colleges that were able to commit to participating in this project were identified and comprise the sample of this study. Each college or university in Canada is legislated to provide services for students with disabilities. The disability services office (DSO) assists students who have or think they may have a disability related to learning, mental health, attention, vision, and hearing, or a physical, medical, or systemic condition. The fundamental goals of a DSO are to collaborate with and empower students who have disabilities and coordinate support services and programs that facilitate equal access to education. The participating colleges were representative of four geographical areas (central, eastern, western and northern) and are of differing sizes. A detailed description of each college is below.

Cambrian College is a medium-sized college in Northern Ontario with a full-time enrolment of about 4,400 students, 800 of which have a documented disability. The Glenn Crombie Centre houses the Northern Ontario Assessment & Resource Centre (NOARC), with eight full-time staff and 25 part-time psychological service providers. NOARC is currently engaged in several research projects relating to students with learning disabilities. The Counselling Centre is also under the same directorship and brings three qualified counsellors to the service of students.

Conestoga College is a public college with its main campus located in Kitchener, Ontario, and regional campuses in Waterloo, Cambridge, Guelph and Stratford. Conestoga has a full-time student population in excess of 6,000 and provides a wide range of one-, two- and three-year diploma programs, as well as apprenticeship training. It also offers several four-year degree programs in Manufacturing, Architecture, Health and International Business Management.

Georgian College is a medium-sized college located in Central Ontario, where 11,000 full-time students study at the three main campuses in Barrie, Orillia and Owen Sound. Four regional campuses are located in Orangeville, Midland, Collingwood and Bracebridge. Registrants for part-time study number more than 28,000 annually. Approximately 1,200 of these students have documented disabilities and obtain direct support from the Centre for Access and Disability Services (C4A) on all campuses. C4A is staffed by a manager, eight disability specialists, three and a half adaptive technologists, four testing advisors and multiple part-time customer service assistants. The C4A at each campus has adaptive technology support and testing service centres. Counselling, learning strategy support, peer tutoring, and math and writing drop-in centres complete this holistic approach to student success.

Loyalist College is a small college in Belleville, Ontario, with a full-time enrolment of approximately 3,200 students. To provide services to the 420 students with a documented disability, the DSO is staffed with a manager, an assistive technologist/disability advisor, three learning skill advisors/adaptive technologists, and an ASL/English interpreter. The DSO has an assistive technology lab and a separate work room. Counselling, testing, peer tutoring and mentoring services, as well as writing, math and computer skills drop-in centres are also available to students.

Sheridan College has grown from a locally-based college of 400 students to a large, dynamic educational institution of over 15,000 full-time and 35,000 continuing education students. Five academic schools in Animation, Arts, Business, Community and Liberal Studies, Applied Computing/Engineering, and Continuing Education provide 97 degree, diploma and certificate programs. Over 1,500 students with disabilities are registered and receive services.

Methodology

The study included a sample of 2,201 GwD and 1,776 GwoD who graduated from their college program between 2007 and 2010.

This study was conducted to determine the number of GwD who required additional time to complete their programs and those who did not. In addition, the study explored the use of accommodations and services by GwD in an attempt to assess their impact on student success.

The college attended was included as a variable in the regression models to control for any differences between them. This was not intended to lead to a comparison of colleges. Differences between them may be a reflection of policies, procedures, staffing, and disability service/student service models and not necessarily the performance of the colleges.

GwD Student Selection Criteria

Two inclusion criteria were used to select students for the GwD group: 1) Program of graduation: the student must have graduated from a postsecondary-level program, including certificate, diploma, advanced diploma, degree and graduate certificate programs. Selection excluded specialized programs for students with developmental disabilities; 2) Verified recipient of disability services: graduates who were registered with the DSO but did not have a confirmed disability were excluded from the study.

GwoD Student Selection Criteria

Students who have graduated from the same programs as the GwD were selected at random. Each GwoD was matched to a GwD based on program, gender, age and grade point average (GPA).

Sample Population

A template for data collection was provided to each college. Data concerning cohort year, program, disability type, GPA, graduation year and services used were collected. The same template was used to collect information for the GwoD match, with the exception of disability type. Data were submitted electronically to the lead college where it was pooled. Data were collected from a sample including 2,201 GwD and 1,776 GwoD students. A total of 1,776 matched pairs were used to specifically compare time-to-

completion. Variations in all other values can be explained by variable reporting and missing values from some of the five colleges.

Variables

Program Area and Credential Type

The names provided by the colleges were mapped to MTCU program codes, which link to program area and credential type. Program areas were grouped as follows:

1. Business
2. Community Service
3. Engineering/Technology
4. Health
5. Hospitality
6. Preparatory/Upgrading
7. Creative and Applied Arts

Credential Type

Credential types were grouped following the standardized Ontario college credentials, which include certificate, diploma, advanced diploma, degree and graduate certificate programs. The dataset also contained a small number of college-specific credentials and skilled trades. Due to small sample sizes for some credentials, an “other” category was created for the regression analyses to contain diverse certifications such as skilled trades, local college certificate programs, graduate certificates and applied degrees. Credential areas for cross-tabulation purposes were grouped as follows:

1. College Certificate
2. Skilled Trades
3. Certificates
4. Diplomas
5. Advanced Diplomas
6. Graduate Certificates
7. Applied Degrees

Disability Type

There are a total of eight disability types recorded in the DSO in Ontario colleges. All eight, as well as the “other” category, were shown in various cross-tabulations. For the regression models, disability type had to be grouped into the following four categories due to small sample sizes.

1. Physical, sensory and medical disabilities (PSMD)
 - Mobility

- Medical
 - Brain Injury
 - Deaf, Deafened or Hard of Hearing
 - Blind or Low Vision
2. Psychiatric
 3. Attention deficit and hyperactivity disorder (ADHD) & learning disability (LD)
 4. Other (includes unknown and not available)

Research Methods

Regression Models

Two regression models were performed to better understand how demographic and college-specific variables, as well as disability type, affect GwD outcomes in school.

1. An ordinary least squares (OLS) regression model using GPA as the dependent variable was used to determine how the set of variables identified above affect GwD GPAs.
2. A logistic regression model with time-to-completion as the outcome variable was produced. The goal of this model was to assess the extent to which the same group of variables identified above can be used to predict whether a GwD required extra terms to graduate (referred to as time-to-completion, or TTC in tables and figures).

Matched Pair Analyses

In order to compare whether GwD required extra time, each GwD was matched to a GwoD with the same gender, age, GPA and program. A t-test was then performed. After removing cases without a match and/or without time-to-completion data, a total of 1,776 matched pairs were retained.

Results and Analysis

Demographic Profile

In order to obtain a measure of the representativeness of the study sample to the overall Ontario college population, the distribution of disability types was compared. The results show that the five colleges were fairly representative of the broader college sector with respect to the type of disability.

Table 1. Distribution of Disability Types, 2007-2010 (%)

Distribution	Disability Type ¹								
	ABI	ADHD	HI	LD	Medical	Mobility	PSYCH	Vision	Other
All Ontario Colleges	2.0	8.3	3.0	40.9	13.4	8.0	15.9	1.5	7.0
Five Sample Colleges	2.0	9.1	2.7	43.2	14.2	9.7	14.0	1.4	3.7

Source: Ontario data: submitted by all Ontario college DSOs to MTCU; five college data: data from participating colleges

Table 2 provides the demographic profile of the sample used for this study, sorted by disability type. The majority of GwD in this study are female (57.5%), and the most prevalent type of disability among both women and men is a learning disability (LD) (43.2% for both genders). LD is more prevalent in the younger population, under the age of 22, while medical and mobility disabilities are more prevalent in the population 26 and older. Within disability types, females are more likely to have a hearing impairment, a medical disability or a psychiatric disability. While females are overrepresented in most disability types, they are also overrepresented in the sample as a whole. GwD who are over the age of 25 are more likely to have a mobility disability. The most common program types among all disability groups are Community Service, Business, Engineering/Technology, and Creative and Applied Arts. Hospitality is the least common. Most GwD graduated from a diploma program, and this holds true regardless of disability type. Looking within disability types, the majority of mobility GwD graduated from a diploma program. Graduates in advanced diploma programs are more likely to have medical or mobility disabilities.

¹ ABI (acquired brain injury), ADHD (attention deficit hyperactivity disorder), HI (hearing impaired), PSYCH (psychiatric), Other (unknown and not available).

Table 2. Demographics (%)

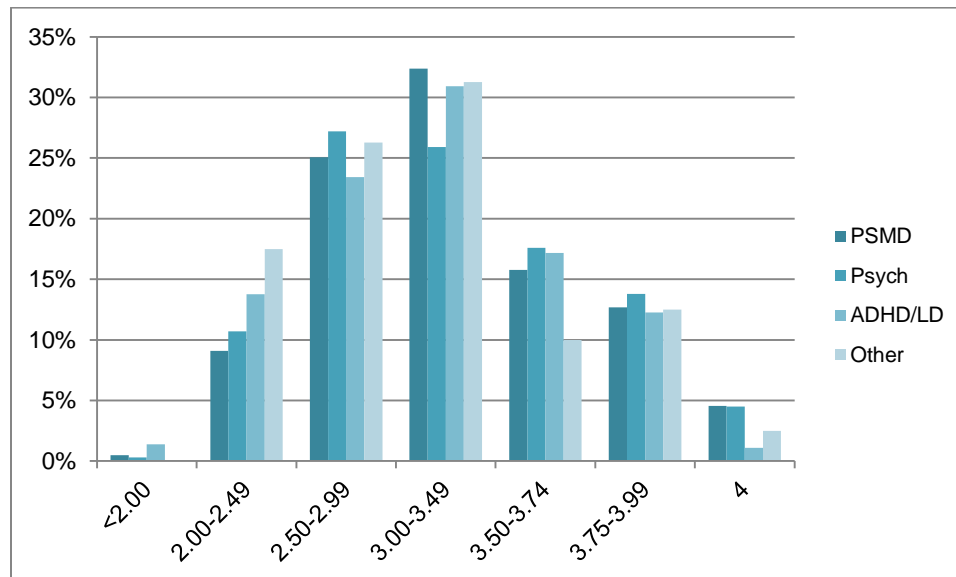
Demographic Characteristics		Disability Type									Total (N)
		ABI	ADHD	HI	LD	Medical	Mobility	Psych	Vision	Other	
Gender	Female	48.8	51.8	67.8	57.5	59.5	46.6	66.4	56.7	55.0	1236
	Male	51.2	48.2	32.2	42.5	40.5	53.4	33.6	43.3	45.0	915
	N	43	195	59	929	306	208	301	30	80	2151
Age	Under 22	48.8	48.2	47.5	59.4	28.9	21.7	39.9	50.0	40.0	995
	22-25	27.9	31.8	18.6	23.6	14.8	7.2	24.9	26.7	26.3	468
	26 and over	23.3	20.0	33.9	17.0	56.3	71.0	35.2	23.3	33.8	685
	N	43	195	59	929	304	207	301	30	80	2148
Program Type	Business	23.3	16.5	19.0	13.0	29.3	27.7	20.0	26.7	18.8	401
	Community Service	23.3	19.6	15.5	22.6	18.1	28.2	18.0	20.0	22.5	455
	Creative and Applied Arts	27.9	18.6	13.8	16.8	13.5	13.1	21.3	13.3	13.8	357
	Engineering/Technology	14.0	20.6	15.5	22.2	21.1	20.4	9.7	20.0	23.8	419
	Health	7.0	14.4	24.1	12.4	6.3	4.9	17.7	3.3	7.5	248
	Hospitality	2.3	1.0	6.9	4.3	2.3	1.5	2.7	6.7	2.5	68
	Prep/Upgrading	2.3	9.3	5.2	8.7	9.5	4.4	10.7	10.0	11.3	184
	N	43	194	58	917	304	206	300	30	80	2132
Credential Type	College Cert.	0.0	0.5	0.0	0.2	1.0	0.0	0.0	0.0	0.0	6
	Trades	4.7	4.6	3.4	4.8	0.7	0.0	1.3	6.7	12.5	75
	Certificates	20.9	27.3	29.3	25.6	18.8	7.8	25.0	20.0	15.0	480
	Diplomas	46.5	37.1	46.6	46.5	40.1	54.4	44.7	46.7	46.3	964
	Advanced Dipl.	20.9	20.6	17.2	17.0	30.3	26.7	19.0	10.0	20.0	438
	Grad Cert.	7.0	7.2	3.4	4.7	7.2	8.7	5.3	16.7	1.3	124
	Applied Degrees	0.0	2.6	0.0	1.2	2.0	2.4	4.7	0.0	5.0	45
	N	43	194	58	917	304	206	300	30	80	2132

At the outset of this paper, five research questions were posed. The extent to which this study can address these questions varies. Specifically, the fourth research question was not addressed to the same extent as the others because of issues surrounding data completeness.

What are the factors that affect GPA within the population with disabilities?

Figure 1 contains the GPA distribution by disability type. The majority of GwD included in this study have GPAs between 2.50 and 3.49 (on a 4.0 scale), while very few students have exceptionally low or high grades. There is little difference by disability type, with those categorized as “other” somewhat more likely to be on the lower end of the spectrum.

Figure 1. GPA by Disability Type (%)



N=2073

In order to determine which factors are associated with the GPA of the GwD, a regression model was run. Several variables included in this model are shown to be statistically significant. Older students and females are more likely to have higher GPAs, whereas enrolment in a health program or in an advanced level diploma is associated with lower GPAs. It is also interesting to note that the graduate’s college had a significant effect on the final GPA. The final variable noteworthy of discussion is that GwD who require extra terms to complete their program also have lower GPAs. This implies that students who take a longer time to complete their program also are likely to be struggling academically.

Table 3. GPA

Variables ^{2,3}		B	S.E.	Sig.
Age		.008***	.001	.000
Gender (Male)	Female	.100***	.024	.000
Field of Study (Arts)	Business	-.001	.039	.984
	Community	.028	.036	.440
	Engineering/Technology	.057	.039	.149
	Health	-.070*	.041	.089
	Hospitality	-.098	.062	.115
Credential Type (Diploma)	Preparatory/Upgrade	-.052	.045	.248
	Certificate	-.036	.031	.237
	Advanced Diploma	-.095***	.032	.003
College (1)	Other	.164***	.035	.000
	2	-.137***	.033	.000
	3	-.436***	.034	.000
	4	-.023	.031	.445
Disability Type (ADHD/LD)	5	-.341***	.047	.000
	PSMD	.023	.027	.395
	Psychiatric	.050	.032	.112
Extra Terms Required (TTC) (No)	Other	-.106*	.055	.055
	Yes	-.248***	.026	.000

*.10 significance level; **.05 significance level; ***.01 significance level

Do college GwD require a longer time to graduate than their non-disabled peers?

In order to determine whether GwD took longer to graduate than their peers without disabilities, graduates were matched on gender, age, program and GPA. The majority of GwD and GwoD completed their program requirements on time (78.4% and 85.9%, respectively) (Table 4). However, on average, GwD take more time than do students in the GwoD group (Table 5). While the difference between the mean time-to-completion of the two groups is minimal, at only one-seventh of a semester, it is statistically significant (Table 6).

² The categories 'other' should not be meaningfully interpreted. The 'other' category for credential type is the result of grouping together four different credential types (college certificate, applied degree, skilled trades and graduate certificate). This collapsing of categories had to be done so that other credential types (certificate and advanced diploma) could be included in the model. This is a result of the limited observations for certain levels of GPA by credential types. The second 'other' category is for disability type, which has an extremely small cell count and also includes more than one type of disability and thus does not accurately represent a type of student.

³ Categories in parentheses are the reference groups.

Table 4. Number of Extra Terms (%)

Number of Extra Terms	GwoD	GwD
0	85.9	78.4
1	7.4	11.0
2	3.2	5.4
3	2.3	3.0
4	.7	1.3
5	.2	.5
6	.2	.3
7	.1	.1
Total	100.0	100.0

Table 5. Mean TTC

	Mean	S.D.	S.E.
Mean TTC (GwoD)	.260	.772	.018
Mean TTC (GwD)	.405	.941	.022

Table 6. Difference in Mean TTC

	Mean	S.D.	S.E.	t	Sig. (2-tailed)
GwoD – GwD	-.14471	.74373	.01765	-8.200	.000

What program/academic factors affect time-to-completion? Does the type of disability affect time-to-completion?

The descriptive data show that both program and credential type were associated with requiring extra time to complete. In terms of field of study (Table 7), GwD from Business and Health had an increased likelihood of requiring extra terms to graduate when compared to the reference group, Creative and Applied Arts. A little over one-third (34.5%) of GwD in business and one-quarter (26.6%) in health programs took longer to graduate than GwD in other program areas. When compared to GwD from diploma programs, GwD from certificate programs were less likely to require additional terms to graduate, while GwD from advanced diplomas were more likely to require additional terms (data not shown). These findings are easily understood when taking into consideration program requirements. Certificate programs have fewer requirements than do advanced diploma programs, and thus provide fewer opportunities for students to fall behind.

Table 7. Number of Extra Terms by Field of Study (%)

Number of Extra Terms	Field of Study							Total (N)
	Business	Community Service	Creative and Applied Arts	Engineering/Technology	Health	Hospitality	Preparatory/Upgrading	
0	65.5	84.9	78.8	80.6	73.4	82.4	81.8	1546
1	18.2	7.8	8.8	10.6	12.9	10.3	8.0	215
2	7.8	3.6	8.8	4.5	6.6	2.9	5.1	115
3	5.5	2.4	2.4	2.3	4.1	2.9	1.7	60
4	2.0	.9	.9	1.3	1.2	.0	2.8	26
5	1.0	.2	.0	.5	.8	.0	.6	9
6	.0	.0	.3	.3	.8	1.5	.0	5
7	.0	.2	.0	.0	.0	.0	.0	1
N	307	449	339	397	241	68	176	1977

Table 8 shows the difference in time-to-completion by the type of disability. The descriptive data show marginal differences, with the ADHD/LD somewhat less likely to require extra terms and those with a psychiatric disability or “other” somewhat more likely to require extra terms. The majority of GwD included in this study did not require extra terms to complete their program requirements. With the exception of the “other” group, GwD with psychiatric disabilities were most likely to require additional terms to complete their program requirements.

Table 8. Number of Extra Terms by Disability Type (Grouped) (%)

		PSMD	ADHD/LD	Psych	Other	Total (N)
Number of Extra Terms	0	76.7	80.9	74.1	69.7	1544
	1	11.2	9.2	13.5	17.1	211
	2	6.9	5.5	4.7	7.9	116
	3	1.7	3.0	5.8	3.9	60
	4	2.1	1.1	0.7	1.3	26
	5	0.7	0.3	0.7	0.0	9
	6	0.5	0.1	0.4	0.0	5
	7	0.2	0.0	0.0	0.0	1
N	580	1042	274	76	1972	

The next step in the analysis is to determine using regression which factors significantly influence time-to-completion. These results, in Table 9, show that graduates with a psychiatric disability are more likely to need extra time to complete their credential requirements when compared with the reference group, graduates with ADHD/LD (Table 9). GwD with higher GPAs are less likely to require additional terms, as are those who graduated from a certificate program. GwD from Business and Health have an increased likelihood of requiring additional terms to graduate, as do those who graduated with an advanced diploma. Interestingly, unlike the results seen for GPA, age and gender did not have an impact on whether extra terms were required to complete the credential.

Table 9. Number of Extra Terms Required (TTC)

Variables		O.R.	S.E.	Sig.
Age		1.000	.007	.952
GPA		.282***	.119	.000
Gender (Male)	Female	.839	.132	.182
Program Type (Arts)	Business	1.537**	.195	.028
	Community	.810	.206	.306
	Engineering/Technology	.745	.206	.151
	Health	1.578**	.218	.036
	Other Program Types	.943	.229	.798
Credential Type (Diploma)	Certificate	.612***	.179	.006
	Advanced Diploma	1.607***	.160	.003
	Other Credential Types	1.829	.190	.001
Disability Type (ADHD/LD)	PSMD	1.254	.147	.124
	Psychiatric	1.526**	.173	.014
	Other	1.554	.280	.116

*.10 significance level; **.05 significance level; ***.01 significance level

Does the use of services or accommodations affect the length of time to complete?

One of the objectives of this study was to evaluate the effects of support services on the time-to-completion of GwD. These services and accommodations consisted of accessing adaptive technology support, using alternative formats, using testing services and seeking learning strategies, using peer services, and counselling. However, as seen in Table 10, the analysis was limited for two reasons. One challenge was that some of the services offered, such as the availability of disability counsellors, had a 100 per cent uptake, while others were very rarely used, creating too small a sample size. The other challenge was a lack of reporting for some services by the participating colleges, either as a result of not recording usage in their systems or a lack of reporting for the study. As a result, service and accommodation use could not be included as a variable in the preceding regression analysis to determine whether it has an impact on the time-to-completion.

Table 10. Use of Services and Accommodations by Number of Extra Terms (%)

Services and Accommodations		Number of Extra Terms Required								Total (N)
		0	1	2	3	4	5	6	7	
Adaptive Technology	No	73.8	70.9	75.0	79.5	78.6	100.0	100.0	100.0	1131
	Yes	26.2	29.1	25.0	20.5	21.4	0.0	0.0	0.0	399
	N	1266	134	64	44	14	4	3	1	1530
Tuition Subsidy	No	98.3	97.0	91.9	93.3	95.7	100.0	100.0	100.0	1430
	Yes	1.7	3.0	8.1	6.7	4.3	0.0	0.0	0.0	35
	N	1133	164	86	45	23	8	5	1	1465
Alternate Format	No	54.0	48.5	54.4	28.6	37.5	37.5	20.0	0.0	974
	Yes	46.0	51.5	45.6	71.4	62.5	62.5	80.0	100.0	890
	N	1469	198	103	56	24	8	5	1	1864
Testing Services	No	27.2	30.8	33.0	21.4	25.0	50.0	20.0	0.0	517
	Yes	72.8	69.2	67.0	78.6	75.0	50.0	80.0	100.0	1347
	N	1469	198	103	56	24	8	5	1	1864
Learning Strategies	No	86.7	82.1	84.4	93.2	78.6	100.0	100.0	100.0	1322
	Yes	13.3	17.9	15.6	6.8	21.4	0.0	0.0	0.0	208
	N	1266	134	64	44	14	4	3	1	1530
Peer Services	No	94.3	95.1	96.5	100.0	91.7	100.0	100.0	NA	730
	Yes	5.7	4.9	3.5	0.0	8.3	0.0	0.0	NA	41
	N	600	82	57	14	12	4	2	NA	771
Disability Counsellor	No	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
	Yes	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	1465
	N	1133	164	86	45	23	8	5	1	1465

Career Advisors	No	97.9	98.1	94.0	100.0	100.0	100.0	100.0	100.0	1942
	Yes	2.1	1.9	6.0	0.0	0.0	0.0	0.0	0.0	44
	N	1553	216	116	60	26	9	5	1	1986
Counselling Services	No	89.0	100.0	98.2	100.0	100.0	100.0	100.0	NA	703
	Yes	11.1	0.0	1.8	0.0	0.0	0.0	0.0	NA	67
	N	599	82	57	14	12	4	2	NA	770

However, even within these limitations, there are some interesting results (Table 10). On average, the use of services and accommodations provided by the college is not widespread, with the exception of consultations with disability counsellors, who all GwD would be required to access to receive supports. Making use of testing services (72.8%), alternative format textbooks (46.0%) and adaptive technology (26.2%) are the next most commonly used services and accommodations. Colleges in the study reported very few students using peer services, tuition subsidies and career advisors.

For the reasons described above, it is difficult to discern any relationship between the use of services and accommodations and requiring extra time to complete a program. The results show that 20.6 per cent of graduates who used testing services required extra time to graduate, compared to 23 per cent of those who did not use or require the services. In contrast, those using alternate format materials were somewhat more likely to require extra time (24%), compared to 19 per cent for those who did not. While more research and analysis would be needed, a preliminary conclusion is that the use of alternative format textbooks impacts a student's ability to complete his/her program on time.

Conclusions

This report compared graduates with disabilities (GwD) to a matched cohort (GwoD) of students who graduated between 2007 and 2010 from five Ontario Colleges. These groups were compared in order to determine whether GwD required more time to graduate than did the college cohort group without disabilities (GwoD), and whether there were other variables present affecting time-to-completion. This research has provided some insight into the experiences of GwD. Associations between certain socio-demographic characteristics and both GPA and time-to-completion were found. This research also shed light on differences in time-to-completion between GwD and GwoD.

Several variables were associated with both increases and decreases in GPA. The model predicts that being an older student and a female is associated with increased GPA. Enrolment in a health program or an advanced diploma is associated with a decrease in GPA. However, the decreases are extremely small – being enrolled in a health program is associated with a decrease in GPA equivalent to approximately .07. Requiring extra time to graduate was shown to have the largest effect on GPA, with an associated decrease of .25.

This study also highlighted differences in time-to-completion between GwD and GwoD. On average, both groups of students required extra time to graduate, but GwD require slightly more. Enrolment in Business,

Health or an advanced diploma program was associated with an increased likelihood of requiring extra time to graduate, as was having a psychiatric disability. Enrolment in a certificate program was found to be associated with a decreased likelihood of requiring extra time to complete program requirements.

No substantive conclusions could be reached about the association between the use of accommodations and services and requiring extra time to complete program requirements. On average, most students made little use of services and accommodations for students diagnosed with a disability. However, when only evaluating cross-tabulation data about testing services, the use of adaptive technology or alternative format textbooks could be considered factors slightly increasing the need for extra time to graduate for GwD.

Limitations

Although the research method included a large sample size (N=2,201), matched pairs sampling (N=1,776), and was representative of five colleges, some of the information was missing or unavailable due to lack of resources, outdated data collection systems, policies, procedures, staffing, and differences in disability/student service models. Tracking certain pieces of information (GPA comparisons between the two groups, access/use of services) was difficult because of differences in electronic databases and availability of staff to collect this information.

Conclusions

This study should be duplicated in other provinces to verify trends across Canada and examine why some GwD do not access services/accommodations when they may be beneficial. Disability offices should consider the importance of testing centres and encourage struggling students with disabilities to utilize this service. The results concerning GwD who use alternative format materials could be considered an indicator of an immediate recommendation for the disability counsellor to suggest reduced course loads or considerable adaptive technology training for reading software. The early introduction of reading software may alleviate anxiety related to learning new software and reduce the risk of course failure in the first semester of a program. Most importantly, the tuition subsidy offered to students with disabilities should be re-evaluated, not only to equalize tuition costs but also to include the costs associated with additional living expenses. For the small number of students with disabilities who access this subsidy, such an amendment would ensure equal tuition costs and equal educational opportunity. In addition, allowing a living expense subsidy would meet the Accessibility for Ontarians with Disabilities Act (AODA) guidelines and make Ontario a leader in equal costs for accessible education. Finally, significant resources would be required in order to address the limitations that the results of this study identified.

References

- Alcorn Mackay, S. (2009). *Succeeding with Disabilities: A preliminary study of the time to graduation*. Toronto: Higher Education Quality Council of Ontario.
- Finnie, R., Childs, S., & Qui, T. (2012). *Patterns of Persistence in Postsecondary Education: New Evidence for Ontario*. Toronto: Higher Education Quality Council of Ontario.
- Human Resources and Skills Development Canada (HRSDC). (2006). *Advancing the Inclusion of People with Disabilities 2006*. Retrieved from http://www.hrsdc.gc.ca/eng/disability_issues/reports/fdr/2006/page05.shtml
- Human Resources and Skills Development Canada (HRSDC). (2011). *Disability in Canada: A 2006 Profile*. Retrieved from http://www.hrsdc.gc.ca/eng/disability_issues/reports/disability_profile/2011/disability_profile.pdf
- Ma, X., & Frempong, G. (2008). *Reasons for Non-completion of Postsecondary Education and Profile of Postsecondary Dropout*. Gatineau: Learning Policy Directorate.
- Sattler, P., & Academica Group Inc. (2010). *From Postsecondary Application to the Labour Market: The Pathways of Under-represented Groups*. Toronto: Higher Education Quality Council of Ontario.
- Statistics Canada. (2007). *Participation and Activity Limitation Survey 2006: Analytical Report*. Catalogue no. 89-628-XIE. Retrieved from <http://www.statcan.gc.ca/pub/89-628-x/89-628-x2007002-eng.pdf>
- Statistics Canada. (2008a). *Physical activity and limitation survey: Table 5. Labour force status for adults 15 to 64, by Canada and provinces, 2001 and 2006*. Retrieved from: <http://www.statcan.gc.ca/pub/89-628-x/2008008/t/5201169-eng.htm>
- Statistics Canada. (2008b). *Participation and Activity Limitation Survey 2006: Tables (Part V)*. Catalogue no. 89-628-X no. 011. Retrieved from <http://www.statcan.gc.ca/pub/89-628-x/89-628-x2008011-eng.htm>
- Statistics Canada. (2011). *Physical activity and limitation survey: custom tables for HEQCO*.



Higher Education
Quality Council
of Ontario

An agency of the Government of Ontario