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## **Disability in Ontario: Postsecondary education participation rates, student experience and labour market outcomes**

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## Introduction

The Ontario government recognizes the importance of ensuring equality of access to postsecondary education (PSE). One group that has been and continues to be underrepresented in PSE is students with disabilities. As a response, the Ontario government has made improvements to the Accessibility for Ontarians with Disabilities Act, 2005, with the end goal of making Ontario a more accessible province for people with disabilities by 2025. In addition to making changes to legislation, there has been increased funding for students with disabilities, with more than \$47 million allocated in 2010-2011 to help these students achieve success in PSE. The Ontario government now also provides targeted funding for students with learning disabilities (Tsagris and Muirhead, 2012).

The 2005 Postsecondary Review, “Ontario: a Leader in Learning,” authored by Bob Rae, addressed issues facing students with disabilities. Key recommendations<sup>1</sup> included:

Require institutions to reach out to students with disabilities at their schools and in their communities to ease the transition to postsecondary education. Provide funding for enhanced academic and career counselling on campus. Allow for the evolution of centres of research and service excellence and distribute funding to institutions for supports and services on the basis of the size of a given institution’s population of students with disabilities (Rae, 2005: 32).

In HEQCO’s early research and review plans, students with disabilities were highlighted as a group that is underrepresented in PSE, particularly in university (HEQCO, 2008; 2009). HEQCO subsequently funded several research studies on disability, both directly as a focus of the research and indirectly as a segment within larger studies. This paper will summarize what has been learned by:

1. describing how and what information is collected pertaining to participation and attainment rates;
2. describing the in-school experiences of students with disabilities, including their engagement and service usage;
3. describing research findings for specific types of disability;
4. describing these students’ labour market outcomes and experiences.

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<sup>1</sup> The Postsecondary Review also recommended the creation of a council in higher education, which resulted in the establishment of the Higher Education Quality Council of Ontario (HEQCO). As part of its mandate, HEQCO evaluates the postsecondary sector and provides policy recommendations to the Minister of Training, Colleges and Universities, to enhance the access, quality and accountability of Ontario’s colleges and universities.

## Canadian and Ontario Sources of Data on Disability

A critical question in the discussion of access to PSE for persons with disabilities is to determine the proportion of this population who attempt and complete PSE, and whether this has changed over time. Both nationally and within Ontario, data have been collected on the population at regular intervals and using a variety of methods. The following provides an overview of selected data collection initiatives in Ontario and Canada.

There are two ways to calculate the numbers of students with disabilities who have participated or are currently participating in PSE: 1) as a share of the population, and 2) as a share of students in PSE.

### *Share of population with disabilities*

- a. The participation rate in college or university can be calculated as the share of the population with a disability of a certain age who are currently enrolled in college or university. The main sources for these rates are Statistics Canada surveys, the Survey of Labour and Income Dynamics (SLID) and the Youth in Transition Surveys (YITS). In Ontario, another potential data source is the Ministry of Education's student information system, which contains details on the special education status of high school students. This data system also documents whether the student transitioned directly to PSE within Ontario, thus enabling the calculation of a participation rate.
- b. The attainment rate is analogous to the participation rate, but it represents the proportion of the population in a specified age range who report having completed a PSE credential. The primary sources of information here are the Physical Activity Limitation Survey (PALS) and the SLID.

### *Share of students in PSE with a disability or access disability services*

- a. The share of students in PSE with a disability is generally calculated as the percentage of a surveyed PSE population who self-identify as having a disability. Sources include the University & College Applicant Study (UCAS), which provides information on college and university applicants for Ontario, and the Canadian University Survey Consortium (CUSC), which provides information on university students nationally. The population-based surveys mentioned above (SLID, YITS, and PALS) could also be used to calculate the percentage within a given PSE group with a disability.
- b. In addition to self-identification, student use of disability services can be considered a proxy for disability rates within the student population. Service-related calculations rely on data reported through disability offices or from surveys. For Ontario, the main data source is the annual reporting to the Ministry of Training, Colleges and Universities (MTCU) of the number of students who register with college and university disability offices. Since this reporting is administrative, it avoids potential survey bias. However, it will not include students who do not disclose their disability and it will be impacted by the service offerings at a particular college or university. Ontario colleges also collect similar information in the MTCU Ontario College Student Satisfaction Survey, which asks students whether they use "special needs/disability services." As an in-class survey with a very high response rate, it too avoids some response bias issues, but the wording, which includes "special needs," may not be specific to disability.

Table 1 provides a detailed description of current data sources, as well as the disability rate reflected by each data source. As the table shows, the population, methodology, and question(s) used to identify disability vary by data source. Thus, quantifying the share of the population with a disability is difficult. The differing disability rates generated by each survey demonstrate the impact that the use of different questions, different numbers of questions, and different survey vehicles can have on reported rates. This is confounded by the definitions of disability used, as well as by the point in one's life cycle in which the data is collected. For example, disability can change over time, with older age groups tending to report higher levels of disability. Additionally, some disabilities, such as those affecting mental health, do not present until the late teens or early twenties, often coinciding with entry into PSE (Choy, Horn, Nunez, and Chen, 2000). Nonetheless, two things are clear: those with disabilities are accessing postsecondary education at a lower rate than those without disabilities, and this is primarily an issue of university access, since participation rates in colleges are roughly similar for those with or without a disability.

**Table 1: Various Data Sources for Students with Disabilities in Ontario Postsecondary Institutions**

Instrument or Source	Description	Information Relating to Disability	College	University	Population Disability Rate
<b>College Student Satisfaction Survey (KPI) (MTCU) (HEQCO analysis)</b>	<ul style="list-style-type: none"> <li>• annual, in-class, paper survey in all Ontario colleges (CAATS);</li> <li>• administered during second semester</li> </ul>	Use of, and satisfaction with, special needs/disability services (did not use/NA, low use, high use)	2010-11: 5.80% high use, 6.40% low use	--	--
<b>University and College Applicant Surveys 2011 (UCAS, Academica Group, Inc.) (custom table)</b>	<ul style="list-style-type: none"> <li>• annual, online survey</li> <li>• applicants to all Ontario colleges (CAATS); varying university participation</li> </ul>	2010-2011: Do you consider yourself to have a disability (physical, mental or learning)? Yes/No/Prefer not to answer	2011: 10.0% of college applicants	2011: 4.5% of university applicants	--
<b>Youth in Transition Survey (YITS-A); cycle 4; aged 21 in 2006 (HRSDC and Statistics Canada) (Finnie, Childs, and Wismer, 2011)</b>	<ul style="list-style-type: none"> <li>• national, longitudinal survey</li> <li>• 2 cohorts: A and B</li> <li>• administered to students every two years; administered to parents once (child aged 15),</li> <li>• first cycle administered in schools, remaining cycles administered as telephone survey</li> </ul>	Asked in parent survey when child was age 15: Does a long term physical condition, mental condition or health problem limit the kind or amount of activity {child} can do ... at home? ...at school?... in other activities, for example transportation or leisure?) Yes/No/Refused/Don't know Does {child} have any difficulty hearing, seeing, communicating, walking, climbing stairs, bending, learning or doing any similar activities? Yes sometimes/Yes often/No/Don't know/ Refused	<ul style="list-style-type: none"> <li>• 46.2% of those with a disability at age 15 attended college by age 21</li> <li>• 14.4% of those who had ever attended college by age 21 had a disability at age15</li> </ul>	<ul style="list-style-type: none"> <li>• 22.1% of those with a disability at age 15 attended university by age 21</li> <li>• 5.60% of those who ever attended university by age 21 had a disability at age 15</li> </ul>	<ul style="list-style-type: none"> <li>• 11.4% of the survey population had a disability at age 15</li> </ul>
<b>Canadian University Survey Consortium (CUSC)</b>	<ul style="list-style-type: none"> <li>• Survey of Canadian university undergraduates</li> <li>• 2011: 25 universities,</li> </ul>	Do you have a disability? (Check all that apply) Mobility Hearing Speech	--	7% of university graduates (2009) 9% of undergraduates (2011)	--

Instrument or Source	Description	Information Relating to Disability	College	University	Population Disability Rate
<b>(2009, graduates) (2011, all students)</b>	n=8,549, 35% response rate, online survey	Partial sight or blind Learning Head Injury Other Physical disability Mental health			
<b>Census 2006/Physical Activity and Limitation Survey (PALS)<sup>2</sup>, 2006 (Statistics Canada (custom table))</b>	<ul style="list-style-type: none"> <li>Post-censal survey of those who answered positive for the disability questions on the Census</li> </ul>	Does this person have any difficulty hearing, seeing, communicating, walking, climbing stairs, bending, learning or doing any similar activities? Yes, sometimes/ Yes, often/ No  Does a physical condition or mental condition or health problem reduce the amount or the kind of activity this person can do: (a) at home? (b) at work or at school? (c) in other activities, for example, transportation or leisure?	31.5% of the population with disabilities aged 25-44 attained a college credential; vs. 32.1% of those without a disability 8.5% of college graduates aged 25-44 had a disability	22.4% the population with a disability aged 25-44 have a university degree vs. 36.1% for those without a disability  5.6% of university graduates aged 25-44 had a disability	8.70% of population aged 25-44 had a disability
<b>Ontario college and university disability service offices (DSO) (2010-2011)</b>	<ul style="list-style-type: none"> <li>Administrative report submitted annually by individual colleges and universities' disability service offices to MTCU; standardized coding and template; count of students who registered with DSO</li> </ul>	01 - Acquired Brain Injury 02 - Attention-deficit/hyperactivity disorder 03 - Chronic Illness/ Systemic/Medical 04 - Deaf, deaf, Deafened, Hard-of-Hearing 05 - Learning Disability 06 -Low Vision, Blind 07 -Mobility/Functional 08 -Psychiatric 09 - Other	Approximately 11% of college students registered with DSO (# registered/ FTE) <sup>3</sup>	Approximately 5% of university students registered with DSO (# registered/ #undergrad & grad FTE)	--

<sup>2</sup> According to the PALS, a person with a disability is defined as a respondent who answers: YES to a disability filter questions on Census, **and** YES to disability filter questions in PALS, **or** YES to detailed questions on activity limitations in PALS

<sup>3</sup> Note: For both the college and university percentages, full-time equivalent (FTE) is used as the denominator. MTCU uses FT headcounts, resulting in higher rates.

Instrument or Source	Description	Information Relating to Disability	College	University	Population Disability Rate
<b>National Graduate Survey, Statistics Canada (class of 2005) (HEQCO analysis)</b>	<ul style="list-style-type: none"> <li>Survey of Canadian postsecondary graduates, 2 and 5 years after graduation</li> </ul>	<p>Does a long-term physical condition, mental condition or health problem, that is, one that has lasted or is expected to last six months or more, limit the kind or the amount of activity you can do:                      ...at home? ...at work or at school?                      ...in other activities (for example, travel or leisure time activities)?                      (yes to any of the above)</p>	<ul style="list-style-type: none"> <li>8.7% of Ontario college graduates reported a disability; 8% rest of Canada (ROC)</li> </ul>	<ul style="list-style-type: none"> <li>6.6% of Ontario university bachelor graduates reported a disability; 5.7% ROC</li> </ul>	--
<b>Survey of Labour and Income Dynamics (SLID), Statistics Canada<sup>4</sup></b>	<ul style="list-style-type: none"> <li>Participation rate: analysis of 18-21 year olds (2007)</li> <li>Attainment rate: analysis of 16-64 year olds (2008)</li> </ul>	<p>If answered yes to any of the following four questions:</p> <p>Do you have any difficulty learning, hearing, seeing, communicating, walking, climbing stairs, bending or doing any similar activities?</p> <p>Does a physical condition or mental condition or health problem reduce the amount or the kind of activity you can do at home?... at work?                      ... in other activities, for example, transportation or leisure?</p>	<ul style="list-style-type: none"> <li>29.1% of those with disabilities attended college vs. 26.5% of the non-disabled population</li> <li>22.4% of college students reported having a disability at least once since they were 16;</li> <li>28.7% of those with a disability attained a certificate or diploma</li> <li>28.8% of certificate or diploma graduates had a disability</li> </ul>	<ul style="list-style-type: none"> <li>30.2% of those with disabilities attended university; vs. 45.3% of the non-disabled population</li> <li>14.9% of university students reported having a disability at least once since 16</li> <li>14.6% of those with a disability attained a university degree</li> <li>18.5% of degree graduates had a disability</li> </ul>	<ul style="list-style-type: none"> <li>20.8% of the overall population 18-21 years of age reported a disability</li> <li>27% of the population 16-64 years of age reported a disability</li> </ul>

<sup>4</sup> 18-21 year-olds in 2007, HEQCO analysis (Zhao, H); 2008 analysis for attainment 16-64 years custom table R391390\_final from Statistics Canada, SLID

## Participation and Attainment Rates

Analysis drawing on the YITS shows that 68 per cent of Ontario students surveyed whose parents reported that their child had a disability at 15 years of age had participated in college or university by age 21, with 46 per cent in college and 22 per cent in university. This proportion differed dramatically from that of students without a disability, 35 per cent of whom participated in college and 49 per cent in university. Compared to the rest of the country, Ontario has fewer students with a disability who attended university (22% vs. 26%), but a much higher proportion who attended college (46% vs. 32%) (Finnie, Childs, and Wismer, 2011). Looking at a slightly younger population, SLID results for those between the ages of 18 and 21 showed that 59 per cent of students with a disability had attended PSE, compared to 72 per cent for those without a disability. This gap is similar to that observed in the YITS data. In both cases, these differing participation rates are driven largely by the university results.

PALS data shows little difference between the proportion of students with and without a disability between the ages of 25 and 44 who have attained a college credential. Thirty-two per cent of the population with a disability has attained a college credential. The disparity arises at the university level, with 22 per cent of those with a disability and 36 per cent of those without a disability having attained a university credential. The attainment data from the SLID shows that of the population aged 16 to 64, 29 per cent of those with a disability completed a certificate or diploma, compared to only 15 per cent who completed a degree.

The percentage of PSE students with a disability or, as a proxy, who are using disability services, ranges between 10 and 15 per cent for college students, with reasonable consistency across various datasets.<sup>5</sup> For university students, the range across data sources is also fairly consistent and ranges from 5 to 7 per cent. The PALS and the National Graduates Survey (NGS)<sup>6</sup> also show a similar number of students who have attained a credential. The NGS showed that 8.7 per cent of Ontario college graduates and 6.6 per cent of bachelor's degree graduates reported a disability. These results are similar to 2006 PALS data, with 8.5 per cent of college and 5.6 per cent of university graduates aged 25 to 44 reporting a disability.

### Impact of severity of disability and type

Disability is a general term that encompasses many conditions with a wide range of severity. In terms of participation in PSE by those with disabilities, both severity and type of disability have a major impact. Data sources are limited in Canada, with Statistics Canada's PALS being perhaps the only source that allows for a comparison by type and severity of disability.<sup>7</sup> However, this source only provides attainment rate and not participation rate. Additionally, sample sizes for Ontario only allow for broad disability type groupings of "physical only" and "other." Key categories, such as learning and psychiatric disabilities, cannot be distinguished.

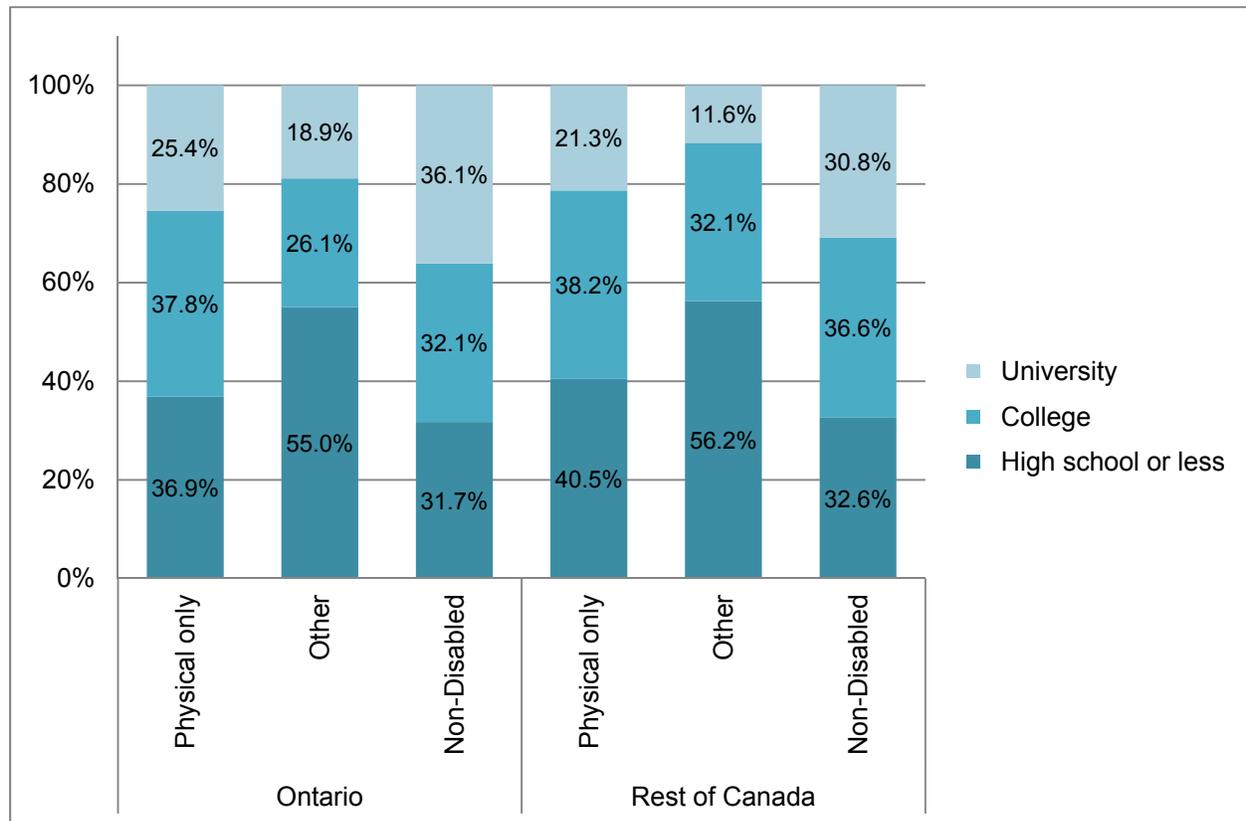
Figure 1 shows that Ontarians with physical disabilities are more likely to have attained a PSE credential (63%) than those with other types of disabilities (45%), a trend also observed in the rest of Canada. Those with a physical disability, both in and outside of Ontario, are actually more likely to have attained a college credential than the population without a disability, but have a much lower share of those who completed university. Those with "other" disabilities were less likely to have attained either a college or university credential than the population without a disability.

<sup>5</sup> SLID results show much higher rates, since a broader question is asked.

<sup>6</sup> Graduates are surveyed two years after graduation.

<sup>7</sup> Statistics Canada currently has a new survey, the Canadian Survey on Disability, with results expected in 2013.

**Figure 1: Educational Attainment for Ages 25 to 44 by Disability Type, Ontario and the Rest of Canada, 2006**



**Source:** Statistics Canada, Participation and Activity Limitation Survey, 2006. Custom tabulation #11-016.

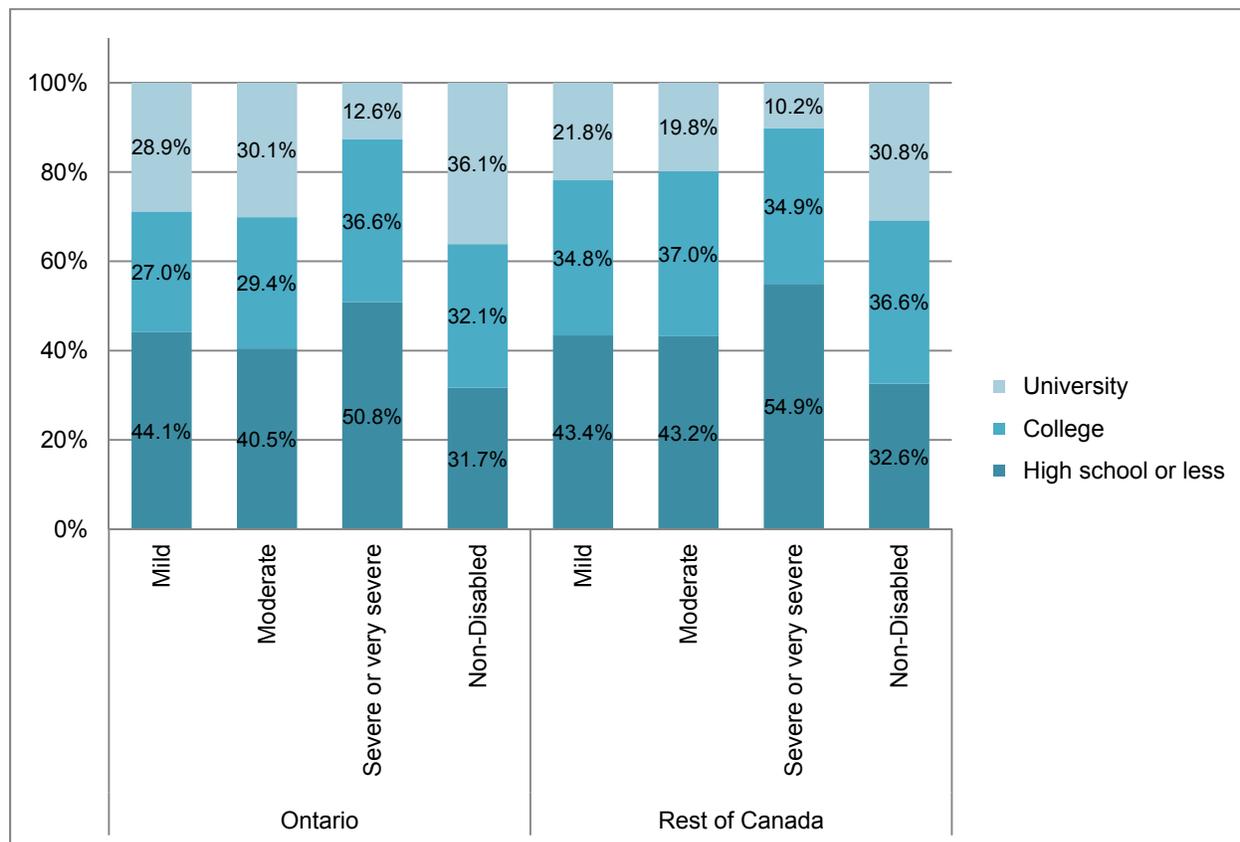
"Physical only" comprises hearing, seeing mobility, agility, pain, and communication.

"Other" comprises learning, memory, developmental and psychological, or a combination of one or more of these and one or more physical disability(ies) for Ontario.

For the "other" university category, use with caution due to low sample sizes.

The reported severity of the disability also has an impact, with only 49 per cent of those reporting a severe or very severe disability attaining a PSE credential, compared to 56 per cent of Ontarians with a mild disability and 59 per cent of those with a moderate disability (Figure 2). Strikingly, the share of the population with a severe/very severe disability attaining a university degree is only 13 per cent in Ontario and 10 per cent in the rest of Canada. In contrast, in Ontario, there was an even higher percentage of those with a severe/very severe disability.

**Figure 2: Educational Attainment for Ages 25 to 44 by Disability Severity for Ontario and the Rest of Canada, 2006**



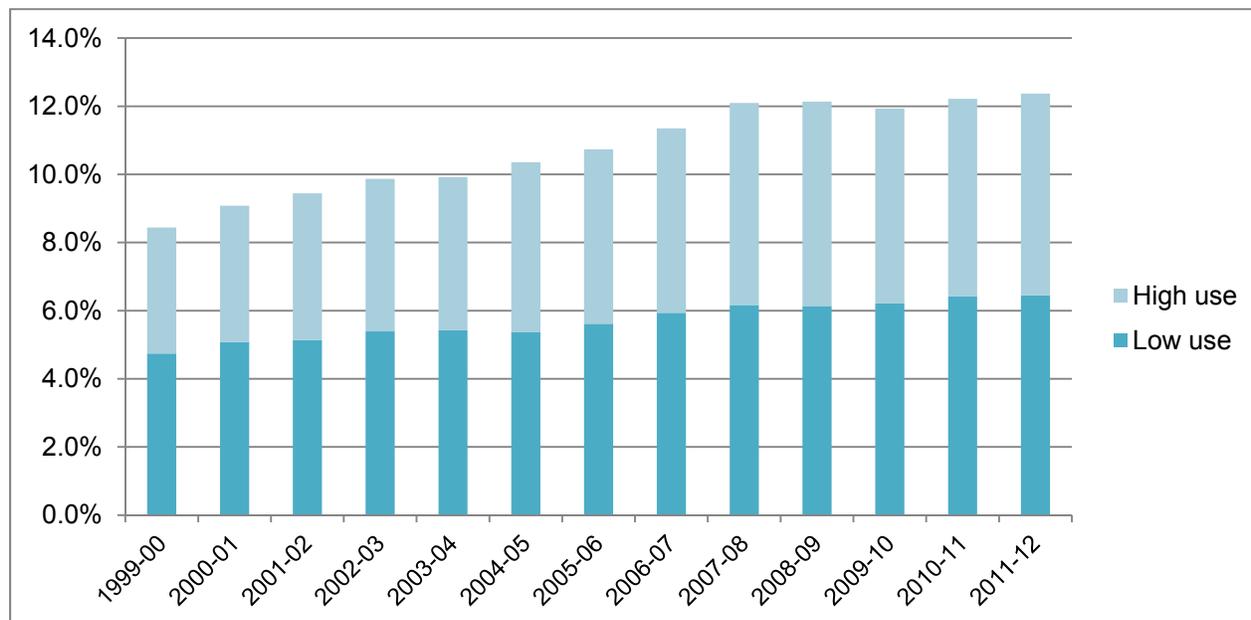
Source: Statistics Canada, Participation and Activity Limitation Survey, 2006. Custom tabulation #11-016.

### Trends over time

The population reporting a disability in both Ontario and Canada has increased, a trend that has also impacted colleges and universities. Data from the PALS showed that between 2001 and 2006, the disability rate in Ontario increased from 13.5 to 14.7 per cent when the age of the population is standardized (Statistics Canada, 2007). Using a different definition of disability, SLID data showed an increase in Ontario between 1999 and 2008 from 21 to 27 per cent of the population (Statistics Canada, custom tables). This has been reflected in the number of students registering with disability offices on campuses, with university registrations increasing by 69 per cent between 2003-2004 and 2010-2011, and by 63 per cent in colleges over the same time period, for an overall increase of 66 per cent (MTCU).

In terms of student-reported use of disability services, results from the Ontario College Student Satisfaction Survey indicate a steady climb in use of “special needs/disability services.” Between 1999-2000 and 2007-2008, the percentage of students indicating low or high use rose from 8.4 to 12.1 per cent, with a plateau in usage since then (Figure 3). However, it should be noted that overall college enrolment also climbed during this period, such that the absolute numbers using these services would have increased, as seen in the MTCU DSO registration data described above.

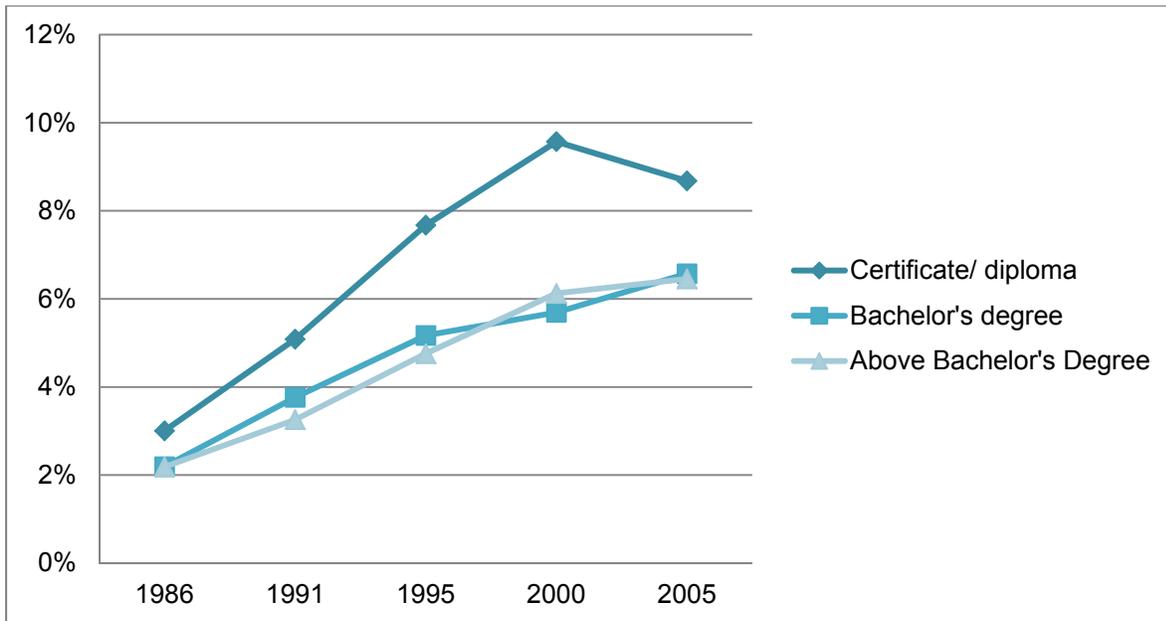
**Figure 3: Ontario College Students' Use of "Special Needs/Disability Services": 1999-2000 to 2011-2012**



Source: MTCU Student Satisfaction Survey, HEQCO analysis

Similar to the increases in the percentage of students with disabilities attending colleges and universities, the percentage of college and university graduates reporting a disability has also increased. Figure 4 shows that the percentage of college and university graduates who reported a disability has been increasing since the 1980s, rising from 3 per cent of certificate/diploma graduates and 2.2 per cent of bachelor's degree graduates in 1986 to 8.7 per cent and 6.6 per cent, respectively, for the 2005 graduating class. Unfortunately, there is no available data to indicate whether the prevalence of disability has changed similarly in the general Ontario population over this time period.

**Figure 4: Percentage of Ontario Graduates with a Disability, 1986-2005**

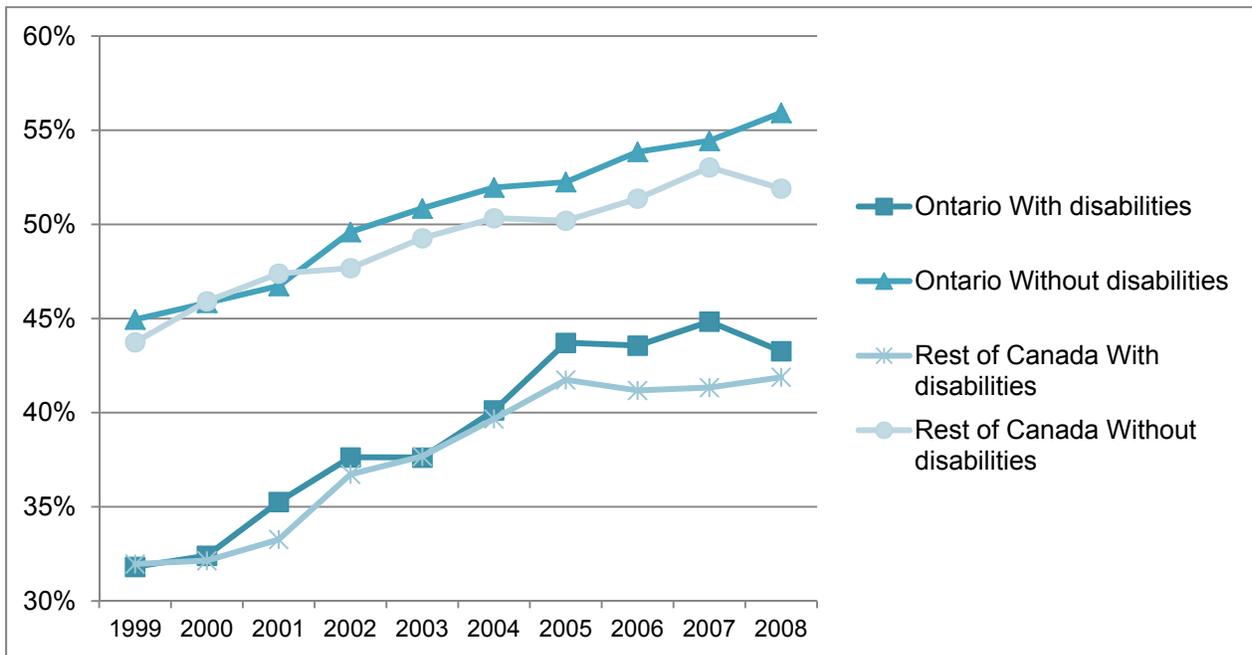


**Source:** National Graduate Survey, Statistics Canada, HEQCO analysis.

Note: The disability status is reported at the survey time, two years after graduation.

One of the limitations of the NGS is that it only contains data on PSE graduates. An alternate source, the SLID, provides a comparison over time of the share of the population with and without disabilities which has attained a credential. Figure 5 shows that educational attainment has increased for both the population with and without a disability over the past ten years. In both populations, the attainment rate among 16 to 64 year-olds has increased by 11 percentage points, with the gap between the groups remaining unchanged at 13 percentage points. Ontario differs little when compared to the rest of Canada. In 2008, 43 per cent of the population in Ontario with a disability had a credential, only slightly higher than the rest of Canada (42%).

**Figure 5: Percentage of the Population with a College or University Credential, Population Aged 16-64, with and without Disabilities, 1999-2008**



Source: Statistics Canada, Income Statistics Division, Survey of Labour and Income Dynamics. Custom Table R391390\_final

## Transition to PSE

Information about students transitioning to PSE in Ontario is difficult to gather since it requires a longitudinal survey or linked administrative datasets containing both school and PSE enrolment data. While this is not yet available Ontario-wide,<sup>8</sup> the Toronto District School Board has been able to build a dataset which contains information on the nature of the transition for students who were identified as having special needs in high school, and has been mapped onto whether they confirmed attendance in an Ontario college or university (Brown and Parekh, 2010). It was found that students with special needs had higher high school dropout rates and a lower rate of transition to PSE.<sup>9</sup> Of those who were in grade 9 in 2003, only 20 per cent of the non-special needs students dropped out within five years, while 29 per cent of those with learning disabilities, 46 per cent of those with behavioural disabilities, and 35 per cent with mild intellectual disabilities (MID) had dropped out. Correspondingly, only 9 per cent of students with a learning disability confirmed an offer for university, 2 per cent of those with a MID, and 5 per cent of those with a behavioural disability. This is in contrast to 51 per cent of non-special needs students confirming an offer to university. For college, the number transitioning are higher, with 22 per cent of those with a learning disability, 17 per cent of those with MID, and 9 per cent of those with a behavioural disability confirming an offer to college, compared with 14 per cent of non-special needs students (Brown and Parekh, 2010).

Sweet, Anisef, Brown, Adamuti-Trache, and Parekh (2011) conducted further research using the same dataset. Their study showed that students with special needs were more likely to be male (66%) and less likely to be East, Southeast and South Asian students. They were also more likely to be from schools in low socioeconomic status neighbourhoods and were more likely to have parents with an education level below a university degree. In order to control for the effect of these differences, a multinomial logistic regression model was used. The results showed that the odds of a student with special needs confirming university acceptance relative to dropping out of high school were much lower for those without special needs. However, there was no difference for confirming college or graduating from high school.

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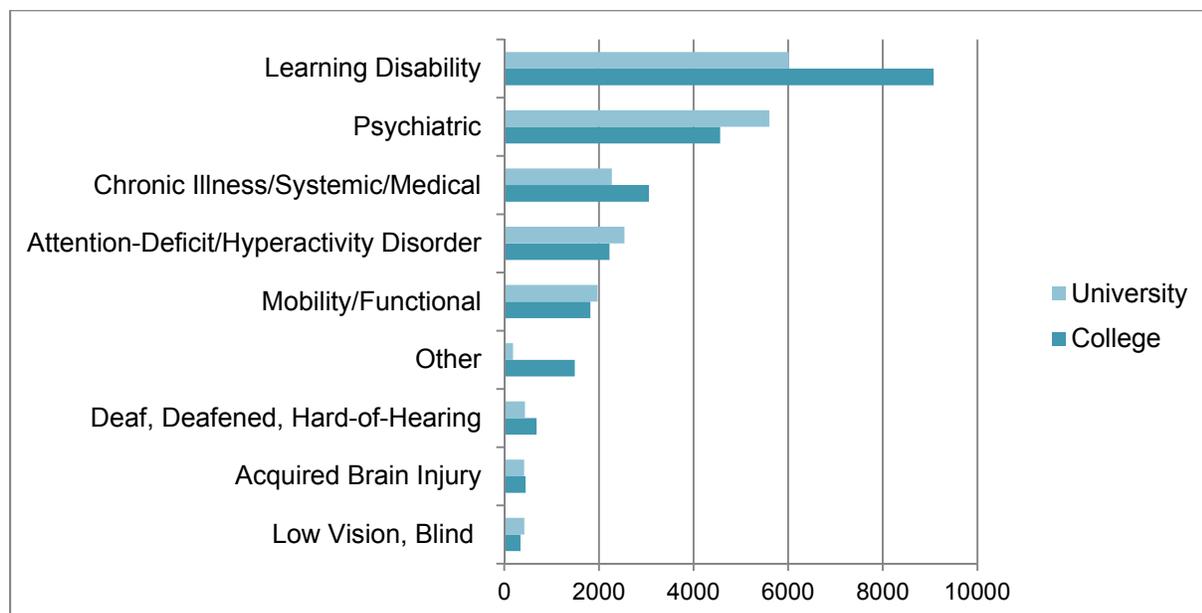
<sup>8</sup> Data collected at board level on special needs and reported centrally to the Ministry of Education as part of student record; potential exists to link to college and university applications and determine an Ontario PSE transition rate.

<sup>9</sup> Note that this study was based on the school boards' classification of 'special needs' for the purpose of providing programming, while in postsecondary institutions students must qualify as having a disability.

## A Profile of Students with a Disability in Ontario

The prevalence and needs of students with disabilities vary greatly. Provincially reported data from disability service offices in Ontario PSE institutions indicate that the three most common disabilities are learning disabilities, followed by psychiatric disabilities and chronic illness (Figure 6).

**Figure 6: Number of Ontario College and University Students Registered in Disability Service Offices by Disability Type, 2010-2011<sup>10</sup>**



Source: MTCU.

The annual survey of applicants to college and university (UCAS), conducted by Academica Group, Inc., allows for the creation of a demographic and academic profile of PSE applicants. Additionally, it facilitates a better understanding of how applicants are informed about PSE, the role that financial considerations play in their application and decision-making process, and their reasons for applying to PSE (Academica Group, Inc., 2012). Since disability status is included in the survey's demographic questions, an assessment of the interaction between these aspects and other demographic characteristics can be conducted. The following is a summary of the findings for applicants with disabilities for the years 2006-2011.

### *Socio-demographic Characteristics*

The characteristics of those applying to PSE who have disabilities are fairly similar to the overall applicant population. They are equally likely as the rest of the population to come from small communities (<10,000), to come from households with lower incomes (≤\$60,000), and to be the first in their family to attend PSE.

Differences can be found when looking at the likelihood of being employed full-time at the time of application. While college applicants with disabilities are less likely to be employed on a full-time basis when compared to

<sup>10</sup> This aggregate data is not audited and is based on information provided by college and university DSOs in their annual report under the Accessibility Fund for Students with Disabilities (AFSD), in which they summarize the number of students registered with their offices and receiving accommodations or services during that year. This does not reflect the total number of disability categories receiving services or accommodation because students with more than one disability may be accessing several services from OSDs.

college applicants overall, the opposite holds true for university applicants. On average, both college and university applicants with disabilities tend to be older than applicants overall, and applicants with disabilities are overrepresented in the oldest age category (25+) and slightly underrepresented in the youngest age category (<19). Additionally, it is interesting to note that university applicants who had previously attended college were more likely to have a disability than other university applicants.

### ***Academic Characteristics***

When compared to the overall population, applicants with disabilities are more likely to have a high school grade average below 75 per cent, regardless of whether they are applying to college or university, and are less likely to have a grade average of 90 per cent or more when applying to university. Direct entry from high school to either college or university is less likely for applicants with disabilities. This finding was expected, given that applicants with disabilities were shown to be older on average than their counterparts.

### ***PSE Information Sources Used and Level of Influence***

College applicants with or without a disability do not differ in their use of either personal sources (family, friends) or high school sources (teachers and guidance counselors) when researching PSE options. University applicants with disabilities are less likely than university applicants overall to rely on personal recommendations (family, friends) or high school teachers. However, both college and university applicants with disabilities are more likely to make use of informal campus visits, and college applicants with disabilities are more likely to use formal campus tours and campus open houses. This is likely due to potential students with a disability deciding to evaluate, in person, the level of accessibility and support services being offered on campus. However, despite some differences in the use of different information sources, the impact of each did not differ between those with or without a disability.

### ***Intended Credential and Program Preferences***

College applicants with disabilities are more likely to intend to obtain a college diploma and are less likely to intend to obtain a bachelor's degree than the overall college applicant population. University applicants with disabilities have fewer intentions to do an MBA or enter medicine but have greater intentions to obtain a doctorate or teaching degree than university applicants overall.

At both the college and university level, applicants with disabilities are less likely to choose health sciences or business. College applicants with disabilities are more likely to indicate that applied technologies or social/community services was their first-choice program compared to the population as a whole. At the university level, applicants with disabilities are more likely to choose social sciences or humanities.

### ***Reasons for Applying***

College and university applicants with or without disabilities have very similar responses when asked about their major influencers for applying to PSE. Overall, top reasons include career preparation, and to increase their knowledge, personal growth and future options. However, college applicants with a disability were more likely than applicants without a disability to indicate that they applied as a means of increasing their confidence. University applicants with disabilities are less likely to apply as a means of preparing for graduate study and were also less likely to cite "to meet new people" as a reason for applying than university applicants without a disability.

## Services/Supports for Specific Student Populations

HEQCO has commissioned several papers which focus on the transition and supports provided to specific populations of students with disabilities, including students with autism spectrum disorder (ASD), learning disability, attention deficit hyperactivity disorder (ADHD), and mental health issues.

### Autism Spectrum Disorder

ASD is “a complex developmental disorder that typically affects a person's ability to communicate, form relationships and respond appropriately to his or her environment” (Alcorn Mackay, 2010:4). In 2008, Ontario’s colleges and universities were anecdotally reporting an increase in the numbers of students with ASD entering their institutions and expressed a concern that they did not have the appropriate transition supports in place. Therefore, HEQCO funded a study led by Alcorn Mackay (2010) that involved 1) obtaining an estimate of the numbers of students with ASD who will be entering PSE, and 2) performing a gap analysis of the services provided in secondary schools compared to those provided in PSE. The results showed that school boards, colleges and universities all reported that the number of students with ASD who are eligible and capable of enrolling in PSE was increasing, with major increases expected in the next few years (Alcorn MacKay, 2010). The study also showed that gaps existed between the services provided in high school that were not available in PSE, such as staff specifically trained in ASD, dedicated “safe” spaces, and trained ASD coaches to support students academically.

Based on this gap analysis, Alcorn MacKay (2010) provided several recommendations for postsecondary institutions. These included having staff trained in working with people with ASD, increasing awareness among all institutional staff, and having a “safe” space for students with ASD to retreat when activities become too stressful. The author also stressed that the development of orientation activities for ASD students is needed. While the transition to PSE can be overwhelming for most students, those with ASD are likely to face additional difficulties as “any change in schedule, location or interaction with people can pose varying degrees of problems for students with ASD” (Alcorn MacKay, 2010:6). Additionally, parents should be involved with their child’s educational plan, as developing parental partnerships may help the transition process for ASD students as well as ensure that their needs are being met. Lastly, the author recommended that psychological practitioners should be provided with the opportunities needed to increase their knowledge of working with adult students with ASD, as it is likely that many of them are lacking such training. Alcorn Mackay (2010) stated that these recommendations, if enacted, will not only help to improve the PSE experiences of ASD students but may also encourage more students with this diagnosis to apply to PSE.

### Learning Disabilities and ADHD

The MTCU has created a number of programs to improve the academic success of students with disabilities. Among them is the Summer Transition Program (STP), designed to equip students with a learning disability with skills that promote PSE success without the added pressure and demands of a full postsecondary course load.<sup>11</sup> HEQCO commissioned a study of this program at Durham College and the University of Ontario Institute of Technology (Tsagris and Muirhead, 2012). This longitudinal, mixed methods study was aimed at assessing the effectiveness of the STP and enhanced services that promote academic performance, engagement, and success throughout PSE. Data collection took place at the Centre for Students with Disabilities, which provides support and services for both college and university students.

This research demonstrated a positive association between the use of enhanced services and attending the STP. While attending the STP did not result in a statistically significant increased likelihood of obtaining a

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<sup>11</sup> Technically, the STP is designed for students with a learning disability only. The inclusion of students with ADHD and autism is only appropriate in cases of co-morbidity with a learning disability.

GPA above a 2.0, it did improve students' orientation to campus and its services, as well as their willingness to self-advocate and disability awareness. The study found that the STP improved the quality of students' transition to PSE through an early introduction to institutional disability services and personnel, and smoothed pathways to required pre-PSE assessments. Students who did not attend the STP described a generally lengthier and more complicated transition process. Many students who attended the STP reported that the benefits of seeking academic support and accommodations outweighed the psychological costs of self-identifying as a person with disabilities.

In addition to evaluating the STP, Tsagris and Muirhead (2012) also delved into barriers and issues facing students with a learning disability and/or ADHD. Students reported that they encountered both institutional and personal barriers in trying to access accommodations and services. They needed to make additional time commitments and make use of supports and accommodations, as well as develop organizational strategies and time-management skills, which they found to be very beneficial to their academic success. Some students, particularly mature students and others not pursuing PSE directly after high school, identified a need for more information about available services and accommodations. Other concerns include the faculty's lack of knowledge and awareness regarding disabilities, echoing Alcorn MacKay's (2010) findings. Many students noted their apprehension about identifying themselves as having a disability, because of the associated stigma. The authors suggested that if faculty members become more knowledgeable about students with disabilities, it may reduce students' apprehension and in turn increase their likelihood of successful completion. Overall, Tsagris and Muirhead (2012) conclude that institutions have yet to meet the needs of disabled students. Attempts should be made to minimize the stigmatization often associated with having a disability. Services should be easier to access and, ultimately, students with disabilities should be provided with a fully accessible environment that allows them to achieve their goals.

## Mental Health Disorder

The impact of mental health issues in Ontario's postsecondary institutions has been a growing concern, mostly recently evidenced by the Spring 2012 conference titled "Focus on Mental Health," jointly hosted by Ontario college and university associations and student groups.<sup>12</sup> Data collected by MTCU from disability offices in Ontario colleges and universities indicate an increase of 67 per cent in the "psychiatric" category of disabilities between 2006-2007 and 2010-2011 (MTCU, 2012), creating a need to better understand this population. Most recently, the Ontario government announced the creation of the Mental Health Innovation Fund for projects that "improve mental health services and outcomes for Ontario's postsecondary students" (Hudes, 2012). Project funding is set at \$7 million per year until 2015 and is targeted at projects that are system wide or multi-institutional and that have a commitment to sharing results.

In 2008, HEQCO commissioned a study whose goal was to design and implement a way to gather information about the types and frequency of mental health problems and illnesses among college students, as well as to document and address their academic challenges (Holmes, Sylvestri, and Kostakas, 2011). It was hoped that the method developed would also allow for the tracking of the number of students who access these college-based support services. The researchers found that 61 per cent of students accessing counseling or disability offices had a diagnosed mental illness. The most prevalent types of diagnoses in this sample were mood (38%) and anxiety (25%) disorders, with an additional 24 per cent with comorbid diagnoses. Looking at the type of treatment utilized, most students diagnosed with mood and anxiety disorders most commonly received treatment through medication, followed by psychotherapy; some students also used more than one type of treatment at once. A positive correlation was found between the severity of problems and number of disability appointments attended. However, it was uncommon for students to attend more than two appointments at their disability and counseling centre.

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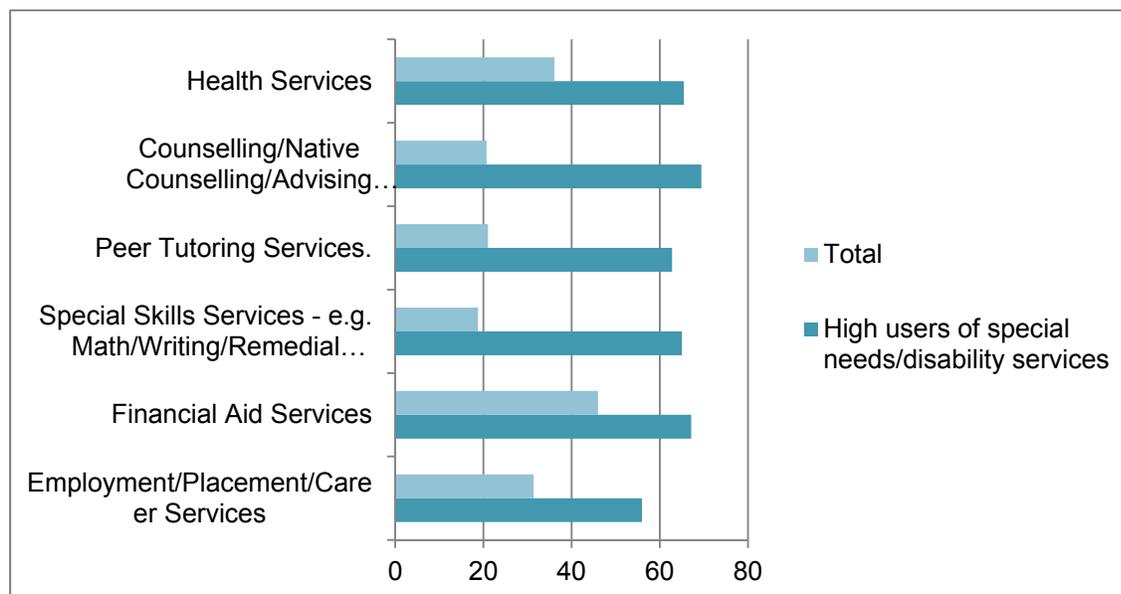
<sup>12</sup>Co-hosted by Colleges Ontario, Council of Ontario Universities, College Student Alliance, and the Ontario Undergraduate Student Association.

The link between mental health and academic challenges is evident in this research, as over two-thirds of students who used counseling and disability services also displayed academic challenges. These challenges included difficulty concentrating, absenteeism, being easily distracted, lacking energy, being disorganized, and panic related to exams and deadlines. However, these challenges differ according to diagnoses. The authors stress that mental health issues do not just affect the counseling and disability offices but the college as a whole. Therefore the authors suggested that professional development opportunities for administration, faculty and support staff be made available.

## Usage of Student/Institutional Supports

The review of papers so far demonstrates that students who make use of disability services also often require other support services. In order to analyze the extent of this phenomenon, results from existing surveys can be mined. As previously described, the MTCU College Student Satisfaction Survey requests that students indicate their usage of an extended list of student services. Students who reported use of “special needs/disability services” on the survey were analyzed for their use of other college services. As anticipated, these students are also making use of other services such as employment, financial aid, special skills, peer tutoring, counseling/advising, and health more frequently than the population overall (Figure 7).

**Figure 7: Student Service Use in Ontario Colleges by Students who Report High Usage of Special Needs/Disability Services, 2009-2010 (%)**



**Source:** Student Satisfaction Survey, Ministry of Training, Colleges and Universities, HEQCO analysis.

Similar results were found in the *Academica* study of both college and university students (Sattler & *Academica* Group, Inc., 2010). This study asked students whether they had a disability and whether they used disability services. The results showed that 64 per cent of students reporting a disability used disability services, with university students less likely than college students to report any use (56% vs. 71%). Those who did report a disability also reported higher use of financial services, academic advising, personal counseling, tutoring, peer mentoring, and Prior Learning Assessment and Recognition (PLAR). The use of orientation programs and career employment services were similar for both groups.

**Table 2: Use of Student Services by College and University Students with and without a Disability**

	University Students		College Students	
	Disability	No Disability	Disability	No Disability
<b>Services for students with disabilities</b>	56%	2%	71%	4%
<b>Financial aid services</b>	73%	62%	72%	62%
<b>Orientation programs</b>	65%	74%	69%	66%
<b>Academic advising</b>	79%	66%	61%	37%
<b>Career/employment services</b>	46%	49%	48%	39%
<b>Personal counselling</b>	38%	20%	43%	17%
<b>Tutoring services</b>	36%	28%	41%	20%
<b>Prior learning and assessment</b>	22%	16%	41%	22%
<b>Peer mentoring services</b>	42%	32%	32%	21%

**Source:** Sattler & Academica Group Inc., 2010, additional analysis by HEQCO.

Despite this reported high use of services by students with disabilities, other research indicates that there remains a gap between what resources are available and what students require. In a 2009 survey of PSE students with disabilities, 28 per cent of respondents indicated that there were “aids or services that they would use but do not have access to” (Chambers, Sukai, and Bolton, 2011). The top responses included academic accommodation, specialized adaptive technology, and extended testing time. The most cited reasons for not having access included aids or services that were too costly to purchase, not being aware of services available, and ineligibility for bursaries. This result is similar to those of the previously described gap analysis for students with ASD, which showed that these students were not getting the services they received while in high school (Alcorn Mackay, 2010).

## Financial Support

Most of the studies discussed above mention the financial barriers faced by students with disabilities. However, at the application stage, the impact of financial considerations on the selection of an applicant's first-choice school does not seem to be mediated by disability status (Academica Group, Inc., 2012). There is also little difference in PSE financing concerns when comparing applicants with disabilities to the overall population. Where applicants do differ is in their major sources of funding. College applicants with disabilities are less likely to use personal savings to finance their PSE than the overall population, while university applicants with disabilities are more likely to rely on personal savings. Both college and university applicants with disabilities are more likely than the overall respective populations to have 'other sources' of funding, which include sources such as scholarships and bursaries.

Once attending PSE, however, many students noted that there was a gap between the aids and services they needed and those provided by the institution (Chambers, Sukai, and Bolton, 2011). Purchasing the types of education-related services and/or equipment needed to accommodate their disability was not affordable for many students. For example, over one-third of the sample reported that their income, coming from various sources, such as government student loans, work, and personal savings, is insufficient to meet the costs associated with such aids and services. Furthermore, a number of students noted their concern regarding the amount of debt to be incurred while completing PSE. Thus a number of students are not able to take on the additional costs associated with aids and services. These results are in keeping with the greater use of financial aid services by both college and university students, as shown in Table 2 above.

Chambers, Sukai, and Bolton (2011) recommend several financial aid policies, including shifting loan-based funding to a grant-based model, taking into consideration the typically longer time to completion, adjusting eligibility for students with disabilities who do not qualify for student aid, and adjusting loan repayment mechanisms in general for students with disabilities.

## Student Experience and Engagement

Although student engagement has long been considered a key component of a quality education (Zhao, 2011), there has been little work focused specifically on students with disabilities.<sup>13</sup> In a follow-up survey of college and university applicants conducted one to three years after application, questions pertaining to student engagement were asked of all applicants who had attended PSE (Sattler & Academica Group Inc., 2010). The results show interesting differences in levels of overall engagement between college and university students with and without disabilities (Table 3). Both college and university students with a disability were less likely to report completing assignments on time. However, university students with a disability were more likely than others to ask questions in class and to discuss grades and ideas with their instructor. Interestingly, college students with disabilities were equally likely to interact with faculty but were less likely to interact with other students than college students who did not report a disability.

**Table 3: School Engagement, Students with Disabilities\***

		University Students		College Students	
		Disability	No Disability	Disability	No Disability
<b>Complete assignments on time</b>	Frequently	80%	89%	81%	89%
	Never	1%	1%	1%	1%
<b>Ask questions/participate in class</b>	Frequently	39%	30%	57%	54%
	Never	7%	17%	6%	4%
<b>Discuss grades with instructor</b>	Frequently	28%	16%	40%	38%
	Never	13%	25%	8%	10%
<b>Discuss ideas with instructor</b>	Frequently	27%	18%	34%	33%
	Never	19%	31%	16%	17%
<b>Discuss career with instructor</b>	Frequently	6%	7%	22%	20%
	Never	49%	59%	26%	29%
<b>Attend campus, student, school events</b>	Frequently	22%	28%	18%	18%
	Never	24%	13%	27%	28%
<b>Work with other students</b>	Frequently	42%	39%	49%	59%
	Never	9%	10%	8%	3%
<b>E-communication with students</b>	Frequently	77%	77%	60%	74%
	Never	7%	3%	7%	3%

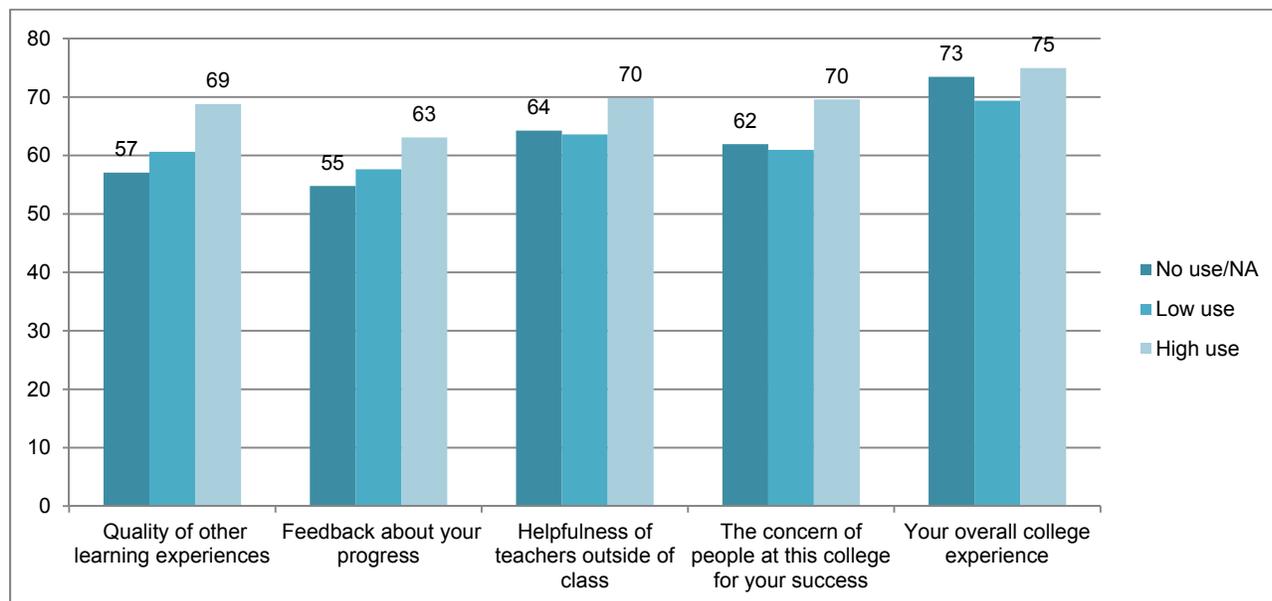
\* Sample includes all those who attended college or university, whether attended and left, still attending, or graduated at time of survey. Survey question: Thinking generally about your experiences at [institution], please indicate how often you engage in the following activities. Response options were frequently/sometimes/never.

Results from another source, the Ontario College Student Satisfaction Survey, showed that students who indicated a “high use” of special needs/disability services did not rate their overall college experience

<sup>13</sup> For example, the National Survey of Student Engagement (NSSE) does not have a question on disability, although it does ask about other key demographics.

significantly higher than other students, but they did indicate greater satisfaction with the “concern of people at the college about their success,” the amount of feedback about their progress, and teacher helpfulness outside of class.

**Figure 8: Student Satisfaction by Use of Special Needs/Disability Services (%)**



Source: 2009-2010 MTCU Student Satisfaction Survey, HEQCO analysis.

These observations in Ontario are similar to those found using the NSSE in selected U.S. four-year colleges (Hedrick, Collins, Evans, and Grayson, 2010). Whereas students with disabilities were favorable in their perceptions of student-faculty interactions, they also considered their campus environments to be less supportive than did students without disabilities. Interestingly, similar results were seen in the previously described paper on the transition of students with special needs from high school (Sweet et al., 2012). That study showed no difference in the engagement scores for “instructional support” between the high school students with special needs and those without. However, students with special needs did report lower engagement scores for school climate and social relations.

## Persistence

Research has shown that students with disabilities are less likely to persist in their studies, and if they complete, take a longer period of time (OECD, 2011). In Ontario, research on persistence for students with disabilities is limited. In a recent follow-up survey of Ontario PSE applicants (Sattler and Academica Group, Inc., 2010), 14 per cent of those with a disability had withdrawn from PSE at the time of the survey (between one and three years after applying), compared to 8 per cent of those without a disability. Using YITS-A data, Finnie, Childs, and Qiu (2012) found that, after taking into account those who switched institutions and programs, 27 per cent of Ontario college students with a disability had left PSE after three years, compared to 17 per cent of students without a disability. At the university level, 47 per cent of the cohort with a disability had graduated after four years, somewhat less than those without a disability (53%). Interestingly, however, most of the rest of the cohort were currently enrolled in some form of PSE, at 100 per cent for those with a disability, compared to 96 per cent for those without.

It is also understood that students with disabilities, even if they do complete, often take longer to complete their studies, due in part to reduced course loads. A recent study in six Ontario colleges compared the time to

completion for graduates who had registered with the disability office as students (Woods, forthcoming). Graduates with a disability (GwD) were matched on grades, program, gender, and age to students at their college without a disability. The researchers found that even when controlling for these factors, students with a disability took marginally longer to complete their program, with 78 per cent of graduates with a disability completing on time, compared to 85 per cent of those without a disability. The results also showed that the type of disability had an impact on completion. Regression models showed that within the GwD population, the credential type, program area, having a psychiatric disability (relative to those with ADHD or a learning disability), and having a lower GPA influenced whether a graduate took extra terms to complete their program.

In trying to understand why some students persist in their PSE and other do not, much of the literature focusses on the reported reasons for leaving PSE as well as the differences in student experience between the two groups. Less is known about whether leavers' experiences and reasons for leaving are affected by disability status. The previously described study by Sattler and Academica Group Inc. (2010) compared the reasons for leaving PSE according to whether students had a disability. Using an "index score" (the proportion influenced multiplied by the mean level of influence), health-related problems were the top reason for leaving PSE among those with a disability but ranked 22<sup>nd</sup> for non-disabled leavers (Table 4). Seventy per cent of leavers with a disability indicated health reasons as having some influence on their decision to leave, compared to only 17 per cent of those without a disability. For those who did not indicate that they had a disability, issues around program fit and changing career plans dominated, whereas personal/family issues and low marks were ranked more highly by those with a disability. Additionally, leavers with disabilities were significantly more likely to indicate that "problems with time management" was a major reason for leaving PSE.

**Table 4: Top Reasons for Leaving PSE by Disability Status (index score)**

Rank for Leavers with a Disability	Rank for Leavers without a Disability	Reasons for Leaving PSE	Disability (n=39)	No Disability (n=221)
1	22	Health-related problems	<b>2.27</b>	<b>0.47</b>
2	5	Personal/family issues	2.00	1.47
3	6	Marks were too low	1.88	1.35
4	1	Career goals changed	1.88	2.35
5	4	Felt unconnected to the school/students/faculty	1.78	1.65
6	2	Did not like the program	1.64	2.15
7	9	Problems with time management	<b>1.63</b>	<b>1.04</b>
8	3	Transferred to another postsecondary institution	1.53	1.88
9	13	Campus was too far from home	1.31	0.90
10	7	Felt uncertain about postsecondary education	1.23	1.25

Source: Sattler & Academica Group, Inc. (2010)

Notes: Index scores in bold indicate significant difference by disability status.

24 potential reasons were provided in the survey, only the ten highest ranked for those with a disability are shown.

Sattler and Academica Group, Inc. (2010) also explored whether, within the population with a disability, those who persisted in their studies differed from those who left. It found that, compared to those who persisted, leavers perceived that there were fewer non-academic supports available to them, that they were less likely to understand the expectations of their programs, and less likely to feel they had at least one person to rely on. Additionally, they were less likely to complete assignments on time or to interact with an instructor. Overall, it appears that students with disabilities who persist seem to have more strategies for being successful.

Interestingly, the report did not indicate that leavers with disabilities were less likely to make use of student services than students with disabilities who stayed. More detailed research into this apparent phenomenon is required before a conclusion can be drawn.

## Labour Market Outcomes

Access to the Canadian labour market for those with a disability is ensured in the Canadian Charter of Rights and Freedoms and the Canadian Human Rights Act, which guarantees equality and prohibits discrimination on these grounds (Human Resources and Social Development Canada, 2006). However, the transition to the labour market for those with a disability is often a difficult process. For this reason, Canada and Ontario cost-share employment-related programs for people with disabilities, funded through the Ministries of Community and Social Services, Health and Long-Term Care, and Training, Colleges and Universities (Ministry of Community and Social Services, 2011).

Overall, the population with disabilities has a lower employment rate and lower earnings than individuals without disabilities. The 2006 PALS data show that, nationally, 60 per cent of the population with disabilities aged 25 to 34 were employed, compared to 81 per cent of the population without disabilities. In terms of employment income, for the same age group, those without disabilities earned \$33,196 on average, compared to \$25,031 (Statistics Canada, 2008).

Attaining a PSE credential appears to result in a narrowing of the gap in earnings and employment for the population with and without disabilities. For example, there is only a ten percentage point difference in the employment rate nationally for those aged 15 to 64 with a university degree and above (74% vs. 84%), compared to a gap of 21 per cent for those with a high school diploma only (54% vs. 75%) (HRSDC, 2011). In terms of earnings, data from the 2007 NGS show that, two years after graduation, Ontario college graduates with a disability earned \$29,074 on average, compared to \$31,838 for graduates without a disability. Ontario's bachelor's degree graduates from the same year earned similar salaries regardless of whether they had a disability (\$40,547) or not (\$40,307). Some caution in interpreting the impact of attaining a PSE credential is required, since, as seen previously in this report (Figure 2), those who do not graduate from PSE are more likely to have a more severe form of a disability, which likely impacts their labour market experiences.

A study by Holmes, Sylvestri, and Harrison (2011) sought to provide a better understanding of the transition to employment for Ontario PSE graduates, focussing on the population with a learning disability. The study looked at job satisfaction, employment success, the impact of having a learning disability within a job setting, and experiences with employment transition services utilized during PSE. The sample includes graduates from 20 Ontario PSE institutions who received a diagnosis of learning disability from one of the two Ontario Assessment and Resource Centres between 2004-2005 and 2007-2008, and had graduated by 2008. The survey, conducted between 2009 and 2010 showed that 69 per cent of respondents were working on either a part- or full-time basis, 6 per cent were homemakers, 16 per cent had returned to school, and 11 per cent were unemployed. A large majority of respondents reported that they were satisfied with their jobs. Graduates were most satisfied with their relationships with coworkers and the level of independence within their jobs. Interestingly, graduates who did not disclose their learning disability in the workplace were generally more satisfied with their jobs.

Employed graduates with a learning disability reported using less visible accommodations, such as time management and support from family and friends, rather than more visible accommodations such as assistive technology and self-advocacy. A large majority of respondents indicated that their learning disability impacts their performance at work (72%) in areas such as their information processing rate and communication skills. Despite this, 62 per cent chose not to reveal their disability, often for fear of being stigmatized. Overall, the graduates did not recall using career services frequently when they were students, with only one-quarter indicating that they took part in work placements or accessed job search training, a proportion similar to the

rest of the student population. The study indicated how complex the transition to the labour market is for students with a learning disability, going beyond the measures of employment rate and earnings.

## Conclusions

This report summarizes current data sources and research on the status of Ontario PSE for students with disabilities. Some observations from this review include the following:

- The share of the population with disabilities is rising, a trend which is mirrored in the increase in students registering with college and university disability service offices and in the increased PSE education attainment in the population.
- Although attainment is increasing in both the population with and without disability, the gap continues to exist, mainly in the university sector. Students with a disability do not appear to be underrepresented in colleges.
- The population with disabilities is quite diverse, and the type and severity of the disability results in differential education attainment rates.
- Although research is limited, students with disabilities are less likely to persist to graduation, and those who do persist take longer to complete.
- The results suggest that students with disabilities make greater use of student services and use a number of support services beyond the disability office.
- This supports the current trend in PSE institutions of centralizing services for students, as this would appear to be a benefit for students with disabilities, provided issues around confidentiality and safe space are addressed. Additionally, students with disabilities appear to interact more often with faculty and some staff than do students without disabilities. However, students with disabilities may also be less engaged with other students and their PSE institution in general, potentially indicative of reduced social integration.
- Financial barriers remain, due to both the extra time required to complete PSE and the financial costs associated with aids and services to accommodate the student's disability.
- Much work remains to be done to smooth transitions to the labour market. Although the attainment of PSE credentials narrows the gap between those with and without a disability, issues around the use of accommodations and fears of stigmatization in the workplace remain.
- A range of data sources used in this report, such as Statistics Canada's PALS, NGS, SLID, and YITS, have been permanently or temporarily discontinued, or adapted over time. This leads to difficulties in looking at trends over time. Additionally, as surveys, the sample sizes may become too small to conduct detailed breakdowns by specific attributes. Alternate data sources, such as administrative datasets in educational institutions or provincial ministries, need to be investigated further in order to monitor the progress being made for student with disability in accessing and succeeding in PSE.

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