

Étudiants ayant des incapacités au cégep : Réussite et avenir

College Students with Disabilities: Their Future and Success



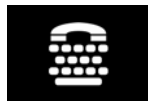
Final Report Presented to FQRSC
Rapport final présenté à FQRSC
Spring / Printemps 2006



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Université Laval⁶

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Association québécoise des étudiants ayant des incapacités au postsecondaire (AQEIPS)⁸

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 Table of Contents

TABLE OF CONTENTS.....	3
ACKNOWLEDGEMENTS.....	4
EXECUTIVE SUMMARY.....	5
ABSTRACT	5
GOALS	6
METHOD	6
RESULTS	6
RECOMMENDATIONS	10
CEGEP EXPERIENCE QUESTIONNAIRE	14
CONTACT INFORMATION	15
SOMMAIRE.....	16
RÉSUMÉ	16
OBJECTIFS	17
MÉTHODOLOGIE	17
RÉSULTATS	18
CONCLUSIONS	21
RECOMMANDATIONS	22
QUESTIONNAIRE SUR VOTRE EXPÉRIENCE AU CÉGEP	26
INFORMATION POUR NOUS REJOINDRE	27
INTRODUCTION.....	28
BACKGROUND	28
GOALS	32
CONCEPTUAL FRAMEWORK: PPH MODEL (PROCESSUS DE PRODUCTION DU HANDICAP)	33
THE PRESENT INVESTIGATION	34
METHODOLOGY.....	35
OVERVIEW	35
PARTICIPANTS	36
MEASURES.....	38
PROCEDURE	39
RESULTS	47
SAMPLE CHARACTERISTICS	47
ENROLLMENT: PROPORTION OF STUDENTS / GRADUATES REGISTERED TO RECEIVE DISABILITY RELATED SERVICES	52
OPEN-ENDED DATA ABOUT FACILITATORS, OBSTACLES, AND THINGS TO CHANGE.....	54
CEGEP EXPERIENCE QUESTIONNAIRE: REFINING THE CEQ - PSYCHOMETRIC ANALYSES	77
CEGEP EXPERIENCE QUESTIONNAIRE (CEQ): FACILITATORS AND OBSTACLES	82
WHAT HAPPENS AFTER GRADUATION?.....	114
RESULTS IN BRIEF	120
SUMMARY, DISCUSSION, CONCLUSIONS, AND RECOMMENDATIONS.....	130
SAMPLE CHARACTERISTICS AND REPRESENTATION OF STUDENTS AND GRADUATES WITH DISABILITIES IN THE CEGEPS.....	130
USING THE CEGEP EXPERIENCE QUESTIONNAIRE (CEQ) TO FACILITATE STUDENT SUCCESS	132
WHAT FACTORS MAKE CEGEP STUDIES EASIER? HARDER? WHAT SHOULD BE CHANGED?	132
WHAT HAPPENS AFTER GRADUATION?.....	136
LIMITATIONS OF THIS INVESTIGATION	136
RECOMMENDATIONS	138
REFERENCES.....	142
APPENDIX - CEGEP EXPERIENCE QUESTIONNAIRE: ENGLISH AND FRENCH VERSIONS	149
ENGLISH VERSIONS: CEGEP EXPERIENCE QUESTIONNAIRE.....	149
FRENCH VERSIONS: QUESTIONNAIRE SUR VOTRE EXPÉRIENCE AU CÉGEP.....	149

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Executive Summary - College Students with Disabilities: Their Future and Success

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Adapttech Research Network - Dawson College, Montréal

Executive Summary

Abstract

In this investigation we examined views about obstacles and facilitators of academic success as perceived by Cegep graduates with and without disabilities as well as by Cegep based disability service providers and currently enrolled Cegep students with a variety of disabilities. Because both student and service provider perspectives are valid and reflect different aspects of the Cegep experience, information is needed about both views. The sampling also allowed us to determine similarities and differences between the experiences of nondisabled graduates and of graduates with disabilities who did, and those who did not, register to receive disability related services. It also enabled us to examine what happens to students after they graduate from Cegep (i.e., find out whether they were employed, continuing their studies, or doing something else) and to estimate what proportion of individuals with disabilities register to receive disability related services from their Cegep.

To accomplish this we studied (a) Cegep based disability service providers, (b) students with all types of disabilities who were enrolled at one of the 48 public Cegeps at the time of testing and who were registered to receive disability related services, and (c) three groups of recent graduates (nondisabled, with a disability and registered to receive services, with a disability and not registered to receive services). The graduates were sampled from three large Cegeps: Dawson College, Cégep du Vieux Montréal, and Cégep de Sainte-Foy. Disabilities studied included: learning disability/ADD, mobility impairment, hearing impairment, medically related condition, psychological disability, limitation in the use of hands/arms, low vision, blindness, neurological impairment, Deafness, speech/language impairment, and PDD (pervasive developmental disorder such as autism and Asperger's).

The data collected allowed us to answer the following questions: In what programs are students with disabilities registered at the college? What are graduates doing approximately one year after graduation? What are seen as personal, Cegep based, and external community based facilitators and obstacles to academic success? What can students, Cegeps and community based organizations do to facilitate the success outcomes of students with disabilities?

Here we summarize the findings and make recommendations for research and practice. Additional details are available in the full report along with English and French versions of the measure we developed - the Cegep Experience Questionnaire (CEQ) - in alternate formats.

Goals

To remove barriers, support success for students with disabilities in our postsecondary institutions and inform policy developers it is imperative that accurate information reflecting realities of diverse aspects of the Cegep community be made available to concerned groups and individuals so that they can: (a) help recruit, retain, and graduate students with disabilities, (b) ensure that these students have appropriate opportunities for further education and employment after they graduate, and (c) determine factors which influence the academic outcomes of students with disabilities that are unique to them and that are not evident from studies of nondisabled students. The overall goal of the present research was to provide such information which, ultimately, will help students with disabilities graduate and successfully compete for positions at university and in the workplace.

To realize this goal in the present research we (1) conducted a systematic study of what Cegep based disability service providers and current students with various disabilities perceive as important facilitators and obstacles in pursuing Cegep studies and in succeeding in the system, and (2) explored post Cegep educational and vocational outcomes and views about facilitators and obstacles of recent Cegep graduates with and without disabilities from both pre-university and career/technical programs. Because we surveyed all graduates from the three Cegeps with the largest enrollments of students with disabilities (i.e., Dawson College, Cégep de Ste-Foy, Cégep du Vieux Montréal), we were able to compare the views of nondisabled graduates, graduates with disabilities who registered to receive disability related services from their Cegep, as well as graduates with disabilities who did not register to receive services.

Specific goals were as follows

- Examine what makes it easier (facilitators) and harder (obstacles) for students with disabilities to succeed in their Cegep studies
- Explore similarities and differences between nondisabled Cegep graduates and graduates with disabilities who were and who were not registered to receive disability related services from their Cegep
- Describe what happens to students with disabilities after graduation
- Provide a questionnaire that evaluates academic obstacles and facilitators to students for use in institutional evaluation
- Inform policy development and practice

Method

The study was carried out in three phases. Response rates were 83% (Phase 1), 32% (Phase 2), and 28% (Phase 3).

- Phase 1 - 57 disability service providers completed the measures (Demographic Questions, Open-Ended Easier-Harder-Change Questions, Cegep Experience Questionnaire) by telephone interview during the fall 2004 semester.
- Phase 2 - 300 current students registered to receive disability related services from their Cegep completed similar measures during the winter 2005 semester. At least four weeks later, 159 of them completed the measures a second time (test-retest).
- Phase 3 - 1486 recent graduates with and without disabilities from two French and one English Cegep completed the same measures as well as the Post Cegep Questionnaire. 182 of these graduates indicated that they had a disability. 1304 had no disability.

Results

Sample characteristics and representation of students and graduates with disabilities in the Cegeps. Although this varied greatly, campus based disability service providers typically had seven years experience in the job and devoted an average of one day per week to providing services to students with disabilities. Over half of the campus based disability service providers reported that they had experience providing services to students with learning disabilities and mobility and hearing impairments. However, less than half of them had experience providing services to students with medical and psychological disabilities.

As is the trend in all postsecondary education, Cegep students with disabilities and all three groups of graduates were more likely to be female than male. Consistent with the results of an earlier study where we found that Cegep students with disabilities take one semester longer to graduate, in the present investigation we found that Cegep graduates with disabilities are, on average, ½ year older than their nondisabled counterparts. The vast majority (over 90%) of both current students with disabilities and all three groups of graduates were enrolled in a regular diploma program: approximately ½ in a pre-university program and ½ in a career/technical program.

The nature of the impairments of those who register to receive disability related services from their Cegep has changed over the years. Among the most common impairments of current students and graduates were: learning disability/attention deficit disorder, mobility impairment, hearing impairment, medically related disability, and psychological disability. Also, approximately 25% of those who registered for disability related services had two or more impairments.

The impairments of many students with disabilities no longer fit the original tripartite Québec Ministère de l'Éducation, Loisir et Sport (MELS) division of visual impairment, hearing impairment, and "other." In fact, a learning disability, the most common impairment reported by current students registered to receive disability related services from their Cegep, is not funded according to the MELS's traditional funding formula. Other common impairments of students include psychiatric and psychological disabilities, impairments which are not recognized or funded by the MELS, and about which disability service providers know relatively little.

We found that the proportion of Cegep students who are registered to receive disability related services has risen slightly since 1999. This change, however, is not dramatic and it may not be keeping up with corresponding increases in other provinces. Most troubling is that the percentage continues to be under 1% of the student body. Similarly, the percentage of students registered to receive disability related services for whom the Cegeps receive funding from the MELS has improved over the 1999 level, but only slightly. Currently, the Cegeps receive funding only for approximately ⅓ of the students who are actually registered to receive services. This has resulted in serious service provision and funding issues. Cegeps handle this problem in various ways. For example, some Cegeps have "waiting lists" for services.

Our study of graduates suggests that the actual proportion of Cegep students who self-identify as having a disability hovers around 10%, but that most students with disabilities do not register to receive disability related services. The majority of graduates with disabilities who had not registered for disability related services had medical, psychological, visual or learning disabilities.

Registered vs. unregistered students. As is the case in the rest of North American colleges and universities, our results suggest that the majority (approximately 90% in our sample) of students with self-reported disabilities in the Cegeps do not register to receive disability related services or accommodations. Therefore, estimating the rate of disability in the Cegeps using only those students who register significantly under-reports the actual rate. This also raises the question of whether there really are, proportionally, very few students with disabilities who require disability related services in the Cegep system or whether the students are enrolled, but, for a variety of reasons, do not register to receive disability related services.

Nevertheless, because most students with disabilities are not registered to receive disability related services, accommodations are often not made for them by faculty or staff. Therefore, there is increased need for universal instructional design, which involves educational strategies that are accessible to all students, including those with disabilities.

Funding issues. Extrapolation suggests that there are approximately 15,000 students with disabilities currently enrolled in the Cegeps (i.e., approximately 10% of all Cegep students), although only about 10% of them register to receive disability related services from their Cegep. In turn, Cegeps receive funding for only about ⅓ of students who are registered, suggesting that there are serious financial concerns around providing services for students with disabilities.

The "emerging clientele." Reports from the disability service providers and from the managers in charge of services for students with disabilities at the three "centre d'accueil" Cegeps show important trends in the types of impairments presented by students to whom they provide services. Many of these are impairments for which Cegeps receive little or no funding from the MELS. The trend over time shows that the "emerging clientele" of students with learning disabilities, psychiatric and medical conditions has been increasing dramatically, resulting in even more important funding concerns. The "emerging clientele" has also posed difficulties for disability service providers who feel inexperienced and inadequate in providing services to many of these students.

Although the "emerging clientele" has translated into only very modest funding increases, the MELS has already instituted a variety of changes in the Cegeps to ensure that students with learning disabilities receive increased attention.

Using the Cegep Experience Questionnaire (CEQ) to facilitate student success. We developed the content of the 32 item closed-ended Cegep Experience Questionnaire and established that it has acceptable reliability and validity. Regular print, large print and digital (Word) versions are provided in the Appendix of the full report in French and English. Although there are no "norms," average scores for students with disabilities in general as well as for students with specific impairments are provided in the full report.

What factors make Cegep studies easier? Harder? What should be changed? In general, all samples of participants indicated more conditions that made academic studies easier than harder. This was especially notable in the case of Cegep based factors, which were generally seen as both important and quite facilitating. Students' personal situations and community and government based services were less so. In general, the more impairments a student reported having, the more obstacles he or she encountered.

Disability service providers identified numerous issues related to their functions which they considered important to student success. These include: good collaboration between professors and disability service providers; affordable diagnostic services external to the Cegep, such as evaluations of learning disabilities; students' ability to express their needs; the attitudes of the administration toward services provided to students with disabilities; identification of students' individual needs by the disability service provider; students' awareness of the impact of their disability; the budget allocated for disability services at the Cegep; willingness of students to use suitable accommodations; students' choice of career; and professors' level of knowledge about disability services and accommodations.

For the most part, individuals with and without disabilities reported similar facilitators as well as obstacles. Individuals with disabilities who did not register for disability related services, however, had significantly and substantially less facilitating scores overall, as well as on several Cegep environment related items, than nondisabled individuals or individuals with disabilities who did register.

Good teachers, tutors and learning centers (which assist with studying, writing, and exam taking skills and provide tutoring), and the availability of computers both on and off-campus were generally seen as important facilitators by current students and all three groups of graduates. Friends, good schedules, easy and interesting courses and programs, a good financial situation, good motivation and good study skills were also identified as facilitators. On the other hand, poor teachers, difficult courses, poor schedules, having to hold a job, transportation problems, a poor financial situation, lack of access to computers, having to take too many courses, poor study skills, demanding and boring programs, poor motivation, and insufficient time were generally seen as obstacles.

Consistent with the finding that the availability and accessibility of computers, both at the Cegep and off-campus, were seen as important facilitators, other investigations have also found that computers were rated as important facilitators by students with disabilities. In addition, a recent investigation shows that computer use on the job is associated with higher salaries for employees both with and without disabilities. Nevertheless, a comprehensive recent review, which showed that eLearning initiatives are important in Canadian postsecondary education, also noted that very little is known about eLearning needs and concerns of students with disabilities. Clearly, more research is needed.

Although level of personal motivation was rated as a very important facilitator by most students, it was seen as especially facilitating by students with learning disabilities. This is consistent with other research which showed that personal motivation was identified among the most important facilitators, along with family and friends, by students with learning disabilities.

Nondisabled graduates and graduates with disabilities who were and who were not registered to receive disability related services. The results also show that, overall, graduates with disabilities had significantly lower scores on personal situation items as well as on the overall Index of Difficulty (IDF) than nondisabled graduates. Issues of concern to those with disabilities include: poor health and the impact of their disability/impairment.

Improvements suggested by current students with disabilities as well as by graduates with and without disabilities were very similar and were generally aimed at aspects of the Cegep environment. Of greatest importance to all groups were better schedules, improving the college system, improving programs and courses in general, having better teachers, more available

computer technologies, support and help as well as improvements to the physical environment of the college. Changes suggested by disability service providers generally focused on improving the accessibility of classrooms and facilities as well as aspects of their services. Promoting collaboration and communication between staff, teachers and students, increased funding for their services, and better availability of tutoring were also frequent suggestions among disability service providers.

The data also suggest that it may be important for students with disabilities to register with their disability service provider. For example, graduates with disabilities who registered experienced certain aspects of their Cegep environment, such as the availability of computers and course materials, as more facilitating. They also had overall Index of Difficulty (IDF) scores that were more facilitating than graduates with disabilities who did not register. In fact, graduates with disabilities who did not register for services generally had the worst scores, especially on Cegep environment related items. The IDF score for graduates who had registered for disability related services was similar to that for graduates with no disabilities. However, when disability related items were excluded, the registered graduates had IDF scores that were, on average, more facilitating than those of graduates without disabilities. This was not true for unregistered graduates.

Consistent with reports by others, individuals with disabilities who were registered to receive disability related services from their Cegep overwhelmingly indicated that disability related accommodations were among the most important facilitators, along with sensitization and information dissemination about disabilities to teachers. In the present investigation specific accommodations seen as helpful were: having a note taker or interpreter in class, extended time for exams and assignments, accessible facilities, as well as MELS and college policies which permit students with disabilities to take a reduced number of courses and still be considered "full time students."

Not only has extended time been shown to be especially important to students with learning disabilities in other investigations, but it has also been shown to improve their scores. This has been found to be the case for both algebra and reading comprehension tasks where students with learning disabilities, who initially scored significantly lower than nondisabled peers under regular timing conditions, improved their scores and did not differ from nondisabled peers when both groups experienced extended time conditions.

Comparing students with disabilities and campus based disability service providers. In most cases students and service providers agreed on which factors were important as obstacles and facilitators. Exceptions show that although students identified a variety of "personal situation" variables as facilitators, such as friends, their schedule, computers off-campus, physical adaptations at home, and their finances, disability service providers did not do so. Also, students noted the following important obstacles that were not mentioned by service providers: too many and difficult courses, bad schedules, the impact of their impairment, a problematic financial situation, and having to hold a job while studying.

Campus based disability service providers, on the other hand, indicated that a knowledgeable service provider, pre-registration of students with disabilities for courses before other students register, the attitude and willingness of professors to adjust their courses to students' needs, and good counselling and academic advising were important facilitators - factors generally not noted by students with disabilities. On the other hand, although students did not identify these concerns, service providers were dissatisfied with various aspects of the disability related services and accommodations that they provide, with the lack of information and sensitization about disabilities in the Cegep, with having inadequate knowledge about disabilities and accommodations themselves, and with students' poor self-advocacy skills. Indeed, self-advocacy skills have long been seen as important for academic success by disability service providers and the importance of the evolving role of faculty in the successful outcomes of students with disabilities has been stressed in several recent publications.

What happens after graduation? Our findings show little difference in the percentage of graduates with and without disabilities who continued their studies after Cegep or in the percentages of those who were working full time or part time. Similarly, there was no significant difference between the employment rates of graduates with and without disabilities.

The employment rates of graduates in career/technical programs was very high - over 95% for both graduates with and without disabilities. Statistics Canada findings for people with and without disabilities in 2001 generally also showed little difference in the employment rates of adults with and without disabilities. There is an important caveat, however, because the overall statistics for Canada also show a huge difference between the proportions of people with and without disabilities who are not in the labor force. This was not found for Cegep graduates, as the proportions of graduates with and without disabilities who were studying or not available to the labor force for other reasons were very similar.

Also, there was no significant difference between graduates with and without disabilities concerning whether their employment was related to their field of study. This was also found to be true of university graduates in a large U.S. study. Indeed, the only important difference we found between graduates with and without disabilities was that graduates with disabilities in career/technical programs were less likely than their nondisabled counterparts to obtain employment in a field "closely" related to their field of study.

Conclusions

Overall, when it comes to individuals with disabilities in the Cegeps, the findings of this investigation show more positives than negatives. The proportion of Cegep students with disabilities has increased during the past five years. Participants reported substantially more facilitators than obstacles to student success, especially facilitators related to the Cegep environment. And, graduates with and without disabilities continued their studies and successfully joined the labor force in equal proportions.

There are, however, three major reasons for concern. First, the growth during the past five years in the number of students with disabilities who registered to receive disability related services from their Cegep has been limited and remains under 1% of the student body, compared to the approximately 6% we found for the rest of Canada five years ago. Second, the findings show that approximately nine out of 10 Cegep graduates who had a disability did not register for disability related services. Furthermore, these unregistered graduates with disabilities experienced more obstacles and, in particular, more Cegep related obstacles, than nondisabled graduates or graduates with disabilities who had registered for services. Third, the findings highlight serious funding problems for Cegep based disability related services that need urgent attention.

Recommendations

Research recommendations.

Evaluate obstacles and facilitators to students with different impairments before and after changes are made to Cegep policies and practices at the college.

- The Cegep Experience Questionnaire (CEQ) can be used to evaluate obstacles and facilitators for current students with and without disabilities as well as in institutional research surveys of students and graduates

Routinely include questions related to students' disability status and the nature of their disabilities in research.

- Include disability related questions on all Cegep based surveys and make sure these are available in alternate formats
- Include disability related questions on SRAM (Service régional d'admission du Montréal métropolitain) and SRAQ (Service régional d'admission au collégial de Québec) surveys

Conduct research on the accessibility of eLearning and computer technologies.

- Given that the availability of computers and information technologies was seen as either an important obstacle or an important facilitator, research on the accessibility of eLearning and computer technologies needs to be carried out at the Cegeps

Evaluate the impact of funding of Cegeps' disability related services.

- The academic outcomes of students for whom the Cegeps receive funding should be compared to those of students who are registered but for whom funding is not available (i.e., those with "recognized" vs. "not recognized" disabilities). High school leaving grade can be used as a covariate or as a basis for equating the two groups of students

Gather more information about students with disabilities who do not register to receive disability related services

- Those with disabilities who did not register for disability related services at their Cegep experienced more obstacles to academic success than either individuals with disabilities who had registered for services or nondisabled individuals.
- To ensure appropriate services to unregistered students with disabilities, more information is needed about them: Why do they not register? What are their needs and concerns? How can their educational needs best be met when they are not registered? Would they be better off academically if they were to register?
- There is a need to compare the academic outcomes of students with disabilities who are registered to receive disability related services and those who are not. Here, too, high school leaving grade can be used as a covariate or as a basis for equating the two groups of students

Evaluate the effectiveness of each type of Cegep based disability accommodation for students with different disabilities.

- Disability related accommodations were among the most important facilitators for individuals with disabilities

Conduct prospective and retrospective studies to investigate what happens to Cegep graduates.

- What happens to Cegep graduates with disabilities?
- Since such a large proportion of Cegep graduates continue their studies, how do graduates with disabilities fare at university compared to their nondisabled peers?
- How do the careers of technical program graduates, including their salaries, progress in the long term?

Practice recommendations. These are intended primarily for MELS and college personnel, including campus based disability service providers, faculty, managers of disability related resources, personnel responsible for student services, financial aid, information and computer technologies, professional development, etc.

There is a need for evidence based practice in providing disability related funding, services and accommodations in the Cegeps.

- Inform campus based disability service providers about relevant research findings to promote evidence based practice
- Use the newly developed Cegep Experience Questionnaire (CEQ) in program evaluation and in evaluations of how students with disabilities are faring at the Cegep
- Disability service providers can regularly administer the (CEQ) to their clientele to provide a snapshot of students' current situations. This can help improve services by incorporating the students' views, tracking changes over time, evaluating the impact of any improvements, and providing evidence to facilitate decision making by Cegep and MELS based administrators

There are fewer students with disabilities who are registered to receive disability related services in Québec's colleges compared to other provinces. Also, relatively few Cegep students with disabilities are registered to receive disability related services from their Cegep. In addition, appropriate accommodations and information dissemination about disabilities to the college community were seen as especially facilitating. This suggests that there is a need for greater visibility of disability related services and accommodations in a variety of contexts.

- Increase the visibility of disability related services at the college to incoming students by sending pamphlets to all students upon admission to the Cegep
- Develop a college guide for students with disabilities which provides information about the types of accommodations, resources and facilities available, and information about successful outcomes of students with disabilities, and make this available to all students, not only those with disabilities
- Develop a promotional video and pamphlet to discuss the services available to students with disabilities in the Cegeps. Include services that could benefit students with learning, psychological/psychiatric, and medical disabilities
- Publicize the success of students with disabilities and the availability of disability related services in various settings (e.g., within the Cegep, in high schools, in rehabilitation centers, to community groups, to the Ordre des conseillers et conseillères d'orientation et des psychoéducateurs et psychoéducatrices du Québec, to Emploi Québec, to adapted employment centres such as the SEMOs)
- Include information on disability related accommodations available at the Cegeps at open house and high school visits

- High school professionals and teachers need to motivate high school students with disabilities to attend Cegep
- Include disability related information in SRAM (Service régional d'admission du Montréal métropolitain) and SRAQ (Service régional d'admission au collégial de Québec) publications such as the "Guide aux études" and the "Guide général d'admission"
- Given the high priority accorded by both students with disabilities and disability service providers to sensitizing and informing others about disabilities, design and distribute promotional materials to sensitize and inform college personnel, especially faculty, about disabilities and appropriate accommodations
- Promotional materials could be designed and distributed to all college personnel, with a special emphasis on faculty
- Promote the benefits of registering for disability related services in Cegep newsletters, web sites, and other publications
- Suggest to faculty that they include a statement such as, "If you have a disability you may want to get in touch with the Cegep's campus based disability service provider so that he or she can provide appropriate accommodations to support your success" on all course outlines
- De-stigmatize registration for disability related services by including these among other services offered in the Cegeps (e.g., exam invigilation service, not intended exclusively for students with disabilities)

Students stated that their financial situations and their need to work at a paid job during the term posed obstacles.

- College personnel and MELS policy makers need to pay more attention to students' financial situations. There is an urgent need for better financial assistance to students with disabilities to reduce the need to work during the academic term
- Lobby for more government support to students with disabilities
- Get involved in committees to make improvements to government financial aid and compensation programs for students (e.g., social assistance, funding related to students' Cegep studies)
- Publicize the availability of scholarships to students with disabilities (cf. AQEIPS (Association québécoise des étudiants ayant des incapacités au postsecondaire), NEADS (National Educational Association of Disabled Students))

Students with disabilities indicated that friends constitute an important facilitator.

- Help develop a system of peer mentoring for students with disabilities

Employment is an important post-Cegep outcome.

- Provide support and training to students and graduates with disabilities to help them find summer and permanent jobs and internships
- Encourage prospective employers and adapted employment agencies (e.g., IAM CARES, SEMOs) to recruit on campus

Computer and information technologies, universal instructional design, and knowledgeable faculty were seen as important facilitators.

- Enhance access to computer technologies with needed adaptations for both Cegep and off-campus use
- Promote universal instructional design and the accessibility of eLearning to Cegep based organizations such as APOP (Association des applications pédagogiques de l'ordinateur au postsecondaire), AQPC (Association québécoise de pédagogie collégiale), profWeb (2006), Clic (Bulletin collégial des technologies de l'information et des communications)
- Provide more information about universal instructional design at professional development activities for faculty, disability service providers, and eLearning practitioners and specialists at the Cegep (e.g., PERFORMA, education degree programs)
- Enhance professors' knowledge by developing faculty teams which can promote accessibility to their peers
- Include consideration of the accessibility of eLearning in Cegep information and communication technology initiatives and activities
- Sensitize rehabilitation centers and officials from various ministries about the importance of computers for off-campus use
- Lobby for better funding for Cegep based adaptive and accessible computer technologies

Campus based disability service providers believe that they are not sufficiently knowledgeable and that providing services to students with disabilities is not an important Cegep priority.

- Improve the status, recognition and relevance of disability service providers in the colleges
- Ensure more job stability of campus based disability service providers
- Provide additional opportunities for professional development for campus based disability service providers to become more knowledgeable about adaptive computer technologies and about how to better meet the needs of the increasing numbers of "emerging clientele" students with disabilities (e.g., students with medical and psychological impairments), whether these students are registered with the service or not

Improving services and accommodations for students with disabilities was seen as an important issue by both students and service providers.

- Given that personal situation factors posed significant obstacles to students with disabilities, campus based disability service providers need to pay more attention to ameliorating problematic situations in this realm.
- Provide services to students with all types of impairments
- Provide supplementary transportation services to supplement adapted transport
- Ensure better availability of tutoring
- Improve the accessibility of college buildings and facilities
- Because a good schedule was seen as an important facilitator, offer pre-registration to students with disabilities to permit them to obtain schedules that better fit with their impairments
- Because having too many courses was seen as an obstacle by many, inform students with disabilities that they are permitted to register for fewer courses and still be considered full-time students and encourage career/technical program coordinators to allow students to complete their studies in more semesters than specified in the program description
- Provide better links between inexperienced campus based disability service providers and the Eastern and Western Quebec "centre d'accueil" Cegeps

Improved funding for disability related services at Cegeps was seen as an important priority.

- The MELS needs to reconsider its funding formula for services to students with disabilities. Changes need to acknowledge the "unrecognized" disabilities of the "emerging clientele," such as learning disabilities, certain medical conditions and psychiatric disabilities

CEGEP EXPERIENCE QUESTIONNAIRE

Using the following scale, indicate in what way each of the items below has **affected your Cegep studies** by making them:

1	2	3	4	5	6	[N/A]
Much Harder	Moderately Harder	Slightly Harder	Slightly Easier	Moderately Easier	Much Easier	Not Applicable

Put a number beside all items. If an item is not applicable to you, respond with **N/A** (not applicable).

Personal Situation

1. _____ Financial situation
2. _____ Paid employment
3. _____ Family situation
4. _____ Friends
5. _____ Level of personal motivation
6. _____ Study habits
7. _____ Previous education experiences
8. _____ Health
9. _____ Impact of my disability

Cegep Environment

10. _____ Level of difficulty of courses
11. _____ Course load
12. _____ Course schedule
13. _____ Attitudes of professors
14. _____ Attitudes of non-teaching staff (e.g., registration staff, financial aid staff)
15. _____ Attitudes of students
16. _____ Availability of computers on campus
17. _____ Training on computer technologies on campus
18. _____ Availability of course materials
19. _____ Opportunity to participate in Cegep extracurricular activities (e.g., clubs, sports, social activities)
20. _____ Willingness of professors to adapt courses to my needs
21. _____ Accessibility of building facilities (e.g., doorways, classrooms, labs)
22. _____ Accessibility of Cegep physical education courses
23. _____ Availability of disability related services at the Cegep

Government and Community Supports and Services

24. _____ Availability of financial aid
25. _____ Availability of tutoring outside the Cegep
26. _____ Public transportation
27. _____ Availability of computers off-campus
28. _____ Training on computer technologies off-campus
29. _____ Disability-related support services off-campus
30. _____ Availability of adapted transport for student with disabilities
31. _____ Coordination between disability-related support services (e.g., attendant care, adapted transport) and school
32. _____ Availability of adaptations / career/technical aids at home (e.g., ramp, TDD)

Contact Information

For additional information and the full report, consult the Adaptech Research Network web site (<http://www.adaptech.org>) or contact one of the principal investigators.

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Sommaire - Étudiants ayant des incapacités au cégep : Réussite et avenir

Rapport final présenté à FQRSC

Printemps 2006

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Réseau de Recherche Adaptech – Collège Dawson, Montréal

Sommaire

Résumé

Dans la présente étude nous avons examiné les perceptions sur les obstacles et les facilitateurs au succès scolaire tels que perçus par les diplômés de niveau collégial avec ou sans incapacité, des répondants locaux (conseillers pour les étudiants ayant des incapacités) oeuvrant dans les cégeps, et les étudiants ayant divers types d'incapacités. Dans la mesure où les perspectives des étudiants et des répondants sont valides et qu'elles reflètent différents aspects de l'expérience collégiale, il est important d'obtenir des informations de ces deux sources. L'échantillonnage a également permis d'identifier les similarités et les différences des expériences des diplômés sans incapacité et de ceux ayant des incapacités qui étaient ou n'étaient pas inscrits pour recevoir des services spécialisés. Enfin, cette étude a aussi permis de connaître ce qui arrive aux étudiants une fois qu'ils ont complété leurs études collégiales (ex. : se renseigner sur leur projets futurs, que ce soit un emploi, la poursuite de leurs études ou d'autres projets) et de connaître quelle proportion d'étudiants ayant des incapacités s'inscrivent pour recevoir des services spécialisés à leur cégep.

En vue de répondre à ces objectifs, nous avons interrogé (a) des répondants oeuvrant dans les cégeps; (b) des étudiants ayant différents types d'incapacités qui étaient inscrits dans l'un des 48 cégeps publics au moment de l'étude et qui recevaient des services spécialisés reliés à leurs incapacités; (c) trois groupes de diplômés récents (sans incapacité, avec incapacités qui étaient inscrits pour recevoir des services spécialisés et avec incapacités, mais sans être inscrits à ces services). Les diplômés provenaient de trois cégeps ayant une large population étudiante, soit : le Collège Dawson, le Cégep du Vieux Montréal et le Cégep de Sainte-Foy. Les types d'incapacités étudiées comprenaient : les troubles d'apprentissage/déficits de l'attention, les déficiences motrices, les déficiences auditives, les problèmes médicaux, les troubles psychologiques, les limitations fonctionnelles aux mains/bras, la basse vision, la cécité, les troubles neurologiques, la Surdit , les troubles du langage ou de la communication et les troubles envahissants du d veloppement (TED), tels que l'autisme ou le syndrome d'Asperger.

Les donn es obtenues ont permis de r pondre aux questions suivantes : Dans quels programmes les  tudiants ayant des incapacit s sont-ils inscrits au C gep? Que font-ils un an apr s avoir  t  diplôm s? Que perçoivent-ils comme  tant des facilitateurs ou des obstacles au plan personnel, au plan du C gep et au plan de la communaut  en lien avec leur succ s scolaire? Qu'est-ce que les  tudiants, les c geps et les organismes communautaires peuvent faire pour faciliter le succ s scolaire des  tudiants ayant des incapacit s?

Nous r sumons dans cette partie du rapport, les r sultats de la pr sente  tude et indiquons des recommandations   des fins de recherche et d'intervention. Des d tails additionnels sont disponibles dans le rapport final, incluant les versions anglaise et fran aise de l'instrument de mesure d velopp  par notre groupe de recherche, le Questionnaire sur votre exp riences au c gep (QEC) disponible en formats adapt s.

Objectifs

Afin de diminuer les obstacles, soutenir le succès scolaire des étudiants ayant des incapacités dans nos institutions post-secondaires et sensibiliser les administrateurs, il est impératif que les informations qui reflètent bien les diverses réalités de la communauté collégiale soient transmises aux groupes et aux individus concernés afin qu'ils puissent : (a) aider à recruter, retenir et augmenter le taux de diplômation des étudiants ayant des incapacités; (b) assurer que ces étudiants aient des opportunités d'emploi et de poursuivre leur éducation une fois diplômés; et (c) déterminer les facteurs spécifiques qui influencent leur succès scolaire qui ne sont pas identifiés dans les études portant sur les étudiants sans incapacité. L'objectif principal de la présente recherche est de fournir ces informations qui, ultérieurement, aideront les étudiants ayant des incapacités à réussir leurs études collégiales et devenir concurrentiels pour les places dans les universités ainsi que sur le marché du travail.

Pour réaliser cet objectif, nous avons (1) mené une étude systématique sur la perception des répondants locaux (conseillers pour les étudiants ayant des incapacités) et des étudiants en cours de formation ayant divers types d'incapacités, des facilitateurs et des obstacles à la poursuite et à la réussite de leurs études collégiales et leur succès dans le système scolaire; 2) exploré les perceptions post-cégep des facilitateurs et des obstacles de récents diplômés avec et sans incapacité des programmes d'études pré-universitaires et techniques/professionnels. Puisque notre population de diplômés provient des trois cégeps comptant le plus grand nombre d'étudiants ayant des incapacités (c'est-à-dire le Collège Dawson, le Cégep du Vieux Montréal et le Cégep de Sainte-Foy, nommés les « centres d'accueil »), nous avons été en mesure de comparer les réponses des diplômés n'ayant pas d'incapacité, des diplômés ayant des incapacités inscrits pour recevoir des services spécialisés, ainsi que celles des diplômés ayant des incapacités non-inscrits pour obtenir de tels services.

Les objectifs spécifiques étaient les suivants

- Examiner ce qui rend plus facile (les facilitateurs) ou à l'inverse, plus difficile (les obstacles) la réussite scolaire des étudiants ayant des incapacités au cégep
- Explorer les similarités et les différences entre les diplômés sans incapacité et ceux ayant des incapacités qui sont inscrits ou non aux services spécialisés de leur cégep
- Décrire ce qui arrive aux étudiants après l'obtention de leur diplôme
- Fournir un questionnaire qui permet d'évaluer les obstacles et les facilitateurs académiques des étudiants pour des fins d'évaluation institutionnelle
- Informer les administrateurs pour le développement de politiques et de pratiques appropriées

Méthodologie

Cette étude a été menée en trois phases. Les taux de réponses à chaque phase sont de 83% (Phase 1), 32% (Phase 2) et 28% (Phase 3).

- Phase 1 - 57 répondants ont complété les instruments de mesure (les questions démographiques, les questions qualitatives sur les éléments qui rendent les études « plus faciles », « plus difficiles » et les changements suggérés, et le Questionnaire sur votre expérience au cégep) lors d'un entretien téléphonique au cours de la session d'automne 2004
- Phase 2 - 300 étudiants inscrits aux services spécialisés de leur cégep à la session d'hiver 2005 ont complété des questionnaires similaires. Parmi ceux-ci, 159 ont complété les instruments à deux reprises à 4 semaines d'intervalle afin de déterminer la fidélité du questionnaire (test-retest)
- Phase 3 - 1486 diplômés récents, avec et sans incapacité, provenant de deux cégeps francophones et d'un cégep anglophone, ont complété les mêmes questionnaires ainsi qu'une section supplémentaire, le Questionnaire Post-Collégial. Parmi ces diplômés, 182 ont indiqué qu'ils avaient une incapacité et 1304 ont indiqué n'en présenter aucune.

Résultats

Caractéristiques de l'échantillon et représentation des étudiants et des diplômés ayant des incapacités dans les cégeps. Dans le même sens que la tendance générale au niveau de l'éducation post-secondaire, les étudiants actuels ayant des incapacités et les trois groupes de diplômés étaient plus susceptibles d'être des femmes que des hommes. Les diplômés ayant des incapacités étaient en moyenne plus âgés de 6 mois que leurs collègues sans incapacité, ce qui abonde dans le même sens que les résultats d'une étude antérieure qui indiquait que les étudiants ayant des incapacités prenaient environ une session de plus que leurs pairs sans incapacité pour terminer leurs études collégiales. La majorité des étudiants ayant des incapacités et des trois groupes de diplômés (au total, plus de 90%), étaient inscrits dans des programmes réguliers visant l'obtention d'un diplôme d'études collégiales (DEC) : environ 50% provenaient d'un programme d'études pré-universitaires et 50% d'un programme technique/professionnel.

Bien qu'une grande variation existe d'un cégep à l'autre, les répondants ont mentionné avoir en moyenne sept années d'expérience dans leur emploi et consacré en moyenne une journée (20%) par semaine pour les services aux étudiants ayant des incapacités. Plus de la moitié de ces professionnels ont indiqué avoir de l'expérience dans l'octroi de services auprès d'étudiants ayant des troubles d'apprentissage, des déficiences motrices et des déficiences auditives alors que moins de la moitié d'entre eux avaient de l'expérience dans la distribution de services spécialisés aux étudiants présentant des troubles d'ordre médical et/ou psychologique.

La nature des incapacités des étudiants inscrits pour recevoir des services spécialisés dans leur Cégep a changé au courant des dernières années. Les incapacités les plus souvent rapportées par les étudiants et diplômés étaient : des troubles d'apprentissage/d'attention, des déficiences motrices, des déficiences auditives, des problèmes médicaux et des troubles psychologiques. De plus, il est à noter que près de 25% de ceux qui sont inscrits aux services spécialisés présentaient plus d'une incapacité.

Les déficiences d'une grande partie des étudiants ayant des incapacités ne correspondent plus à la division tripartite originale du Ministère de l'Éducation, Loisir et Sport (MELS) du Québec, qui se divise par déficiences visuelles, par déficiences auditives et par une catégorie générale « autres ». En effet, le type d'incapacités le plus rapporté parmi les étudiants inscrits pour recevoir des services spécialisés au sein de leur cégep sont les troubles d'apprentissage et ces derniers ne sont pas une catégorie reconnue et financée par le modèle traditionnel du MELS. D'autres incapacités fréquemment rapportées par les étudiants incluent les troubles psychologiques et psychiatriques, qui ne sont également pas reconnus ou financés par le MELS et pour lesquels les répondants estiment avoir peu de connaissances.

Nous avons trouvé que la proportion d'étudiants inscrits aux services spécialisés de leur établissement scolaire avait légèrement augmenté depuis 1999. Toutefois, cette augmentation paraît minime et ne semble pas suivre l'augmentation correspondante dans les autres provinces. Le fait le plus bouleversant est que la proportion continue à représenter moins de 1% de tout l'effectif étudiant. De la même façon, le pourcentage d'étudiants inscrits pour recevoir des services spécialisés et pour lesquels les cégeps reçoivent du financement du MELS a augmenté par rapport à celui observé en 1999, mais de façon peu considérable. En effet, à l'heure actuelle, les cégeps ne reçoivent des fonds que pour soutenir le tiers des étudiants présentement inscrits pour recevoir des services spécialisés. Cette situation a contribué à de sérieux problèmes financiers et des difficultés en termes de distribution des services. Pour pallier ces difficultés, les cégeps gèrent la situation par divers moyens. À titre d'exemple, certains cégeps ont une liste d'attente.

Notre étude sur les diplômés suggère que la proportion actuelle d'étudiants rapportant des incapacités se situe autour de 10%. Parmi eux, la majorité ne s'inscrit pas pour recevoir des services spécialisés. Notons par ailleurs que la majorité de ces derniers présentent des incapacités d'ordre médical, psychologique ou encore des incapacités visuelles et des troubles d'apprentissage.

Étudiants inscrits versus non-inscrits aux services spécialisés. Comme c'est le cas dans les autres collèges et universités en Amérique du Nord, nos résultats suggèrent que la majorité des étudiants rapportant des incapacités dans les cégeps (à peu près 90% dans nos échantillons) ne s'inscrivent pas pour obtenir des services spécialisés ou pour recevoir des adaptations particulières. Par conséquent, l'évaluation du nombre d'étudiants ayant des incapacités à partir des inscriptions aux services spécialisés représente une sous-estimation de la proportion réelle. Ceci soulève également la question à savoir s'il y a en effet une proportion très petite d'étudiants ayant des incapacités dans le système collégial ou encore s'ils sont inscrits dans les cégeps, mais pour des diverses raisons, ne s'inscrivent pas aux services spécialisés.

Néanmoins, puisque la majorité des étudiants ayant des incapacités ne sont pas inscrits pour recevoir de services spécialisés, des adaptations sont rarement fournies par le personnel ou le corps enseignant. Le besoin d'appliquer le modèle de l'accessibilité universelle en pédagogie, qui implique des stratégies éducationnelles accessibles à tous les étudiants, incluant ceux ayant des incapacités, apparaît donc important.

Problèmes de financement. Des estimations suggèrent qu'il y a approximativement 15 000 étudiants ayant des incapacités actuellement inscrits dans les cégeps (c'est-à-dire à peu près 10% des cégépiens) bien que seulement 10% sont inscrits aux services spécialisés. Pour leur part, les cégeps ne reçoivent du financement que pour un tiers des étudiants inscrits à ces services. Ces données indiquent donc des problèmes sérieux de financement concernant la distribution de services spécialisés pour les étudiants ayant des incapacités.

« *La clientèle émergente* ». Les rapports des répondants et des gestionnaires des services spécialisés des trois cégeps « centres d'accueil » montrent des tendances quant aux types d'incapacités présentées par les étudiants qu'ils desservent. Les cégeps reçoivent peu ou pas de financement du MELS pour plusieurs d'entre elles. La tendance à long terme montre que la « clientèle émergente » d'étudiants présentant des troubles d'apprentissage et des problèmes médicaux et psychologiques augmente substantiellement, ce qui soulève de nouvelles préoccupations financières. De même, cette clientèle amène des difficultés pour les répondants qui se sentent peu expérimentés et peu aptes à leur donner les services adéquats.

Bien que le MELS ait déjà mis en vigueur un ensemble de changements dans les cégeps pour assurer que les étudiants présentant des troubles d'apprentissage reçoivent davantage d'attention, des augmentations budgétaires très modestes ont été enregistrées pour faire face à cette « clientèle émergente ».

Utilisation du Questionnaire sur votre expérience au cégep (QEC) pour faciliter la réussite des étudiants. Nous avons développé 32 items pour le Questionnaire sur votre expérience au cégep et établi des coefficients de validité et de fidélité acceptables. Le questionnaire est disponible en anglais et en français, en format régulier, en gros caractères et en version digitale (format Word) dans l'Appendice du rapport intégral. Malgré le fait qu'il n'y a pas de « normes », les moyennes obtenues pour chaque item sont présentées dans le rapport final en fonction des étudiants ayant des incapacités en général et en fonction des incapacités spécifiques.

Quels facteurs facilitent les études au cégep? Lesquels présentent des obstacles? Que faudrait-il changer? De manière générale, tous les participants ont mentionné davantage de facteurs qui ont facilité leurs études que de facteurs qui les ont rendu plus difficiles. Cette tendance était surtout observable lorsqu'il s'agissait de facteurs reliés à l'environnement du cégep et qui étaient généralement perçus comme importants et facilitants à la fois. Les situations personnelles des étudiants et les services de la communauté et du gouvernement étaient perçus comme moins importants et facilitants. De plus, les étudiants qui rapportaient plusieurs incapacités rencontraient plus d'obstacles.

Les répondants (conseillers pour les étudiants ayant des incapacités) ont identifié plusieurs facteurs reliés à leur fonction qu'ils considéraient comme étant importants pour la réussite des étudiants. Ceux-ci incluent : une bonne collaboration entre les professeurs et les répondants; des services de diagnostique à l'extérieur du cégep tels que des évaluations de troubles d'apprentissage; la capacité des étudiants à formuler leurs besoins; des attitudes favorables de l'administration du cégep face aux services spécialisés; l'identification des besoins des étudiants par les répondants, la reconnaissance de la part des étudiants de l'impact de leurs incapacités; le budget alloué aux services spécialisés de leur cégep; l'ouverture des étudiants à utiliser les services; les choix de carrière des étudiants et le niveau de connaissances des professeurs concernant les services spécialisés et les types d'adaptations nécessaires.

La majorité des participants avec et sans incapacité ont rapporté des facilitateurs et des obstacles similaires. Toutefois, les diplômés ayant des incapacités qui n'étaient pas inscrits pour recevoir de services spécialisés ont obtenu des scores significativement moins élevés à l'échelle globale ainsi qu'aux items reliés à l'environnement du cégep que les diplômés sans incapacité et les diplômés qui étaient inscrits aux services spécialisés. D'une part, de bons professeurs, les tuteurs, les centres d'apprentissage (aide pour l'étude, l'écriture, la prise d'examen et le tutorat) et la disponibilité des ordinateurs sur le campus et à l'extérieur étaient considérés comme des facilitateurs importants par les étudiants et les trois groupes de diplômés. Les amis, les horaires de cours, la facilité et l'attrait des cours et des programmes, une bonne situation financière, une grande motivation et des habiletés pour les études sont aussi considérés comme des facilitateurs. D'autre part, de « mauvais enseignants », des cours et des horaires difficiles, l'obligation d'avoir un emploi, des problèmes de transport public, une mauvaise situation financière, un manque d'accès aux ordinateurs du cégep, une trop grande charge de cours, le

manque d'habiletés pour les études, la difficulté et le manque d'intérêt pour les programmes, une faible motivation et le manque de temps étaient généralement perçus comme des obstacles.

Les résultats sur la disponibilité et l'accessibilité des ordinateurs au cégep et hors-campus, qui sont perçus comme des facilitateurs, correspondent aux résultats d'autres études appuyant l'idée que les ordinateurs facilitaient grandement les études des étudiants ayant des incapacités. De plus, une recherche récente rapporte que l'utilisation de l'ordinateur au travail est associée à un salaire plus élevé pour les employés avec et sans incapacité. Cependant, une autre étude récente indique que malgré l'utilisation importante du cyber-apprentissage au niveau de l'éducation post-secondaire au Canada, peu d'informations sont disponibles sur les besoins et les préoccupations des étudiants ayant des incapacités par rapport au cyber-apprentissage. Il est clair que plus d'études sont nécessaires.

Même si le niveau de motivation personnelle était perçu comme un facilitateur important pour la plupart des étudiants, il était spécialement facilitant pour les étudiants ayant des troubles d'apprentissage. Cette conclusion appuie d'autres recherches qui ont démontré que la motivation personnelle était identifiée comme un des plus importants facilitateurs, suivis de la famille et des amis, pour les étudiants ayant des troubles d'apprentissage.

Les diplômés sans incapacité et les diplômés avec incapacités inscrits et non-inscrits aux services spécialisés. Les résultats indiquent qu'en général, les diplômés ayant des incapacités ont obtenu des scores significativement inférieurs à ceux des diplômés sans incapacité, particulièrement pour les items reliés à la situation personnelle et pour l'index de difficulté global (IDF). Pour les individus ayant des incapacités, les préoccupations particulières incluent : leur mauvais état de santé et l'impact de leur incapacité.

Les changements suggérés par les étudiants ayant des incapacités de même que les diplômés avec ou sans incapacité étaient très semblables et visaient généralement l'environnement du cégep. Les facteurs les plus importants pour tous les groupes étaient l'amélioration des horaires de cours, du fonctionnement de leur cégep, des programmes et cours en général, de meilleurs professeurs, une plus grande disponibilité d'ordinateurs et de technologies de l'information, de soutien et d'aide ainsi que des améliorations à l'environnement physique du cégep. Les changements suggérés par les répondants visaient surtout l'amélioration de l'accessibilité aux locaux et aux installations de même que certains aspects des services qu'ils offrent. Promouvoir la collaboration et la communication entre les membres du personnel, les professeurs et les étudiants, accroître le financement de leurs services et plus de disponibilité de service de tutorat comptent parmi les changements les plus rapportés par les répondants.

Les données suggèrent aussi qu'il peut être important pour les étudiants ayant des incapacités de s'inscrire aux services spécialisés. Par exemple, les diplômés ayant des incapacités inscrits aux services spécialisés ont perçu que certains aspects de l'environnement du cégep, tels que la disponibilité des ordinateurs et du matériel de cours, étaient plus facilitants. Ils ont aussi des scores plus élevés pour l'index de difficulté global (IDF) que ceux non-inscrits. En fait, les diplômés ayant des incapacités non-inscrits détenaient les scores les plus bas, spécialement pour les items reliés à l'environnement du cégep. Les scores de l'index de difficulté global (IDF) pour les diplômés ayant des incapacités et qui sont inscrits étaient similaires aux scores des diplômés sans incapacité. Par contre, en excluant les items du questionnaire reliés aux incapacités, les diplômés inscrits avaient des scores à l'IDF, en moyenne, supérieurs à ceux des diplômés sans incapacité. Ceci ne s'appliquait pas aux diplômés non-inscrits.

En concordance avec d'autres études, les individus ayant des incapacités qui étaient inscrits aux services spécialisés de leur cégep ont mentionné de façon marquée que les adaptations comptaient parmi les plus importants facilitateurs, avec la sensibilisation et la diffusion de l'information au corps enseignant sur les incapacités. Dans la présente étude, les adaptations spécifiques perçues comme utiles étaient : avoir un preneur de note ou un interprète en classe, du temps supplémentaire pour les examens et travaux, des installations accessibles ainsi que les politiques du MELS et des cégeps qui permettent aux étudiants ayant des incapacités de réduire leur charge de cours tout en étant considérés comme des « étudiants à temps plein ».

D'autres études ont indiqué que le temps supplémentaire était important chez les étudiants ayant des troubles d'apprentissage et augmentait aussi leurs résultats scolaires. Ceci a été démontré dans le cas de tâches de compréhension de textes et d'algèbre, dans lesquelles les étudiants ayant des troubles d'apprentissage, qui avaient initialement obtenu des résultats plus faibles que leurs pairs sans incapacité sous des conditions de temps régulier, ont amélioré leurs résultats. De plus, ils ne se distinguaient pas de leurs pairs sans incapacité quand les deux groupes bénéficiaient d'une période de temps prolongée.

Comparaison entre les étudiants ayant des incapacités et les répondants. Dans la plupart des cas, les étudiants et les répondants s'entendaient sur les obstacles et les facilitateurs les plus importants. Les exceptions démontrent que même si les étudiants ont identifié différents facteurs sous la catégorie « situation personnelle » comme étant des facilitateurs (tels que les amis, leur horaire, l'accessibilité des ordinateurs hors-campus, les adaptations physiques à la maison et leur situation financière), les répondants ne partageaient pas leurs perceptions. De plus, les étudiants ont identifié des obstacles qui ne sont pas mentionnés par les répondants : une trop grande charge de cours, des cours trop difficiles, des mauvais horaires, l'impact de leur incapacité, une situation financière problématique et l'obligation de travailler pendant les études.

De leur côté, les répondants ont indiqué qu'un répondant bien informé, le service de pré-inscription aux cours pour les étudiants ayant des incapacités avant les autres étudiants, l'attitude et l'ouverture des professeurs à adapter leurs cours selon les besoins des étudiants, un bon service de counseling et d'aide pédagogique étaient d'importants facilitateurs, de même qu'une bonne revendication personnelle de l'étudiant – facteurs généralement non mentionnés par les étudiants ayant des incapacités. D'un autre côté, même si les étudiants n'ont pas identifié ces préoccupations, les répondants étaient insatisfaits à l'égard de divers aspects reliés aux services spécialisés et aux adaptations qu'ils offrent, le manque d'information et de sensibilisation à l'égard des incapacités au cégep, leur manque de connaissances sur les incapacités et les adaptations et la faible revendication personnelle des étudiants. En effet, la revendication personnelle (le fait de demander de l'aide et/ou d'affirmer ses besoins) a longtemps été perçue comme étant un facteur primordial pour le succès scolaire par les répondants. De plus, l'importance accrue du rôle du corps enseignant pour le succès scolaire des étudiants ayant des incapacités a aussi été soulevée dans plusieurs publications récentes.

Que se passe-t-il après l'obtention du diplôme? Nos conclusions font ressortir très peu de différences entre les pourcentages des diplômés avec ou sans incapacité qui ont continué leurs études post-collégiales ou dans les pourcentages de ceux qui travaillaient à temps plein ou à temps partiel. Il n'y avait pas de différence significative entre les taux d'emploi chez les diplômés avec ou sans incapacité.

Le taux d'emploi chez les diplômés dans les programmes techniques était très élevé - plus de 95% pour les diplômés avec ou sans incapacité. Les résultats de Statistiques Canada pour les individus ayant ou non des incapacités en 2001 n'indiquent qu'une légère différence dans les taux d'emploi chez les adultes avec ou sans incapacité. Par contre, il est important de noter que les statistiques générales pour le Canada notent une différence importante entre la proportion des individus avec et sans incapacité qui ne sont pas sur le marché du travail. Ceci ne s'appliquait pas aux diplômés du cégep puisque les proportions des diplômés avec et sans incapacité qui étudiaient ou qui n'étaient pas disponibles sur le marché du travail pour diverses raisons étaient très similaires.

De plus, il n'y avait pas de différence significative entre les diplômés avec ou sans incapacité en fonction du fait que leur emploi était relié ou non à leur domaine d'étude. Ces données sont consistantes à celles des diplômés universitaires mentionnées dans une importante étude américaine. En effet, la seule différence que nous avons trouvée entre les diplômés avec ou sans incapacité était le fait que les diplômés avec incapacités et qui étaient inscrits dans des programmes techniques étaient moins susceptibles que leurs collègues sans incapacité d'obtenir un emploi relié « étroitement » à leur domaine d'étude.

Conclusions

De manière générale, en analysant la situation des étudiants ayant des incapacités dans les cégeps, les résultats de cette étude indiquent plus d'éléments positifs que négatifs. La proportion des étudiants avec des incapacités a augmenté au cours des cinq dernières années. Les participants ont reporté substantiellement plus de facilitateurs que d'obstacles au plan de la réussite scolaire, particulièrement des facilitateurs associés à l'environnement du cégep. Par ailleurs, les diplômés avec ou sans incapacité ont poursuivi leurs études et sont entrés sur le marché du travail avec succès dans des proportions équivalentes.

Par contre, trois préoccupations principales doivent être notées. Premièrement, la croissance durant les cinq dernières années du nombre d'étudiants ayant des incapacités qui s'inscrivent aux services spécialisés dans leur cégep est limitée et demeure en dessous de 1% du corps étudiant comparativement à 6% dans le reste du Canada, donnée que nous avons trouvée il y a cinq ans. Deuxièmement, les résultats rapportent qu'approximativement 9 diplômés ayant des incapacités sur 10 ne s'inscrivent pas aux services spécialisés. En outre, ces diplômés non-inscrits ont vécu plus d'obstacles, en particulier reliés à l'environnement du cégep, que les diplômés sans incapacité ou les diplômés ayant des incapacités inscrits. Troisièmement, les résultats soulignent de sérieux problèmes de financement pour les services spécialisés, ce qui demande une attention particulière.

Recommandations

Recommandations pour fins de recherche.

Évaluer les obstacles et les facilitateurs des étudiants ayant diverses incapacités avant et après l'application des changements aux politiques et pratiques du cégep.

- Le Questionnaire sur votre expérience au cégep (QEC) peut être utilisé pour évaluer les obstacles et les facilitateurs chez les étudiants avec ou sans incapacité et peut aussi être inclus dans les sondages de recherche institutionnelle ciblant les étudiants et diplômés

Inclure systématiquement les questions relatives au statut et à la nature des incapacités des étudiants dans les études.

- Inclure les questions relatives aux incapacités dans tous les sondages des cégeps et s'assurer qu'ils soient disponibles en divers formats
- Inclure les questions relatives aux incapacités dans les sondages du SRAM (Service régional d'admission du Montréal métropolitain) et du SRAQ (Service régional d'admission au collégial de Québec)

Effectuer une étude sur l'accessibilité du cyber-apprentissage et sur les technologies de l'information.

- Dépendamment des circonstances, les ordinateurs et les technologies de l'information étaient perçus comme étant soit des obstacles importants, soit des facilitateurs importants. Il est donc indispensable d'effectuer des recherches sur l'accessibilité du cyber-apprentissage et sur les besoins des technologies de l'information dans les cégeps

Évaluer l'impact du financement des services spécialisés du cégep.

- Les résultats scolaires provenant des étudiants qui reçoivent du financement devraient être comparés à ceux des étudiants inscrits mais pour qui le financement n'est pas disponible (ex. : ceux ayant des incapacités « reconnues » versus « non-reconnues »). La moyenne générale obtenue au secondaire peut être utilisée comme une covariante ou un repère dans l'appariement des deux groupes d'étudiants

Rechercher plus d'informations sur les étudiants ayant des incapacités qui ne s'inscrivent pas aux services spécialisés de leur cégep.

- Les individus ayant des incapacités non-inscrits aux services spécialisés ont rencontré plus d'obstacles que les individus ayant des incapacités inscrits aux services et les individus sans incapacité.
- Pour assurer l'accès aux services appropriés aux étudiants avec des incapacités non-inscrits, il est essentiel d'obtenir plus d'informations sur ce groupe : Pourquoi ne se sont-ils pas inscrits? Quels sont leurs besoins et préoccupations? Comment leurs besoins scolaires peuvent-ils être comblés sans être inscrits aux services spécialisés? Auraient-ils eu de meilleurs résultats académiques s'ils s'étaient inscrits?
- Il s'avère essentiel de comparer les résultats scolaires des étudiants ayant des incapacités inscrits avec ceux des étudiants non-inscrits. Encore ici, la moyenne générale obtenue au secondaire peut être la covariante ou un repère dans l'appariement des deux groupes d'étudiants

Évaluer l'efficacité de chaque type de services offerts au cégep pour les différentes incapacités.

- Les adaptations reliées aux incapacités se trouvaient parmi les facilitateurs les plus importants pour les individus ayant des incapacités

Effectuer des études prospectives et rétrospectives afin d'analyser le cheminement des diplômés.

- Qu'arrive-t-il aux diplômés ayant des incapacités?
- Étant donné qu'une grande proportion des diplômés poursuit leurs études après le cégep, quel est le cheminement universitaire des diplômés ayant des incapacités comparativement à ceux sans incapacité?
- Quel est le cheminement de carrière à long terme des personnes diplômées des programmes techniques/professionnels, ainsi que leurs salaires?

Recommandations pour la pratique. Ces recommandations visent essentiellement le personnel du MELS et des cégeps, incluant les répondants (conseillers pour les étudiants ayant des incapacités) oeuvrant dans les cégeps, le corps enseignant, les gestionnaires des services reliés aux incapacités, le personnel responsable des services étudiants, l'aide financière, les technologies informatiques et de l'information, le développement professionnel, etc.

Il existe un besoin pour la pratique basée sur les données probantes dans l'approvisionnement du financement des services et adaptations reliés aux incapacités.

- Informer les répondants travaillant sur le campus des résultats de recherches pertinentes afin de promouvoir la pratique basée sur des données probantes
- Utiliser le QEC pour l'évaluation de programmes et de l'évaluation du cheminement scolaire des étudiants ayant des incapacités
- Les répondants peuvent administrer régulièrement le QEC à leur clientèle afin d'obtenir des informations sur la réalité des étudiants. Ce questionnaire peut permettre d'améliorer les services en incorporant les idées des étudiants, en tenant compte des changements dans le temps, en évaluant l'impact des améliorations et en offrant de la documentation afin de faciliter les prises de décision par les administrateurs des cégeps et du MELS

Il y a moins d'étudiants ayant des incapacités inscrits dans les cégeps au Québec comparativement aux autres provinces et relativement moins d'étudiants sont inscrits aux services spécialisés de leur cégep. De plus, les adaptations appropriées et la diffusion d'information concernant les incapacités dans la communauté collégiale étaient perçues comme étant particulièrement facilitantes. Ce dernier point suggère qu'il existe un besoin pour une plus grande visibilité des services et des adaptations reliés aux incapacités dans des contextes variés.

- Une meilleure visibilité des services spécialisés dans les cégeps pour les nouveaux arrivants, en acheminant, par exemple, des dépliants à tous les étudiants lorsqu'ils sont admis au cégep
- Élaborer un guide collégial qui fournit l'information concernant la disponibilité de diverses adaptations, de ressources et d'installations, en incluant aussi de l'information concernant le niveau de réussite des étudiants ayant utilisé ces services, et rendre ce guide accessible à tous les étudiants, non seulement à ceux ayant des incapacités
- Créer une vidéo et un dépliant promotionnels offrant de l'information sur les services disponibles pour les étudiants ayant des incapacités à travers les cégeps. Inclure les services qui pourraient aider les étudiants ayant des troubles d'apprentissage, des troubles psychologiques/psychiatriques et des problèmes médicaux.
- Publiciser les réussites des étudiants ayant des incapacités ainsi que les services spécialisés dans divers contextes (ex. : à l'intérieur du cégep, dans les écoles secondaires, dans les centres de réadaptation, aux groupes communautaires, à l'Ordre des Conseillers et Conseilleuses d'orientation et à l'Ordre des Psychoéducatrices et Psychoéducateurs du Québec, à Emploi-Québec, aux centres d'emploi adaptés tel que le SEMO, etc.
- Inclure l'information sur la disponibilité des adaptations reliées aux incapacités à travers les cégeps pendant les journées Portes ouvertes et à la visite dans les écoles secondaires
- Les professionnels et les professeurs des écoles secondaires doivent motiver les étudiants ayant des incapacités à poursuivre leurs études au cégep
- Inclure l'information reliée aux incapacités dans les publications tels que le « Guide aux études » et le « Guide général d'admission » du SRAM (Service régional d'admission du Montréal métropolitain) et du SRAQ (Service régional d'admission au collégial de Québec)
- Mettre en œuvre et diffuser des outils promotionnels qui sensibiliseront et informeront le personnel du cégep, avec une emphase particulière pour le corps enseignant, sur les incapacités en général et les adaptations appropriées
- Promouvoir les avantages de s'inscrire aux services spécialisés via le bulletin du cégep, les sites web et autres publications
- Suggérer aux membres du corps enseignant d'inclure dans tous leurs plans de cours, des déclarations telles que : « Si vous avez des incapacités, vous pouvez contacter les services spécialisés du cégep afin que le répondant puisse vous offrir les adaptations nécessaires pour faciliter vos études »
- Dé-stigmatiser l'inscription aux services spécialisés en les incluant parmi les autres services offerts dans les cégeps (ex. : la supervision durant les examens, qui n'est pas désignée exclusivement pour les étudiants ayant des incapacités)

Les étudiants rapportent que leur situation financière et la nécessité d'avoir un travail rémunéré durant leurs études leur posaient des obstacles.

- Le personnel des cégeps et les gestionnaires du MELS doivent accorder plus d'attention à la situation financière des étudiants. Il existe un besoin urgent pour une meilleure assistance financière désignée aux étudiants ayant des incapacités afin de pouvoir réduire leurs heures de travail durant les sessions scolaires
- Faire pression pour plus de soutien gouvernemental envers les étudiants ayant des incapacités
- Participer aux comités afin d'améliorer l'aide financière gouvernementale et aux programmes de compensation pour les étudiants (ex. : assistance sociale, financement relié aux études collégiales des étudiants)
- Publiciser la disponibilité de bourses aux étudiants avec des incapacités (ex. : AQEIPS (Association québécoise des étudiants ayant des incapacités au post-secondaire), NEADS (Association nationale des étudiant(e)s handicapé(e)s au niveau postsecondaire))

Les amis représentent un facilitateur important pour les étudiants ayant des incapacités.

- Aider à développer un programme de mentor par les pairs pour les étudiants ayant des incapacités

L'emploi est un aboutissement post-collégial important.

- Fournir le soutien et la formation nécessaire aux étudiants et diplômés afin de les aider à obtenir un emploi d'été, un emploi permanent ou des stages
- Encourager les employeurs potentiels et les agences d'emploi (ex. : AIM CROIT, SEMO) à recruter sur les campus

Les ordinateurs et les technologies de l'information, l'accessibilité universelle en pédagogie et un corps enseignant instruit étaient perçus comme étant des facilitateurs importants.

- Optimiser l'accès aux technologies de l'information avec des adaptations supplémentaires pour leur utilisation dans les cégeps et hors-campus
- Promouvoir l'accessibilité universelle en pédagogie et l'accessibilité du cyber-apprentissage aux organismes collégiaux tels que l'APOP (Association des applications pédagogiques de l'ordinateur au postsecondaire), AQPC (Association québécoise de pédagogie collégiale), profWeb (2006) et Clic (Bulletin collégial des technologies de l'information et des communications)
- Fournir plus d'information à propos de l'accessibilité universelle en pédagogie durant les séminaires professionnels pour les membres du corps enseignant, les répondants, les praticiens et les spécialistes du cyber-apprentissage dans les cégeps (ex. : PERFORMA)
- Approfondir les connaissances des professeurs en développant des équipes parmi les membres du corps enseignant pour discuter des problématiques reliées à l'accessibilité du cyber-apprentissage
- Considérer l'accessibilité du cyber-apprentissage dans les activités et les initiatives de technologies de l'information et de la communication au cégep
- Sensibiliser les centres de réadaptation et les fonctionnaires provenant de divers ministères par rapport à l'importance de l'accès des ordinateurs hors-campus
- Faire pression pour un meilleur financement pour les technologies de l'information adaptées dans les cégeps

Les répondants oeuvrant dans les cégeps croient qu'ils n'ont pas suffisamment de connaissances et que fournir des services aux étudiants ayant des incapacités n'est pas une priorité pour leur établissement.

- Améliorer le statut et la reconnaissance des répondants dans les cégeps
- Assurer une meilleure stabilité d'emploi aux répondants et reconnaître la pertinence de leur travail
- Offrir plus d'opportunités pour un développement professionnel afin que les répondants travaillant sur le campus puissent être mieux informés par rapport aux technologies de l'information adaptées et par rapport à la rencontre des besoins d'un nombre croissant de cette « clientèle émergente » (ex. : les étudiants ayant des problèmes médicaux ou des problèmes psychologiques), peu importe si les étudiants sont inscrits ou non à leurs services

L'amélioration des services et des adaptations pour les étudiants avec des incapacités était perçue comme étant une problématique importante autant pour les étudiants que pour les répondants.

- Les facteurs reliés à la situation personnelle amenant des obstacles significatifs pour les étudiants ayant des incapacités, les répondants doivent porter plus d'attention vers l'amélioration de cet aspect
- Fournir des services aux étudiants ayant tous les types d'incapacités
- Fournir des services de transport supplémentaires en plus du transport adapté
- Assurer une plus grande disponibilité du tutorat
- Améliorer l'accessibilité des immeubles et des installations du cégep
- Offrir un service de pré-inscription aux étudiants ayant des incapacités afin de leur permettre d'obtenir des horaires qui conviennent mieux à leurs besoins
- Informer les étudiants ayant des incapacités qu'ils ont la permission d'avoir un horaire moins chargé tout en étant considérés comme des étudiants à temps plein et encourager les coordinateurs des programmes techniques/professionnels de permettre aux étudiants de compléter leurs études en davantage de sessions que le nombre prescrit dans la description du programme
- Créer des liens plus étroits entre les répondants inexpérimentés et les cégeps « centres d'accueils » de l'est et l'ouest du Québec

Un financement amélioré pour les services reliés aux incapacités dans les cégeps était perçu comme une priorité importante.

- MELS doit reconsidérer sa formule de financement pour les services aux étudiants ayant des incapacités. Il est primordial de reconnaître les incapacités « non-reconnues » de la « clientèle émergente », tels que les troubles d'apprentissage, certains problèmes médicaux et troubles psychiatriques

QUESTIONNAIRE SUR VOTRE EXPÉRIENCE AU CÉGEP

À l'aide de l'échelle suivante, indiquez comment chaque item a **influencé vos études au Cégep** en les rendant :

1 Plus difficile	2 Modérément plus difficile	3 Légèrement plus difficile	4 Légèrement plus facile	5 Modérément plus facile	6 Plus facile	[N/A] Non Applicable
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Inscrivez le chiffre correspondant pour chaque item. Si un élément ne s'applique pas à votre situation, répondez par **N/A** (non applicable).

Situation personnelle

1. _____ Situation financière
2. _____ Travail rémunéré
3. _____ Situation familiale
4. _____ Ami(es)
5. _____ Degré de motivation personnelle
6. _____ Gestion du travail scolaire (méthode, organisation)
7. _____ Expériences scolaires antérieures
8. _____ État de santé
9. _____ Impact de mon incapacité

Environnement du Cégep

10. _____ Degré de difficulté des cours
11. _____ Charge reliée au nombre de cours
12. _____ Horaire des cours
13. _____ Attitude des professeurs
14. _____ Attitude du personnel non enseignant (ex. : personnel du registrariat /de l'aide financière)
15. _____ Attitude des étudiants
16. _____ Disponibilité des ordinateurs dans le Cégep
17. _____ Formation sur les technologies informatiques au Cégep
18. _____ Disponibilité du matériel de cours
19. _____ Opportunité de participer aux activités parascolaires au Cégep (ex. : clubs, sports, activités sociales)
20. _____ Ouverture des professeurs à adapter les cours en fonction de mes besoins
21. _____ Accessibilité des installations physiques (ex. : portes, salles de cours, laboratoires)
22. _____ Accessibilité aux cours d'éducation physique au Cégep
23. _____ Disponibilité des services au Cégep pour les étudiants ayant des incapacités

Soutien et services de la communauté et du gouvernement

24. _____ Disponibilité d'une aide financière
25. _____ Disponibilité de tutorat à l'extérieur du Cégep
26. _____ Service de transport public
27. _____ Disponibilité des ordinateurs à l'extérieur du Cégep
28. _____ Formation sur les technologies informatiques à l'extérieur du Cégep
29. _____ Services adaptés pour les étudiant(es) ayant des incapacités à l'extérieur du Cégep
30. _____ Disponibilité d'un moyen de transport adapté pour les étudiant(es) ayant des incapacités
31. _____ Coordination des horaires des services spécialisés pour les étudiant(es) ayant des incapacités (ex. : préposé(e) aux soins, transport adapté) et du Cégep
32. _____ Disponibilité des adaptations / aides techniques à mon domicile (ex. : rampe d'accès, ATS)

Information pour nous rejoindre

Pour de plus amples informations et pour obtenir le texte intégral du rapport, veuillez consulter le site Web du Réseau de Recherche Adaptech (<http://www.adaptech.org>) ou contacter l'une des chercheuses principales.

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Introduction

What happens to students with disabilities after Cegep? Do they continue their education? Get a job? Or become unemployed? What do students see as helping or hindering their progress? What could Cegeps do to increase retention and graduation rates of these students? The marked growth in the number of students with disabilities at Cegeps since the early 1980s makes it critical to evaluate how students are faring in the system.

As Québec moves toward a knowledge-based technology-driven economy, physical ability and sensory acuity will no longer be pre-requisites for employment or involvement in community life. Therefore, people with disabilities will have an unprecedented opportunity to participate fully in the workforce and all aspects of society. To realize this potential they, like others, must succeed in postsecondary education. In Québec the first step is to attend and graduate from Cegep. Therefore, removing obstacles and providing conditions that support success for learners with disabilities within these institutions are vital.

To provide an educational environment in the Cegeps that helps ensure that students with disabilities are given every opportunity to succeed requires that services be evaluated for their effectiveness. This allows disability related accommodations to be modified in response to these research findings. The academic outcomes of all students with disabilities, including those not registered for disability related services, needs to be examined and compared to their non-disabled peers so that environmental interventions can be initiated to improve the success of both groups of students. Among the educational objectives announced by the Conseil supérieur de l'éducation (2000) is the goal of 40% of the Québec population under age 30 attending a university within the next decade, with 30% graduating. For youth with disabilities, similar targets also need to be adopted and monitored. However, for these targets to have a realistic chance of being met, it is necessary for disability service units in the colleges to provide the necessary accommodations and to evaluate the effectiveness of these services.

Background

Our data on a large number of Dawson College students over a 12 year period show that students with disabilities who registered to receive disability related services do as well as their nondisabled peers in terms of grades, proportion of courses passed, and graduation rates, although they take an average of one semester longer to graduate (Jorgensen, Fichten, Havel, Lamb, James, & Barile, 2003; 2005). This suggests that investment in ensuring that students have the needed accommodations are money and effort well spent.

As the numbers of students with disabilities in postsecondary education continue to rise (Bouchard & Veillette, 2005; CADSPPE, 1999; Fournier & Tremblay, 2003, Tremblay, Gagné, & Le May, 2004; Tremblay & Le May, 2005; Wagner, Newman, Cameto, & Levine, 2005), demands on disability service providers and disability related services will escalate (Asuncion, Fichten, Barile, Fossey, & Robillard, 2004; Fichten, Asuncion, Barile, Fossey, Robillard, Judd, Wolforth, Senécal, Généreux, Guimont, Lamb, & Juhel, 2004). It is important that decision makers associated with budget allocations are provided with evidence based research that shows the impact of investment in disability support services. Better system-wide collection of data on facilitators and obstacles to the success of students with disabilities is required to achieve this.

History. The public Cegeps provided postsecondary education to approximately 142,635 full time students in 2005 (Ministère de l'Éducation, du Loisir et du Sport, 2005). Postsecondary education is the key to training a labour force and, as M. Rochon noted as long as five years ago (Ministère de la Recherche, de la Science et de la Technologie, 2000), Québec is working hard to meet the challenges of the new knowledge-based economy. Indeed, the 2001 Canadian Census showed that of the increase in the labor force between 1991 and 2001, almost half of the growth "occurred in highly skilled occupations that normally require university qualifications" (Statistics Canada, 2003). In its recently released report, Knowledge Matters, the Government of Canada (2002) estimates that, "more than 70 percent of all new jobs created in Canada will require some form of postsecondary education." "Postsecondary education has been targeted as one of the key vehicles for providing a labour force ready to meet the challenges of the new workplace. Human Resources Development Canada estimates that nearly half of the jobs created in the next decade will require a minimum of 17 years of education" (Butlin, 1999, p. 9). Similar sentiments have also been voiced for the Québec context (e.g., Cartier, 2000). It is important, therefore,

that all students are given the opportunity to undertake the levels of postsecondary education that are necessary to ensure full participation in the workforce of the future.

As we become increasingly reliant on the new knowledge-based economy, individuals with disabilities can have an unprecedented opportunity to fully participate in the social and economic life of their communities. The 10% of Québec residents over the age of 15 who have some level of disabilities (Statistics Canada, 2002) will have promising new possibilities in an environment where valuable commodities are no longer physical goods and services but information and knowledge (e.g., Loewen & Tomassetti, 2002; Wolfe & Gertler, 2001). However, this will only become a reality when they have the same opportunities for postsecondary education as others in Québec.

It is only in the past 25 years that North American institutions of higher education have begun to recognize the need to deliver disability related services to people with disabilities (Fichten, Bourdon, Creti, & Martos, 1987; Hill, 1992). This is also true of Québec's Cégeps (cf. Bouchard & Veillette, 2005; Leblanc, 1990, 1999; King, Mimouni, & Courtemanche, 2006; Mimouni, 2006). During this time, the number of students with disabilities in postsecondary education has increased substantially in Québec, the US and the rest of Canada (e.g., Fournier & Tremblay, 2003; Hill, 1996; Harris Interactive 2000; 2004; Tremblay, Gagné, & Le May, 2004; Tousignant, 1995; Wagner, Newman, Cameto, & Levine, 2005). The increase has also been felt in the Cégeps (e.g., AQEHPS, 1999; Bouchard, et al., 2005; Fichten, Asuncion, Barile, Robillard, Fossey, & Lamb, 2003; Fichten, Landry, Jorgensen, Juhel, Tétreault, Barile, Havel, Fiset, Huard, & Amsel, 2006; Généreux, 2001; Senécal, 1998). In general, students with disabilities are more likely to enroll in colleges than universities; this is true of Québec, the rest of Canada, England and the United States (e.g., Fichten et al., 2003; Horn & Berkold, 1999; Richardson, 2001; Richardson & Roy, 2002). Québec's unique Cégep system, with its mixture of pre-university and career/technical programs, makes it especially important to evaluate what happens to Cégep graduates with disabilities.

A number of documents express a high level of commitment in Québec to the inclusion of people with disabilities in Québec society. In 1992 the Ministère de la Santé et des Services sociaux (MSSS, 1992) established goals for the year 2002. Among these was the intention to, "diminuer les situations qui entraînaient un handicap." The first priority concerned school and vocational inclusion (MSSS, 1992, p. 128). More recently, Francois Legault, when he was Minister of State for Education and Youth, wrote in his introduction to a major policy document (Ministère de l'éducation du Québec, 1999) that, "Young people with difficulties ask that we not only show concern for them but also help them achieve success. This is an obligation from which no one can be exempted."

The Strategic Plan of the Ministère de l'Éducation, du Loisir et du Sport (2005) reiterates its commitment to support students with special educational needs and to fostering their success and inclusion. In achieving this policy initiative to help young people achieve success the Cégeps have an important role to play. Although the government's strategic plan focuses on the integration of students with special needs at the secondary level, full inclusion of young people with special needs does not occur until they have equal access to higher education and are integrated into the workforce. Postsecondary education needs to ensure that people with disabilities are able to compete on a level playing field in the job market and for places at university once they graduate from Cégep. It is only then that individuals with disabilities will be able to fulfill personal goals, attain economic independence, reduce their reliance on public funds and participate fully in the social and economic life of their communities. It is important, therefore, that Cégeps have in place effective services to ensure that students with disabilities are able to overcome educational disadvantages associated with their disability, and that they are able to evaluate whether these services are achieving the intended goals.

In Canada, a substantially smaller proportion of individuals with disabilities (35%) than those without disabilities (49%) have some postsecondary education (Statistics Canada, 1992). Data from the comprehensive PALS 2001 Statistics Canada survey show that for Canadian youth aged 15 to 24, 7% of individuals with disabilities and 10% of nondisabled individuals have completed college. The figures for university graduation are 3% and 7%, respectively (Human Resources Development Canada, 2003). When it comes to working age Canadians, in 2001 a substantially smaller proportion of Canadians with disabilities (38%) than those without disabilities (48%) had some postsecondary education (Statistics Canada, 2003). This report also shows that although the percentages of Canadians with and without disabilities who obtained junior/community college qualifications were similar (i.e., 16% vs. 17%), only 11% of working age Canadians with disabilities graduated from university compared to 20% of those without disabilities.

Postsecondary graduates with and without disabilities have better employment outcomes than their counterparts with no postsecondary education (e.g., Canadian Council on Social Development, 2002; 2004; undated; Horn & Berkold, 1999; Government of Canada, 1996; Nichols, 1998; Stodden & Dowrick, 2000). The rates of employment for people who have a university degree are higher than that of students who did not complete university, who, in turn, generally fare better than

those who never went to college (Canadian Council on Social Development, 2002; undated; Fawcett, 1996; Government of Canada, 1996; Harris Interactive Inc., 2000; Nichols, 1998). For example, U.S. data show that in a large sample of university graduates, of those who obtained a bachelor's degree in 1992-1993, 67% of graduates with disabilities and 73% of nondisabled graduates were working a year later (Horn & Berkold, 1999). It has been shown that although employment of postsecondary graduates with disabilities is somewhat lower than that of their nondisabled peers both in the U.S. (e.g., Horn & Berkold, 1999) and Canada (Fawcett, 1996), once employed, salaries are similar and rates of employment are still substantially higher than rates for those who did not complete postsecondary studies (Canadian Council on Social Development, 2002; Horn & Berkold, 1999). Data on postsecondary students and graduates with disabilities indicate that most want to work (Hubka & Killean, 1996).

Proportion of students with disabilities in North American postsecondary institutions. Data on the number of students with disabilities on campus are affected by the definition of disability used, what question is asked, of whom it is asked, and how percentages are calculated. Much research is based on self-reports by probability samples or freshman surveys, although a substantial number are based on responses of campus based professionals who provide disability related services.

At most North American colleges and universities, including Cegeps, there is at least one designated person whose responsibility it is to provide disability related services and accommodations to students with disabilities. Examples of the kind of services offered include exam accommodations, advocacy, peer tutoring, production of academic material in alternative formats and assistance with specialized computer technologies (e.g., Juhel, 2000). Students have the option to register for services and, in most cases, need to provide documented proof of the disability and the need for specialized services.

There are many students with disabilities who do not register for services. Students do not register because they feel they do not need services or because they do not wish to be "stigmatized" as a student who has a disability (Fichten, Bourdon, Creti, & Martos, 1987; Greenbaum, Graham, & Scales, 1995). Other possible reasons include "denial" and, in the case of nonvisible disabilities, the possible threat of being found out (cf. Livneh, 2001). Consequently, the rate of disability in the college population is higher than reflected in the figures provided by the disability service providers for their postsecondary institutions. Estimates from a number of self-report surveys conducted in the 1990s put the proportion of North American postsecondary students with some disability at somewhere between 5% to 11%, with colleges having a larger proportion of students with disabilities than universities. For example, the 1995-96 National Postsecondary Aid Study (cited by Horn & Berkold, 1999) indicates that approximately 6% of 21,000 American university undergraduates surveyed indicated that they had a disability. The 1994 freshman survey conducted by the Cooperative Institutional Research Program studied 237,777 students attending 461 American universities and 2 year colleges (Henderson, 1995). The 1998 freshman survey examined responses at 469 American junior/community colleges and universities. In both freshman surveys, approximately 9% of students reported at least one disability (Henderson, 1995, 1999). More recently, the freshman survey has looked only at university students. Here the data show that 6% of freshmen reported having a disability (Henderson, 2001). The most recent American study, which surveyed 120,000 students randomly selected from enrollment lists at about 1,600 postsecondary institutions, shows that, overall, 12.2% of public 2 year junior college students reported having a disability; the corresponding figure for public 4 year universities with and without a doctoral program were 9.4% and 11% (D'Amico, 2006; Munsey, 2006).

In the late 1990s in Canada, according to the Canadian Association of Disability Service Providers in Post-Secondary Education (CADSPPE) 7% percent of persons with disabilities reportedly participated in postsecondary education in Canada (CADSPPE, 1999). Two surveys of enrolled students conducted at Dawson College in 2002 and 2005 indicate that the percentage of students who reported a disability represented between 6.5% and 9.0% of the college's student population, consistent with the figures reported in the literature (Jorgensen, 2006). When it comes to postsecondary graduates, a decade old Canadian survey based on self-reports showed that 6% of junior/community college graduates and 4% of university graduates in 1995 indicated that they had a disability (Taillon & Paju, 1999).

In a study of Canadian disability service providers, however, we showed that in 1999, overall, only 2½% of students were registered to receive disability related services from their colleges or universities and that this varied from ½% to 6% across the country (Fichten, et al., 2003). Junior/community colleges had a higher percentage of students with disabilities registered to receive disability related services (3¾%) than universities (1⅓%). The results also showed that Québec had a smaller proportion of both college (⅔% vs. 6%) and university (½% vs. 2½%) students with disabilities than the rest of Canada. A targeted study involving 46 professionals who provided disability related services in 1999 in Québec's Cegeps (Fichten, Barile, Robillard, Fossey, Asuncion, Généreux, Judd, & Guimont, 2000) revealed that lack of recognition of learning disabilities for postsecondary funding by the Québec government is an important contributor to the low Québec percentages, although this, alone cannot explain the huge discrepancies between Québec and the rest of Canada (Fichten, et al., 2003).

Disability related services and accommodations and institutional research. Data from the United States (e.g., Horn & Berkold, 1999; Miller, 2001) and from selected Canadian postsecondary institutions (Outcomes Group, 1998) including Cegeps (Jorgensen, et al., 2005) show that postsecondary students with disabilities who receive accommodation services persist in their studies and graduate at similar rates to their nondisabled peers. The low number of postsecondary students, as well as of workers, with disabilities in Québec compared to the rest of Canada (i.e., in the 2001 PALS survey, of working age adults aged 15-64, only 33% of Québeckers with disabilities were employed compared to 42% for the totality of Canada (Statistics Canada, 2003) makes it especially important to know about factors that facilitate or impede their academic and vocational accomplishments. Only in this way can we improve pedagogical and student services and alter policies related to students with disabilities to enhance their ability to succeed.

A concerted search of databases such as ERIC and PsycINFO, and the resources of specialized libraries such as that of the Centre de documentation of the OPHQ and the Centre de documentation collégiale (CDC) revealed surprisingly little recent research and no appropriate tools or instruments which investigate students' beliefs about what factors made their studies easier or harder.

To enhance opportunities for Cegep students with disabilities and to enable them to succeed it is vital that reliable and valid information on facilitators and obstacles to student success are available. This means following up with current students as well as with those who have graduated or have failed to complete their studies. These data then need to be accessible to those who are involved in the planning of curriculum and policy development as well as to those overseeing the delivery of disability related services. For example, when it comes to making computer equipment available to students with disabilities on campus, the Cegeps' centralized adaptive equipment loan bank system (SAIDE at Cégep du Vieux Montréal and les Services adaptés of the Cégep de Ste-Foy) is not only innovative but also, as shown by our findings, a huge success (Fichten, Barile, Robillard, Fossey, Asuncion, Généreux, Judd, & Guimont, 2000). Clearly this is one aspect of services for students with disabilities that is a facilitator and needs to be retained.

When it comes to students with disabilities, neither Cegeps nor most other postsecondary institutions in Québec and the rest of North America have a well-established program of evaluation. Although some studies have been carried out, these generally use "home-made" instruments (e.g., Roessler & Kirk, 1998 for the University of Arkansas, Wolfe & Stokley, 1998, for Auburn University) that (1) have not been subjected to psychometric evaluation and consist of measures and items for which reliability and validity are unknown, (2) were designed to answer specific questions related to a specific institution's services for students with disabilities, and (3) fail to compare responses of students with disabilities to those of nondisabled students. In addition, a very recent survey was conducted by NEADS to evaluate the alternate formats needs of students with print impairments (Kilmurray & Faba, with the collaboration of Alphonse & Smith, 2005). However, although recent and comprehensive, this survey deals only with alternate formats and has a low participation rate from Cegep students. There is one measure prepared for a wide-based audience of Canadian students with disabilities (Killean & Hubka, 1999). This, however, is 11 dense pages long, making easy administration and high response rates unlikely. In addition, there are wide-ranging measures of student outcomes designed for American students with disabilities (e.g., Horn & Berkold, 1999) and there exists a Québec-based survey of students with disabilities who failed to complete high school (Charest, 1997). Perhaps most relevant is a measure prepared by André Leblanc (1999) for his thesis, which was co-supervised by one of us (Fichten), on the history of students with disabilities at Champlain College. Although Leblanc's research bears directly on Cegep related issues, he did not examine students' perceptions of individual and environmental obstacles and facilitators.

To the best of our knowledge, only one study has investigated employment outcomes of Cegep students with disabilities (HERMES-Information stratégique, 1999). Although the sample was small, it highlights issues and concerns of interest to Cegep students with different types of disabilities and discusses environmental obstacles and facilitators to acquiring a job.

Cegeps generally carry out follow-up studies of their students in the career/technical programs (e.g., Direction générale de l'enseignement collégial, 1993). These are used, in part, to report students' vocational outcomes to a centralized Ministère de l'Éducation, du Loisir et du Sport (MELS) grouping such as the Service régional d'admission du Montréal métropolitain (SRAM). How Cegeps do this is highly individualized. In general, there are several problems with using this approach to gather information about students with disabilities, including: the lack of a means for respondents to identify their disability status, the lack of information about facilitators and obstacles impacting students with disabilities in achieving successful post Cegep academic and vocational outcomes, and the lack of adaptations of formats to make surveys suitable for those who need an accessible version (e.g., students with print impairments).

Goals

To remove barriers, support success for students with disabilities in our postsecondary institutions and further inform policy development it is imperative that accurate information reflecting realities of diverse aspects of the Cegep community be made available to concerned groups and individuals so that they can: (a) help recruit, retain, and graduate students with disabilities, (b) ensure that these students have appropriate opportunities for further education and employment after they graduate, and (c) determine factors which influence the academic outcomes of students with disabilities that are unique to them and that are not evident from studies of nondisabled students. The overall goal of the present research was to provide such information which, ultimately, will help students with disabilities graduate and successfully compete for positions at university and in the workplace.

To realize this goal in the present research we (1) conducted a systematic study of what Cegep based disability service providers and current students with various disabilities perceive as important facilitators and obstacles in pursuing Cegep studies and in succeeding in the system, and (2) explored post Cegep educational and vocational outcomes and views about facilitators and obstacles of recent Cegep graduates with and without disabilities from both pre-university and career/technical programs. Because we surveyed all graduates from the three Cegeps with the largest enrollments of students with disabilities (i.e., Dawson College, Cégep de Ste-Foy, Cégep du Vieux Montréal), we were able to compare the views of nondisabled graduates, graduates with disabilities who registered to receive disability related services from their Cegep as well as graduates with disabilities who did not register to receive services. To the best of our knowledge, nothing is known about this latter group, which makes up a very large segment of postsecondary students with disabilities (Fichten, Asuncion, Barile, Robillard, Fossey, & Lamb, 2003).

Specific goals are as follows.

- Examine what makes it easier (facilitators) and harder (obstacles) for students with disabilities to succeed in their Cegep studies
- Explore similarities and differences between nondisabled Cegep graduates and graduates with disabilities who were and who were not registered to receive disability related services from their Cegep
- Describe what happens to students with disabilities after graduation
- Provide a questionnaire for use in institutional evaluation
- Inform policy development and practice

Objectives. The objectives are to realize these goals by

- Providing descriptive data about individual, Cegep related, and external community based facilitators, obstacles, and things to change from the perspectives of:
 - Current students registered to receive disability related services
 - Cegep based disability service providers
 - Three groups of recent Cegep graduates
 - Nondisabled graduates
 - Graduates with disabilities registered to receive disability related services
 - Graduates with disabilities who were not registered
- Comparing views of current students with disabilities and Cegep based disability service providers
- Examining facilitators and obstacles for students with different types of impairments
- Comparing responses of graduates with disabilities registered and not registered to receive disability related services from their Cegep
- Comparing the post Cegep outcomes of the three groups of recent Cegep graduates
- Refining the Cegep Experience Questionnaire

Table 1 below provides an outline of the three phases of the research.

Table 1

Phases	Samples	Start	End
Phase 1	Service providers at public Cegeps <ul style="list-style-type: none"> • Phone survey 	Oct. 2004	Dec. 2004
Phase 2	Current students registered for disability related services in the Winter 2005 semester at their Cegep <ul style="list-style-type: none"> • Cegep Experience Questionnaire - distributed by répondants • Completed twice: test and retest 	Jan. 2005	July 2005
Phase 3	Graduates (Dawson, CVM, Saint-Foy) with and without disabilities <ul style="list-style-type: none"> • Cegep Experience Questionnaire & Post Cegep Questionnaire - mailed 	Jan. 2005	July 2005

Conceptual Framework: PPH Model (Processus de production du handicap)

As noted earlier, over 10 years ago the Ministère de la Santé et des Services sociaux (MSSS, 1992) established goals for Québec society. Among these was the intention to, "diminuer les situations qui entraînaient un handicap." The first priority concerned school and vocational inclusion (MSSS, 1992, p. 128). One of our objectives was to explore this issue by examining the findings from the perspective of the conceptual framework dominant in Québec: Fougeyrollas et al.'s PPH model (Processus de production du handicap: Fougeyrollas & Beauregard, 2001; Fougeyrollas, Lippel, St-Onge, Gervais, Boucher, Bernard, & Lavoie, 1999; RIPPH, undated).

The PPH is a Québec based model which proposes that a "situation de handicap" (i.e., reduced ability to perform daily activities) is the result of the interaction between individual factors (i.e., impairments and disabilities - the biological factors) on the one hand, and the environment (which consists of obstacles and facilitators), on the other. According to the model, the goal is to reduce or eliminate the barriers that hinder participation. This can only happen if a person is able to perform daily activities required for specific tasks. It is important that both individual and environmental aspects be taken into consideration, « Les éléments forts du modèle conceptuel permettent ainsi de distinguer entre ce qui appartient à la personne (facteurs personnels) et ce qui appartient à l'environnement (facteurs environnementaux) faisant, de ce fait, du handicap un résultat situationnel et non plus une caractéristique personnelle » (RIPPH, undated).

A third concept that interacts with personal and environmental factors is life habits ("habitudes de vie"). A life habit is described as "a daily activity or social role valued by the person or his or her sociocultural context according to his or her characteristics" (Fougeyrollas & Beauregard, 2001, p. 183). In the case of education, "life habits" involve attending college, studying, writing, and reading (cf. Lemieux-Brassard, 1996). For the purposes of the present study, life habits, such as paid employment, previous education experiences, and family situation, have been included under the construct of personal factors as we view these concepts to be closely related. In our view, the social participation involved in life habits plays a role in shaping the individual: experiences lead to the acquisition of knowledge and the formation of identity.

In the context of the PPH model, "impairment" (déficience) refers to the degree to which a person is affected physiologically. "Disability" (incapacité) refers to a degree of reduction of ability. Of particular interest to this investigation are the notions of "situation de handicap" (a reduction in ability to perform daily activities) and "situation de participation sociale" (full participation). These are due to the interaction between personal factors and environmental obstacles (i.e., create obstacles to access) and environmental facilitators (i.e., make execution of a task easier) (cf. Lemieux-Brassard, 2002). For example, certain pedagogical practices, such as talking while students are viewing a film in a darkened classroom, can create an environmental obstacle for students with hearing impairments. On the other hand, when giving a lecture, having an interpreter in class or an FM system would be facilitating.

To better understand factors that facilitate success among students with disabilities in this investigation we examined the nature of disability related individual and environmental factors (facilitators as well as obstacles) that help students succeed in their

Cegep studies. We applied the PPH model to the construction of our measure, and we examined the nature and impact of disability related obstacles and facilitators in influencing how students with disabilities fare in Cegep.

In the present investigation the main measure, the Cegep Experience Questionnaire (CEQ), evaluates personal (e.g., health, financial situation) factors, Cegep specific environmental factors (e.g., accessibility of classrooms, attitudes of professors), and community based environmental factors (e.g., availability of adapted transportation, availability of computer technologies off-campus) that students see as facilitating or hindering their progress.

Key PPH model concepts in the context of the present research.

- *Personal* situation (e.g., health, financial situation)
- *Cegep* environment (e.g., availability of needed disability related services, attitudes of professors)
- *Community* and government based environmental factors (e.g., availability of needed external support services such as home-care or mobility training, availability of needed adapted transportation)
- *Obstacles* are factors that make Cegep studies more difficult
- *Facilitators* are factors that make Cegep studies easier

The Present Investigation

In this investigation we examined views about obstacles and facilitators of academic success as perceived by Cegep graduates with and without disabilities as well as by Cegep based disability service providers and currently enrolled Cegep students with a variety of disabilities. Because both student and service provider perspectives are valid and reflect different aspects of the Cegep experience, information is needed about both views. The sampling also allowed us to determine similarities and differences between the experiences of nondisabled graduates and of graduates with disabilities who did, and those who did not, register to receive disability related services. It also enabled us to examine what happens to students after they graduate from Cegep (i.e., find out whether they were employed, continuing their studies, or doing something else) and to estimate what proportion of individuals with disabilities register to receive disability related services from their Cegep.

To accomplish this we studied (a) Cegep based disability service providers, (b) students with all types of disabilities who were enrolled at one of the 48 public Cegeps at the time of testing and who were registered to receive disability related services, and (c) three groups of recent graduates (nondisabled, with a disability and registered to receive services, with a disability and not registered to receive services). The graduates were sampled from three large Cegeps: Dawson College, Cégep du Vieux Montréal, and Cégep de Sainte-Foy. Disabilities studied included: learning disability/ADD, mobility impairment, hearing impairment, medically related condition, psychological disability, limitation in the use of hands/arms, low vision, blindness, neurological impairment, Deafness, speech/language impairment, and PDD (pervasive developmental disorder such as autism and Asperger's).

We also obtained data to answer the following questions: What programs are students with disabilities registered in at the college? What are graduates doing approximately one year after graduation? What are seen as personal, Cegep based, and external community based facilitators and barriers to academic success? What can students, Cegeps and community based organizations do to facilitate the success outcomes of students with disabilities?

Methodology

Overview

The study was carried out in 3 phases.

- Phase 1 - 57 disability service providers completed the measures by telephone interview during the fall 2004 semester. They completed the following measures:
 - Demographic Questions
 - Open-Ended Easier-Harder-Change Questions
 - Cegep Experience Questionnaire
- Phase 2 - 300 current students registered to receive disability related services from their Cegep completed similar measures during the winter 2005 semester. 159 of them completed the measures a second time, a minimum of 4 weeks later (test-retest). They completed the following measures:
 - Demographic Questions
 - Open-Ended Easier-Harder-Change Questions
 - Cegep Experience Questionnaire
- Phase 3 - 1486 recent graduates with and without disabilities from 2 French and 1 English Cegep completed the measures. 182 of these graduates indicated that they had a disability. 1304 had no disability. They completed the following measures:
 - Demographic Questions
 - Open-Ended Easier-Harder-Change Questions
 - Cegep Experience Questionnaire
 - Post Cegep Questionnaire

Table 2 below provides a summary of the 5 samples and the measures they completed.

Table 2

Overview Of The 5 Samples And The Measures They Completed

Measures	Cegep Based Disability Service Providers	Current Students Registered to Receive Disability Related Services	Graduates: From the 3 participating Cegeps: Dawson College, Cégep du Vieux Montréal and Cégep de Sainte-Foy		
			Nondisabled	With A Disability	
				Registered to receive disability related services	Not registered to receive disability related services
Introductory Letter - Informed Consent Form	X	X	X	X	X
Demographic Questions	X	X	X	X	X
Open-Ended Easier-Harder-Change Questions	X	X	X	X	X
Cegep Experience Questionnaire	X	X	X	X	X
Post Cegep Questionnaire:	n/a	n/a	X	X	X

Participants

There were five samples of volunteer participants: (1) Cegep based disability service providers, (2) students with all types of disabilities who were enrolled at the time of testing at one of the public Cegeps and who were registered to receive disability related services (current students), and three groups of recent graduates: (3) graduates who are nondisabled, (4) graduates with a disability who were registered to receive disability related services from their Cegep, and (5) graduates with disabilities who were not registered to receive disability related services. These were recent graduates of three large Cegeps: Dawson College, Cégep du Vieux Montréal, and Cégep de Sainte-Foy. The three participating Cegeps are among the five largest Cegeps, with enrolments in excess of 6000 full time students. All three have been designated, and funded by the Ministère de l'Éducation, du Loisir et du Sport (MELS), as specialized "centres d'accueil" (Ministère de l'éducation du Québec, 1998). These host the largest numbers of students with disabilities. Detailed sample characteristics are available in the Results section.

Cegep based disability service providers. Fifty-seven Cegep based disability service providers, 24 men and 33 women, participated. Respondents were selected from the 48 public anglophone and francophone Cegeps listed on the web page of the Fédération des cégeps (2006). They represent 42 of the 46 eligible Cegeps (2 Cegeps had no students with disabilities, 4 Cegeps could not be reached, and some Cegeps had more than one service provider). The distance education unit of the Cégep de Rosemont (Centre collégial de formation à distance) was excluded because many of the questions of interest are not applicable to a college with no physical "campus." 10 service providers were situated in English Cegeps and 47 in French Cegeps. They represent 83% of potential participants whom we approached.

Current Cegep students with disabilities. Three hundred current students with various disabilities, 113 males and 187 females, participated: 188 from French Cegeps and 112 from English Cegeps. They represent 32 of the 43 Cegeps where campus based disability service providers handed out questionnaires. Their mean age was 21 (range = 17-50, median = 20). All were registered with their Cegep to receive disability related services and all were enrolled in continuing education or in the regular day division, either in a 2 year pre-university program or in a 3 year career/technical program. 159 of these students were retested and completed the questionnaire twice. It can be seen from Table 3 below that the 300 students represent a 32% response rate.

Table 3

Current Student Return Rates

	CEQ TEST			CEQ RETEST		
	Sent	Received	%	Sent	Received	%
Total	928	300	32%	255	159	62%
French	507	188	37%	157	102	65%
English	421	112	27%	98	57	58%
Male		113			48	
Female		187			111	

Graduates. Of the 5251 recent graduates (i.e., received a diploma in the context of their studies either in a 2 year pre-university program or in a 3 year career program within the previous 5-12 months) of 3 large Cegeps (2 French, 1 English) who were sent questionnaires, a total of 1486 returned usable responses for a total return rate of 28%. 1032 graduates were males, 451 were females, and 3 failed to indicate their sex. The average age of the graduates was 22.5 years. Details are available in Table 4.

Table 4

Graduate Participants: Return Rates Per Cegep

Cegep	Number of Questionnaires Sent	Number of Questionnaires Received	Return Rate (%)
Total	5251	1486	28%
Dawson College	2120	492	23%
Cégep de Ste-Foy	1844	620	34%
Cégep du Vieux Montréal	1287	374	29%

It can be seen in Table 5x that of the 182 graduates responding, 12%, indicated that they had a disability. The percentages from the three participating Cegeps were similar and ranged from 11% to 14%. Of the 182 participants with disabilities, only 24 (13%) were registered to receive disability related services from their Cegep.

Table 5

Graduate Participants With No Disabilities And Graduates With Disabilities Who Were, And Who Were Not Registered To Receive Disability Related Services

Cegep	Number Of Questionnaires Received	Graduates With Disabilities	Graduates With Disabilities: Registered To Receive Services	Graduates With Disabilities: Not Registered To Receive Services
Dawson College	492	61 (12%)	11	50
Cégep de Sainte-Foy	620	68 (11%)	6	62
Cégep du Vieux Montréal	374	53 (14%)	7	46
Total	1486	182 (12%)	24	158

Graduates with disabilities ($M = 23.0$, $SD = 4.3$) were slightly, but significantly older than graduates without disabilities ($M = 22.4$, $SD = 3.4$), $t(1476) = 2.13$, $p = .033$. The sex breakdown was 69.5% female and 30.4% male. A chi-square test, $\chi^2(1, N = 1483) = 0.76$, $p = 0.384$, showed no significant difference between the proportions of male and female graduates with disabilities (Males = 27.6%; Females = 72.4%) compared to those without disabilities (Males = 30.8%; Females = 69.2%).

Measures

All participants completed a two page questionnaire. The first page included a brief set of objective demographic questions, three open-ended questions asking respondents to indicate, in an open-ended manner, 3 factors that make Cegep studies easier, 3 factors that make Cegep studies harder, and 3 things that could be changed to make Cegep studies easier. For Cegep graduates, page 1 also inquired about current activities including employment and continuing studies. Page 2 was devoted to the College Experience Questionnaire (CEQ). English and French versions of the CEQ are enclosed in the Appendix.

Demographic Questions. Each sample was administered pertinent demographic questions related to: sex, age, Cegep program, nature of the student's disabilities/impairments, years working providing services to students with disabilities, and number of students registered to receive disability related services at the Cegep. Most of the questions on this measure have been used in our previous studies (Fichten, Barile, & Asuncion, 1999; Fichten, Jorgensen, Havel, Barile, 2005).

Enrollment statistics. To enable us to compare the proportion of students with disabilities who are registered to receive disability related services from the Cegep to our data from 1999 (Barile, Fichten, Robillard, Fossey, Généreux, & Guimont, 2000) we asked service providers to answer the following question, "Since the beginning of the 2004-2005 academic year, approximately how many students identified themselves to receive disability related services at your Cegep?" We also obtained "official figures" for 2004 fall provided by the 3 "centres d'accueil:" by the Service d'Aide à l'Intégration Des Élèves (SAIDE) at Cégep du Vieux Montréal (Fiset, 2004), by les Services adaptés du Cégep de Sainte-Foy (Juhel, 2004), and by Alice Havel of Dawson College (personal communication, 2005). These official figures represent the number of students for whom an individualized education plan (IIP) had been submitted to the MELS and approved, and for whom the Cegep is funded to deliver disability related services. To obtain total college enrollment statistics we consulted the web site of the MELS, which provides full time enrollment data for 2004 (Ministère de l'Éducation, du Loisir et du Sport, 2005). To find out about the disabilities of students at the Cégeps we also asked campus based disability service providers to indicate whether they have ever provided services for students in the following disability categories: learning disability / ADD, mobility impairment, hearing impairment, medically related condition, psychological disability, limitation in the use of hands / arms, low vision, blindness, neurological impairment, Deafness, speech / language impairment, and PDD (pervasive developmental disorder such as autism and Asperger's).

Open-Ended Easier-Harder-Change Questions. Three open-ended items were included. These asked respondents to identify the 3 most important factors that make Cegep studies easier, the 3 most important factors that make Cegep studies harder, and 3 things that could be changed to make Cegep studies easier. The easier-harder questions have been used in our previous research (Nguyen, Fichten, Barile, & Lévesque, in press; Fichten, Jorgensen, Havel, Barile, 2005).

Post Cegep Questionnaire. A series of 4 questions inquired about whether the graduate was currently studying (full or part time), working (full or part time), and, if working, to what extent the work was related to their Cegep education. These questions were adapted from the SRAM survey questions (cf. SRAM, 2003).

Cegep Experience Questionnaire (CEQ). This 1 page 32 item questionnaire, which is included in the Appendix, is based on the PPH model (Processus de production du handicap: Fougeyrollas et al., 1999). It was originally developed and validated on English and French speaking students with physical disabilities in the context of our PAREA research (Fichten, Jorgensen, Havel, & Barile, 2005). Although the validation included alternate formats, students who had only learning disabilities or psychiatric impairments were excluded. Therefore, the measure was modified for the present investigation and a 10 item section dealing with Service Provision was added for disability service providers. Service Provision items are based on the findings of a nominal group with disability service providers.

Students and graduate respondents used a 6-point Likert-type response scale (1 = much harder, 6 = much easier, as well as not applicable) and indicated the extent to which each item made their Cegep studies easier or harder. The measure can be scored on an item-by-item basis and also has an overall Index of Difficulty (IDF) and 3 Subscale scores: Students' Personal Situation, Cegep Environment, and Government and Community Supports and Services. To compile Subscale scores, data from participants who answered a minimum of 50% of items on the Subscale in question were used. IDF scores were calculated only for those participants who completed at least 50% of all items. Two sets of Subscale and IDF scores were calculated for graduates with disabilities: those which included and those which excluded disability specific items.

The response scale used for students and graduates was not appropriate for campus based disability service providers. Therefore, we changed the response scale for disability service providers to a 5-point Likert-type scale of importance (1 = not important, 5 = extremely important, as well as not applicable).

Procedure

Ethics. On an Information and Consent Form current students with disabilities and graduates from the two French Cegeps were informed about the nature and requirements of the research (Dawson College graduates were sent the usual institutional research information). Individuals were informed that participation is voluntary and that confidentiality will be maintained. Students and graduates were assured that neither their campus based disability service provider nor any of the disability service provider team members would be able to associate their responses with their names. All participants were told about the purpose of the project, risks and benefits envisaged, the task requirements, the right to withdraw at any time without penalty and measures taken to ensure confidentiality. They were informed that they may discuss any questions or concerns about this study with the principal investigator, Catherine Fichten (514-931-8731 #1546). The protocol and the Information and Consent Form were approved by Dawson's Institutional Ethics Committee.

Modifications to measures. The first activity was to adapt the questions to the needs of: current students with learning disabilities/attention deficit disorders and those with psychiatric impairments, Cegep based disability service providers, and graduates with all types of disabilities as well as those without disabilities. Because we already obtained focus group data from students with all types of disabilities in the context of previous research (Fichten, Jorgensen, Havel, & Barile, 2005), we had the requisite information to make needed modifications to the measure to allow students with a variety of disabilities to complete it. The modified student and graduate versions of the measures were made available in French and English in the following formats: regular and large print, Word, and Web-based versions. The modified items and the new Web-based versions were extensively pre-tested with both current students and graduates with disabilities as well as with nondisabled graduates. The Demographic Questions were also slightly modified for students and graduates.

A series of questions were added for campus based disability service providers to obtain relevant demographic information on these participants as well as on their Cegep. These questions were adapted from measures previously used successfully in our research (Fichten, Asuncion, Barile, Fossey, Robillard, Judd, Wolforth, Senécal, Génereux, Guimont, Lamb, & Juhel, 2004). In addition, a series of 10 questions related to Service Provision were added for disability service providers. These were based on two data sources: open-ended written responses of 57 Cegep based disability service providers about facilitators and obstacles to the success of students with disabilities and the results of a nominal group activity carried out with 15 disability service providers. These activities are described below.

In addition, because the response scale used for students and graduates was not appropriate for the campus based disability service provider questions, we changed the response scale for disability service providers to a 5-point Likert-type scale of importance (1 = not important, 5 = extremely important, as well as not applicable). The new items and the new response scale were administered to 3 disability service providers in a pilot study. No further psychometric testing was done on the modifications for this sample.

Open-ended written responses and nominal group of Cegep based disability service providers. To establish content for the additional items for the CEQ for campus based disability service providers, in May 2004 during the "Journée des répondants" activities held at Cégep de Sainte-Foy and Cégep du Vieux Montréal we asked disability service providers to provide written, anonymous answers to the following 4 questions: Please tell us how each of the following factors plays a role in making the postsecondary studies of students with disabilities easier and harder: (1) the personal situation of the student (such as financial situation; paid employment; family; friends; level of personal motivation; study habits; previous education experiences; health; impact of the disability), (2) the environment internal to your Cegep (such as difficulty of courses; course load; attitudes and knowledge of professors; attitudes and knowledge of non-teaching staff (e.g., registration, financial aid staff); attitudes of fellow students; computers on campus; availability of course materials; accessibility of the Cegep; accessibility of Cegep extracurricular activities; willingness of professors to adapt courses student's needs; accessibility of classrooms; accessibility of labs; accessibility of Cegep physical education courses; availability of disability related services at the Cegep), (3) the external environment (such as availability of financial aid; private tutoring; public transport; availability of computers off-campus; computer technologies training off-campus; disability related support services off-campus; availability of adapted transportation for people with disabilities; scheduling

conflicts between disability related support services (e.g., attendant, adapted transport) and school; availability of physical adaptations at home (e.g., ramp, lift, mobility aids), and (4) any other categories or items that we have missed. 21 individuals provided responses which we grouped into factors that made Cegep studies easier or harder for students with disabilities.

We also held a nominal group session with 15 disability service providers in the context of a Journée des Répondants at Cégep de Sainte-Foy. Here, 15 disability service providers indicated 55 factors that they felt made Cegep studies easier or harder for students with disabilities. They then, as a group, classified each as "essential, important, unimportant" for student success. Items with an "essential" rating were adapted and included as Service Provision items on the CEQ.

Phase 1: Disability service providers. We tried to telephone disability service providers at the 48 public Cegeps. When we managed to reach someone we described the study to them and asked them to participate. For a 2 week period we repeatedly telephoned service providers, hoping to reach them directly. If we did not succeed in doing so, we left up to 3 messages indicating the purpose of the call and inviting the campus based disability service provider to call us back. In this way we were able to obtain the participation of 57 individuals. Two Cegeps indicated that they had no students with disabilities. We were not able to obtain the participation of any service provider from 4 Cegeps. Several Cegeps had more than 1 individual who provided services to students with disabilities (e.g., different campuses geographically distant, services are provided by different individuals for students with learning and with other disabilities). We interviewed all disability service providers who were willing to participate. Thus the 57 campus based disability service provider participants represent 42 Cegeps which enrolled at least 1 student with a disability in the fall 2004 semester. 69 individuals were contacted, so the 57 participants represent a response rate of 83%.

A time was scheduled for the interview for all disability service providers who agreed to participate. The structured interview included the following measures: Demographic Questions, Open-Ended Easier-Harder-Change Questions, Cegep Experience Questionnaire. Questions were faxed or e-mailed to participants prior to the scheduled appointment to assist in the process. This included the Introductory Letter - Informed Consent Form. To encourage honest responses, even if these did not reflect well on their Cegep, participants were assured that the information that they provided would never be linked either to themselves or to their Cegep. During the phone call the interviewer read each question and gave the respondent ample time to answer. Clarification was provided if participants were unsure of the meaning of particular questions.

Phase 2: Current students registered to receive disability related services from their Cegeps. Participants were students with disabilities who were enrolled in a Cegep in the winter 2005 semester and who were registered to receive disability related services from their Cegep at the time of testing. All students received a 4 page packet (Introductory Letter - Informed Consent Form, Demographic Questions, Open-Ended Easier-Harder-Change Questions, Cegep Experience Questionnaire) and a stamped, self addressed envelope as well as a "tear-off coupon" form to complete. This coupon asked about their coordinates and asked whether we may contact the student again for future studies. The Introductory Letter - Informed Consent Form advised students that when we received their completed questionnaire and coupon we would send them \$5 as a token of our appreciation for helping us with this research and that one participant would receive an additional \$25. Students were informed that they could complete the questionnaire on paper, by email, or online in French or English and that they could request a different format (e.g., large print).

We recruited students with the assistance of campus based disability service providers at the public Cegeps. We phoned disability service providers and asked for their help in distributing packages. We then asked how many packages, in regular and in large print, they wished to have and either gave these to the disability service providers directly or couriered this to them just before the Christmas break in the fall 2004 semester. We suggested to disability service providers that they could make the questionnaires available in their offices so that when students came to consult in the new semester they could pick up the packages. An alternative was that they could mail them to students (we offered to reimburse postage costs). 43 campus based disability service providers indicated that they had distributed questionnaires.

Disability service providers were contacted by a research team member several times during the spring 2005 semester to find out how things were going, to remind disability service providers to keep distributing questionnaires and, finally, to obtain a total number of the questionnaire packages distributed.

Four weeks after receipt of their questionnaires we mailed all participants who indicated their name the \$5 honorarium. Of the 300 usable questionnaires received, 255 current students indicated that we may contact them again. Four weeks after receipt of their questionnaires we mailed these 255 students a new questionnaire packet, this time informing them that the

honorarium would be \$10 and that by completing the questionnaire a second time they would qualify for a second chance at the \$25. 159 of these students completed the retest for a response rate of 62%. The mean test-retest duration was 6 weeks (range = 4 to 17 weeks, median = 6 weeks).

Phase 3: Three groups of graduates. In January 2005, between 5 and 10 months after graduation, all 5251 graduates (i.e., from both career/technical and pre-university programs) at the three participating Cegeps (i.e., Vieux Montréal, Cégep de Sainte-Foy, Dawson College) were mailed a cover letter and the Demographic Questions, Open-Ended Easier-Harder-Change Questions, Cegep Experience Questionnaire, and Post Cegep Questionnaire and a stamped, self addressed envelope. Graduates' student numbers appeared on the questionnaire. Graduates were informed that they may request a different format or language and that they could answer using any format they wish. They were given 2 weeks to return the questionnaires. Three weeks after the first mailing the questionnaires were once more sent to graduates who had not replied. For graduates at Dawson College the questionnaire was included as part of a larger institutional research package for graduates. For the other two Cegeps only the measures described above were mailed.

182 (12%) of the 1486 graduates who responded self-identified as having a disability. The student numbers of these graduates were checked against the colleges' records to determine how many of them had been registered with their Cegep to receive disability related services.

Open-Ended Easier-Harder-Change Questions

A coding manual consisting of 65 categories of Facilitators and Obstacles to the academic success of current students with and without disabilities was used. This is a modification of a 60 item manual that was developed in our previous investigation (Fichten, Jorgensen, Havel, & Barile, 2005; Nguyen, Fichten, Barile, & Lévesque, in press). This was modified by the addition of 5 items to take into account responses of graduates and of disability service providers. A 40 item coding manual was developed to evaluate recommendations for changes. Tables 6 and 9 provide listings. Three coders, trained to a minimum of 80% item-by-item inter-rater agreement (which required approximately 30 hours of training) who were blind to student and graduate participants' group, classified responses to each question into the Facilitator and Obstacle codes. 5 coders, also blind to students' and graduates' disability status, coded recommendations made in response to the item which asked how things could be improved into 40 Change content codes. Responses of campus based disability service providers were obtained through interview, making the format different. 2 trained coders jointly coded these responses.

Inter-rater agreement (%) is calculated as follows: $2 \times \text{Number of Agreements} / (\text{Number of codes recorded by Coder 1} + \text{Number of codes recorded by Coder 2})$. Inter-rater agreements for obstacles and facilitators were assessed on 33 checks of reliability (15 on Facilitators and 18 on Obstacles on responses of 360 participants). 3 of the checks of reliability fell below the target minimum of 70%; in all instances the protocols coded since the last reliability calibration were redone. 13 reliability checks were made on the Change codes of 1340 participants. Average inter-rater reliability for Obstacles / Facilitators codes was 87% (range: 74% - 96%; Cohen's kappa score for facilitators was .86 for one pair of coders and .81 for the second pair; it was .86 and .83 for the two pairs of coders for obstacles). The corresponding value for Change codes was 82% (range: 72% - 95%; Cohen's kappa was .82). As an additional means of ensuring the integrity of coding, after all protocols were completed two of the coders went back and re-checked all codes.

Table 6

Obstacles/Facilitators Coding Manual

Facilitators			Obstacles	
One-word Reminder	Description (code 600s)	Code #	One-word Reminder	Description (code 700s)
academic advising / aide pédagogique	API, conseiller pédagogique, availability of advisors, academic counselling, patience and willingness to help	1	academic advising / aide pédagogique	needs improvement, misleading, not helpful, non-coopération, inefficacité et désintérêt de mon API
accessibility: building / accessibilité : édifice	escalator, elevators, ramps, ouvertures, heures du cégep	2	accessibility: building / accessibilité : édifice	not accessible, have to walk far, mobility class to class, broken stairs, l'absence d'un ascenseur convenable, l'inaccessibilité d'un local de cours
accessibility: course / accessibilité: cours	easily readable notes, not writing on the board, voir bien le cinéma dans la classe	3	accessibility: course / accessibilité: cours	small print, can't see blackboard/overhead, teacher writes on board and talks at the same time, la diffusion de films non sous-titrés en classe
accommodations / adaptations	no other specifier	4	accommodations / adaptations	no other specifier
accommodations: books / adaptations: livres	books on tape, lecture à l'aide de cassette	5	accommodations: books / adaptations: livres	format des livres
accommodations: services for students with disabilities / adaptations: centre pour étudiants ayant des besoins spéciaux	centre for students with disabilities, centre for students with learning disabilities, accueil et soutien par le service adapté	6	accommodations: services for students with disabilities / adaptations: centre pour étudiants ayant des besoins spéciaux	limited staffing and training, lack of institutional support and accessibility, manque de services
accommodations: pre-registration / adaptations: pré-inscription	pre-registration, early, help picking teachers	7	accommodations: pre-registration / adaptations: pré-inscription	lack of, problems with
accommodations: exam room / adaptations: local d'examens	exam given in a room other than classroom, chambre spéciale pour les élèves avec des difficultés pour faire les examens	8	accommodations: exam room / adaptations: local d'examens	no quiet test taking area
accommodations: FM system / adaptations: système MF	l'utilisation d'un système MF	9	accommodations: FM system / adaptations: système MF	le fait de n'avoir pas utiliser l'appareil MF en attente d'un meilleur
accommodations: interpreter/ adaptations/ interprète	avoir des interprètes avec moi dans les cours	10	accommodations: interpreter/ adaptations/ interprète	difficile d'obtenir un interprète à moins de 24 heures d'avis, rencontre avec professeur sans interprète
accommodations: large print / adaptations: impression en gros caractères	agrandissement de documents, enlarged exams are very helpful	11	accommodations: large print / adaptations: impression en gros caractères	difficulty obtaining material in large print
accommodations: note taker / adaptations: preneur de notes	scribe, notes made available	12	accommodations: note taker / adaptations: preneur de notes	la difficulté à comprendre les notes de quelqu'un d'autre, les preneurs de note n'arrivent pas à l'heure ou s'absentent sans m'avertir
accommodations: taped exams / adaptations: examens enregistrés sur cassette audio	exams on tape, enregistrement des examens	13	accommodations: taped exams / adaptations: examens enregistrés sur cassette audio	lack of, problems with
accommodations: taping / adaptations: enregistrement	taping classes	14	accommodations: taping / adaptations: enregistrement	lack of, problems with
accommodations: time / adaptations: temps	extra time for exams and assignments, plus de temps pour les examens	15	accommodations: time / adaptations: temps	manque de temps pour les travaux et lors des examens
attendance / présence en classe	have to show up, la présence à tous les cours	16	attendance / présence en classe	didn't go to class, les cours où j'étais absente
cegep environment / environnement du cégep	environment of the college is pleasing, student life, athletics, non academic activities, clubs, student organizations, location downtown, atmosphere, places to hang out, attitude of students, meeting new people, environnement physique, proximité des lieux, résidences proches du cégep	17	cegep environment / environnement du cégep	unpleasant, confusing hierarchical institution, distraction from students and staff, freedom, administration, bad social environment, downtown distractions, temperature/lighting (not specified), pas de stationnement, not knowing about activities offered on campus, le snobisme de certaines personnes étudiant au cégep, la vie scolaire, cafétéria, l'ambiance
classes small / classes petit groupe	size of class is good, groupe d'étudiants restreint	18	classes big / classes grand groupe	size of class is too big, classes avec beaucoup d'élèves
classmates / collègues de classe	helpful, friendly, class atmosphere, peer support, groupe stable	19	classmates / collègues de classe	didn't like some of my classmates, they cheat, disruptive classmates, competition, les comportements des autres étudiants en classe
college pre-registration / service de pré-inscription du cégep	pre-registering for certain classes	20	college pre-registration / service de pré-inscription du cégep	strange schedule chosen for me, it would be better if students could choose their teachers
college size / taille du cégep	the school was very big, petit collège, beaucoup d'étudiants	21	college size / taille du cégep	overwhelming student population, too many students, big school, un cégep très grand
computers / ordinateurs	technology available, software and hardware, lab, scanning, A/V equipment, les technologies informatiques	22	computers / ordinateurs	technology not available, not accessible, can't use regular computer lab, heure d'ouverture des locaux informatique, viruses, no space, not enough, A/V equipment, manque d'ordinateurs
counselling / counseling	counselling service, travailleuse sociale à l'école	23	counselling / counseling	counselling service, not enough, service de psychologie inutile
course outlines / plan de cours	distribution du plan de cours, clair, helped to organize exams and papers	24	course outlines / plan de cours	unclear, unhelpful, plans de cours non établis
courses / cours	lots of choices, topics that interested me, ability to choose courses, well-planned, organized, lectures, intérêt à la matière	25	courses / cours	cours inutiles, did not interest me, had to take because of profile, unnecessary courses, boring, disorganized, le surplus de cours de base
courses: easy / cours: faciles	easy tests/courses, course materials, textbooks, not too much homework, light work load, no compulsory assignments, take-home exams, des projets intéressants	26	courses: difficult / cours: difficiles	difficulty of courses, course materials, textbooks, exams, lots of writing, hard readings, essays, heavy work load, daily homework, activités obligatoires dans les cours
courses: few / cours: charge réduite	reduced course load, few courses, allègement de deux sessions grâce à des cours d'été	27	courses: many / cours: surcharge	heavy course load, too many courses, nombre de cours par session
day-care / service de garde	les garderies, available	28	day-care / service de garde	no available day-care, service de garde difficile à trouver
electronic portals / portails électroniques	can use computer to work from home, online submissions, notes de cours sur l'internet	29	electronic portals / portails électroniques	course notes on WebCT or other internet sources
schedule: assignments, exams / horaire: travaux, examens	loose deadlines, scheduled dates of when work was due	30	schedule: assignments, exams / horaire: travaux, examens	all at the same time, not scheduled properly, le fait que les examens sont souvent durant la même semaine
family / famille	supportive, encouragement de ma famille	31	family / famille	unsupportive, raising a child, situation familiale
finances / finances	scholarship, parents paid, prêts et bourses, did not have to work, live with parents; second-hand books, aide financière de mes parents	32	finances / finances	student loans, no financial aid, costly supplies/books, no scholarships, having to work, problèmes financiers, le coût élevé des cours et du matériel

Table 6 continued

Facilitators			Obstacles	
One-word Reminder	Description (code 600s)	Code #	One-word Reminder	Description (code 700s)
friends / ami(es)	support, good friends, groupe d'amis brillants et motivés	33	friends / ami(es)	distracting, easy to skip classes because friends available, unsupportive, l'influence des amis
group work / travail d'équipe	working and studying in a group, étude en équipe	34	group work / travail d'équipe	working in groups is something that I hate, beaucoup de travaux d'équipe
health / santé	medication for specific conditions, bonne santé	35	health / santé	état de santé, pain, missing class because of medical condition, depression, troubles alimentaires, hospitalisations, medication
job / travail	not having a job, working in the CEGEP, horaire flexible au travail	36	job / travail	paid/unpaid work, balancing school and work, travailler en même temps
language / langue	that some students and teachers were speaking French was reassuring, facilité en français	37	language / langue	ESL or LD language difficulties, heavy accent, bad English of teachers, my English is not good, language barrier, I'm not fluently bilingual, mon mauvais français écrit
learning centre, tutor / centre d'apprentissage, tuteur	peer tutoring, someone to check over my grammar, tutorials, service le tandem	38	learning centre, tutor / centre d'apprentissage, tuteur	no tutor, manque de tutorat, pas assez d'aide avec devoirs
library / bibliothèque	good library & internet facilities, electronic database, resources, librarians, bibliothèque adaptée aux travaux en équipe	39	library / bibliothèque	not open long enough, old books, stuffy, manque de places à la bibliothèque
personal situation / vie personnelle	being a calm person, I am very adaptable, maturity, être plus âgés et avoir de l'expérience	40	personal situation / vie personnelle	personal life/issues, dropping classes, being older, switching programs, not knowing what to do in the future, social life, laziness, fatigue, activités personnelles extérieures
program / programme	good, interesting, closeness of students and faculty, stage, internship, intérêt marqué pour mon programme d'étude	41	program / programme	hard, loose, uninteresting, stage, internship, programme très exigeant
registrariat / registrariat	computerized & phone registration and grade checking, Omnivox	42	registrariat / registrariat	long lines, course change procedure, school lost my address, course selection process, program change procedure, devoir payer pour changer nos horaires
schedule / horaire	ability to have courses according to one's preferred schedule, breaks to study, horaire flexible	43	schedule / horaire	early classes, no time between classes, long classes, back-to back 3 hour classes, horaire chargé, pause de 4 heures, cours de 16h à 18h
staff / personnel	helpful, supportive, nice staff, attitude du personnel non-enseignant	44	staff / personnel	not supportive, unfriendly, unorganized, difficulté joindre les personnes ressources
student services / services aux étudiants	student union, workshops, mentoring, welcoming program, l'association étudiante	45	student services / services aux étudiants	orientation was confusing
study centres / centres d'étude	French student centre, science study rooms, math and physics tutorial rooms, extra lab time, lab facilities, centre d'aide en français, laboratoire de photographie	46	study centres / centres d'étude	laboratoires de pratique disponible surtout le soir, not enough studio time
study skills / habiletés pour les études	studying hard, good skills, being able to stay focused/ concentrated, time management, discipline, rapidité/ facilité d'apprentissage	47	study skills / habiletés pour les études	procrastination, not studying hard, lack of concentration, bad time management, gestion de mes travaux, organisation
support, help / soutien, aide	help I received, services at the Cegep (not specified), available resources, encadrement	48	support, help / soutien, aide	lack of support/help/resources, manque de ressources
teachers / enseignants	helpful, available, skilled, accommodating my disability, friendly, office hours, empathie des professeurs, la disponibilité des professeurs	49	teachers / enseignants	difficult, lack skills, not accommodating disabilities, don't show up for office hours, unfair, certains professeurs incompetents
time / temps	no mention of any other aspect	50	time / temps	not enough, limited, doing too much, manque de temps
transition / transition	being more independent, l'autonomie qu'on doit acquérir	51	transition / transition	transition from high school, away from home, adapting, éloignement de ma famille
transportation / transport	distance to the college, living close to school, Metro close, le transport privé, le transport adapté	52	transportation / transport	long commute, winter travel, travel to the country every weekend, long distance, unreliable adaptive transport, temps perdu dans les transports en commun
other / autres	non-categorized items, wastebasket	53	other / autres	non-categorized items, wastebasket
disability, impairment / incapacité, handicap	diagnosis of disability, diagnostique de dyslexie	54	disability, impairment / incapacité, handicap	trouble working with disorder, mon trouble d'apprentissage, dealing with my panic attacks and agoraphobia
stress / stress	I work better under pressure, stress coping skills, there is less stress to perform well than in high school	55	stress / stress	pressure, anxiety, fear of exams, le stress des fin de session
self-advocacy / revendication personnelle	I ask for help, I go talk to teachers for accommodations, poser beaucoup de questions	56	self-advocacy / revendication personnelle	I'm too shy to ask for help, always have to fight your own battles, me battre pour avoir mes droits
academic preparation, background / expérience, préparation académique antérieure	background, previous degree/diploma, my high school prepared me well for Cegep, expériences scolaires antérieures	57	academic preparation, background / expérience, préparation académique antérieure	did not have background, my high school did not prepare me for Cegep, bad high school habits, manque de préparation au secondaire
motivation / motivation	personal goals, career goals, interest (not specified), self-determination, I like what I'm studying, love of school, passion (unspecified), persévérance, volonté	58	motivation / motivation	lack of motivation, lack of interest (not specified), la démotivation
outside services / services à l'extérieur du cégep	outside medical services, orthophony, off-campus tutor, travailleuse sociale, l'aide à l'extérieur du cégep	59	outside services / services à l'extérieur du cégep	I didn't have my psychiatrist, orthophony
self-confidence / confiance en soi	I'm intelligent, my brain, I'm smarter than the others, mon habileté en art	60	self-confidence / confiance en soi	mon orgueil
expertise: disabilities / expertise: incapacités	expertise available, knowledgeable service providers, l'expérience du répondant dans le domaine de l'éducation	61	expertise: disabilities / expertise: incapacités	lack of expertise because far from urban area, inexperience of service providers, manque de connaissance sur les incapacités
sensitization and information: disabilities / sensibilisation et information: incapacités	sensitize students, organise seminars, invite experts, involve staff, promote the rights of students with disabilities, awareness, integration, aviser et informer les enseignants	62	sensitization and information: disabilities / sensibilisation et information: incapacités	lack of awareness/information/sensitization/ integration, marginalisation, manque de valorisation
classrooms / locaux des cours	room size/location, desks, chairs, lighting, temperature, ventilation, nombre suffisant de bureaux dans les classes	63	classrooms / locaux des cours	room size/location, desks, chairs, lighting, temperature, ventilation, l'odeur et renfermé locaux classes nature science
career opportunities / opportunités de carrière	career possibilities/options, job market, possibilité d'emploi	64	career opportunities / opportunités de carrière	lack of opportunities, no contact with professionals in field, pas de déboucher dans le domaine
evaluation / évaluation		65	evaluation / évaluation	CRC, compulsory examinations, OSCE, exit exams

Table 7 shows the coding guidelines that were followed.

Table 7

Coding Guidelines

1. Base your coding on the actual response without drawing inferences regarding what the participant "really meant." If they didn't explicitly say it, we can't code it.
 2. If a response fits into more than one category, use the most specific category without going beyond the actual response. For example, for the response, "The staff in the Center for Students with Disabilities was very helpful," categories 48, 44, and 6 all fit. However, category 6 is the most specific and should be used in this case.
 3. Use the most up-to-date version of the coding manual, as it will reflect decisions made during reliability meetings.
 4. Be as consistent as possible with your coding, even if this means double checking your coding or the manual before deciding on a code. The extra time and attention to detail is worth it!
 5. When coding facilitators and obstacles, don't automatically code a factor as an accommodation unless it is evident that this is a disability related accommodation. For example, if the student simply lists "pre-registration" as a facilitator, use code 20 unless there is evidence that the student was taking advantage of a pre-registration for students with disabilities specifically at his/her college (i.e., they mention other accommodations they receive).
 6. If the response mentions a cause and its effect, code the cause. For example, for "Lack of time stressed me out," code 50 instead of 55 because the lack of time is the cause of the stress.
 7. Use code 65 for assessment/evaluation methods outside the course (i.e., at the college, provincial or national level). Fairness/unfairness of marking should be coded as 49, because marking is done by the teacher. Ease/difficulty of exams/assignments should be coded as 26, because they are related to course difficulty.
 8. When more specific examples are given in parentheses, code the first example given in parentheses instead of the more general factor preceding the parentheses.
 9. Reliability checks should be done on 20 subjects out of every 100. If the inter-rater agreement does not reach at least 70%, all 100 responses must be recoded by both coders and any disagreement must be discussed until an agreement is reached.
-

Guidelines for the coding of recommendations for changes are presented in Table 8. The coding manual is included in Table 9.

Table 8

Guidelines For The Coding Of Recommendations For Changes

1. In general, the same guidelines that applied to the coding of facilitators and obstacles apply to the coding of the changes as well.
 2. If the direction of the change is ambiguous or unclear from the response (e.g., "teachers"), then don't code it.
 3. If a response starts off by stating that no changes are needed, but then goes on to suggest one or more changes, ignore the first statement (i.e. don't code 39) and code only the recommendations.
 4. If the response reads "I didn't have any problems," "I have no idea/I don't know," or "It doesn't apply to me," don't code it. Only if it reads, "I don't think anything has to be changed" should 39 be coded.
 5. If a response refers back to a previous response (i.e., obstacles), do not go back to read the response. Simply, do not code such responses, as doing so would involve inferring what solutions could be suggested to the previously stated obstacles.
-

Table 9

Recommendations For Changes Coding Manual

Code	One-word Reminder	Description
1	more government support	plus de prêts et bourses, recognize LD, abolir la côte R
2	more outside services	ressources de l'extérieur
3	improve transportation	adapted or not
4	improve college system	better administration, budget management, lower costs, not require attendance, meilleure évaluation des professeurs, établir des mesures d'urgence, Co-op, more time to study before exam period, cheaper parking, exams/assignments not scheduled close together, uniformity of teaching/standards across courses, coordination between core and program specific courses
5	more funding: college	money to update and upgrade the equipment, more funding for services
6	larger college size	agrandir le cégep
7	improve college environment: physical	plus grande cafétéria, plus de salles de travail d'équipe, renouveler le matériel et en acheter du nouveau, smaller/larger classrooms, more residences, more parking, more microwaves, more telephones, plus de locaux disponibles
8	improve college environment: social	connaître des gens qui vivent les mêmes difficulté, more student association organized activities, promotion des activités socioculturelles du cégep, clubs, parties, sports
9	improve accessibility: building	more ramps/escalators/railings/electric doors, longer building hours, adapted bathrooms, shuttles, gym hours
10	more collaboration/communication	between students/teachers/staff/service providers (any combination)
11	improve support/help: general	meilleur encadrement, workshops on time management/study skills, daycare, more help with school work (unspecified source), more information
12	improve academic advising	cheminement plus personnalisé, meilleur guide pour études universitaires, meilleure gestion de l'aide pédagogique individuelle
13	more counselling services	psychologists, increase maximum number of psychologist visits
14	improve study centers	plus de matériel au laboratoire de langues, avoir plus de locaux pour les laboratoires pratiques disponible dans la journée
15	improve library	noise level, more books, more space
16	more tutoring	Learning Centre, more tutors, Tandem
17	more technology	more computers, extend computer lab hours, update technology, A/V, more technicians
18	improve services for students with disabilities	more advertising of services, improve training for service providers, accès à un programme qui pourrait aider ceux qui ont des problèmes de santé mentale, more staff, a permanent full-time service provider for students with disabilities
19	more sensitization/information: disabilities	more awareness, improve integration, faire de la sensibilisation auprès des élèves et des professeurs
20	more expertise: disabilities	more expertise on LD, more knowledgeable service provider
21	more accommodations: human	note taker, interpreter, hire professionals and not students
22	more accommodations: technological	subtitles, Braille, software, computer for exams
23	more accommodations: room/facilities	room for exam, study rooms
24	more accommodations: time	more time for exams/assignments, complete course over two semester instead of one
25	improve program	introduce entrance exams, stable groups, more/longer stages
26	better schedule	be able to make my own, no late/early classes, meilleure répartition des cours, moins nombre d'heures de cours
27	more accessibility: course	teachers give students the notes so they can follow and listen at the same time, should have course websites
28	improve courses: general	course content, subject, eliminate useless courses, rendre le contenu plus pratique que théorique, cours plus interactifs, more course selection, more time to do assignments in class, pondération
29	courses: easier	less work, simplified tests, two-part exams, less writing essays, rely less on textbooks, plus de travaux pratiques, less group work, abaisser les critères de français, more course materials, more course notes/materials
30	courses: fewer	diminuer la charge des cours
31	better teachers	more supportive/understanding/available/competent/specialized
32	smaller class size	fewer students
33	more career opportunities/guidance	offrir des ateliers sur les perspectives d'emploi, visite avec différents employeurs, career counsellors
34	more funding: student	aide financière aurait pu me permettre de déménager de chez mes parents et de m'installer à Montréal
35	improve study skills	améliorer mon français, étudier souvent au laboratoire et aussi prendre beaucoup de travaux pratiques
36	more self-advocacy	going to the library at the resource or tutor area
37	facilitate balancing job and school	offrir davantage de programme travail-étude
38	more support from family/friends	
39	no changes needed / all is good	from what I've seen they seem to be doing a very good job, aucun, rien
40	other change	

Disability service providers. All 57 participants answered the following 3 questions

- At your Cegep, what are the 3 most important factors that make Cegep studies easier for students with disabilities?
- At your Cegep, what are the 3 most important factors that make Cegep studies harder for students with disabilities?
- At your Cegep, what could be changed to make Cegep studies easier for students with disabilities?

Current students registered to receive disability related services from their Cegep. 297 of the 300 participants in this category answered the open-ended questions. It should be noted, however, that the Change question was phrased slightly differently on the English and French questionnaires, with the French questionnaires asking about "making Cegep studies easier for you" and the English questionnaires asking about "making Cegep studies easier for students with disabilities." Because of the difference in wording, we analyzed the Change questions separately for participants who responded on the English and on the French questionnaires.

- What are the 3 most important factors that have made your Cegep studies easier?
- What are the 3 most important factors that have made your Cegep studies harder?
- At your Cegep, what could be changed to make Cegep studies easier for you? (French questionnaire)
At your Cegep, what could be changed to make Cegep studies easier for students with disabilities? (English questionnaire)

Graduates. 1417 of the 1486 participants in this category answered the open-ended questions. It should be noted, however, that as in the case of current students, the Change question was phrased slightly differently on the English and French questionnaires, with the French questionnaires asking about "making Cegep studies easier for you" and the English questionnaires asking about "making Cegep studies easier for students with disabilities." Because of the difference in wording, we did not analyze the Change question for nondisabled graduates who completed the English questionnaire and we analyzed the Change questions separately for participants with disabilities who responded on the English and on the French questionnaires.

- What are the 3 most important factors that have made your Cegep studies easier?
- What are the 3 most important factors that have made your Cegep studies harder?
- At your Cegep, what could be changed to make Cegep studies easier for you? (French questionnaire)
At your Cegep, what could be changed to make Cegep studies easier for students with disabilities? (English questionnaire)

Results

Sample Characteristics

Campus based disability service providers. 24 campus based disability service providers were men and 33 were women. Disability service providers had worked a mean of 7 years providing services to students with disabilities (median = 5 years, range = 0.2-20 years). This activity constituted an average of 20% of their workload (median = 11%, range = 1%-100%). Results in Table 10 show that more than $\frac{3}{4}$ of the disability service providers had provided services to students with learning disabilities / ADD, a mobility impairment and a hearing impairment. Relatively few, however, less than $\frac{1}{2}$, had provided services to students with psychological / psychiatric disabilities, medically related conditions, or a speech / communication impairment.

Table 10

Types Of Students Ever Serviced By The Service Providers In The Sample In Rank Order

Student's Disability /Impairment	Percent
Learning disability / ADD (e.g., dyslexia)	80.70%
Mobility impairment (e.g., use of a wheelchair / cane / crutches)	80.70%
Hearing impairment	78.95%
Visual impairment	73.68%
Neurological impairment (e.g., epilepsy, traumatic brain injury)	66.67%
Limitation in the use of hands / arms	56.14%
PDD (e.g., autism, Asperger's)	52.63%
Blindness	50.88%
Deafness	50.88%
Psychological / psychiatric disability (e.g., anxiety, depression)	45.61%
Medically related / health problem (e.g., diabetes, Crohn's)	40.35%
Speech / communication impairment	36.84%

Current students with disabilities. The mean age of students was 21 (standard deviation = 5, minimum = 17, maximum = 50, median = 20). It can be seen in Table 11 that that by far the largest number of students, over 90%, were enrolled in a diploma program with approximately $\frac{1}{2}$ of them enrolled in a pre-university program and the other half in a career/technical program. Approximately 6% were enrolled in an attestation program (AEC) or in another course of studies.

Table 11

College Programs of the Current Student Sample

Program	Number	%
Pre-university	140	46.67%
Career / Technical	141	47.00%
AEC	5	1.67%
Other (e.g., continuing education)	14	4.67%
Total	300	100%

Students had a variety of impairments. It can be seen in Table 12 that the most common impairment/disability was a learning disability/attention deficit disorder, followed by mobility impairment, hearing impairment, medically related disability, and psychological disability.

Table 12

Current Students' Impairments

Type of Impairment	Number of Students	% of Students
Learning disability / ADD	142	47%
Mobility impairment	53	18%
Hearing impairment	39	13%
Medically related condition	33	11%
Psychological disability	32	11%
Limitation in the use of hands / arms	30	10%
Visual impairment	29	10%
Neurological impairment	25	8%
Deafness	17	6%
Speech / language impairment	16	5%
PDD (pervasive developmental disorder - e.g., autism, Asperger's)	11	4%
Blindness	2	1%
Total number of impairments reported by the 300 students	429	n = 300

It is noteworthy that over 30% of students with disabilities had more than one impairment, with 9% having 3 or more impairments (see Table 13).

Table 13

Number of Impairments of Current Students

Number of Impairments	Number of Students	% of Students
1	210	70%
2	62	21%
3	20	7%
4+	8	3%
Total	300	100%

Graduates. Of the 1486 graduates responding to the survey, 182 (12.2%) reported a disability. Of the graduates with a disability 24 (13.2%) had registered with their Cegep disability service provider and 158 (86.8%) were unregistered. The remaining 1304 graduates reported no disability.

It can be seen in Table 14 that approximately half of the graduates with and without disabilities were enrolled in a pre-university program and half in a career/technical program. Overall, 57.0% of the graduates were enrolled in pre-university programs, 42.4% in career/technical programs and the remainder in some other form of study. There was no significant difference between the proportion of graduates in pre-university and career/technical programs when graduates with and without disabilities were compared, $\chi^2(1, N = 1473) = 2.85, p = 0.091$.

Table 14

Program Breakdown Of Graduates With And Without Disabilities

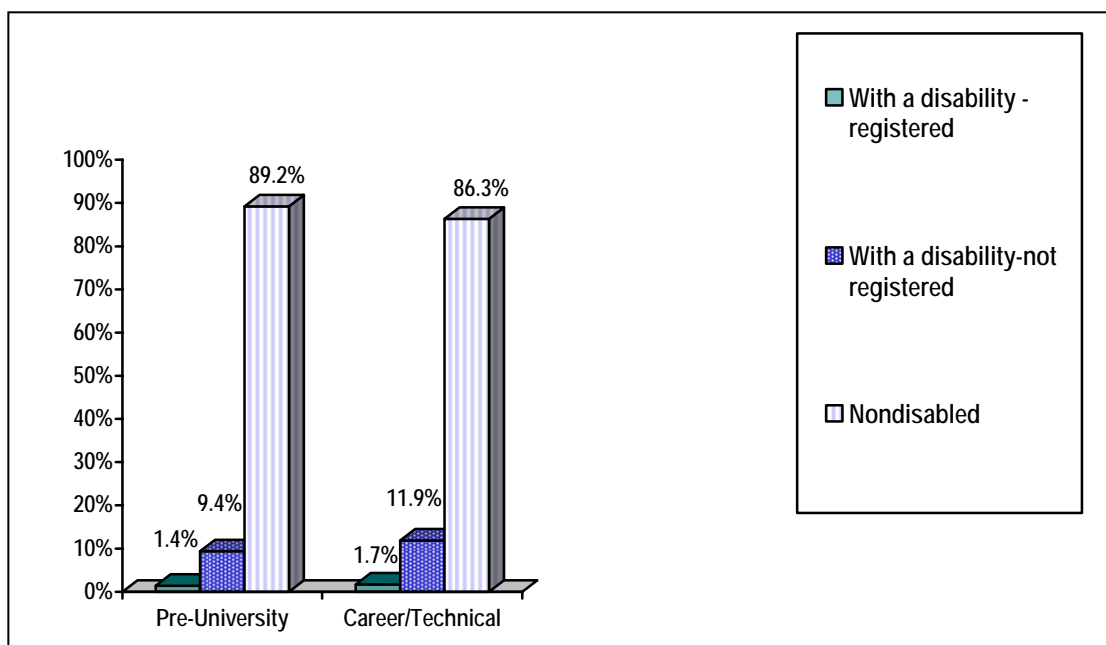
Program	With A Disability	No Disability	Total
Pre-University	91 (50.6%)	753 (57.8%)	844 (57.0%)
Career/Technical	86 (47.8%)	543 (41.7%)	629 (42.4%)
Other	3 (1.7%)	6 (0.5%)	9 (0.6%)
*Total	180	1302	1482

*4 graduates did not reply to the diploma type question.

We also examined the sector of enrollment of graduates with disabilities who had, and those who had not registered for disability related services from their Cegep. Figure 1 shows that similar proportions of all three groups of graduates were enrolled in pre-university and in career/technical programs.

Figure 1

Graduates' Programs



Graduates had a variety of impairments. One hundred and eighty-two graduates reported a total of 212 disabilities. The distribution of disability types for graduates who registered with their Cegep to receive disability related services and those who did not is shown in Table 15 below.

Table 15

Types of Disabilities Reported by Registered and Unregistered Graduates

Disabilities / Impairments	Registered		Unregistered		Total	
	Number Of Graduates (N=24)	Percent In Disability Category	Number Of Graduates (N=158)	Percent In Disability Category	Number Of Graduates (N=182)	Percent In Disability Category
Blind	0	0.0%	0	0.0%	0	0.0%
Visual Impairment	0	0.0%	57	31.3%	57	26.9%
Deaf	2	6.7%	0	0.0%	2	0.9%
Hearing Impairment	2	6.7%	6	3.3%	8	3.8%
Speech/Communication impairment	1	3.3%	1	0.5%	2	0.9%
Learning Disability	10	33.3%	15	8.2%	25	11.8%
Mobility Impairment	5	16.7%	2	1.1%	7	3.3%
Limitation use of hands	3	10.0%	0	0.0%	3	1.4%
Medically Related	4	13.3%	46	25.3%	50	23.6%
Psychological	3	10.0%	46	25.3%	49	23.1%
Neurological	0	0.0%	2	1.1%	2	0.9%
PDD	0	0.0%	2	1.1%	2	0.9%
Other	0	0.0%	5	2.7%	5	2.4%
Number of disabilities reported	30	100%	182	100%	212	100%

To find out whether there was a significant difference in the distribution of disabilities between registered and unregistered graduates we conducted a chi-square test. Graduates' disabilities were grouped into seven disability categories to ensure that there were sufficient numbers in each category to perform a valid test. Table 16 shows the categories of disability used in the analysis.

Table 16

Grouping Graduates With Disabilities Into 7 Combined Disability Categories

Combined Disability Categories	Registered	Unregistered	Total
1 Learning disability/ADD	8 33.3%	10 6.3%	18 9.9%
2 Medical impairment	2 8.3%	31 19.6%	33 18.1%
3 Psychological impairment	2 8.3%	39 24.7%	41 22.5%
4 Visual impairment and blindness	0 0.0%	47 29.7%	47 25.8%
5 Hearing impairment and Deafness	4 16.7%	5 3.2%	9 4.9%
6 Multiple disabilities	5 20.8%	19 12.0%	24 13.2%
7 Other (includes pervasive developmental disabilities, mobility impairment, limitation in use of hands or arms, neurological impairment, speech/communication impairment)	3 12.5%	7 4.4%	10 5.5%
Total with disabilities	24 100%	158 100%	182 100%

A chi-square test showed that there was a significant difference in the distribution of disabilities between registered and unregistered graduates, $\chi^2(6, N = 182) = 37.81, p < 0.001$. From Table 16 it can be seen that none of the registered graduates reported a visual impairment and that registered graduates were more likely to have a learning disability, a hearing impairment and multiple disabilities while unregistered graduates were more likely to have a visual, psychological or medical disability. The distribution of the numbers of disabilities reported by both groups is shown in Table 17 below.

Table 17

Numbers of Disabilities Reported by Registered and Unregistered Graduates With Disabilities

Number of Disabilities	Registered		Not Registered		Total	
	Number	%	Number	%	Number	%
One	19	79.2%	139	88.0%	158	86.8%
Two	4	16.7%	16	10.1%	20	11.0%
Three	1	4.2%	1	0.6%	2	1.1%
Four	0	0.0%	2	1.3%	2	1.1%
Total	24	100%	158	100%	182	100.0%
Graduates with more than one disability	5	20.8%	19	12.0%	24	13.2%

Enrollment: Proportion Of Students / Graduates Registered To Receive Disability Related Services

We obtained statistics about the number of students with disabilities registered to receive disability related services from the Cegep from 44 of the public Cegeps. This includes the 2 Cegeps that indicated that they currently had no students with disabilities. The question disability service providers were asked was, "Since the beginning of the 2004-2005 academic year, approximately how many students identified themselves to receive disability related services at your Cegep?" We also obtained "official figures" for the fall of 2004 provided by the 3 "centres d'accueil:" by the Service d'Aide à l'Intégration Des Élèves (SAIDE) at Cégep du Vieux Montréal (Fiset, 2004), by les Services adaptés du Cégep de Sainte-Foy (Juhel, 2004), and by Alice Havel of Dawson College (personal communication, 2005). These official figures represent the number of students for whom an individualized education plan (IIP) had been submitted and approved by the MELS and, thus, for whom disability related services were funded. To obtain total college enrollment statistics we consulted the web site of the MELS, which provides full time enrollment data for 2004 (Ministère de l'Éducation, du Loisir et du Sport, 2005a).

The data indicate that there were great discrepancies among Cegeps in the percentage of students with disabilities (range 0% to 3.34%). Summary data on student enrollments at participants' institutions and percentages of students with disabilities registered to receive disability related services, based on the 2 data sources (i.e., full time enrollments available for 2004 on the web site of the Ministère de l'Éducation, du Loisir et du Sport (2005a) and the Cegep based disability service providers) are available in Table 18. Overall, the findings show that the average total full time enrolment at the 44 participating Cegeps for 2004 was approximately 2906 (standard deviation = 1842, range = 559 to 7237). Information concerning the number of students with disabilities registered to receive disability related services according to the disability service providers show that the mean was 24 students per Cegep (median = 12, standard deviation = 19, range = 0 to 238). The mean percentage of students with disabilities registered to receive disability related services in a Cegep was 0.84% (i.e., approximately ¾ of 1%).

Table 18

Enrollment Data For 2004

44/48 Cegeps Were Reached	Total Enrollment At The 44 Cegeps	Number Of Students Registered For Disability Related Services (Fall 2004)	Number With Individualized Education Plans (PII)
Total N	127 870	1069 % of 127 870 = (0.84%)	391 % of 127 870 = (0.31%) % of 1 069 = (37%)

It can be seen in Table 18 that of the 1069 students with disabilities registered to receive disability related services from their Cegep, only 391 had individualized education plans approved by the MELS (i.e., the Cegeps were funded for only 391 students - only 37% of those registered to receive services). The average number of students with disabilities for whom funding was provided by the MELS was 9 per Cegep (median = 5 per Cegep). Thus funding was provided by the MELS for only about a third of students who registered for services.

Changes from 1999 to 2004. To examine changes in the proportion of students with disabilities registered to receive services from their Cegep we compared the current data with data obtained in 1999, when we also asked disability service providers about the number of students registered to receive services (Fichten, Barile, Robillard, Fossey, Asuncion, Génereux, Judd, & Guimont, 2000). Numbers were available for 1999 and 2004 from the same 31 colleges: 27 French and 4 English Cegeps. Results of the comparison, presented in Table 19, show that there was some increase in the proportion of students with disabilities registered for disability related services (change from 0.75% to 0.94%). There was also a change in the proportion of students registered for disability related services from their Cegep for whom the MELS provided funding (from 32% to 36%). However, neither the comparison on the proportion of the student body that is registered to receive services, $t(30) = .357$, $p = .724$, or on the proportion of students registered to receive disability related services for whom the Cegep is funded by the MELS, $t(28) = .966$, $p = .342$, were significant. The proportion of the full_time student body funded for disability related services by the MELS increased from 0.24% of the total full time student population to 0.34%; this is a significant change from 1999 to 2004, $t(29) = 3.21$, $p = .003$. This was a result of an increase in the number of students with disabilities who have an Individualized Educating Plan (IIP) coupled with a decline in overall Cegep enrollments.

Table 19

Number Of Cegep Students Registered For Disability Related Services At Their Cegep

Year	Total Enrollment at the Same 31 Cegeps	Number of Students Registered for Services	Number with Individualized Education Plans (PII)
1999	105 153	787 % of 105 153 = (0.75%)	252 % of 105 153 = (0.24%) % of 787 = (32%)
2004	100 369	940 % of 100 369 = (0.94%)	343 % of 100 369 = (0.34%) % of 940 = (36%)

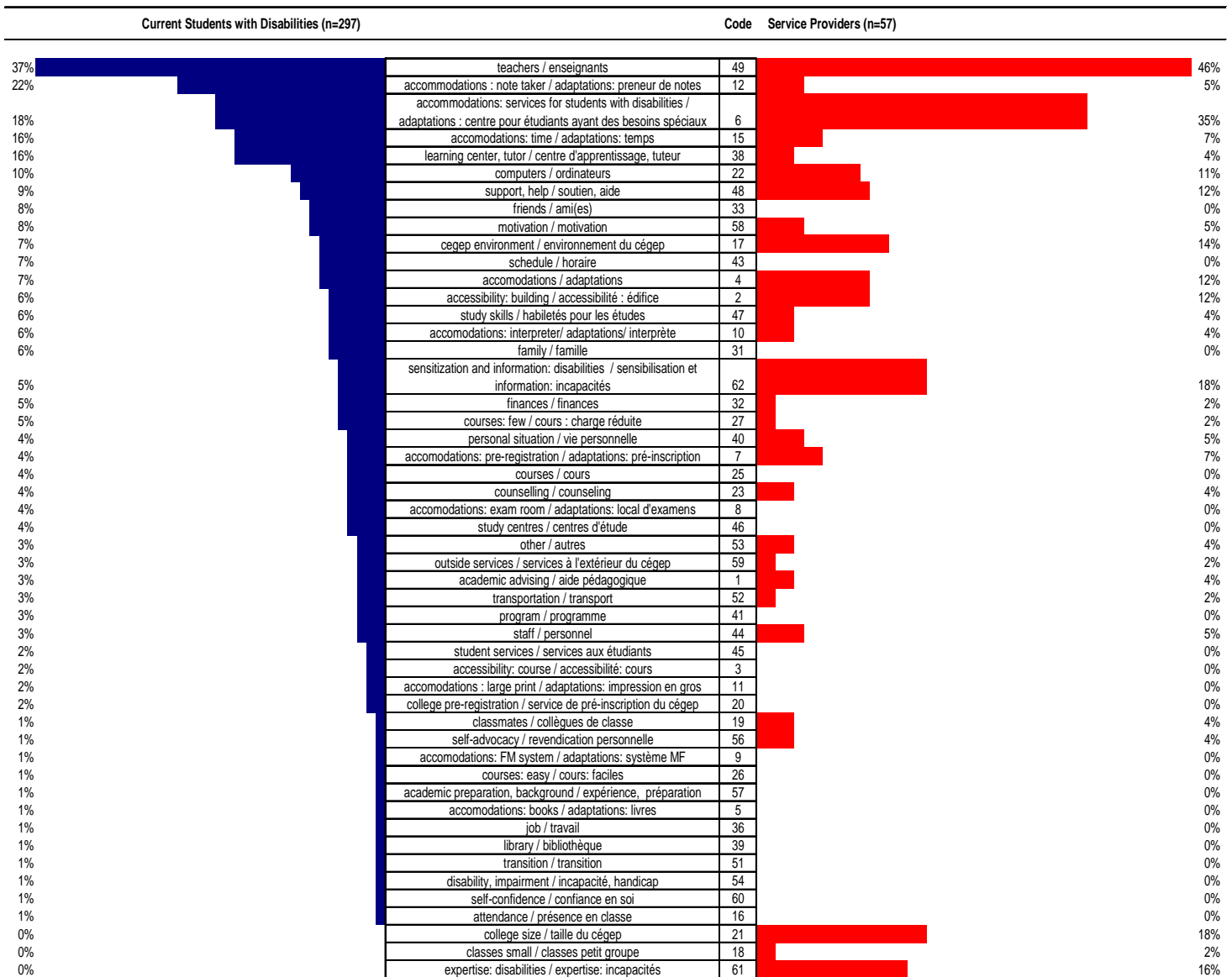
Open-Ended Data About Facilitators, Obstacles, And Things To Change

Current students with disabilities. It should be noted that students with different impairments may require either similar accommodations (e.g., extended time for exams) or disability specific accommodations (e.g., a sign language interpreter). Therefore, the percentage of responses that deal with accommodations in Figure 2 should be interpreted in this light. To provide perspective, we also calculated the number of participants who noted any type of disability related accommodation in response to both the facilitator and obstacle questions.

Facilitators. Results detailed in Figure 2 show that most students with disabilities indicated that disability related accommodations were among the most frequently noted facilitators. Indeed, 171 of the 297 current students who answered the open ended questions (i.e., 58%) noted at least 1 disability related accommodation as a facilitator.

Figure 2

Facilitators: Current Students with Disabilities vs. Service Providers



Note. Percentages refer to percent of participants who said this.

We decided that "important facilitators" were those that were noted by at least 5% of the participants who completed open-ended questions (i.e., at least 15 of the 297 participants). Important facilitators for students include: services for students with disabilities in general and specific disability related accommodations such as having a note taker or interpreter in class, extended time for exams and assignments, an accessible building, as well as Ministère de l'Éducation, du Loisir et du Sport and college policies which permit students with disabilities to take a reduced number of courses and still be considered "full time students." Sensitization and information about disabilities was also seen as a facilitator.

Approximately half of the important facilitators are not specifically disability related but are issues of concern to all students. These include: good teachers (this ranks in first place), the Cegep environment, tutors and learning centers (which assist with studying, writing, and exam taking skills and provide tutoring), the availability of computers and of support and help. Other factors that students indicated made their studies easier are the facilitating role of: friends and family, having a good schedule, students' financial situation, motivation and good study skills. These facilitators are best seen in Table 20 below, where items common to all students are boxed.

Table 20

Important Facilitators For Current Students with Disabilities In Rank Order

teachers: good	37%
accommodations: note taker	22%
accommodations: services for students with disabilities	18%
accommodations: time	16%
learning center, tutor	16%
computers	10%
support, help	9%
friends	8%
motivation	8%
schedule: good	7%
Cegep environment	7%
accommodations: in general	7%
study skills: good	6%
accessibility: building	6%
family	6%
accommodations: interpreter	6%
finances	5%
sensitization and information: disabilities	5%
courses: few	5%

Note. Common items to all students are boxed. Important facilitators are those that were noted by at least 15 of the 297 participants who completed open-ended questions (i.e., at least 5%).

Obstacles. The obstacles noted by current students with disabilities are detailed in Figure 3. Important obstacles are those that were noted by at least 15 of the 297 participants (i.e., at least 5%). This includes only one item that is disability specific: poor health. Indeed, when we collapsed all of the disability related items, results indicate that only 10 of the 297 participants (i.e., 3%) noted at least 1 disability related accommodation as an obstacle.

Figure 3

Obstacles: Current Students with Disabilities vs. Service Providers

Current Students with Disabilities (n=297)	Code	Service Providers (n=57)	
25%	teachers / enseignants	49	9%
22%	courses: difficult / cours: difficiles	26	7%
15%	courses / cours	25	2%
13%	schedule / horaire	43	7%
12%	job / travail	36	0%
11%	personal situation / vie personnelle	40	5%
11%	transportation / transport	52	7%
11%	Cegep environment / environnement du cégep	17	18%
10%	finances / finances	32	14%
8%	computers / ordinateurs	22	5%
8%	courses: many / cours : surcharge	27	0%
7%	schedule: assignments, exams / horaire: travaux examens	30	0%
7%	study skills / habiletés pour les études	47	4%
6%	transition / transition	51	4%
6%	program / programme	41	0%
5%	health / santé	35	0%
5%	time / temps	50	0%
5%	motivation / motivation	58	0%
4%	other / autres	53	9%
4%	stress / stress	55	0%
4%	disability, impairment / incapacité, handicap	54	0%
3%	language / langue	37	0%
3%	accessibility: building / accessibilité : édifice	2	18%
3%	accessibility: course / accessibilité: cours	3	2%
3%	college size / taille du cégep	21	2%
3%	family / famille	31	2%
3%	group-work / travail d'équipe	34	0%
3%	classrooms / locaux des cours	63	0%
2%	classes big / classes grand groupe	18	0%
2%	classmates / collègues de classe	19	0%
2%	support, help / soutien, aide	48	0%
2%	library / bibliothèque	39	0%
2%	sensitization and information: disabilities / sensibilisation et information: incapacités	62	30%
2%	accommodations: services for students with disabilities / adaptations : centre pour étudiants ayant des besoins spéciaux	6	37%
1%	friends / ami(es)	33	0%
1%	learning center, tutor / centre d'apprentissage, tuteur	38	0%
1%	academic preparation, background / expérience, préparation académique antérieure	57	2%
1%	accommodations / adaptations	4	4%
1%	registrariat / registrariat	42	0%
1%	evaluation / évaluation	65	0%
1%	accommodations: interpreter/ adaptations/ interprète	10	2%
0%	academic advising / aide pédagogique	1	0%
0%	accommodations: exam room / adaptations: local d'examens	8	2%
0%	self-advocacy / revendication personnelle	56	12%
0%	expertise: disabilities / expertise: incapacités	61	14%
0%	accommodations : note taker / adaptations: preneur de notes	12	2%
0%	career opportunities / opportunités de carrière	64	4%

Note. Parentages refer to percent of participants who said this.

Other "important obstacles," shown in Table 21, include: bad teachers, hard courses, poor schedules, having to hold a job, students' personal situations in general, the Cegep environment, transportation issues, students' finances, lack of availability of computers, too many courses, poor study skills, bad exam and assignment schedules, transition related issues, demanding and boring programs, poor motivation, and insufficient time.

Table 21

Important Obstacles For Current Students With Disabilities In Rank Order of Popularity

teachers: bad	25%
courses: hard	22%
courses in general	15%
schedule: bad	13%
job	12%
personal situation bad	11%
Cegep environment	11%
transportation	11%
finances	10%
computers	8%
courses: too many	8%
study skills: poor	7%
schedule: assignments, exams (bad)	7%
transition	6%
program	6%
motivation	5%
health: poor	5%
time: insufficient	5%

Note. Common items to all students are boxed. Important obstacles are those that were noted by at least 15 of the 297 participants who completed open-ended questions (i.e., at least 5%).

Disability service providers. Scores of campus based disability service providers are also presented in Figures 2 and 3.

Facilitators. Results detailed in Figure 2 show that most campus based disability service providers also indicated that disability related accommodations were among the most important facilitators. This is particularly evident when we collapsed the data across all disability related accommodations: the findings show that 31 of the 57 campus based disability service providers (i.e., 54%) noted at least 1 disability related accommodation as a facilitator.

Important facilitators are those that were noted by at least 3 of the 57 participants (i.e., at least 5%). These include: services for students with disabilities in general and specific disability related accommodations such as having a note taker or interpreter in class, extended time for exams and assignments, good building accessibility, and the possibility of early pre-registration for students with disabilities. Sensitization / providing information about disabilities was also seen as an important facilitator. In addition, the campus based disability service provider's expertise and students' self-advocacy skills were also seen as important.

Approximately half of the important facilitators are not specifically disability related. These include: good teachers (this ranks in first place) the Cegep's small size and its overall environment, the availability of computers, counsellors, academic advising, support and help, helpful college staff, and the availability of tutors and learning centers (which assist with studying, writing, and exam taking skills and provide tutoring). Other factors that campus based disability service providers indicated made students' college studies easier are the facilitating role of: the student's classmates as well as students' motivation, study skills, and overall personal situation. These relationships are best seen in Table 22 below, where items common to all students are boxed.

Table 22

Important Facilitators For Campus Based Disability Service Providers In Rank Order of Popularity

teachers	46%
accommodations: services for students with disabilities	35%
sensitization and information: disabilities	18%
college size	18%
expertise: disabilities	16%
Cegep environment	14%
support, help	12%
accommodations: general	12%
accessibility: building	12%
computers	11%
accommodations: time	7%
accommodations: pre-registration	7%
accommodations : note taker	5%
motivation	5%
personal situation	5%
staff	5%

Note. Common items to both groups are boxed. Important facilitators are those that were noted by at least 3 of the 57 participants (i.e., at least 5%).

Obstacles. The obstacles noted by campus based disability service providers are detailed in Figure 3. Services for students with disabilities on campus ranked at the top of the list. In fact, the lack of available accommodations and/or poor accommodations were seen as impediments to student success. This is particularly evident when we collapsed the data across all disability related accommodations: the findings show that 24 of the 57 campus based disability service providers (i.e., 42%) noted at least 1 disability related accommodation as an obstacle.

Important obstacles are those that were noted by at least 3 of the 57 participants (i.e., at least 5%). Approximately $\frac{1}{3}$ of these items are disability specific: the absence of appropriate services for students with disabilities, lack of sensitization and information dissemination on campus about disabilities, inaccessible buildings, lack of expertise of the part of the service provider about disabilities, and poor self-advocacy skills of students. Other important obstacles, shown in Table 23, include: bad teachers, hard courses, poor schedules, students' personal situations in general, the Cegep environment, transportation issues, the students' finances, and lack of availability of computers.

Table 23

Important Obstacles For Campus Based Disability Service Providers In Rank Order From Most to Least Important

accommodations: services for students with disabilities	37%
sensitization and information: disabilities	30%
Cegep environment	18%
accessibility: building	18%
finances	14%
expertise: disabilities	14%
self-advocacy	12%
teachers	9%
courses: difficult	7%
schedule	7%
transportation	7%
personal situation	5%
computers	5%

Note. Common items to both groups are boxed. Important facilitators are those that were noted by at least 3 of the 57 participants (i.e., at least 5%).

Comparing the views of students with disabilities and disability service providers. Table 24 provides a listing of facilitators and obstacles noted by at least 5% of students with disabilities and 5% of campus based disability service provider participants.

Facilitators. It can be seen in Table 24 that most important facilitators noted by students with disabilities were also noted by campus based disability service providers. Exceptions are as follows. Students noted that important facilitators for them were: friends, their schedule, their family, finances, and the possibility of taking fewer courses than is typical. Campus based disability service providers, on the other hand, indicated that a small college, the service provider being knowledgeable about disabilities, pre-registration for courses before other students register, helpful staff and classmates, and the availability of good counselling and academic advising for students were important facilitators, as were the student's personal situation and self-advocacy skills.

Obstacles. Table 24 also shows that most obstacles noted by campus based disability service providers were also noted by students with disabilities. A notable exception relates to disability related accommodations, which 42% of disability service providers saw as an obstacle, while Figure 3 shows that only 2% of students with disabilities did so. Other exceptions are as follows. Service providers noted that important obstacles included poor or few accommodations and services for students with disabilities, lack of information and sensitization about disabilities, disability service providers not having adequate knowledge about disabilities and accommodations, the building's accessibility and students' poor self-advocacy skills. Students noted the following important obstacles that were not mentioned by service providers: too many courses and problems with their courses and programs of study in general, insufficient time, bad exam and assignment schedules, transition issues, having to hold a job, and poor motivation, study skills, and health.

Table 24

Commonalities Between Students With Disabilities And Campus Based Disability Service Providers In Rank Order Of Popularity

Facilitators: Students With Disabilities	Facilitators: Disability Service Providers
teachers	teachers
37%	46%
accommodations : note taker	accommodations:
22%	services for students with disabilities
accommodations:	35%
services for students with disabilities	sensitization and information: disabilities
18%	18%
accommodations: time	college size
16%	18%
learning center, tutor	expertise: disabilities
16%	16%
computers	Cegep environment
10%	14%
support, help	support, help
9%	12%
friends	accommodations: in general
8%	12%
motivation	accessibility: building
8%	12%
schedule	computers
7%	11%
Cegep environment	accommodations: time
7%	7%
accommodations: in general	accommodations: pre-registration
7%	7%
study skills	accommodations: note taker
6%	5%
accessibility: building	motivation
6%	5%
family	personal situation
6%	5%
accommodations: interpreter	staff
6%	5%
finances	
5%	
sensitization and information: disabilities	
5%	
courses: few	
5%	

Obstacles: Students With Disabilities

teachers	25%
courses: difficult	22%
courses	15%
schedule	13%
job	12%
personal situation	11%
Cegep environment	11%
transportation	11%
finances	10%
computers	8%
courses: too many	8%
study skills	7%
schedule: assignments, exams	7%
transition	6%
program	6%
motivation	5%
health	5%
time	5%

Obstacles: Disability Service Providers

accommodations: services for students with disabilities	37%
sensitization and information: disabilities	30%
Cegep environment	18%
accessibility: building	18%
finances	14%
expertise: disabilities	14%
self-advocacy	12%
teachers	9%
courses: difficult	7%
schedule	7%
transportation	7%
personal situation	5%
computers	5%

Note. Items noted by both groups are boxed. Important facilitators and obstacles are those that were noted by at least 5% of participants.

Students' Personal Situation, Cegep Environment, and Government and Community Supports and Services based Facilitators and Obstacles. We also examined the relative frequencies of current students' and campus based disability service providers' responses that fell into each of these categories and evaluated the hypothesis that campus based disability service providers would provide more "personal" (i.e., Student's Personal Situation) comments about both facilitators and obstacles while students would make relatively more "environmental" comments (i.e., Cegep Environment, Government and Community Supports and Services). The codes in the three grouping can be seen in Table 25.

Table 25

<i>Grouping Obstacles and Facilitators</i>		
Group	One-Word Reminder	Code #
Students'	Personal Situation	
	Attendance / présence en classe	16
	Family / famille	31
	Finances / finances	32
	Friends / ami(es)	33
	Health / santé	35
	Job / travail	36
	Language / langue	37
	Personal situation / vie personnelle	40
	Study skills / habiletés pour les études	47
	Time / temps	50
	Transition / transition	51
	Disability, impairment / incapacité, handicap	54
	Stress / stress	55
	Self-advocacy / revendication personnelle	56
	Academic preparation, background / expérience, préparation académique antérieure	57
	Motivation / motivation	58
	Self-confidence / confiance en soi	60
Cegep Environemnt		
	Academic advising / aide pédagogique	1
	Accessibility: building / accessibilité : édifice	2
	Accessibility: course / accessibilité: cours	3
	Accommodations / adaptations	4
	Accommodations: books / adaptations: livres	5
	Accommodations: services for students with disabilities / adaptations: centre pour étudiants ayant	6
	Accommodations: pre-registration / adaptations: pré-inscription	7
	Accommodations: exam room / adaptations: local d'examens	8
	Accommodations: fm system / adaptations: système mf	9
	Accommodations: interpreter/ adaptations/ interprète	10
	Accommodations: large print / adaptations: impression en gros caractères	11
	Accommodations: note taker / adaptations: preneur de notes	12
	Accommodations: taped exams / adaptations: examens enregistrés sur cassette audio	13
	Accommodations: taping / adaptations: enregistrement	14
	Accommodations: time / adaptations: temps	15
	Cegep environment / environnement du cégep	17
	Classes small / classes petit groupe	18
	Classmates / collègues de classe	19
	College pre-registration / service de pré-inscription du cégep	20
	College size / taille du cégep	21
	Computers / ordinateurs	22
	Counselling / counseling	23
	Course outlines / plan de cours	24
	Courses / cours	25
	Courses: easy / cours: faciles	26
	Courses: few / cours: charge réduite	27
	Electronic portals / portails électroniques	29
	Schedule: assignments, exams / horaire: travaux, examens	30
	Group work / travail d'équipe	34
	Learning centre, tutor / centre d'apprentissage, tuteur	38
	Library / bibliothèque	39
	Program / programme	41
	Registrar / registrariat	42
	Schedule / horaire	43
	Staff / personnel	44
	Student services / services aux étudiants	45
	Study centres / centres d'étude	46
	Support, help / soutien, aide	48
	Teachers / enseignants	49
	Expertise: disabilities / expertise: incapacités	61
	Sensitization and information: disabilities / sensibilisation et information: incapacités	62
	Classrooms / locaux des cours	63
Government and community supports and services		
	Day-care / service de garde	28
	Transportation / transport	52
	Outside services / services à l'extérieur du cégep	59
	Career opportunities / opportunités de carrière	64
	Evaluation / évaluation	65

To test this hypothesis we used chi-square to examine the relative frequencies of Student's Personal Situation and Cegep Environment codes by students with disabilities and by campus based disability service providers, separately for Facilitators and Obstacles. We did the same for Student's Personal Situation and Government and Community Supports and Services frequencies. None of the chi-square tests was significant. It can be seen in Tables 26 and 27 that, not surprisingly, both students and service providers noted substantially more (approximately $\frac{3}{4}$) Cegep Environment than Student's Personal Situation Facilitators and Obstacles. Both groups also noted more (approximately $\frac{3}{4}$) Student's Personal Situation than Government and Community Supports and Services facilitators and obstacles.

Table 26

Internal And External Attributions For Facilitators And Obstacles: Frequencies of Student's Personal Situation And Cegep Environment Codes

	Facilitators		Obstacles	
	Student's Personal Situation	Cegep Environment	Student's Personal Situation	Cegep Environment
Disability Service Providers	11 (8%)	129 (92%)	22 (21%)	84 (79%)
Students With Disabilities	130 (17%)	643 (83%)	233 (35%)	431 (65%)

Table 27

Internal And External Attributions For Facilitators And Obstacles: Frequencies of Student's Personal Situation And Government and Government and Community Supports and Services

	Facilitators		Obstacles	
	Student's Personal Situation	Government and Government and Community Supports and Services	Student's Personal Situation	Government and Government and Community Supports and Services
Disability Service Providers	11 (85%)	2 (15%)	22 (79%)	6 (21%)
Students With Disabilities	130 (80%)	33 (20%)	233 (81%)	55 (19%)

We also compared the relative frequencies of Facilitators and Obstacles in each of the Student's Personal Situation, Cegep Environment, and Government and Community Supports and Services categories of students with disabilities and service providers. None of the chi-square tests was significant. The frequencies in Table 28 show that both students and service providers indicated substantially more (approximately $\frac{2}{3}$) Cegep Environment based Facilitators than Obstacles and that they indicated more (approximately $\frac{2}{3}$) Student's Personal Situation and Government and Community Supports and Services Obstacles than Facilitators.

Table 28

Facilitators And Obstacles: Frequencies In The Student's Personal Situation, Cegep Environment, And Government And Community Supports And Services Categories

	Student's Personal Situation	
	Facilitators	Obstacles
Disability Service Providers	11 (33%)	22 (67%)
Students With Disabilities	130 (36%)	233 (64%)

	Cegep Environment	
	Facilitators	Obstacles
Disability Service Providers	129 (61%)	84 (39%)
Students With Disabilities	643 (60%)	431 (40%)

	Government And Community Supports And Services	
	Facilitators	Obstacles
Disability Service Providers	2 (25%)	6 (75%)
Students With Disabilities	33 (38%)	55 (63%)

Commonalities between obstacles and facilitators. Some topics figured prominently as both an obstacle as well as a facilitator. These can best be seen in Figure 4.

Current students with disabilities. For example, it can be seen in Figure 4 and in Table 29 that teachers, the availability of computers, the Cegep environment, students' schedules, and the course load could be either facilitators or obstacles, depending on the circumstances. The same is true of students' motivation, study skills, and finances.

Figure 4

Commonalities Between Facilitators and Obstacles: Current Students with Disabilities

	Facilitators	Item	Code	Obstacles	
37%		teachers / enseignants	49		25%
22%		accommodations : note taker / adaptations: preneur de notes	12		0%
		accommodations: services for students with disabilities / adaptations : centre pour étudiants ayant des besoins spéciaux	6		2%
18%		accommodations: time / adaptations: temps	15		0%
16%		learning center, tutor / centre d'apprentissage, tuteur	38		1%
10%		computers / ordinateurs	22		8%
9%		support, help / soutien, aide	48		2%
8%		friends / ami(es)	33		1%
8%		motivation / motivation	58		5%
7%		schedule / horaire	43		13%
7%		cegep environment / environnement du cégep	17		11%
7%		accommodations / adaptations	4		1%
6%		study skills / habiletés pour les études	47		7%
6%		accessibility: building / accessibilité : édifice	2		3%
6%		family / famille	31		3%
6%		accommodations: interpreter/ adaptations/ interprète	10		1%
5%		finances / finances	32		10%
		sensitization and information: disabilities / sensibilisation et information: incapacités	62		2%
5%		courses: few / cours : charge réduite	27		8%
4%		personal situation / vie personnelle	40		11%
4%		courses / cours	25		15%
4%		accommodations: pre-registration / adaptations: pré-inscription	7		0%
4%		accommodations: exam room / adaptations: local d'examens	8		0%
4%		counselling / counseling	23		0%
4%		study centres / centres d'étude	46		0%
3%		other / autres	53		4%
3%		outside services / services à l'extérieur du cégep	59		0%
3%		transportation / transport	52		11%
3%		program / programme	41		6%
3%		academic advising / aide pédagogique	1		0%
3%		staff / personnel	44		0%
2%		student services / services aux étudiants	45		0%
2%		accessibility: course / accessibilité: cours	3		3%
		accommodations : large print / adaptations: impression en gros caractères	11		0%
2%		college pre-registration / service de pré-inscription du cégep	20		0%
1%		courses: easy / cours: faciles	26		22%
1%		classmates / collègues de classe	19		2%
		academic preparation, background / expérience, préparation académique antérieure	57		1%
1%		self-advocacy / revendication personnelle	56		0%
1%		accommodations: FM system / adaptations: système MF	9		0%
1%		job / travail	36		12%
1%		transition / transition	51		6%
1%		disability, impairment / incapacité, handicap	54		4%
1%		library / bibliothèque	39		2%
1%		self-confidence / confiance en soi	60		0%
1%		accommodations: books / adaptations: livres	5		0%
1%		attendance / présence en classe	16		0%
0%		schedule: assignments, exams / horaire: travaux examens	30		7%
0%		health / santé	35		5%
0%		time / temps	50		5%
0%		college size / taille du cégep	21		3%
0%		group-work / travail d'équipe	34		3%
0%		classrooms / locaux des cours	63		3%
0%		classes small / classes petit groupe	18		2%
0%		registrariat / registrariat	42		1%
0%		stress / stress	55		4%
0%		language / langue	37		3%
0%		evaluation / évaluation	65		1%

Note. Percentages refer to percent of participants who said this.

Table 29

Commonalities Between Important Obstacles and Facilitators: Current Students With Disabilities

Facilitators: Students With Disabilities		Obstacles: Students With Disabilities	
teachers	37%	teachers	25%
accommodations : note taker	22%	courses: hard	22%
accommodations: services for students with disabilities	18%	courses: general	15%
accommodations: time	16%	schedule	13%
learning center, tutor	16%	job	12%
computers	10%	personal situation	11%
support, help	9%	Cegep environment	11%
friends	8%	transportation	11%
motivation	8%	finances	10%
schedule	7%	computers	8%
Cegep environment	7%	courses: few-many	8%
accommodations: general	7%	study skills	7%
study skills	6%	schedule: assignments, exams	7%
accessibility: building	6%	transition	6%
family	6%	program	6%
accommodations: interpreter	6%	motivation	5%
finances	5%	health	5%
sensitization and information: disabilities	5%	time inadequate	5%
courses: few-many	5%		

Note. Boxed items are common to facilitators and obstacles. Important facilitators and obstacles are those that were noted by at least 5% of participants.

Campus based disability service providers. The same was true for service providers. For example, it can be seen in Figure 5 and Table 30 that availability and quality of disability related services, the accessibility of the building, the overall Cegep environment, how knowledgeable the campus based disability service provider is about disability and accommodations, and sensitization and information about disabilities were common to facilitators and obstacles. The same was true of teachers, the availability of computers, and students' personal situations.

Figure 5

Commonalities Between Facilitators and Obstacles: Campus Based Disability Service Providers

	Facilitators	Item	Code	Obstacles	
46%		teachers / enseignants	49		9%
35%		accommodations: services for students with disabilities / adaptations : centre pour étudiants ayant des besoins spéciaux	6		37%
18%		sensitization and information: disabilities / sensibilisation et information: incapacités	62		30%
18%		college size / taille du cégep	21		2%
16%		expertise: disabilities / expertise: incapacités	61		14%
14%		cegep environment / environnement du cégep	17		18%
12%		accessibility: building / accessibilité : édifice	2		18%
12%		accommodations / adaptations	4		4%
12%		support, help / soutien, aide	48		0%
11%		computers / ordinateurs	22		5%
7%		accommodations: pre-registration / adaptations: pré-inscription	7		0%
7%		accommodations: time / adaptations: temps	15		0%
5%		personal situation / vie personnelle	40		5%
5%		accommodations : note taker / adaptations: preneur de notes	12		2%
5%		staff / personnel	44		0%
5%		motivation / motivation	58		0%
4%		self-advocacy / revendication personnelle	56		12%
4%		other / autres	53		9%
4%		study skills / habiletés pour les études	47		4%
4%		accommodations: interpreter/ adaptations/ interprète	10		2%
4%		academic advising / aide pédagogique	1		0%
4%		classmates / collègues de classe	19		0%
4%		counselling / counseling	23		0%
4%		learning center, tutor / centre d'apprentissage, tuteur	38		0%
2%		finances / finances	32		14%
2%		transportation / transport	52		7%
2%		classes small / classes petit groupe	18		0%
2%		courses: few / cours : charge réduite	27		0%
2%		outside services / services à l'extérieur du cégep	59		0%
0%		courses: easy / cours: faciles	26		7%
0%		schedule / horaire	43		7%
0%		transition / transition	51		4%
0%		career opportunities / opportunités de carrière	64		4%
0%		accessibility: course / accessibilité: cours	3		2%
0%		accommodations: exam room / adaptations: local d'examens	8		2%
0%		courses / cours	25		2%
0%		family / famille	31		2%
0%		academic preparation, background / expérience, préparation académique antérieure	57		2%

Note. Percentages refer to percent of participants who said this.

Table 30

Commonalities Between Important Obstacles And Facilitators: Campus Based Disability Service Providers

Facilitators: Disability Service Providers	Obstacles: Disability Service Providers
teachers 46%	accommodations: services for students with disabilities 37%
accommodations: services for students with disabilities 35%	sensitization and information: disabilities 30%
sensitization and information: disabilities 18%	Cegep environment 18%
college size 18%	accessibility: building 18%
expertise: disabilities 16%	expertise: disabilities 14%
Cegep environment 14%	finances 14%
accessibility: building 12%	self-advocacy 12%
accommodations: general 12%	teachers 9%
support, help 12%	transportation 7%
computers 11%	courses: easy-hard 7%
accommodation: pre-registration 7%	schedule 7%
accommodation: time 7%	computers 5%
personal situation 5%	personal situation 5%
accommodation: note taker 5%	
staff 5%	
motivation 5%	

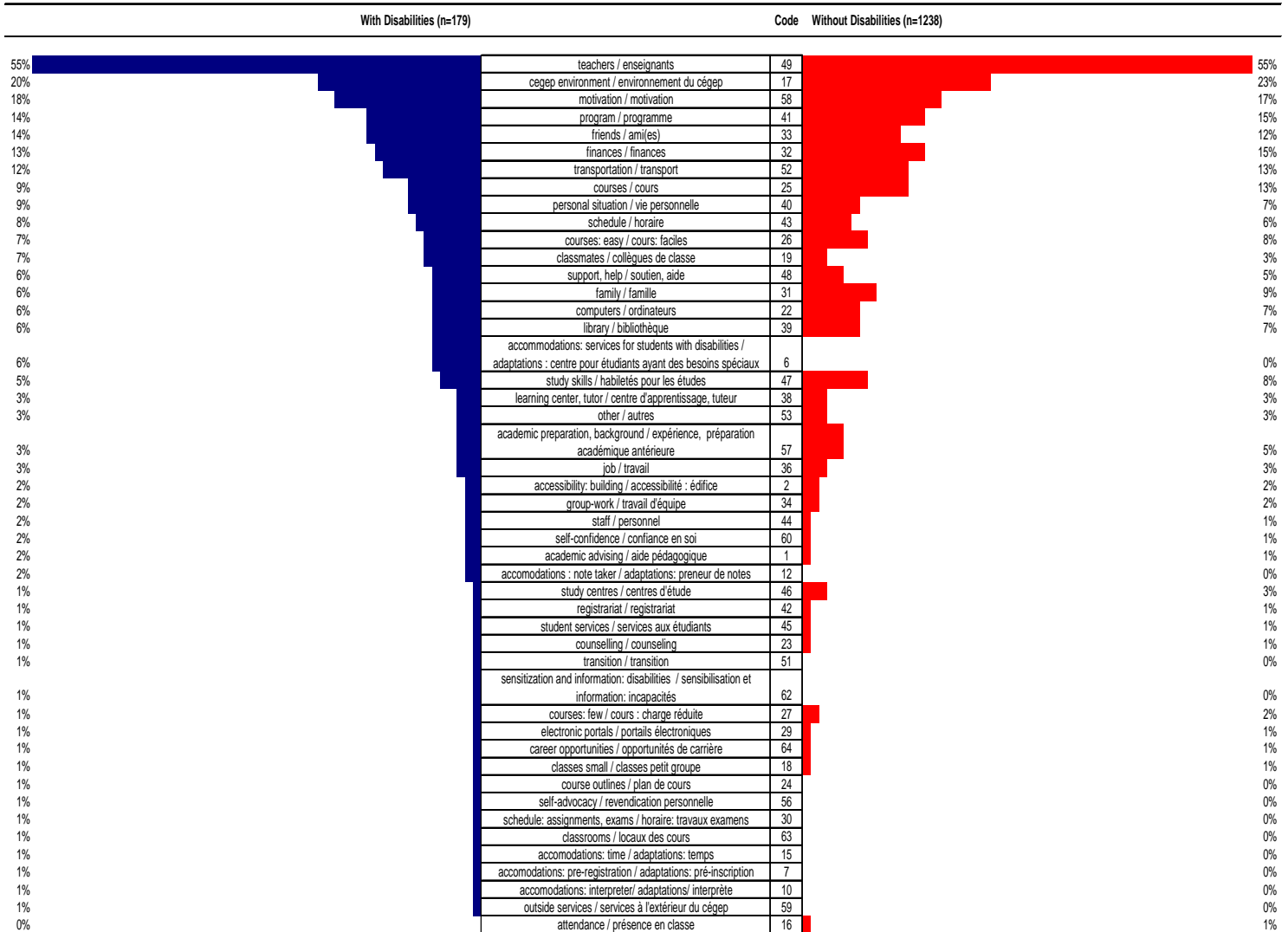
Note. Boxed items are common to facilitators and obstacles. Important facilitators and obstacles are those that were noted by at least 5% of participants.

Graduates with and without disabilities. It should be noted that graduates with different impairments may have required either similar accommodations (e.g., extended time for exams) or disability specific accommodations (e.g., a sign language interpreter). Therefore, the percentage of responses that deal with accommodations should be interpreted in this light.

Facilitators. It can be seen in Figure 6 that graduates with and without disabilities noted virtually all of the same important facilitators (i.e., noted by at least 5% of participants). There are only three exceptions: graduates with disabilities indicated that their classmates and the services for students with disabilities were important facilitators while nondisabled graduates noted that their academic preparation was an important facilitator.

Figure 6

Facilitators: Graduates



Note. Percentages refer to percent of participants who said this.

Obstacles. Similarly, it can be seen in Figure 7 that most important obstacles are also shared (i.e., noted by at least 5% of participants). Exceptions are that graduates with disabilities noted that their family posed an important obstacle along with poor motivation and the impact of their disability/impairment. Slightly more nondisabled graduates, on the other hand, noted that inadequate availability of computers and their academic schedules posed problems.

Figure 7

Obstacles: Graduates

With Disabilities (n=179)		Code	Without Disabilities (n=1238)	
23%	courses: difficult / cours : difficiles	26	21%	
20%	courses / cours	25	15%	
15%	teachers / enseignants	49	24%	
14%	cegep environment / environnement du cégep	17	14%	
13%	schedule / horaire	43	14%	
13%	personal situation / vie personnelle	40	11%	
12%	job / travail	36	15%	
10%	finances / finances	32	15%	
10%	courses: many / cours : surcharge	27	8%	
8%	program / programme	41	7%	
8%	transportation / transport	52	14%	
6%	study skills / habiletés pour les études	47	6%	
6%	transition / transition	51	5%	
6%	motivation / motivation	58	3%	
6%	family / famille	31	2%	
5%	disability, impairment / incapacité, handicap	54	1%	
4%	computers / ordinateurs	22	6%	
4%	health / santé	35	2%	
4%	other / autres	53	4%	
4%	time / temps	50	4%	
3%	group-work / travail d'équipe	34	3%	
3%	stress / stress	55	2%	
3%	schedule: assignments, exams / horaire: travaux examens	30	5%	
3%	language / langue	37	4%	
3%	sensitization and information: disabilities / sensibilisation et information: incapacités	62	2%	
3%	accessibility: course / accessibilité: cours	3	1%	
2%	accessibility: building / accessibilité : édifice	2	2%	
2%	library / bibliothèque	39	1%	
2%	support, help / soutien, aide	48	1%	
2%	registrariat / registrariat	42	1%	
1%	classmates / collègues de classe	19	2%	
1%	academic advising / aide pédagogique	1	2%	
1%	classes big / classes grand groupe	18	1%	
1%	staff / personnel	44	1%	
1%	study centres / centres d'étude	46	1%	
1%	accommodations: interpreter/ adaptations/ interprète	10	0%	
1%	friends / ami(es)	33	1%	
1%	classrooms / locaux des cours	63	1%	
1%	self-advocacy / revendication personnelle	56	0%	
1%	career opportunities / opportunités de carrière	64	0%	
1%	course outlines / plan de cours	24	0%	
1%	accommodations: books / adaptations: livres	5	0%	
1%	accommodations : large print / adaptations: impression en gros caractères	11	0%	
0%	academic preparation, background / expérience, préparation académique antérieure	57	1%	
0%	evaluation / évaluation	65	1%	
0%	college size / taille du cégep	21	1%	
0%	attendance / présence en classe	16	1%	

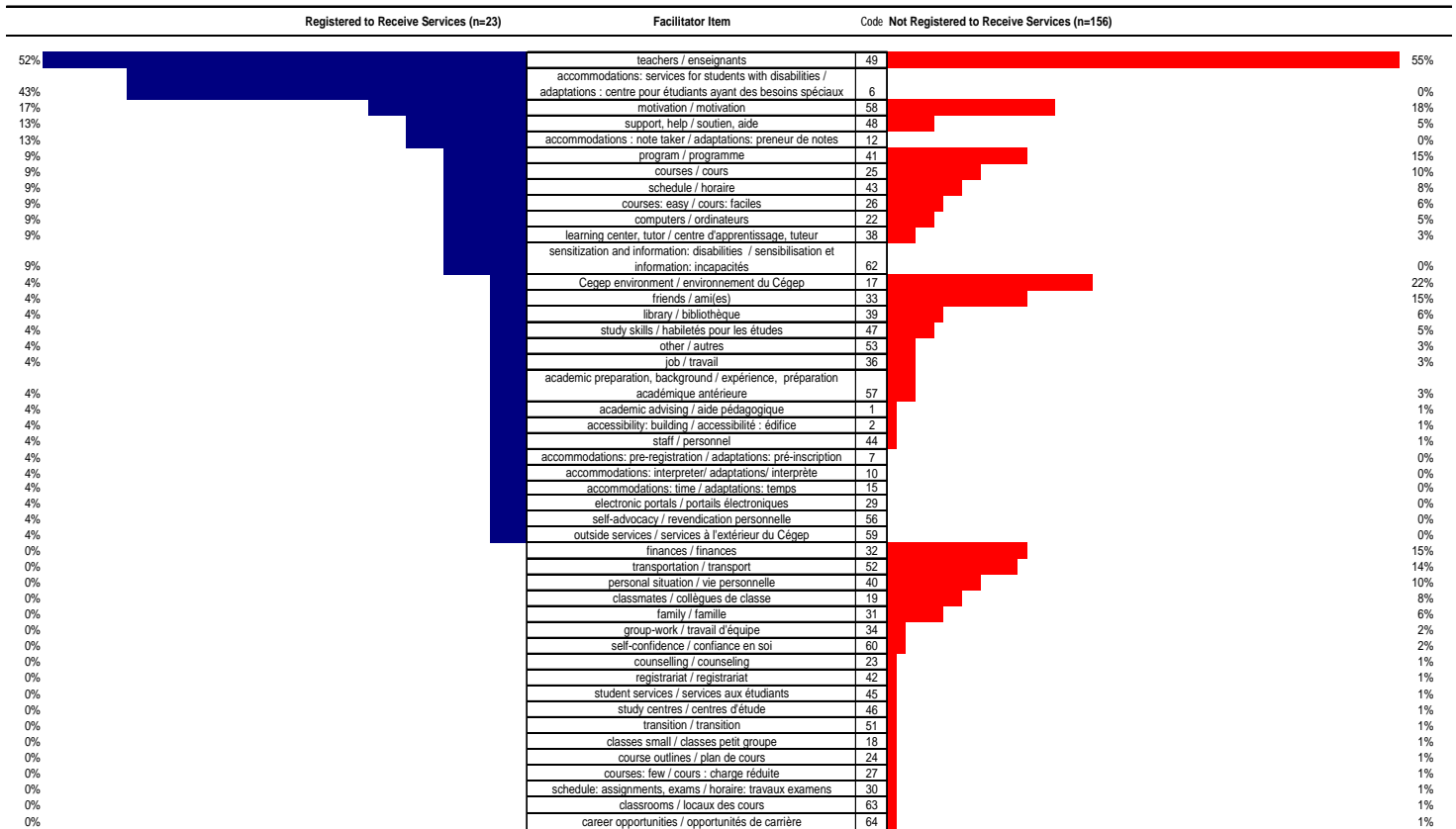
Note. Percentages refer to percent of participants who said this.

Graduates with disabilities who are, and who are not registered to receive disability related services. It can be seen in Figures 8 and 9 that there were many dissimilarities between these two groups.

Facilitators. Figure 8 shows that 43% of the 23 graduates registered to receive disability related services noted that this service was a facilitator, making this the second most popular option of this group. It is not surprising that students not registered for disability related services did not mention this.

Figure 8

Facilitators: Graduates with Disabilities



Note. Percentages refer to percent of participants who said this.

It can be seen in Table 31 that while there were many similarities between the two groups, there were also important differences. In particular, registered graduates noted that disability related accommodations were important for them while those not registered noted other types of facilitators, such as the Cegep environment, their classmates, friends, family, finances, study skills, and personal situation in general as well as good transportation and library facilities.

Table 31

Commonalities Between Important Facilitators: Graduates Registered And Not Registered For Disability Related Services

Graduates Registered For Disability Related Services	Graduates Not Registered For Disability Related Services
teachers 52%	teachers 55%
accommodations: services for students with disabilities 43%	Cegep environment 22%
motivation 17%	motivation 18%
support, help 13%	friends 15%
accommodations : note taker 13%	program 15%
program 9%	finances 15%
courses: general 9%	transportation 14%
schedule 9%	personal situation 10%
courses: easy 9%	courses 10%
computers 9%	schedule 8%
learning center, tutor 9%	classmates 8%
sensitization and information: disabilities 9%	courses: easy 6%
	family 6%
	library 6%
	support, help 5%
	computers 5%
	study skills 5%

Note. Boxed items are common to both groups. Important facilitators and obstacles are those that were noted by at least 5% of participants.

Obstacles. Figure 9 presents the obstacles noted by graduates with disabilities who were, and who were not registered to receive disability related services. Here it can be seen that registered graduates were much more likely to indicate that their disability and health were obstacles and that non-registered graduates were more likely to see transportation as problematic. It is noteworthy that none of the registered graduates indicated that a disability related accommodation posed an obstacle.

Figure 9

Obstacles: Graduates with Disabilities

Registered to Receive Services (n=23)	Obstacle Item	Code	Not Registered to Receive Services (n=156)
22%	personal situation / vie personnelle	40	12%
22%	disability, impairment / incapacité, handicap	54	3%
17%	courses / cours	25	20%
17%	teachers / enseignants	49	15%
13%	job / travail	36	12%
9%	courses: difficult / cours: difficiles	26	26%
9%	cegep environment / environnement du cégep	17	15%
9%	schedule / horaire	43	13%
9%	finances / finances	32	10%
9%	study skills / habiletés pour les études	47	6%
9%	computers / ordinateurs	22	4%
9%	health / santé	35	4%
4%	courses: many / cours : surcharge	27	11%
4%	program / programme	41	9%
4%	transition / transition	51	6%
4%	family / famille	31	6%
4%	motivation / motivation	58	6%
4%	language / langue	37	3%
4%	sensitization and information: disabilities / sensibilisation et information: incapacités	62	3%
4%	registrariat / registrariat	42	1%
4%	support, help / soutien, aide	48	1%
4%	staff / personnel	44	1%
4%	self-advocacy / revendication personnelle	56	0%
4%	classrooms / locaux des cours	63	0%
0%	transportation / transport	52	9%
0%	time / temps	50	4%
0%	other / autres	53	4%
0%	group-work / travail d'équipe	34	4%
0%	stress / stress	55	4%
0%	accessibility: course / accessibilité: cours	3	3%
0%	schedule: assignments, exams / horaire: travaux examens	30	3%
0%	accessibility: building / accessibilité : édifice	2	3%
0%	library / bibliothèque	39	2%
0%	academic advising / aide pédagogique	1	1%
0%	accommodations: interpreter/ adaptations/ interprète	10	1%
0%	classes big / classes grand groupe	18	1%
0%	classmates / collègues de classe	19	1%
0%	study centres / centres d'étude	46	1%
0%	accommodations: books / adaptations: livres	5	1%
0%	accommodations : large print / adaptations: impression en gros caractères	11	1%
0%	course outlines / plan de cours	24	1%
0%	friends / ami(es)	33	1%
0%	career opportunities / opportunités de carrière	64	1%

Note. Percentages refer to percent of participants who said this.

It can be seen in Table 32 that registered graduates with disabilities were likely to see their disability/impairment, their health, and poor access to computers as important obstacles while graduates with disabilities who did not register did not note these as obstacles. They did, however, note that their course load and program of studies posed obstacles along with transition issues, transportation problems, their family situations and a low level of motivation.

Table 32

Commonalities Between Important Obstacles: Graduates Registered And Not Registered For Disability Related Services

Graduates Registered For Disability Related Services

personal situation	22%
disability, impairment	22%
courses: general	17%
teachers	17%
job	13%
courses: difficult	9%
Cegep environment	9%
schedule	9%
finances	9%
study skills	9%
computers	9%
health	9%

Graduates Not Registered For Disability Related Services

courses: difficult	26%
courses: general	20%
teachers	15%
Cegep environment	15%
schedule	13%
job	12%
personal situation	12%
courses: many	11%
finances	10%
program	9%
transportation	9%
transition	6%
study skills	6%
family	6%
motivation	6%

Note. Boxed items are common to both groups. Important facilitators and obstacles are those that were noted by at least 5% of participants.

Recommendations for changes. The questions asked on French and English versions of the questionnaire were slightly different. Before combining the results we examined the responses of participants who were asked different questions.

Current students with disabilities and campus based disability service providers. Responses of students with disabilities who were asked the two different questions are presented in Figure 10. Visual examination revealed that changes suggested by current students responding to the two slightly different questions were similar enough to combine. Therefore, the comparison of the recommendations made by all current students with disabilities and by campus based disability service providers is presented in Figure 11.

Figure 10

Changes: Current Students with Disabilities

Question: At your Cegep, what could be changed to make Cegep studies easier for you? (n=185)	Change Item	Code	Question: At your Cegep, what could be changed to make Cegep studies easier for students with disabilities? (n=112)
12%	no changes needed/all is good	39	15%
11%	improve support/help: general	11	5%
9%	more sensitization/information: disabilities	19	13%
9%	better teachers	31	9%
9%	more accommodations: technological	22	7%
9%	courses: easier	29	6%
6%	improve services for students with disabilities	18	13%
6%	improve accessibility: building	9	3%
5%	more accommodations: human	21	4%
5%	improve college environment: physical	7	4%
5%	other change	40	4%
5%	improve college system	4	4%
5%	improve courses: general	28	2%
4%	better schedule	26	4%
3%	more government support	1	2%
2%	more accessibility: course	27	5%
2%	improve college environment: social	8	1%
2%	more funding: student	34	0%
2%	more accommodations: room/facilities	23	9%
2%	more technology	17	4%
2%	improve program	25	1%
1%	more accommodations: time	24	4%
1%	improve library	15	1%
1%	improve transportation	3	0%
1%	more collaboration/communication	10	0%
1%	more career opportunities/guidance	33	0%
1%	improve study skills	35	0%
1%	smaller class size	32	4%
1%	more funding: college	5	2%
1%	more outside services	2	1%
1%	more tutoring	16	1%
1%	improve academic advising	12	0%
1%	more expertise: disabilities	20	0%
0%	courses: fewer	30	3%
0%	more counselling services	13	2%
0%	improve study centers	14	1%
0%	more self-advocacy	36	1%

Note. Percentages refer to the percent of participants who said this.

Figure 11

Recommendations Made By All Current Students With Disabilities And By Campus Based Disability Service Providers

Current Students with Disabilities (n=297)	Change Item	Code	Service Providers (n=57)
13%	no changes needed/all is good	39	0%
10%	more sensitization/information: disabilities	19	23%
9%	improve support/help: general	11	7%
9%	better teachers	31	0%
9%	improve services for students with disabilities	18	39%
8%	more accommodations: technological	22	5%
8%	courses: easier	29	0%
5%	more accommodations: human	21	0%
5%	improve accessibility: building	9	12%
5%	improve college system	4	9%
5%	other change	40	4%
5%	improve college environment: physical	7	0%
4%	more accommodations: room/facilities	23	16%
4%	better schedule	26	0%
4%	improve courses: general	28	0%
3%	more accessibility: course	27	0%
2%	more government support	1	4%
2%	more technology	17	2%
2%	more accommodations: time	24	0%
2%	improve college environment: social	8	0%
2%	smaller class size	32	0%
1%	improve program	25	2%
1%	more funding: student	34	2%
1%	more funding: college	5	11%
1%	improve library	15	0%
1%	courses: fewer	30	0%
1%	more collaboration/communication	10	16%
1%	more tutoring	16	5%
1%	more outside services	2	2%
1%	improve transportation	3	0%
1%	more counselling services	13	0%
1%	more career opportunities/guidance	33	0%
1%	improve study skills	35	0%
0%	larger college size	6	2%

Note. Percentages refer to the percent of participants who said this.

It can be seen in Figure 11 that, 13% of students with disabilities felt that things were reasonably good and that no changes were needed whereas this response not given by any of the service providers. Of high priority to both students with disabilities and disability service providers was the need for sensitizing and informing others about disabilities. Other changes that were suggested frequently by both groups were improving general support and help, improving services for students with disabilities, including providing better access to computer technologies, improving building accessibility and the college system as a whole. Disability service providers were far more likely to suggest changes involving their services and accessibility of classrooms and facilities than were students with disabilities. Promoting collaboration and communication between staff, teachers and students, increased funding for their services, and better availability of tutoring were also frequent suggestions among disability service providers. Students, but not campus based disability service providers, also wanted easier courses, better teachers, more human assistance, and improvement of the Cegep's facilities in general.

Graduates. Because we wanted to compare the responses of graduates with and without disabilities from the same institutions we used data from only those graduates who answered the identical question: "At your Cegep, what could be changed to make Cegep studies easier for you?" Figure 12 presents the results.

Figure 12

Recommendations Made By Graduates With And Without Disabilities

Graduates With Disabilities (n=119)		Change Item	Code	Graduates Without Disabilities (n=863)	
13%		better schedule	26		11%
13%		improve college system	4		12%
12%		improve courses: general	28		12%
12%		better teachers	31		11%
11%		improve college environment: physical	7		11%
11%		courses: easier	29		5%
8%		more technology	17		12%
8%		improve support/help: general	11		6%
8%		improve program	25		5%
6%		improve accessibility: building	9		2%
5%		no changes needed/all is good	39		7%
5%		more government support	1		3%
3%		other change	40		3%
3%		improve library	15		4%
3%		more counselling services	13		0%
2%		improve college environment: social	8		2%
2%		more collaboration/communication	10		2%
2%		more funding: student	34		2%
2%		improve academic advising	12		1%
2%		facilitate balancing job and school	37		0%
2%		improve services for students with disabilities	18		0%
2%		more sensitization/information: disabilities	19		0%
1%		courses: fewer	30		1%
1%		more tutoring	16		1%
1%		improve study centers	14		0%
1%		improve transportation	3		0%
1%		more accommodations: human	21		0%
0%		more career opportunities/guidance	33		2%
0%		smaller class size	32		1%

Note. Percentages refer to the percent of participants who said this.

Changes suggested by graduates with and without disabilities were very similar and were generally aimed at the Cegep in general. Of greatest importance to both groups were better schedules, improving the college system, improving programs and courses in general, having better teachers, more available computer technologies, support and help as well as improvements to the physical environment of the college. A slightly larger proportion of graduates with disabilities suggested the need for easier courses, better building accessibility and more government support.

Cegep Experience Questionnaire: Refining the CEQ - Psychometric Analyses

Two kinds of reliability were evaluated on data from current students with disabilities: temporal stability and internal consistency. Temporal stability was evaluated by correlating test-retest scores (item-by-item, 3 Subscales, Index of Difficulty). Internal consistency of each of the 3 Subscales was evaluated using Cronbach's alpha for current students with disabilities and for graduates with and without disabilities.

Students made ratings on the 32 items of the Cegep Experience Questionnaire using a 6-point Likert-type scale (1 = much harder, 6 = much easier). We grouped the 32 items based on face validity into three PPH model based conceptual subscales and an overall Index of Difficulty (IDF):

- Students' Personal Situation (9 items including 1 that is applicable to students/graduates with disabilities only)
- Cegep Environment (13 items including 1 that is applicable to students/graduates with disabilities only)
- Government and Community Supports and Services (9 items including 4 that are applicable to students/graduates with disabilities only)
- Index of Difficulty (IDF) (25 items are common to students with and without disabilities, 6 are applicable only to students/graduates with disabilities).

To be consistent with the goals of providing an instrument that can be used on an item-by-item basis as well as having subscales, we used the single items, the 3 Subscales, and the total Index of Difficulty (IDF) in the analyses.

Two versions of the Index of Difficulty (IDF) and of the Subscale scores were calculated: one set includes only those items which are applicable to both students and graduates with and without disabilities. These are best used when comparing scores of students or graduates with and without disabilities. A second set was calculated that includes items that are disability specific as well. This set of scores is best used in analyses dealing only with students or graduates with disabilities.

Although most of the validation of this instrument was carried out in a previous investigation (Fichten, Jorgensen, Havel, & Barile, 2005) we also carried an additional test of validity by correlating Subscale and Index of Difficulty scores.

Temporal stability: test-retest reliability. To determine temporal stability of items we performed Pearson product-moment correlations on the test-retest questionnaire scores of current students with disabilities.

Item-by-item evaluation. Data from current students were used to examine the test-retest results for each of the 32 items. Results presented in Table 33 show that all correlation coefficients are of moderate to large size and highly significant. Moreover, of the 32 paired t-tests which compared Time 1 and Time 2 (i.e., test-retest) scores, only one was significant before a Bonferroni adjustment to the alpha level was made. After the Bonferroni adjustment, none remained significant.

Table 33

Cegep Experience Questionnaire Item-By-Item Test-Retest Scores for Current Students with Disabilities: Means, t-tests, and Correlations

Correlation r	Sig.	Item Number		Test		Std. Deviation	Std. Error Mean	t	df	Sig.	
				Time	Mean						
Personal Situation											
Students' Personal Situation											
0.80	0.000	1	Financial Situation	1	3.46	134	1.76	0.15	-0.39	133	0.695
				2	3.49	134	1.71	0.15			
0.66	0.000	2	Paid employment	1	3.34	80	1.60	0.18	-1.72	79	0.089
				2	3.59	80	1.52	0.17			
0.78	0.000	3	Family situation	1	4.30	148	1.71	0.14	-1.21	147	0.226
				2	4.41	148	1.56	0.13			
0.57	0.000	4	Friends	1	4.65	151	1.43	0.12	-0.32	150	0.748
				2	4.68	151	1.28	0.10			
0.70	0.000	5	Level of personal motivation	1	4.62	155	1.50	0.12	0.49	154	0.625
				2	4.57	155	1.47	0.12			
0.63	0.000	6	Study habits	1	4.03	156	1.56	0.12	0.24	155	0.809
				2	4.01	156	1.50	0.12			
0.51	0.000	7	Previous educational experience	1	4.23	151	1.55	0.13	-0.86	150	0.390
				2	4.33	151	1.50	0.12			
0.83	0.000	8	Health	1	3.81	138	1.83	0.16	1.21	137	0.230
				2	3.70	138	1.75	0.15			
0.59	0.000	9	Impact of my disability	1	2.43	148	1.20	0.10	0.22	147	0.822
				2	2.41	148	1.22	0.10			
Cegep Environment											
0.65	0.000	10	Level of difficulty of courses	1	3.18	156	1.30	0.10	0.43	155	0.668
				2	3.14	156	1.37	0.11			
0.68	0.000	11	Course load	1	3.01	154	1.61	0.13	-0.90	153	0.370
				2	3.10	154	1.55	0.12			
0.59	0.000	12	Course schedule	1	3.65	153	1.58	0.13	-1.75	152	0.082
				2	3.84	153	1.48	0.12			
0.64	0.000	13	Attitudes of professors	1	4.32	156	1.48	0.12	0.58	155	0.564
				2	4.26	156	1.46	0.12			
0.50	0.000	14	Attitudes of non-teaching staff	1	4.96	141	1.14	0.10	1.10	140	0.274
				2	4.85	141	1.16	0.10			
0.59	0.000	15	Attitudes of students	1	4.33	148	1.35	0.11	1.61	147	0.110
				2	4.18	148	1.26	0.10			
0.52	0.000	16	Availability of computers on-campus	1	4.64	146	1.47	0.12	-0.48	145	0.629
				2	4.69	146	1.32	0.11			
0.70	0.000	17	Training on computer technologies on campus	1	4.15	87	1.58	0.17	-0.18	86	0.854
				2	4.17	87	1.37	0.15			
0.39	0.000	18	Availability of course materials	1	4.71	149	1.16	0.09	1.09	148	0.279
				2	4.60	149	1.17	0.10			
0.71	0.000	19	Opportunity to participate in extracurricular activities	1	4.17	100	1.72	0.17	0.83	99	0.411
				2	4.06	100	1.75	0.18			
0.55	0.000	20	Willingness of professors to adapt courses to my needs	1	4.46	151	1.41	0.11	2.92	150	0.004
				2	4.13	151	1.53	0.12			
0.66	0.000	21	Accessibility of building facilities	1	4.76	98	1.35	0.14	1.21	97	0.228
				2	4.61	98	1.45	0.15			
0.70	0.000	22	Accessibility of Cegep physical education courses	1	4.82	101	1.37	0.14	2.02	100	0.046
				2	4.60	101	1.43	0.14			
0.55	0.000	23	Availability of disability related services at Cegep	1	5.01	141	1.35	0.11	0.35	140	0.726
				2	4.98	141	1.15	0.10			
Government and Community Supports and Services											
0.67	0.000	24	Availability of financial aid	1	4.01	81	1.83	0.20	1.25	80	0.213
				2	3.80	81	1.86	0.21			
0.79	0.000	25	Available of tutoring outside the Cegep	1	4.30	73	1.54	0.18	0.93	72	0.356
				2	4.19	73	1.55	0.18			
0.71	0.000	26	Public transportation	1	4.21	106	1.85	0.18	-1.16	105	0.250
				2	4.36	106	1.67	0.16			
0.72	0.000	27	Availability of computers off-campus	1	4.89	121	1.52	0.14	-0.41	120	0.682
				2	4.93	121	1.45	0.13			
0.68	0.000	28	Training on computer technologies off-campus	1	4.02	50	1.72	0.24	-1.17	49	0.248
				2	4.24	50	1.60	0.23			
0.62	0.000	29	Disability related support services off campus	1	3.81	64	1.74	0.22	-0.92	63	0.362
				2	3.98	64	1.69	0.21			
0.67	0.000	30	Availability of adapted transportation for people with disabilities	1	4.00	28	2.13	0.40	1.00	27	0.326
				2	3.68	28	2.07	0.39			
0.65	0.000	31	Coordination between disability related services	1	4.57	44	1.45	0.22	1.97	43	0.055
				2	4.18	44	1.63	0.25			
0.55	0.000	32	Availability of physical adaptations/technical aids at home	1	4.41	44	1.86	0.28	-0.93	43	0.359
				2	4.64	44	1.50	0.23			

Note. Boxed items are significant.

Subscale scores. The three Subscales that are comprised of Cegep Experience Questionnaire items are: Students' Personal Situation, Cegep Environment, and Government and Community Supports and Services. Items included in the Subscales are indicated in Table 34 below (boxed items are part of the subscales for students/graduates with disabilities only). Similarly, although items from all three Subscales are included in the Index of Difficulty (IDF), boxed items are part of the Index of Difficulty for students and graduates with disabilities only.

Table 34

Items Comprising the Subscales and Index of Difficulty (IDF)

Students' Personal Situation

- 1 Financial situation
- 2 Paid employment
- 3 Family situation
- 4 Friends
- 5 Level of personal motivation
- 6 Study habits
- 7 Previous educational experience
- 8 Health
- 9 Impact of my disability

Cegep Environment

- 10 Level of difficulty of courses
- 11 Course load
- 12 Course schedule
- 13 Attitudes of professors
- 14 Attitudes of non-teaching staff
- 15 Attitudes of students
- 16 Availability of computers on campus
- 17 Training on computer technologies on campus
- 18 Availability of course materials
- 19 Opportunity to participate in extracurricular activities
- 20 Willingness of professors to adapt courses to my needs
- 21 Accessibility of building facilities
- 22 Accessibility of Cegep physical education courses
- 23 Availability of disability related services at the Cegep

Government and Community Supports and Services

- 24 Availability of financial aid
- 25 Availability of tutoring outside the Cegep
- 26 Public transportation
- 27 Availability of computers off-campus
- 28 Training on computer technologies off-campus
- 29 Disability related support services off-campus
- 30 Availability of adapted transportation for people with disabilities
- 31 Coordination between disability related services
- 32 Availability of physical adaptations/technical aids at home

Note. Boxed items are part of the Subscales for students/graduates with disabilities only.

Results presented in Table 35 show a significant difference between the two testing times for the Cegep Environment Subscale only. After a Bonferroni adjustment to the alpha level, this item was no longer significant. All test-retest Pearson product-moment coefficients are moderate to large and highly significant, indicating acceptable temporal stability for the Subscales and Index of Difficulty both for scores including and excluding disability related items.

Table 35

Subscales and Index of Difficulty Test-Retest Scores: Means, t-tests, and Correlations

Correlation	Sig.		Test Time	Mean	n	Std. Deviation	Std. Error Mean	t	df	Sig.
Including Disability Specific Items										
0.84	0.000	Personal Situation Subscale	1	3.92	157	0.89	0.07	-0.43	156	0.666
			2	3.94	157	0.86	0.07			
0.79	0.000	Cegep Environment Subscale	1	4.28	154	0.72	0.06	2.25	153	0.026
			2	4.20	154	0.76	0.06			
0.73	0.000	Gov't and Community Supports and Services Subscale	1	4.28	53	1.02	0.14	0.04	52	0.966
			2	4.28	53	1.07	0.15			
0.86	0.000	Index of Difficulty	1	4.16	154	0.69	0.06	1.32	153	0.189
			2	4.12	154	0.71	0.06			
Excluding Disability Specific Items										
0.83	0.000	Personal Situation Subscale	1	4.12	158	0.93	0.07	-0.72	157	0.474
			2	4.15	158	0.90	0.07			
0.78	0.000	Cegep Environment Subscale	1	4.22	154	0.73	0.06	2.22	153	0.028
			2	4.13	154	0.77	0.06			
0.75	0.000	Gov't and Community Supports and Services Subscale	1	4.33	85	1.05	0.11	0.06	84	0.948
			2	4.33	85	1.09	0.12			
0.85	0.000	Index of Difficulty	1	4.21	156	0.71	0.06	1.09	155	0.277
			2	4.17	156	0.73	0.06			

Note. Boxed items are significant.

Internal consistency reliability: Cegep Experience Questionnaire Subscale and Index of Difficulty scores. We evaluated internal consistency both for current students with disabilities as well as for graduates with and without disabilities. Cronbach's alpha coefficients reported in Table 36 indicate that the internal consistency of the 3 Subscales are acceptable and that most alpha values exceed .700, with the lowest being .584. Subscale scores and Index of Difficulty scores were calculated both including and excluding the disability specific items.

Table 36

Internal Consistency of Subscales: Cronbach's Alpha

Subscales	Current Students With Disabilities		Graduates No Disabilities		Graduates With Disabilities	
	n	Alpha	n	Alpha	n	Alpha
Only items common to those with and without disabilities included: 26 items						
Students' Personal Situation	126	.716	666	.637	96	.598
Cegep Environment	94	.757	432	.762	51	.830
Government and Community Supports and Services	45	.756	108	.659	15	.584
Disability specific items included: 32 items						
Students' Personal Situation	119	.737			47	.719
Cegep Subscale	92	.774			21	.895
Government and Community Supports and Services	20	.891			----	----

Relationships Among Cegep Experience Questionnaire Subscales: Validity

Pearson product–moment correlation coefficients for current students with disabilities presented in Table 37 indicate modest significant correlations among Subscales and with Index of Difficulty scores when the scores on the Subscale in question are excluded. The correlations are very high and significant between Subscales and Index of Difficulty scores when the Subscale in question is included. This is true when disability specific items are as well as when they are not part of the analyses.

Table 37

Correlations Among Subscale and Index of Difficulty Scores for Current Students with Disabilities

		Personal Subscale	Cegep Subscale	Community Subscale	Index of Difficulty
Excluding Disability Specific Items					
Students' Personal Situation	Pearson r				
	Significance				
	N				
Cegep Environment	Pearson r	0.431			
	Significance	0.000			
	N	289			
Government and Community Supports and Services	Pearson r	0.341	0.529		
	Significance	0.000	0.000		
	N	247	245		
Index of Difficulty (relevant Subscale included)	Pearson r	0.776	0.872	0.694	
	Significance	0.000	0.000	0.000	
	N	293	291	248	
Index of Difficulty (relevant Subscale excluded)	Pearson r	0.453	0.533	0.518	
	Significance	0.000	0.000	0.000	
	N	249	285	248	
Including Disability Specific Items					
Students' Personal Situation	Pearson r				
	Significance				
	N				
Cegep Environment	Pearson r	0.444			
	Significance	0.000			
	N	286			
Government and Community Supports and Services	Pearson r	0.379	0.573		
	Significance	0.000	0.000		
	N	132	131		
Index of Difficulty (relevant Subscale included)	Pearson r	0.764	0.871	0.795	
	Significance	0.000	0.000	0.000	
	N	287	290	132	
Index of Difficulty (relevant Subscale excluded)	Pearson r	0.458	0.610	0.537	
	Significance	0.000	0.000	0.000	
	N	264	272	132	

Cegep Experience Questionnaire (CEQ): Facilitators And Obstacles

A series of analyses were conducted to evaluate Students' Personal Situation, Cegep Environment, and Government and Community Supports and Services Subscale based obstacles and facilitators for current students with disabilities, Cegep based disability service providers, and the 3 groups of graduates. It should be noted that the response scale for students and graduates was a 6-point scale of difficulty, with 1 = much harder and 6 = much easier. For campus based disability service providers the response scale was a 5-point scale of importance, with 1 = not important and 5 = extremely important.

Current students with disabilities. Table 38 shows the mean scores and sample sizes (n) for all CEQ questionnaire items.

Table 38

CEGEP EXPERIENCE QUESTIONNAIRE

Using the following scale, indicate in what way each of the items below has **affected your Cegep studies** by making them:

1	2	3	4	5	6	[N/A]
Much Harder	Moderately Harder	Slightly Harder	Slightly Easier	Moderately Easier	Much Easier	Not Applicable

Put a number beside all items. If an item is not applicable to you, respond with **N/A** (not applicable).

Students' Personal Situation

1. __ 3.46 (n=243) __ Financial situation
2. __ 3.24 (n=160) __ Paid employment
3. __ 4.33 (n=276) __ Family situation
4. __ 4.65 (n=275) __ Friends
5. __ 4.55 (n=293) __ Level of personal motivation
6. __ 3.86 (n=296) __ Study habits
7. __ 4.26 (n=288) __ Previous education experiences
8. __ 3.89 (n=258) __ Health
9. __ 2.55 (n=274) __ Impact of my disability

Cegep Environment

10. __ 3.16 (n=295) __ Level of difficulty of courses
11. __ 3.04 (n=296) __ Course load
12. __ 3.79 (n=291) __ Course schedule
13. __ 4.46 (n=295) __ Attitudes of professors
14. __ 4.94 (n=273) __ Attitudes of non-teaching staff (e.g., registration staff, financial aid staff)
15. __ 4.47 (n=287) __ Attitudes of students
16. __ 4.59 (n=272) __ Availability of computers on campus
17. __ 4.30 (n=184) __ Training on computer technologies on campus
18. __ 4.66 (n=279) __ Availability of course materials
19. __ 4.03 (n=208) __ Opportunity to participate in Cegep extracurricular activities (e.g., clubs, sports, social activities)
20. __ 4.42 (n=285) __ Willingness of professors to adapt courses to my needs
21. __ 4.75 (n=208) __ Accessibility of building facilities (e.g., doorways, classrooms, labs)
22. __ 4.68 (n=203) __ Accessibility of Cegep physical education courses
23. __ 4.98 (n=281) __ Availability of disability related services at the Cegep

Government and Community Supports and Services

24. __ 3.98 (n=168) __ Availability of financial aid
25. __ 3.95 (n=157) __ Availability of tutoring outside the Cegep
26. __ 4.04 (n=207) __ Public transportation
27. __ 4.89 (n=233) __ Availability of computers off-campus
28. __ 4.05 (n=114) __ Training on computer technologies off-campus
29. __ 3.78 (n=157) __ Disability-related support services off-campus
30. __ 3.48 (n=65) __ Availability of adapted transport for student with disabilities
31. __ 4.14 (n=95) __ Coordination between disability-related support services (e.g., attendant care, adapted transport) and school
32. __ 4.43 (n=94) __ Availability of adaptations / technical aids at home (e.g., ramp, TDD)

Table 39 shows the mean scores, in rank order of difficulty, ranging from making studies easier to harder, of current students with disabilities. Results indicate that the availability of disability related services and accommodations was seen as the most important facilitator by students and the impact of their disability was seen as the most important obstacle.

The mean difficulty rating of items was 4.12 (median = 4.20) on a 6-point scale, with lower scores indicating greater difficulty (range: 2.55 to 4.98). Results indicate that on Subscales (including disability specific items), Students' Personal Situation posed the most difficulty and Cegep Environment the least, with Government and Community Supports and Services being in between.

Table 39

Rank Order of Difficulty: Students with Disabilities - Easy to Hard

Item #	Mean	Rank	Subscale of Item	N	SD
23 Availability of disability related services at Cegep	4.98	1	Cegep	281	1.28
14 Attitudes of non-teaching staff	4.94	2	Cegep	273	1.14
27 Availability of computers off-campus	4.89	3	Community	233	1.51
21 Accessibility of building facilities	4.75	4	Cegep	208	1.38
22 Accessibility of Cegep physical education courses	4.68	5	Cegep	203	1.42
18 Availability of course materials	4.66	6	Cegep	279	1.22
4 Friends	4.65	7	Personal	275	1.42
16 Availability of computers on-campus	4.59	8	Cegep	272	1.47
5 Level of personal motivation	4.55	9	Personal	293	1.53
15 Attitudes of students	4.47	10	Cegep	287	1.32
13 Attitudes of professors	4.46	11	Cegep	295	1.44
32 Availability of physical adaptations/technical aids at home	4.43	12	Community	94	1.77
20 Willingness of professors to adapt courses to my needs	4.42	13	Cegep	285	1.41
3 Family situation	4.33	14	Personal	276	1.66
17 Training on computer technologies on campus	4.30	15	Cegep	184	1.49
7 Previous educational experience	4.26	16	Personal	288	1.56
31 Coordination between disability related services	4.14	17	Community	95	1.65
28 Training on computer technologies off-campus	4.05	18	Community	114	1.68
26 Public transportation	4.04	19	Community	207	1.86
19 Opportunity to participate in extracurricular activities	4.03	20	Cegep	208	1.74
24 Availability of financial aid	3.98	21	Community	168	1.83
25 Available of tutoring outside the Cegep	3.95	22	Community	157	1.76
8 Health	3.89	23	Personal	258	1.80
6 Study habits	3.86	24	Personal	296	1.59
12 Course schedule	3.79	25	Cegep	291	1.52
29 Disability related support services off campus	3.78	26	Community	157	1.77
30 Availability of adapted transportation for people with disabilities	3.48	27	Community	65	2.05
1 Financial situation	3.46	28	Personal	243	1.81
2 Paid employment	3.24	29	Personal	160	1.68
10 Level of difficulty of courses	3.16	30	Cegep	295	1.28
11 Course load	3.04	31	Cegep	296	1.52
9 Impact of my disability	2.55	32	Personal	274	1.32
Subscales					
Cegep Environment	4.28	1		296	0.72
Government and Community Supports and Services	3.97	2		132	1.21
Students' Personal Situation	3.90	3		290	0.92

Results of a 1-way multivariate analysis of variance (MANOVA) examining mean scores on the 3 Subscales shows a significant-test result, $F(2, 260) = 8.50, p = .000$. Post hoc tests show that the Cegep Environment score was significantly higher than scores on both Personal and Community Subscales and that Students' Personal Situation Subscale did not differ significantly from the Government and Community Supports and Services Subscale score.

It can be seen in Table 40 below, which shows facilitator CEQ items (i.e., score > 3.5 on a 6-point scale) arranged in rank order of difficulty (easier items have higher ranks than more difficult items) within groupings, that most factors were seen as facilitating students' studies. It should be noted that although the means indicate that these are, overall, facilitating, these factors constituted obstacles to some students.

Table 40

Facilitating Factors For Students With Disabilities In Rank Order By Subscale

Students' Personal Situation

- 1 Friends
- 2 Student's motivation
- 3 Family situation
- 4 Previous education experiences
- 5 Health
- 6 Study habits

Cegep Environment

- 1 Availability of disability related services
- 2 Attitudes of non-teaching staff
- 3 Accessibility of building facilities
- 4 Accessibility of physical education courses
- 5 Availability of course material
- 6 Availability of computers
- 7 Attitudes of students
- 8 Attitudes of profs
- 9 Willingness of profs to adapt courses
- 10 Training on computer technologies
- 11 Opportunity to participate in extracurricular activities
- 12 Course schedule

Government and Community Supports and Services

- 1 Availability of computers off-campus
 - 2 Availability of adaptations at home
 - 3 Training on computers off-campus
 - 4 Coordination between support services
 - 5 Public transportation
 - 6 Availability of financial aid
 - 7 Availability of tutoring outside the Cegep
 - 8 Disability related support services off-campus
-

Although most items were seen as facilitating student success, the 6 factors shown in Table 23x were seen as obstacles (scores in the obstacles range <3.5 on a 6-point scale). It should be noted, however, that although the means indicate that these are, overall, obstacles, these factors constituted facilitators to some students.

Table 41

Obstacles For Students With Disabilities In Rank Order of Difficulty (Most to Least Difficult)

Students' Personal Situation

1. Impact of my disability
2. Paid employment
3. Financial situation

Cegep Environment

1. Course load
2. Course difficulty

Government and Community Supports and Services

1. Adapted transport
-

Relationship between facilitators and obstacles and the number of students' impairments. We expected that the more impairments students have (i.e., 1 or 2 or 3 or 4, etc.), the more obstacles they would encounter. Correlations between the number of students' impairments and Cegep Experience Questionnaire Index of Difficulty, Subscale and item-by-item scores for current students with disabilities are presented in Table 42. Results show that for 9 of the 10 instances where there was a significant correlation, the more disabilities students had, the more likely they were to experience the item as an obstacle.

Table 42

Current Students with Disabilities: Correlations Between Number of Impairments and Subscale and Item Scores

Item #		Pearson Correlation	sig	n
Students' Personal Situation				
1	Financial situation	0.003	0.959	243
2	Paid employment	-0.051	0.519	160
3	Family situation	-0.119	0.048	276
4	Friends	-0.172	0.004	275
5	Level of personal motivation	-0.007	0.908	293
6	Study habits	0.025	0.669	296
7	Previous educational experience	0.130	0.027	288
8	Health	-0.261	0.000	258
9	Impact of my disability	-0.043	0.483	274
Cegep Environment				
10	Level of difficulty of courses	-0.069	0.239	295
11	Course load	-0.077	0.189	296
12	Course schedule	-0.075	0.201	291
13	Attitudes of professors	0.048	0.408	295
14	Attitudes of non-teaching staff	0.093	0.125	273
15	Attitudes of students	-0.108	0.067	287
16	Availability of computers on-campus	-0.050	0.414	272
17	Training on computer technologies on campus	0.023	0.756	184
18	Availability of course materials	-0.078	0.194	279
19	Opportunity to participate in extracurricular activities	-0.140	0.043	208
20	Willingness of professors to adapt courses to my needs	0.083	0.161	285
21	Accessibility of building facilities	-0.175	0.011	208
22	Accessibility of Cegep physical education courses	-0.143	0.042	203
23	Availability of disability related services at Cegep	0.060	0.314	281
Government and Community Supports and Services				
24	Availability of financial aid	-0.029	0.709	168
25	Available of tutoring outside the Cegep	-0.002	0.980	157
26	Public transportation	-0.193	0.005	207
27	Availability of computers off-campus	0.020	0.759	233
28	Training on computer technologies off-campus	-0.069	0.467	114
29	Disability related support services off campus	-0.102	0.205	157
30	Availability of adapted transportation for people with disabilities	-0.317	0.010	65
31	Coordination between disability related services	-0.254	0.013	95
32	Availability of physical adaptations/technical aids at home	-0.128	0.220	94
Subscales				
	Students' Personal Situation	-0.079	0.178	290
	Cegep Environment	-0.062	0.285	296
	Government and Community Supports and Services	-0.101	0.248	132
	Index of Difficulty	-0.115	0.050	292

Note. Boxed Items are significant.

Similarities and differences between current students with different disabilities. In Table 43 means on CEQ items and Subscales are presented for students in each disability group. It should be noted that a large proportion of students have multiple disabilities, and that the scores in Table 43 include all students who mentioned the disability in question. Scores of students who have *only* the disability in question can be seen in Tables 44, 46, and 16.

Table 43

Subscales, Index of Difficulty and Cegep Experience Questionnaire Scores of Current Students with Different Disabilities

Item #	Blind		Visual impairment		Deaf		Hearing impairment		Speech / communication impairment		Learning disability / ADD	
	N	Mean	N	Mean	N	Mean	N	Mean	N	Mean	N	Mean
Subscales												
Students' Personal Situation	2	3.44	28	4.04	16	4.17	38	4.20	14	4.17	137	3.79
Cegep Environment	1	4.08	29	4.16	17	4.32	38	4.57	16	4.19	141	4.17
Government and Community Supports and Services	2	3.50	19	3.68	10	4.19	14	4.41	7	3.72	58	3.97
Index of Difficulty	2	3.76	28	4.06	17	4.29	38	4.45	15	4.08	139	4.06
Students' Personal Situation												
1 Financial situation	2	4.00	26	3.38	16	3.06	30	3.77	11	3.91	114	3.49
2 Paid employment	0		17	2.82	11	3.55	20	3.85	6	3.00	82	3.20
3 Family situation	2	2.50	28	4.39	15	4.80	34	4.41	15	4.80	129	4.16
4 Friends	2	3.50	26	5.08	16	4.94	34	4.79	12	4.08	132	4.69
5 Level of personal motivation	2	4.50	28	4.86	16	4.38	38	4.74	15	5.00	141	4.38
6 Study habits	2	4.00	29	4.17	16	4.50	38	4.05	16	4.06	140	3.62
7 Previous education experiences	2	5.00	26	4.46	17	4.35	36	4.22	15	5.40	138	3.89
8 Health	2	3.00	24	3.83	15	4.53	36	4.64	13	3.46	118	4.26
9 Impact of my disability	2	1.00	25	2.40	16	3.50	36	3.19	12	2.83	130	2.35
Cegep Environment												
10 Level of difficulty of courses	2	2.00	29	3.24	17	3.29	38	3.32	14	3.00	142	2.82
11 Course load	1	3.00	28	3.25	17	3.53	39	3.21	16	3.00	142	2.72
12 Course schedule	1	4.00	29	3.86	17	4.12	38	3.92	16	3.69	138	3.68
13 Attitudes of professors	2	4.50	29	4.48	17	4.76	38	4.66	16	4.88	139	4.17
14 Attitudes of non-teaching staff	1	4.00	26	4.73	17	4.53	31	5.13	15	5.07	129	4.82
15 Attitudes of students	2	5.50	26	4.54	17	4.41	38	4.79	16	4.31	136	4.49
16 Availability of computers on campus	1	6.00	27	3.85	16	4.75	35	5.09	13	4.00	132	4.62
17 Training on computer technologies on campus	0		15	3.87	13	4.54	21	4.90	9	3.78	92	4.11
18 Availability of course materials	1	1.00	28	4.04	16	4.63	33	5.06	14	4.50	132	4.61
19 Opportunity to participate in Cegep extracurricular activities	1	5.00	20	4.15	13	3.23	25	4.68	10	3.40	102	4.16
20 Willingness of professors to adapt courses to my needs	2	4.00	28	4.43	17	4.35	35	4.86	16	4.63	137	4.28
21 Accessibility of building facilities	1	5.00	22	4.55	11	4.82	27	5.48	13	4.23	88	4.91
22 Accessibility of Cegep physical education courses	1	5.00	21	4.24	13	4.54	29	5.07	10	4.10	89	4.88
23 Availability of disability related services at the Cegep	2	5.50	28	5.07	17	4.76	36	4.72	14	5.21	132	4.91
Government and Community Supports and Services												
24 Availability of financial aid	0		21	3.71	16	3.81	23	4.13	10	4.40	69	3.87
25 Availability of tutoring outside the Cegep	0		14	3.43	12	4.50	23	4.00	8	4.13	88	3.77
26 Public transportation	2	3.50	20	3.50	11	4.73	26	5.15	12	3.33	95	4.21
27 Availability of computers off-campus	1	6.00	23	4.70	11	4.91	31	5.00	14	5.14	116	4.98
28 Training on computer technologies off-campus	2	4.50	16	3.50	7	4.00	11	3.82	5	3.80	63	4.02
29 Disability related support services off-campus	1	2.00	20	3.90	9	3.56	21	4.52	9	2.89	66	3.41
30 Availability of adapted transport for students with disabilities	2	1.50	9	2.33	5	4.40	5	5.40	3	1.00	15	4.40
31 Coordination between disability related support services and school	1	2.00	12	3.83	6	4.33	6	5.33	3	2.67	33	4.39
32 Availability of adaptations / technical aids at home	1	6.00	15	4.07	14	4.29	13	4.46	4	3.25	24	4.42

Item #	Mobility impairment		Limitation in the use of hands / arms		Medically related / Health problem		Psychological / Psychiatric disability		Neurological impairment		PDD		
	N	Mean	N	Mean	N	Mean	N	Mean	N	Mean	N	Mean	
Subscales													
	Students' Personal Situation	53	3.92	28	4.23	32	3.41	32	3.44	23	3.82	1	2.22
	Cegep Environment	51	4.34	30	4.42	33	4.16	32	4.05	25	4.32	1	3.57
	Government and Community Supports and Services	36	3.69	22	3.81	15	3.81	18	3.98	8	3.73	1	3.50
	Index of Difficulty	52	4.10	29	4.25	33	3.88	32	3.85	24	4.12	1	3.16
Students' Personal Situation													
1	Financial situation	46	3.13	25	3.96	29	3.14	26	3.35	19	3.26	7	4.86
2	Paid employment	17	2.88	10	3.70	16	2.81	13	3.62	10	2.40	1	4.00
3	Family situation	52	4.37	27	4.85	31	3.52	31	3.32	22	4.55	10	4.50
4	Friends	47	4.64	25	4.56	31	4.16	31	4.00	21	4.05	9	3.56
5	Level of personal motivation	52	4.79	29	5.00	33	4.24	31	4.03	25	4.72	11	4.45
6	Study habits	53	3.87	30	4.17	33	3.97	32	3.97	25	3.88	11	3.64
7	Previous education experiences	51	4.88	29	5.31	33	4.42	32	4.25	25	4.56	11	4.36
8	Health	47	2.98	27	3.30	33	2.03	30	2.53	23	3.35	10	4.30
9	Impact of my disability	48	2.60	27	2.85	31	2.10	32	1.88	20	2.60	10	2.90
Cegep Environment													
10	Level of difficulty of courses	50	3.72	28	3.57	33	2.94	32	3.19	24	2.46	11	3.45
11	Course load	50	3.08	30	3.30	33	2.70	32	3.03	25	2.56	11	4.00
12	Course schedule	48	3.58	28	3.64	33	3.45	32	3.97	25	3.76	11	3.73
13	Attitudes of professors	52	5.04	30	5.10	33	4.27	32	4.06	25	4.44	11	5.00
14	Attitudes of non-teaching staff	51	5.29	29	5.41	31	4.94	32	5.06	23	5.30	11	5.00
15	Attitudes of students	53	4.43	30	4.53	33	3.91	31	3.61	23	4.57	10	4.10
16	Availability of computers on campus	45	4.53	26	4.69	31	4.48	31	4.29	22	4.50	10	4.80
17	Training on computer technologies on campus	31	4.71	20	4.95	18	4.72	19	3.63	15	4.40	10	4.10
18	Availability of course materials	48	4.77	28	4.64	32	4.59	31	4.16	21	5.00	11	4.73
19	Opportunity to participate in Cegep extracurricular activities	35	3.09	19	2.63	19	3.95	20	4.25	17	3.94	4	5.50
20	Willingness of professors to adapt courses to my needs	49	4.69	30	4.83	33	4.61	31	3.94	24	4.88	10	4.60
21	Accessibility of building facilities	50	3.90	29	4.00	29	4.69	20	4.30	20	4.95	8	5.00
22	Accessibility of Cegep physical education courses	32	4.03	17	4.65	27	4.48	22	4.18	17	4.71	8	4.50
23	Availability of disability related services at the Cegep	51	5.37	29	5.28	32	5.00	29	4.69	23	5.43	10	5.20
Government and Community Supports and Services													
24	Availability of financial aid	37	4.14	18	4.06	21	3.71	18	3.56	10	4.70	4	4.25
25	Availability of tutoring outside the Cegep	17	3.82	11	4.36	17	3.76	18	4.06	9	4.33	8	5.00
26	Public transportation	36	2.78	20	2.80	25	3.28	27	3.63	20	3.85	8	5.00
27	Availability of computers off-campus	39	4.77	23	5.13	25	4.72	31	4.58	20	5.25	9	4.89
28	Training on computer technologies off-campus	18	4.56	10	4.90	8	4.00	11	3.45	9	3.56	3	3.67
29	Disability related support services off-campus	32	3.47	19	3.58	18	3.72	22	3.91	10	3.70	8	4.50
30	Availability of adapted transport for students with disabilities	32	2.72	17	2.24	9	3.78	5	3.20	8	3.25	0	
31	Coordination between disability related support services and school	34	3.47	18	3.44	11	3.82	14	3.86	11	4.27	4	4.25
32	Availability of adaptations / technical aids at home	34	4.32	22	4.64	12	4.00	7	4.86	10	4.00	1	1.00

Comparisons of CEQ means by disability type. To determine whether there were differences in CEQ scores related to graduates' impairments, disability categories were combined. Here we ensured that current students with multiple disabilities were grouped into one category and were not represented in each disability category. This resulted in 8 impairment categories. The number of students who fell in each of the categories is shown in Table 44. Scores of students who have only the disability in question can be seen in Tables 45.

Table 44

Grouping Current Students With Disabilities Into 8 Combined Disability Categories

Combined Disability Categories	Frequency	Percent
1 Visual impairment and blindness only	16	5.33 %
2 Hearing impairment and Deafness only	39	13.00 %
3 Learning disability/ADD only	103	34.33 %
4 Mobility and hand/arm impairment only	19	6.33 %
5 Medical / neurological impairment only	14	4.67 %
6 Psychological impairment / PDD only	16	5.33 %
7 Multiple disabilities	90	30.00 %
8 Other (unclassified and speech/communication impairment)	3	1.00 %
Total with disabilities	300	100.00 %

Table 45

Mean Cegep Experiences Questionnaire Scores of Current Students with Different Disabilities: Multiple Disabilities Separated

#	Item	Visual impairment and blindness		Hearing impairment and Deafness		Learning disability / ADD		Mobility and hand / arm impairment		Medical / neurological impairment		Psychological impairment / PDD		Multiple disabilities	
		Mean	N	Mean	N	Mean	N	Mean	N	Mean	N	Mean	N	Mean	N
Students' Personal Situation															
1	Financial situation	3.69	13	3.53	32	3.36	84	2.75	16	3.00	11	3.80	10	3.60	75
2	Paid employment	2.67	9	3.67	24	3.18	71	2.75	8	3.17	6	4.43	7	3.00	33
3	Family situation	4.33	15	4.63	35	4.31	91	4.95	19	3.69	13	4.50	14	4.17	86
4	Friends	5.21	14	4.83	35	4.81	97	4.88	17	4.50	14	4.36	14	4.32	82
5	Level of personal motivation	5.07	15	4.46	37	4.38	102	5.16	19	4.86	14	4.73	15	4.44	89
6	Study habits	4.50	16	4.00	37	3.54	101	3.89	19	4.43	14	4.19	16	3.88	90
7	Previous education experiences	4.85	13	4.39	36	3.69	99	5.00	18	4.86	14	4.19	16	4.52	89
8	Health	3.75	12	4.68	34	4.63	84	3.38	16	2.36	14	3.73	15	3.20	82
9	Impact of my disability	2.21	14	3.33	36	2.47	96	2.88	16	2.14	14	2.40	15	2.41	82
Cegep Environment															
10	Level of difficulty of courses	3.38	16	3.55	38	2.87	103	4.06	17	2.71	14	3.88	16	3.03	88
11	Course load	3.73	15	3.38	39	2.77	103	3.06	17	2.50	14	4.13	16	2.98	89
12	Course schedule	3.81	16	4.05	39	3.69	99	3.76	17	2.71	14	4.50	16	3.78	87
13	Attitudes of professors	4.25	16	4.42	38	4.31	100	5.44	18	3.64	14	4.88	16	4.51	90
14	Attitudes of non-teaching staff	4.85	13	4.91	32	4.67	92	5.50	18	4.57	14	5.00	16	5.16	85
15	Attitudes of students	4.54	13	4.68	38	4.54	98	4.84	19	4.38	13	3.57	14	4.31	89
16	Availability of computers on campus	3.62	13	5.03	34	4.62	95	4.40	15	4.75	12	4.50	16	4.58	84
17	Training on computer technologies on campus	2.75	4	4.65	23	4.06	67	4.82	11	4.44	9	4.20	10	4.46	59
18	Availability of course materials	3.69	16	4.97	34	4.68	96	5.00	18	4.93	14	4.67	15	4.55	83
19	Opportunity to participate in Cegep extracurricular activities	4.20	10	4.32	28	4.22	78	3.31	13	4.40	10	4.90	10	3.51	57
20	Willingness of professors to adapt courses to my needs	4.47	15	4.60	35	4.24	99	4.65	17	4.00	14	4.36	14	4.53	88
21	Accessibility of building facilities	5.00	12	5.28	25	4.98	62	4.44	18	4.89	9	5.13	8	4.32	73
22	Accessibility of Cegep physical education courses	4.77	13	5.17	29	5.04	67	3.67	12	4.50	12	4.67	9	4.25	60
23	Availability of disability related services at the Cegep	5.27	15	4.44	36	4.90	97	5.17	18	5.62	13	4.93	14	5.09	86
Government and Community Supports and Services															
24	Availability of financial aid	3.89	9	4.20	25	3.68	53	4.07	14	4.00	7	4.00	5	4.13	54
25	Availability of tutoring outside the Cegep	3.60	5	4.13	24	3.67	67	2.67	3	3.00	5	4.86	7	4.36	45
26	Public transportation	3.20	10	5.17	24	4.28	65	3.21	14	3.93	14	4.25	12	3.69	65
27	Availability of computers off-campus	4.09	11	5.00	26	4.98	83	4.50	12	4.44	9	4.43	14	5.07	76
28	Training on computers technologies off-campus	3.50	8	4.15	13	4.02	47	4.50	4	4.50	4	4.25	4	4.03	33
29	Disability-related support services off-campus	4.00	12	4.48	23	3.33	46	4.00	10	4.17	6	4.40	10	3.59	49
30	Availability of adapted transport for students with disabilities	2.57	7	5.29	7	5.10	10	3.40	10	4.50	2			2.66	29
31	Coordination between disability-related support services and school	4.33	6	5.11	9	4.61	18	4.17	12	5.25	4	3.80	5	3.61	41
32	Availability of adaptations / technical aids at home	4.22	9	4.56	18	4.43	14	4.70	10	5.50	2			4.29	41

To examine similarities and differences among students with different disabilities we conducted a one-way MANOVA (multivariate analysis of variance) comparison on Students' Personal Situation and Cegep Environment Subscale scores (7 Disability Categories X 2 Subscales). The Subscale means included all disability related items. The Community and Government Supports and Services Subscale was not included as there were not enough responses on this subscale for meaningful analysis. The results revealed no significant difference among the 7 levels of the variable (category 8 (Other) was not included).

A series of 2 MANOVAs on items in the Students' Personal Situation and in the Cegep Environment Subscale showed significant differences among groups, Wilks' $\Lambda = 0.46$, $F(54,530) = 1.63$, $p=.004$, Wilks' $\Lambda = 0.24$, $F(84,408) = 1.42$, $p=.014$, respectively.

One-way analysis of variance comparisons (ANOVAs) (7 Disability Categories) on Students' Personal Situation Subscale items showed significant findings. Best seen in Table 46, these showed significant results on 3 of the 9 items that comprise the Students' Personal Experiences Subscale: (1) students with learning disabilities/ADD felt that their previous educational experiences (Item 7) was considerably less facilitating than did students with other impairments, (2) that good health (Item 8) was a facilitator for students with hearing impairments and with learning disabilities/ADD while this was an obstacle for students with medical/neurological impairments, multiple disabilities, and mobility and hand impairments, and (3) that while the scores of students in all disability groups was in the obstacle range for the item dealing with the impact of their disability (Item 9), students with medical/neurological impairments felt that this was more of an obstacle than did students with hearing impairments.

The ANOVAs on 6 of the 14 items on the Cegep Environment Subscale were significant. These are also presented in Table 46 and show that (1) students with medical/neurological impairments found that the level of difficulty of their courses (Item 10) posed the greatest obstacle, (2) and that their course schedules (Item 12) posed important difficulties for them, although course schedules were seen as especially facilitating by students with psychological impairments or PDD, (3) that the attitude of professors (Item 13) and (4) of non teaching staff (Item 14) were most problematic for students with medical/neurological impairments and most facilitating for students with mobility and arm/hand impairments, (5) that the availability of course materials (Item 18) was most facilitating for students with mobility and arm/hand impairments and least facilitating for students with visual impairments, and (6) that the accessibility of Cegep physical education courses (Item 22) was least facilitating for students with mobility or arm/hand impairments.

On Government and Community Supports and Services items 2 of the 9 items were significant: (1) both public transportation (Item 26) and (2) the availability of adapted transport for students with disabilities (Item 30). They were both especially problematic for students with multiple disabilities and mobility and hand/arm impairments, although public transportation was least facilitating for students with visual impairments and adapted transportation also caused problems for students with medical / neurological impairments.

Table 46

#	Item	Disability Group	N	Mean	SD	ANOVA F test
Students' Personal Situation						
7	Previous education experiences	4 Mobility and hand/arm impairment	18	5.00	0.970	F(6,278) = 4.23, p=.000
		5 Medical / neurological impairment	14	4.86	1.460	
		1 Visual impairment and blindness	13	4.85	1.405	
		7 Multiple disabilities	89	4.52	1.493	
		2 Hearing impairment and Deafness	36	4.39	1.536	
		6 Psychological impairment / PDD	16	4.19	1.515	
		3 Learning disability/ADD	99	3.69	1.627	
8	Health	2 Hearing impairment and Deafness	34	4.68	1.387	
		3 Learning disability/ADD	84	4.63	1.487	
		1 Visual impairment and blindness	12	3.75	1.960	
		6 Psychological impairment / PDD	15	3.73	1.831	
		4 Mobility and hand/arm impairment	16	3.38	1.708	
		7 Multiple disabilities	82	3.20	1.842	
		5 Medical / neurological impairment	14	2.36	1.393	
9	Impact of my disability	2 Hearing impairment and Deafness	36	3.33	1.352	F(6,266) = 3.05, p=.000
		4 Mobility and hand/arm impairment	16	2.88	1.455	
		3 Learning disability/ADD	96	2.47	1.248	
		7 Multiple disabilities	82	2.41	1.369	
		6 Psychological impairment / PDD	15	2.40	1.242	
		1 Visual impairment and blindness	14	2.21	1.122	
		5 Medical / neurological impairment	14	2.14	0.864	
Cegep Environment						
10	Level of difficulty of courses	6 Psychological impairment / PDD	16	3.88	1.258	F(6,285) = 4.45, p=.000
		2 Hearing impairment and Deafness	38	3.55	1.572	
		1 Visual impairment and blindness	16	3.38	1.258	
		7 Multiple disabilities	88	3.03	1.264	
		3 Learning disability/ADD	103	2.87	1.160	
		5 Medical / neurological impairment	14	2.71	0.825	
12	Course schedule	6 Psychological impairment / PDD	16	4.50	1.265	
		2 Hearing impairment and Deafness	39	4.05	1.538	
		1 Visual impairment and blindness	16	3.81	1.328	
		7 Multiple disabilities	87	3.78	1.631	
		4 Mobility and hand/arm impairment	17	3.76	1.393	
		3 Learning disability/ADD	99	3.69	1.419	
		5 Medical / neurological impairment	14	2.71	1.590	
13	Attitudes of professors	4 Mobility and hand/arm impairment	18	5.44	0.784	F(6,285) = 2.72, p=.014
		6 Psychological impairment / PDD	16	4.88	1.088	
		7 Multiple disabilities	90	4.51	1.493	
		2 Hearing impairment and Deafness	38	4.42	1.536	
		3 Learning disability/ADD	100	4.31	1.390	
		1 Visual impairment and blindness	16	4.25	1.390	
		5 Medical / neurological impairment	14	3.64	1.692	
14	Attitudes of non-teaching staff	4 Mobility and hand/arm impairment	18	5.50	0.618	F(6,263) = 2.43, p=.026
		7 Multiple disabilities	85	5.16	1.100	
		6 Psychological impairment / PDD	16	5.00	0.966	
		2 Hearing impairment and Deafness	32	4.91	1.027	
		1 Visual impairment and blindness	13	4.85	1.068	
		3 Learning disability/ADD	92	4.67	1.259	
		5 Medical / neurological impairment	14	4.57	1.284	
18	Availability of course materials	4 Mobility and hand/arm impairment	18	5.00	1.029	F(6,269) = 2.56, p=.020
		2 Hearing impairment and Deafness	34	4.97	1.114	
		5 Medical / neurological impairment	14	4.93	0.917	
		3 Learning disability/ADD	96	4.68	1.138	
		6 Psychological impairment / PDD	15	4.67	0.724	
		7 Multiple disabilities	83	4.55	1.364	
		1 Visual impairment and blindness	16	3.69	1.621	
22	Accessibility of Cegep physical education courses	2 Hearing impairment and Deafness	29	5.17	1.256	F(6,195) = 3.56, p=.002
		3 Learning disability/ADD	67	5.04	1.079	
		1 Visual impairment and blindness	13	4.77	1.235	
		6 Psychological impairment / PDD	9	4.67	1.000	
		5 Medical / neurological impairment	12	4.50	1.168	
		7 Multiple disabilities	60	4.25	1.663	
		4 Mobility and hand/arm impairment	12	3.67	1.875	
Government and Community Supports and Services						
26	Public transportation	2 Hearing impairment and Deafness	24	5.17	1.341	F(6,197) = 3.01, p=.001
		3 Learning disability/ADD	65	4.28	1.746	
		6 Psychological impairment / PDD	12	4.25	1.545	
		5 Medical / neurological impairment	14	3.93	1.385	
		7 Multiple disabilities	65	3.69	2.023	
		4 Mobility and hand/arm impairment	14	3.21	2.119	
		1 Visual impairment and blindness	10	3.20	2.098	
30	Availability of adapted transport for student with disabilities	1 Visual impairment and blindness	7	5.29	0.756	F(5,59) = 4.73, p=.001
		2 Hearing impairment and Deafness	10	5.10	1.595	
		3 Learning disability/ADD	2	4.50	2.121	
		4 Mobility and hand/arm impairment	10	3.40	2.366	
		5 Medical / neurological impairment	29	2.66	1.798	
		7 Multiple disabilities	7	2.57	1.813	

Cegep based disability service providers. Table 47 shows mean scores of disability service providers' importance ratings on CEQ items, where 1 = not important and 5 = extremely important. The composition of a 4th Subscale - Service Provision - which was present only on the campus based disability service provider version of the CEQ, can be seen in Table 47.

Table 47

Disability Service Providers' Importance Ratings on CEQ Items

Using the following scale, from your experience, indicate the level of importance of each item for the academic performance of Cegep with disabilities. Think of students with disabilities in general. If you feel an item is not applicable, respond with N/A (not applicable).					
1	2	3	4	5	[N/A]
Not Important	Slightly Important	Moderately Important	Very Important	Extremely Important	Not Applicable
Students' Personal Situation					
1. __3.21__ Financial situation					
2. __2.42__ Paid employment					
3. __3.98__ Family situation					
4. __3.93__ Friends					
5. __4.73__ Level of personal motivation					
6. __4.30__ Study habits					
7. __3.79__ Previous education experiences					
8. __4.26__ Health					
9. __3.70__ Impact of their disability					
Cegep Environment					
10. __3.49__ Level of difficulty of courses					
11. __4.07__ Course load					
12. __3.53__ Course schedule					
13. __4.46__ Attitudes of professors					
14. __3.86__ Attitudes of non-teaching staff (e.g., registration staff, financial aid staff)					
15. __4.00__ Attitudes of fellow students					
16. __3.36__ Availability of computers on campus					
17. __2.96__ Training on computer technologies on campus					
18. __3.82__ Availability of course materials					
19. __2.91__ Opportunity to participate in Cegep extracurricular activities (e.g., clubs, sports, social activities)					
20. __4.29__ Willingness of professors to adapt courses to students' needs					
21. __4.22__ Accessibility of building facilities (e.g., doorways, classrooms, labs)					
22. __3.28__ Accessibility of Cegep physical education courses					
23. __4.32__ Availability of disability related services at the Cegep					
Government and Community Supports and Services					
24. __4.00__ Availability of financial aid					
25. __3.32__ Availability of tutoring outside of the Cegep					
26. __3.79__ Public transportation					
27. __3.19__ Availability of computers off-campus					
28. __2.94__ Training on adapted computer technologies off-campus					
29. __3.60__ Disability related support services off-campus					
30. __4.19__ Availability of adapted transport for students with disabilities					
31. __3.94__ Coordination between disability related support services (e.g., attendant care, adapted transport) and school					
32. __3.91__ Availability of adaptations / technical aids at home (e.g., ramp, TDD)					
Service Provision					
33. __4.27__ Budget allocated for disability services at the Cegep					
34. __4.43__ Availability of affordable diagnostic services (e.g., LD assessment) external to Cegep)					
35. __4.21__ Willingness of students to use suitable accommodations					
36. __4.28__ Students' awareness of the impact of their disability					
37. __4.37__ Students' ability to express their needs					
38. __4.04__ Students' choice of career					
39. __4.28__ Identification of students' individual needs by the disability service provider					
40. __3.96__ On-going support by the disability service provider					
41. __4.00__ Professors' level of knowledge about disability services / accommodations					
42. __4.48__ Collaboration between professors and disability service providers					
43. __4.30__ Attitudes of the administration toward services provided to students with disabilities					

Table 48 shows importance ratings in rank order for each subscale. The mean of importance scores was 3.87. Results on Subscales (including disability specific items) indicate that Service Provision was seen as most important, followed by Students' Personal Situation, Cegep Environment, and Government and Community Supports and Services. Results on a 1-way ANOVA examining mean scores on the 4 Subscales shows a significant test result, $F(3, 165) = 146.27, p=.000$. Post hoc tests show that the Service Provision score was significantly higher than scores on all other Subscales and that the Students' Personal Situation Subscale was more important than the Government and Community Supports and Services Subscale. Cegep scores did not differ significantly from Personal or Government and Community Supports and Services scores.

Table 48

Rank Order of Importance: Disability Service Providers

Item #		Mean	Overall Rank	Rank Within Subscale	Subscale of Item	N	SD
5	Level of personal motivation	4.73	1	1	Personal	56	0.45
42	Collaboration between professors and disability service providers	4.48	2	1	Service	56	0.60
13	Attitudes of professors	4.46	3	1	Cegep	57	0.57
34	Availability of affordable diagnostic services (e.g., LD assessment) external to Cegep)	4.43	4	2	Service	53	0.69
37	Students' ability to express their needs	4.37	5	3	Service	57	0.67
23	Availability of disability related services at Cegep	4.32	6	2	Cegep	56	0.72
43	Attitudes of the administration toward services provided to students with disabilities	4.30	7	4	Service	56	0.69
6	Study habits	4.30	8	2	Personal	57	0.65
20	Willingness of professors to adapt courses to my needs	4.29	9	3	Cegep	56	0.65
39	Identification of students' individual needs by the disability service provider	4.28	10	5	Service	57	0.70
36	Students' awareness of the impact of their disability	4.28	11	6	Service	57	0.86
33	Budget allocated for disability services at the Cegep	4.27	12	7	Service	56	0.96
8	Health	4.26	13	3	Personal	57	0.61
21	Accessibility of building facilities	4.22	14	4	Cegep	55	0.69
35	Willingness of students to use suitable accommodations	4.21	15	8	Service	57	0.70
30	Availability of adapted transportation for people with disabilities	4.19	16	1	Community	54	0.78
11	Course load	4.07	17	5	Cegep	57	0.75
38	Students' choice of career	4.04	18	9	Service	56	0.87
15	Attitudes of students	4.00	19.5	6	Cegep	56	0.87
24	Availability of financial aid	4.00	19.5	2	Community	56	0.74
41	Professors' level of knowledge about disability services / accommodations	4.00	21	10	Service	56	0.87
3	Family situation	3.98	22	4	Personal	57	0.74
40	On-going support by the disability service provider	3.96	23	11	Service	57	0.82
31	Coordination between disability related services	3.94	24	3	Community	52	0.92
4	Friends	3.93	25	5	Personal	55	0.79
32	Availability of physical adaptations/technical aids at home	3.91	26	4	Community	55	0.87
14	Attitudes of non-teaching staff	3.86	27	7	Cegep	57	0.81
18	Availability of course materials	3.82	28	8	Cegep	56	0.77
7	Previous educational experience	3.79	29	6	Personal	57	0.70
26	Public transportation	3.79	30	5	Community	52	0.98
9	Impact of my disability	3.70	31	7	Personal	57	0.89
29	Disability related support services off campus	3.60	32	6	Community	55	0.71
12	Course schedule	3.53	33	9	Cegep	57	0.95
10	Level of difficulty of courses	3.49	34	10	Cegep	57	0.71
16	Availability of computers on-campus	3.36	35	11	Cegep	56	0.98
25	Available of tutoring outside the Cegep	3.32	36	7	Community	53	0.80
22	Accessibility of Cegep physical education courses	3.28	37	12	Cegep	53	0.97
1	Financial situation	3.21	38	8	Personal	56	0.89
27	Availability of computers off-campus	3.19	39	8	Community	54	1.03
17	Training on computer technologies on campus	2.96	40	13	Cegep	52	0.91
28	Training on computer technologies off-campus	2.94	41	9	Community	51	0.83
19	Opportunity to participate in extracurricular activities	2.91	42	14	Cegep	56	0.79
2	Paid employment	2.42	43	9	Personal	52	0.87
Subscales							
	Service Provision	4.85	1			57	0.47
	Students' Personal Situation	3.83	2			57	0.37
	Cegep Environment	3.77	3			56	0.38
	Government and Community Supports and Services	3.66	4			57	0.56

Table 49 shows "very important" CEQ items (i.e., score ≥ 4 on a 5-point scale) arranged in rank order of importance within groupings. These indicate that 3 of the 9 Students' Personal Situation items, 6 of the 14 Cegep Environment items, 2 of the 9 Government and Community Supports and Services items, and 10 of the 11 Service Provision items were seen as very important.

Table 49

"Very Important" CEQ Items For Campus Based Disability Service Providers: Rank Ordering Within Groupings

Rank	#	Item
Students' Personal Situation		
1	15	Level of personal motivation
2	6	Study habits
3	8	Health
Cegep Environment		
1	13	Attitudes of professors
2	23	Availability of disability related services at the Cegep
3	20	Willingness of professors to adapt courses to my needs
4	21	Accessibility of building facilities
5	11	Course load
6	15	Attitudes of students
Government and Community Supports and Services		
1	30	Availability of adapted transportation for people with disabilities
2	24	Availability of financial aid
Service Provision		
1	42	Collaboration between professors and disability service providers
2	34	Availability of affordable diagnostic services (e.g., LD assessment) external to Cegep
3	37	Students' ability to express their needs
4	43	Attitudes of the administration toward services provided to students with disabilities
5	39	Identification of students' individual needs by the disability service provider
6	36	Students' awareness of the impact of their disability
7	33	Budget allocated for disability services at the Cegep
8	35	Willingness of students to use suitable accommodations
9	38	Students' choice of career
10	41	Professors' level of knowledge about disability services / accommodations

Comparison Of Disability Service Providers' And Current Students' Ratings

We examined items seen by disability service providers as most important, mid-range in importance, and least important and examined students' facilitator and obstacle scores. Results indicate that the correlation between importance ranks and obstacle-facilitator ranks is not significant, $r(30)=.215$, $p=.238$, indicating a discrepancy between what was most important to service providers and what was experienced as most difficult by current students with disabilities. Table 50 shows the scores.

Table 50

Relationships Between Campus Based Disability Service Provider's Importance Scores And Students With Disabilities' Ratings Of Obstacles And Facilitators

Item #	Item	Disability Service Providers			Type of Item	Current Students With Disabilities					
		Rank	Mean	N		Rank	Mean	N	Major Obstacle ¹ % of Students	Neither Obstacle Nor Facilitator ² % of Students	Major Facilitator ³ % of Students
MOST IMPORTANT TO SERVICE PROVIDERS					2 OF 11 ITEMS IN OBSTACLE RANGE						
5	Level of personal motivation	1	4.73	56	Personal	9	4.55	293	14%	24%	61%
13	Attitudes of professors	2	4.46	57	Cegep	11	4.46	295	12%	31%	57%
23	Availability of disability related services at Cegep	3	4.32	56	Cegep	1	4.98	281	6%	24%	70%
6	Study habits	4	4.30	57	Personal	24	3.86	296	23%	37%	40%
20	Willingness of professors to adapt courses to my needs	5	4.29	56	Cegep	13	4.42	285	10%	38%	52%
8	Health	6	4.26	57	Personal	23	3.89	258	25%	30%	45%
21	Accessibility of building facilities	7	4.22	55	Cegep	4	4.75	208	7%	31%	63%
30	Availability of adapted transportation for people with disabilities	8	4.19	54	Community	27	3.48	65	42%	14%	45%
11	Course load	9	4.07	57	Cegep	31	3.04	296	37%	43%	20%
15	Attitudes of students	10.5	4.00	56	Cegep	10	4.47	287	8%	38%	54%
24	Availability of financial aid	10.5	4.00	56	Community	21	3.98	168	24%	32%	45%
MID-RANGE OF IMPORTANCE TO SERVICE PROVIDERS					1 OF 10 ITEMS IN OBSTACLE RANGE						
3	Family situation	12	3.98	57	Personal	14	4.33	276	16%	29%	55%
31	Coordination between disability related services	13	3.94	52	Community	17	4.14	95	21%	27%	52%
4	Friends	14	3.93	55	Personal	7	4.65	275	10%	26%	64%
32	Availability of physical adaptations/technical aids at home	15	3.91	55	Community	12	4.43	94	20%	16%	64%
14	Attitudes of non-teaching staff	16	3.86	57	Cegep	2	4.94	273	4%	28%	68%
18	Availability of course materials	17	3.82	56	Cegep	6	4.66	279	5%	38%	57%
7	Previous educational experience	18	3.79	57	Personal	16	4.26	288	17%	33%	50%
26	Public transportation	19	3.79	52	Community	19	4.04	207	24%	27%	50%
9	Impact of my disability	20	3.70	57	Personal	32	2.55	274	53%	37%	10%
29	Disability related support services off campus	21	3.60	55	Community	26	3.78	157	27%	32%	41%
LEAST IMPORTANT TO SERVICE PROVIDERS					3 OF 11 ITEMS IN OBSTACLE RANGE						
12	Course schedule	22	3.53	57	Cegep	25	3.79	291	20%	44%	35%
10	Level of difficulty of courses	23	3.49	57	Cegep	30	3.16	295	29%	54%	17%
16	Availability of computers on-campus	24	3.36	56	Cegep	8	4.59	272	10%	33%	57%
25	Available of tutoring outside the Cegep	25	3.32	53	Community	22	3.95	157	27%	28%	45%
22	Accessibility of Cegep physical education courses	26	3.28	53	Cegep	5	4.68	203	10%	26%	64%
1	Financial situation	27	3.21	56	Personal	28	3.46	243	36%	30%	34%
27	Availability of computers off-campus	28	3.19	54	Community	3	4.89	233	10%	21%	69%
17	Training on computer technologies on campus	29	2.96	52	Cegep	15	4.30	184	14%	38%	49%
28	Training on computer technologies off-campus	30	2.94	51	Community	18	4.05	114	22%	33%	45%
19	Opportunity to participate in extracurricular activities	31	2.91	56	Cegep	20	4.03	208	22%	29%	49%
2	Paid employment	32	2.42	52	Personal	29	3.24	160	36%	41%	24%
Subscale											
	Students' Personal Situation	1	3.84	57	Personal	3	3.90	290	6%	67%	27%
	Cegep Environment	2	3.77	56	Cegep	1	4.28	296	1%	61%	38%
	Government and Community Supports and Services	3	3.66	57	Community	2	3.97	132	14%	50%	36%

Note. Boxed items highlight percentages of 50% and greater. Items with shading and box have a mean score in the obstacle range.

¹Major obstacle: score = 1 to 2.

²Neither obstacle nor facilitator" score = 3 to 4

³Major facilitator: score = 5 to 6

Results in Table 50 also show that the number 1 ranked facilitator, considered a facilitator by 70% of students, was the availability of disability related services at the Cegep, an item among those seen as the most important by service providers. The corresponding greatest obstacle, endorsed by 53% of students, was the impact of their disability; this item, however, was only seen as being of intermediate importance by service providers. Table 50 also shows that among items rated among the most important by disability service providers, 2 items had scores in the obstacle range: availability of adapted transportation for people with disabilities and course load. Three items that were seen as among the least important by disability service providers were seen as major obstacles by students with disabilities: their financial situation, paid employment, and the level of difficulty of their courses.

Figures 13 and 14 illustrate some of these relationships for items rated as very important by disability service providers (i.e., rating = 4 to 5) and for items rated as major facilitators (score = 5 to 6) and major obstacles (score = 1 to 2) by current students with disabilities.

Figure 13

Relationships Between Importance Scores Of Service Providers And Items Rated as Major Facilitator By Students With Disabilities

Very important	Service Providers		Facilitators	Item#	Students with disabilities	
						Much easier
100%			Level of personal motivation	5		61%
96%			Attitudes of professors	13		57%
91%			Health	8		45%
89%			Study habits	6		40%
89%			Willingness of professors to adapt courses to my needs	20		52%
89%			Availability of disability related services at Cegep	23		70%
89%			Accessibility of building facilities	21		63%
84%			Availability of financial aid	24		45%
81%			Availability of adapted transportation for people with disabilities	30		45%
81%			Family situation	3		55%
79%			Course load	11		20%
79%			Attitudes of students	15		54%
73%			Availability of physical adaptations/technical aids at home	32		64%
71%			Availability of course materials	18		57%
71%			Coordination between disability related services	31		52%
69%			Friends	4		64%
63%			Previous educational experience	7		50%
63%			Attitudes of non-teaching staff	14		68%
61%			Impact of my disability	9		10%
58%			Public transportation	26		50%
51%			Disability related support services off-campus	29		41%
51%			Level of difficulty of courses	10		17%
51%			Course schedule	12		35%
46%			Availability of computers on campus	16		57%
40%			Accessibility of Cegep physical education courses	22		64%
39%			Availability of computers off-campus	27		69%
38%			Financial situation	1		34%
36%			Availability of tutoring outside the Cegep	25		45%
31%			Training on computer technologies on campus	17		49%
25%			Training on computer technologies off-campus	28		45%
23%			Opportunity to participate in extracurricular activities	19		49%
8%			Paid employment	2		24%

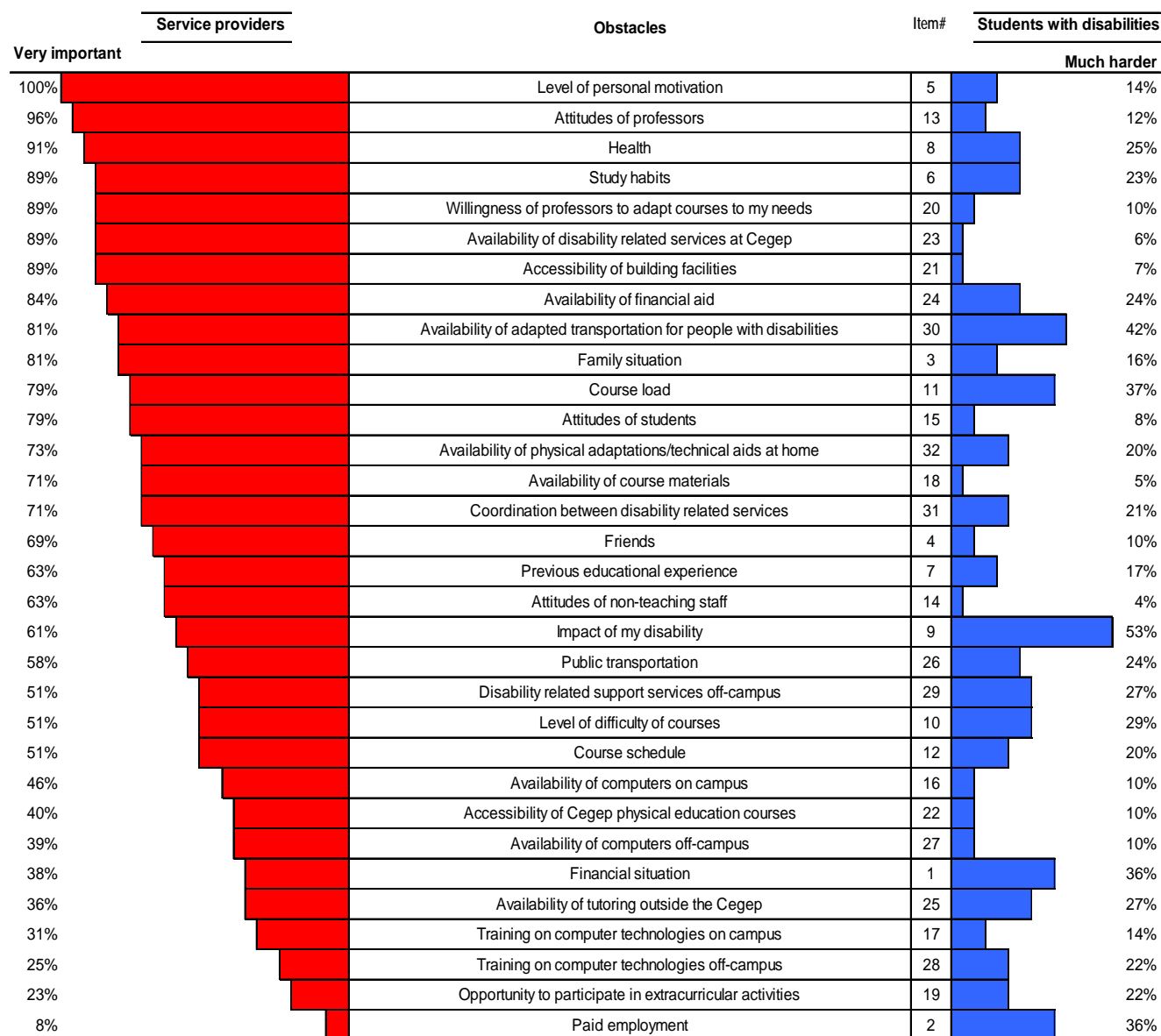
Note. Very important = score of 4 or 5 on the scale of importance. Facilitator = score of 5 or 6 on the scale of difficulty where 1 = much harder and 6 = much easier.

It can be seen in Figure 13 that three of the items rated very important by at least ½ of the campus based disability service providers were seen as key facilitators by fewer than 20% of students with disabilities: course load, the impact of the student's disability, and the level of difficulty of courses. Similarly, 3 items that at least ½ of the students with disabilities indicated made their Cegep studies easier were seen as very important by fewer than 50% of campus based disability service providers: the availability of computers both on and off-campus and the accessibility of Cegep physical education courses.

In Figure 14 it can be seen that 3 of the items rated very important by at least ½ of the campus based disability service providers were seen as key obstacles by at least ⅓ of students with disabilities: the availability of adapted transport for people with disabilities, a heavy course load, and the impact of students' disabilities. Data in the open-ended portion of this investigation shows that the problem with paid employment is that students feel they are spending too much time working at a job, but that this is necessary to enable them to stay in school.

Figure 14

Relationships Between Importance Scores Of Service Providers And Items Rated as Major Obstacles By Students With Disabilities



Note. Very important = score of 4 or 5 on the scale of importance. Obstacle = score of 1 or 2 on the scale of difficulty where 1 = much harder and 6 = much easier.

We also tried to carry out a direct comparison of service providers' and current students' importance ratings by converting the easier-harder ratings of students into importance scores. We did this by collapsing the easier-harder scores in the following way. We made the assumptions that if an item was a major facilitator or a major obstacle (i.e., had a score of 1 (much harder) or 6 (much easier)) that the item was very important. We transformed both of these scores by giving them a new "computed importance" score of 3. Items with easy-difficult scores of 3 or 4 (i.e., slightly harder or easier) were given a score of 1. Items in between (i.e., those with a rating of 5 or 2 - moderately easier or harder) we gave a score of 2. Table 51 shows the means for students with disabilities and disability service providers. It can be seen in this Table, and in the nonsignificant correlation coefficient, $r(30) = .136$, $p = .458$, that there is little in common between the two sets of scores.

Table 51

"Importance Scores:" Disability Service Providers And Students With Disabilities

Item #	Disability Service Providers			Students With Disabilities			Diff. in Rank
	Mean	Rank	N	Mean	Rank	N	
5	4.73	1	56	2.17	6	293	-5
13	4.46	2	57	2.03	21	295	-19
23	4.32	3	56	2.27	4	281	-1
6	4.30	4	57	1.92	27	296	-23
20	4.29	5	56	1.95	25	285	-20
8	4.26	6	57	2.13	13	258	-7
21	4.22	7	55	2.14	11	208	-4
30	4.19	8	54	2.40	1	65	7
11	4.07	9	57	1.85	30	296	-21
15	4.00	10.5	56	1.91	28	287	-17.5
24	4.00	10.5	56	2.17	7	168	3.5
3	3.98	12	57	2.15	9	276	3
31	3.94	13	52	2.07	18	95	-5
4	3.93	14	55	2.15	10	275	4
32	3.91	15	55	2.35	3	94	12
14	3.86	16	57	2.14	12	273	4
18	3.82	17	56	1.95	26	279	-9
7	3.79	18	57	2.03	22	288	-4
26	3.79	19	52	2.24	5	207	14
9	3.70	20	57	1.91	29	274	-9
29	3.60	21	55	2.07	19	157	2
12	3.53	22	57	1.81	31	291	-9
10	3.49	23	57	1.61	32	295	-9
16	3.36	24	56	2.11	16	272	8
25	3.32	25	53	2.11	15	157	10
22	3.28	26	53	2.16	8	203	18
1	3.21	27	56	2.10	17	243	10
27	3.19	28	54	2.38	2	233	26
17	2.96	29	52	1.97	23	184	6
28	2.94	30	51	2.04	20	114	10
19	2.91	31	56	2.12	14	208	17
2	2.42	32	52	1.96	24	160	8

Note. Higher scores indicate greater importance. Maximum score for campus based disability service providers is 5. Maximum score for students with disabilities is 3. Items that differed by 9 or more rank positions are boxed and highlighted.

Nevertheless, it can be seen in Table 52 that on the top 11 items of importance (as rated by the campus based disability service providers) students and service providers agreed upon most (i.e., of the 11 items that were most important to disability services, 5 were also in the top 11 of student rankings). Differences show that campus based disability service providers felt that the attitude and willingness of professors to adjust their courses to students' needs were important as well as students' study habits, health, and course load as well as the attitudes of other students. Students felt that the availability of computers off-campus and of physical adaptations at home were important along with public transportation, the accessibility of Cegep physical education courses, and their friends and family situation.

Table 52

Commonalities Between The Top Eleven "Importance" Scores: Campus Based Disability Service Providers And Students With Disabilities

Service Providers		Students with Disabilities	
Level of personal motivation	100%	Availability of adapted transportation for people with disabilities	54%
Attitudes of professors	96%	Availability of computers off-campus	59%
Availability of disability related services at Cegep	89%	Availability of physical adaptations/technical aids at home	51%
Study habits	89%	Availability of disability related services at Cegep	51%
Willingness of professors to adapt courses to my needs	89%	Public transportation	51%
Health	91%	Level of personal motivation	42%
Accessibility of building facilities	89%	Availability of financial aid	49%
Availability of adapted transportation for people with disabilities	81%	Accessibility of Cegep physical education courses	42%
Course load	79%	Family situation	45%
Attitudes of students	79%	Friends	40%
Availability of financial aid	84%	Accessibility of building facilities	45%

Note. Boxed items are common to service providers and students with disabilities.

Graduates. Three groups of graduates completed the CEQ and the Post Cegep Questionnaire which inquired about graduates' current situation (i.e., questions related to whether they were continuing their studies, were holding a job, etc.): graduates without disabilities, graduates with disabilities who were registered to receive disability related services, and graduates with disabilities who did not register to receive disability related services.

CEQ: Graduates' Personal Situation. A one-way multivariate analysis of variance (MANOVA) was conducted to determine the effect of the presence or absence of a disability on the variables on the Graduates' Personal Situation items that were common to both graduates with and without disabilities. There was a significant difference between graduates with and without a disability on the dependent measures, Wilks' $\Lambda = 0.86$, $F(8, 753) = 14.76$, $p < .001$. Follow-up independent t-tests were conducted. These showed that there were significant differences on Item 8 (Health) and Item 3 (Family). Mean scores of graduates with disabilities showed that their health scores were significantly lower ($M = 3.69$, $SD = 1.82$) than those of graduates without disabilities ($M = 5.06$, $SD = 1.23$), $t(181) = 9.20$, $p < .001$. Family also proved to be less of a facilitator for graduates with disabilities ($M = 3.99$, $SD = 1.60$) than without disabilities ($M = 4.66$, $SD = 1.46$), $t(1304) = 5.43$, $p < .001$. The means, standard deviations and independent t-test results for all items on the Personal Situation subscale are shown in Table 53.

A series of two independent t-tests on the Students' Personal Subscale means showed that there was a significant difference between graduates with and without disabilities both when the disability specific item was included in the mean for graduates with disabilities as well as when this was excluded. Means and t-test results are available in Table 53. These show that the overall personal situation of graduates with disabilities was less facilitating than that of graduates without disabilities.

We also examined the Graduates' Personal Situation variables of graduates in pre-university and career/technical programs separately. A one-way MANOVA was conducted to determine the effect of the presence or absence of a disability on the 7 variables on the Personal Situation subscale that were common to both graduates with and without disabilities in pre-university programs. The test showed a significant difference, Wilks' $\Lambda = 0.87$, $F(8, 405) = 6.5$, $p < .001$. A series of follow up independent t-tests were conducted and the outcomes are shown in Table 54. As in the previous analysis, the means of Item 3 (Family) and Item 8 (Health) were significantly different, with graduates with disabilities experiencing these aspects of their Cegep experience as less facilitating. However, an additional item (Item 14: Friends) also showed a statistically significant difference in means, with graduates with disabilities in pre-university programs ($M = 4.50$, $SD = 1.37$) experiencing this aspect as less facilitating than graduates without disabilities (4.81 , $SD = 1.28$). This item, however, was not significant after a Bonferroni correction was applied to the alpha level. The difference in Personal Situation Subscale means was also significant for graduates in pre-university programs. Means, standard deviations and t-test results can be found in Table 54.

A MANOVA was also conducted for career/technical programs. The test showed a significant difference on the Personal Situation variables, Wilks' $\Lambda = 0.82$, $F(8, 332) = 9.3$, $p < .001$ between graduates with and without a disability. A series of follow-up independent t-tests showed that the pattern for career/technical programs was consistent with the earlier analysis (i.e., the Health and Family items showed a statistically significant difference, as did the Students' Personal Situation Subscale mean). Results of the independent t-tests are shown in Table 55 for career/technical programs.

CEQ Cegep Environment. A one-way multivariate analysis of variance (MANOVA) was conducted on the items common to both graduates with and without disabilities to determine whether there was difference between the two groups on the Cegep Environment items (13 variables). The MANOVA was not significant, Wilks' $\Lambda = 0.99$, $F(13, 469) = 0.45$, $p = .952$. Because of the importance of the items on this subscale we nevertheless carried out independent t-tests on the individual items. Results showed a significant difference on Item 22 (Accessibility of Cegep physical education courses). Graduates with disabilities ($M = 4.43$, $SD = 1.48$) had lower mean scores on this item than graduates without disabilities ($M = 4.68$, $SD = 1.16$) (see Table 53), although the difference was no longer significant after a Bonferroni adjustment to the alpha level.

An independent t-test on the overall Cegep Environment Subscale means showed no significant difference between graduates with ($M = 4.02$, $SD = 0.80$) and without ($M = 4.10$, $SD = 0.67$) disabilities, $t(211) = 1.55$, $p = .178$) (see Table 53).

We again examined the Cegep Environment variables of graduates in pre-university and career/technical programs separately. Means are available in Tables 54 and 55. A one-way MANOVA was conducted on the items common to both graduates with and without disabilities to determine whether there was a difference between the two groups on the Cegep Environment items (13 variables) for graduates in pre-university programs (see Table 54). The comparison was not statistically significant, Wilks' $\Lambda = 0.97$, $F(13, 264) = 0.55$, $p = .892$. The difference in the Cegep Subscale means (0.03) was also not statistically significant. Nevertheless, we conducted independent t-tests on individual items to examine trends in the pre-university data.

These show that scores on Item 22 (Accessibility of Cegep physical education courses) of graduates with and without disabilities in pre-university programs differed, as was the case in the analysis on the whole sample of graduates. However, in addition, scores on Item 12 (Course schedule) and Item 18 (Availability of course materials) were also different. Although the score on Item 12 was below 4.0 for both groups, graduates with disabilities ($M = 3.96$, $SD = 1.32$) rated this item higher than did graduates without disabilities (3.62 , $SD = 1.34$). Graduates with disabilities ($M = 4.74$, $SD = 1.13$) also rated Item 18 (Availability of course materials) higher than graduates without disabilities ($M = 4.44$, $SD = 1.10$). Given the nonsignificant MANOVA, it was not surprising that after a Bonferroni adjustment to the alpha level none of these items were significantly different.

The MANOVA on Cegep Environment scores of career/technical program graduates also was not significant, Wilks' $\Lambda = 0.93$, $F(13, 184) = 1.10$, $p = .366$. When independent t-tests were done, the only item showing a difference in means was Item 20 (Willingness of professors to adapt courses to the student's needs). In this case, graduates with disabilities ($M = 3.82$, $SD = 1.39$) rated the item lower than graduates without disabilities ($M = 4.29$, $SD = 1.35$). Again, the difference was not significant after a Bonferroni correction was applied. Table 55 shows the means, standard deviations and t-test outcomes for career/technical programs.

CEQ: Government and Community Supports and Services. A one-way MANOVA was conducted on the 5 items common to both graduates with and without disabilities to determine whether there was a difference between the two groups. Results show that the comparison was not significant, Wilks' $\Lambda = 0.95$, $F(5, 117) = 1.31$, $p = .348$. The means and standard deviations for each item on the subscale for both groups are shown in Table 53.

When Government and Community Supports Subscale averages were compared, again, there was no significant differences between graduates with ($M = 4.22$, $SD = 1.20$) and without disabilities ($M = 4.19$, $SD = 1.17$). Details of the means, standard deviations and independent t-test values can be found in Table 53.

The small number of responses on items on CEQ Government and Community Supports and Services items did not allow for a meaningful MANOVA comparison. However, consistent with the earlier analysis, when independent t-tests were performed for each of the 5 items there was no statistically significant difference between graduates with and without disabilities. This was true for both the pre-university and the career/technical graduates (see Tables 54 and 55).

CEQ: Index of Difficulty (IDF). It can be seen in Table 53 that when IDF scores of graduates with and without disabilities were compared there was a significant difference on the Index of Difficulty (IDF) for all graduates combined, as well as for those graduating from career/technical and from pre-university programs. Graduates with disabilities had scores that were lower than graduates without disabilities. The difference for pre-university graduates was only significant when the disability specific items were included in the comparison (see Tables 53, 54, 55).

Table 53

CEQ: Comparing Graduates With And Without Disabilities On Item And Subscale Scores In All Programs And Sectors

#	Item	With Disabilities			Without Disabilities			t	df	Sig	Difference	P<.05
		N	Mean	SD	N	Mean	SD					
1	Financial situation	161	3.60	1.68	1125	3.86	1.64	-1.85	1284	0.064	-0.26	
2	Paid employment	131	3.27	1.53	953	3.44	1.44	-1.24	1082	0.215	-0.17	
3	Family	162	3.99	1.60	1144	4.66	1.45	-5.43	1304	0.000	-0.67	*
4	Friends	169	4.71	1.40	1214	4.87	1.23	-1.37	206	0.171	-0.16	
5	Level of personal motivation	180	4.75	1.41	1283	4.74	1.36	0.05	1461	0.959	0.01	
6	Study habits	176	4.23	1.43	1284	4.37	1.38	-1.26	1458	0.209	-0.14	
7	Previous educational experience	167	4.55	1.33	1211	4.61	1.24	-0.60	1376	0.550	-0.06	
8	Health	160	3.69	1.82	1090	5.06	1.23	-9.20	181	0.000	-1.37	*
9	Impact of disability	78	2.69	1.43								
	Personal Situation Subscale (Exclude 9)	177	4.13	0.85	1248	4.48	0.76	5.05	1423	0.000	-0.34	*
	Personal Situation Subscale (Include 9)	177	4.06	0.84	1248	4.48	0.76	6.70	4423	0.000	-0.42	*
10	Level of difficulty of courses	174	3.60	1.25	1268	3.68	1.25	-0.77	1440	0.439	-0.08	
11	Course load	176	3.06	1.46	1274	3.11	1.31	-0.41	1448	0.685	-0.04	
12	Course schedule	176	3.61	1.41	1275	3.52	1.33	0.85	1449	0.395	0.09	
13	Attitudes of professors	178	4.35	1.36	1278	4.30	1.35	0.49	1454	0.627	0.05	
14	Attitudes of non-teaching staff	147	4.09	1.43	1087	4.10	1.30	-0.13	1232	0.899	-0.01	
15	Attitudes of fellow students	170	4.15	1.40	1257	4.31	1.22	-1.46	205	0.145	-0.17	
16	Availability of computers on campus	164	3.91	1.74	1213	4.16	1.58	-1.37	201	0.085	-0.25	
17	IT training Cegep	109	3.87	1.53	836	4.05	1.34	-1.14	130	0.255	-0.18	
18	Availability of course materials	162	4.46	1.31	1212	4.44	1.15	0.22	195	0.824	0.02	
19	Accessibility of extracurricular activities	106	4.19	1.64	819	4.43	1.27	-1.47	122	0.143	-0.24	
20	Willingness of professors to adapt courses to my needs	160	3.97	1.38	1139	4.07	1.35	-0.89	1297	0.372	-0.10	
21	Accessibility of classrooms/labs etc	157	4.63	1.27	1067	4.81	1.07	-1.64	190	0.102	-0.18	
22	Accessibility of Cegep physical education courses	136	4.43	1.38	1047	4.68	1.16	-2.03	161	0.044	-0.25	*
23	Availability of disability related services	56	4.43	1.46								
	Cegep Environment Subscale (Exclude 23)	176	4.02	0.80	1258	4.10	0.66	1.55	211	0.178	-0.08	
	Cegep Environment Subscale (Include 23)	176	4.03	0.80	1258	4.10	0.67	1.18	210	0.238	-0.08	
24	Availability of financial aid	73	3.56	1.79	471	3.93	1.76	-1.65	542	0.099	-0.37	
25	Private tutoring	43	4.00	1.65	276	3.96	1.48	0.18	317	0.860	0.04	
26	Public transport	153	4.47	1.68	1059	4.60	1.55	-0.99	1210	0.323	-0.13	
27	Availability of computers off-campus	112	4.51	1.62	822	4.59	1.62	-0.48	932	0.630	-0.08	
28	Computer technologies training off-campus	37	3.35	1.83	356	3.81	1.54	-1.69	391	0.091	-0.46	
29	Disability related support services off-campus	22	3.59	1.68								
30	Availability of adapted transportation for people with disabilities	16	3.63	1.96								
31	Scheduling conflicts between disability related services	13	3.54	2.03								
32	Availability of physical adaptations at home	12	4.17	1.85								
	Gov't and Community Supports & Services Subscale (Exclude 29-32)	85	4.22	1.20	415	4.19	1.16	0.22	498	0.823	0.03	
	Gov't and Community Supports & Services Subscale (Include 29-32)	85	4.21	1.22	415	4.19	1.17	0.12	498	0.907	0.02	
	Index of difficulty (Excluding disability specific Items)	178	4.08	0.69	1280	4.26	0.59	3.73	1456	0.000	-0.18	*
	Index of difficulty (Including disability specific Items)	178	4.05	0.69	1280	4.26	0.59	4.31	1456	0.000	-0.21	*

Table 54

CEQ: Comparing Graduates With And Without Disabilities On Item And Subscale Scores In Pre-University Programs

#	Item	With Disabilities			Without Disabilities			t	df	Sig. (2-tailed)	Mean Difference	Sig p <= .05
		N	Mean	SD	N	Mean	SD					
1	Financial situation	78	3.94	1.60	618	4.17	1.56	-1.22	694	0.225	-0.23	
2	Paid employment	68	3.40	1.52	525	3.56	1.40	-0.88	591	0.382	-0.16	
3	Family situation	80	3.99	1.61	667	4.67	1.42	-4.04	745	0.000	-0.69	*
4	Friends	86	4.50	1.37	708	4.81	1.28	-2.10	792	0.036	-0.31	*
5	Level of personal motivation	90	4.59	1.49	740	4.59	1.43	-0.01	828	0.992	0.00	
6	Study habits	88	4.07	1.40	741	4.30	1.44	-1.41	827	0.160	-0.23	
7	Previous educational experience	88	4.64	1.30	707	4.58	1.26	0.38	793	0.707	0.05	
8	Health	78	3.74	1.90	616	5.05	1.26	-5.90	86	0.000	-1.30	*
9	Impact of my disability	40	2.73	1.60								
	Personal Situation Subscale (Exclude 9)	89	4.15	0.79	719	4.49	0.79	-3.83	806	0.000	-0.34	*
	Personal Situation Subscale (Include 9)	89	4.07	0.79	719	4.49	0.79	-4.71	806	0.000	-0.42	*
10	Level of difficulty of courses	88	3.80	1.24	735	3.71	1.26	0.63	821	0.531	0.09	
11	Course load	88	3.51	1.34	734	3.30	1.27	1.44	820	0.151	0.21	
12	Course schedule	89	3.96	1.32	737	3.62	1.34	2.22	824	0.027	0.33	*
13	Attitudes of professors	90	4.29	1.31	737	4.14	1.36	0.97	825	0.333	0.15	
14	Attitudes of non-teaching staff	75	3.89	1.48	643	4.08	1.32	-1.15	716	0.249	-0.19	
15	Attitudes of students	88	4.01	1.52	722	4.18	1.26	-1.15	808	0.251	-0.17	
16	Availability of computers on campus	81	4.22	1.64	708	4.30	1.51	-0.43	787	0.667	-0.08	
17	Training on computer technologies on campus	51	4.06	1.41	449	3.98	1.32	0.40	498	0.687	0.08	
18	Availability of course materials	81	4.74	1.13	688	4.44	1.10	2.31	767	0.021	0.30	*
19	Opportunity to participate in extracurricular activities	56	4.41	1.36	490	4.58	1.22	-0.99	544	0.321	-0.17	
20	Willingness of professors to adapt courses to my needs	77	4.10	1.32	637	3.90	1.33	1.28	712	0.201	0.21	
21	Accessibility of building facilities	79	4.63	1.22	603	4.83	1.06	-1.34	94	0.183	-0.19	
22	Accessibility of Cegep physical education courses	80	4.31	1.42	644	4.72	1.15	-2.45	94	0.016	-0.40	*
23	Availability of disability related services at the Cegep	28	4.32	1.52								
	Cegep Environment Subscale (Exclude 23)	88	4.15	0.68	731	4.11	0.67	0.425	817	0.671	0.03	
	Cegep Environment Subscale (Include 23)	88	4.15	0.69	731	4.11	0.67	0.478	817	0.633	0.04	
24	Availability of financial aid	29	3.34	1.74	202	4.00	1.71	-1.94	229	0.054	-0.66	
25	Availability of tutoring outside the Cegep	23	4.26	1.54	147	3.97	1.44	0.88	168	0.379	0.29	
26	Public transportation	81	4.43	1.75	628	4.59	1.60	-0.82	707	0.415	-0.16	
27	Availability of computers off-campus	56	4.95	1.38	488	4.73	1.59	1.11	73	0.272	0.22	
28	Training on computer technologies off-campus	19	3.16	1.86	207	3.80	1.54	-1.71	224	0.089	-0.64	
29	Disability related support services off-campus	11	3.91	1.87								
30	Availability of adapted transportation for people with disabilities	8	3.88	1.96								
31	Coordination between disability related services	9	3.89	2.03								
32	Availability of physical adaptations/technical aids at home	8	4.75	1.28								
	Gov't and Community Supports & Services Subscale (Exclude 29-32)	42	4.38	1.11	215	4.17	1.15	1.05	255	0.293	0.20	
	Gov't and Community Supports & Services Subscale (Include 29-32)	42	4.38	1.15	215	4.17	1.15	1.08	255	0.281	0.21	
	Index of difficulty (Excluding disability specific Items)	90	4.16	0.62	741	4.28	0.59	-1.81	829	0.070	-0.12	
	Index of difficulty (Including disability specific Items)	90	4.13	0.63	741	4.28	0.59	-2.25	829	0.025	-0.15	*

Table 55
CEQ: Comparing Graduates With And Without Disabilities On Item And Subscale Scores In Career/Technical Programs

#	Item	With Disabilities			Without Disabilities			t	df	Sig.	Mean Difference	Sig p<=.05
		N	Mean	SD	N	Mean	SD					
1	Financial situation	78	3.32	1.69	501	3.49	1.65	-0.81	577	0.416	-0.16	
2	Paid employment	58	3.26	1.54	422	3.32	1.48	-0.27	478	0.787	-0.06	
3	Family situation	78	4.04	1.57	469	4.65	1.50	-3.32	545	0.001	-0.61	*
4	Friends	79	4.87	1.42	499	4.96	1.13	-0.62	94	0.534	-0.09	
5	Level of personal motivation	85	4.93	1.26	535	4.96	1.23	-0.19	618	0.848	-0.03	
6	Study habits	83	4.45	1.41	535	4.45	1.30	-0.05	616	0.957	-0.01	
7	Previous educational experience	75	4.48	1.37	497	4.65	1.22	-1.13	570	0.257	-0.17	
8	Health	77	3.71	1.75	467	5.09	1.20	-6.64	88	0.000	-1.37	*
9	Impact of my disability	34	2.71	1.17								
	Personal Situation Subscale (Exclude 9)	83	4.16	0.85	521	4.46	0.72	-3.40	602	0.001	-0.30	*
	Personal Situation Subscale (Include 9)	83	4.10	0.84	521	4.46	0.72	-4.16	602	0.000	-0.36	*
10	Level of difficulty of courses	82	3.39	1.23	525	3.62	1.23	-1.58	605	0.114	-0.23	
11	Course load	84	2.63	1.45	532	2.84	1.32	-1.35	614	0.176	-0.21	
12	Course schedule	82	3.30	1.41	530	3.39	1.31	-0.52	610	0.603	-0.08	
13	Attitudes of professors	83	4.40	1.41	533	4.52	1.32	-0.75	614	0.453	-0.12	
14	Attitudes of non-teaching staff	67	4.28	1.35	436	4.14	1.27	0.88	501	0.379	0.15	
15	Attitudes of students	78	4.29	1.28	527	4.50	1.13	-1.49	603	0.137	-0.21	
16	Availability of computers on campus	78	3.62	1.80	497	3.95	1.64	-1.63	573	0.104	-0.33	
17	Training on computer technologies on campus	55	3.75	1.66	381	4.13	1.35	-1.64	65	0.106	-0.38	
18	Availability of course materials	78	4.18	1.41	516	4.43	1.20	-1.51	95	0.134	-0.25	
19	Opportunity to participate in extracurricular activities	46	4.09	1.79	322	4.21	1.31	-0.47	52	0.643	-0.13	
20	Willingness of professors to adapt courses to my needs	78	3.82	1.39	494	4.29	1.35	-2.85	570	0.005	-0.47	*
21	Accessibility of building facilities	75	4.61	1.34	457	4.78	1.09	-1.16	530	0.245	-0.16	
22	Accessibility of Cegep physical education courses	53	4.55	1.31	396	4.60	1.18	-0.28	447	0.781	-0.05	
23	Availability of disability related services at the Cegep	24	4.54	1.41								
	Cegep Environment Subscale (Exclude 23)	83	3.90	0.85	519	4.09	0.67	-1.93	99	0.057	-0.19	
	Cegep Environment Subscale (Include 23)	83	3.91	0.85	519	4.09	0.67	-1.76	99	0.082	-0.17	
24	Availability of financial aid	39	3.77	1.81	264	3.84	1.79	-0.25	301	0.806	-0.08	
25	Availability of tutoring outside the Cegep	18	3.72	1.64	127	3.92	1.52	-0.51	143	0.607	-0.20	
26	Public transportation	68	4.62	1.53	424	4.63	1.48	-0.05	490	0.960	-0.01	
27	Availability of computers off-campus	52	4.17	1.70	327	4.36	1.65	-0.77	377	0.440	-0.19	
28	Training on computer technologies off-campus	16	3.56	1.86	146	3.79	1.53	-0.48	17	0.636	-0.23	
29	Disability related support services off-campus	9	3.44	1.42								
30	Availability of adapted transportation for people with disabilities	6	2.50	1.52								
31	Coordination between disability related services	3	2.33	2.31								
32	Availability of physical adaptations/technical aids at home	4	3.00	2.45								
	Gov't and Community Supports & Services Subscale (Exclude 29-32)	39	4.19	1.16	196	4.19	1.19	0.02	55	0.981	0.00	
	Gov't and Community Supports & Services Subscale (Include 29-32)	39	4.15	1.17	196	4.19	1.19	-0.16	55	0.872	-0.03	
	Index of difficulty (Excluding disability specific Items)	83	4.03	0.69	531	4.24	0.59	-2.86	612	0.004	-0.21	*
	Index of difficulty (Including disability specific Items)	83	4.00	0.68	531	4.24	0.59	-3.26	612	0.001	-0.23	*

Comparison of CEQ scores of graduates with disabilities who registered and those who did not register for disability related services. The sample consisted of 24 graduates who registered for disability related services provided by their college and a further 158 graduates who self-identified on the questionnaire as having a disability, but did not register for services. Due to the small number of graduates in the registered category it was not possible to conduct meaningful MANOVA comparisons. Instead, independent t-tests were performed for each Subscale and item score on the CEQ. The means, standard deviations and test results for items with significant findings are shown in summary form in Table 56. Details for all items and test results can be found in Table 57.

Table 56

Summary Comparison Of Graduates With Disabilities Who Registered For Services And Who Did Not Register

#	Item	Unregistered				Registered				Sig p < .05
		Mean	N	>3.5	<3.5	Mean	N	>3.5	<3.5	
	*Personal Situation Subscale	4.07	153	77.1%	17.6%	4.51	24	83.8%	12.5%	*
	Cegep Environment Subscale	3.94	152	76.3%	21.7%	4.56	24	95.8%	4.2%	*
	Gov't & Community Supports & Services Subscale	4.16	69	66.7%	26.1%	4.39	16	75.0%	18.8%	
	Index of Difficulty	3.99	154	80.5%	18.2%	4.43	24	100%	0.0%	*
5	Level of personal motivation	4.66	156	80.1%	19.9%	5.33	24	95.8%	4.2%	*
12	Course schedule	3.50	152	52.0%	48.0%	4.33	24	70.8%	29.2%	*
14	Attitudes of non-teaching staff	4.11	125	68.8%	31.2%	4.36	22	86.4%	13.6%	*
16	Availability of computers on campus	3.73	142	56.3%	43.7%	5.05	22	90.9%	9.1%	*
18	Availability of course materials	4.38	141	78.7%	21.3%	5.05	21	90.5%	9.5%	*
23	Availability of disability related services at the Cegep	3.97	34	78.7%	21.3%	5.14	23	99.5%	4.5%	*

*Excludes disability specific Item 9.

Note. Except for the Personal Situation Subscale, comparisons include disability related item.

Table 56 shows the means as well as the percentage of graduates whose scores fell below 3.5 on the 6 point scale (a score that is toward the difficult end of the scale) and the percentage that fell above 3.5 (a score that is toward the facilitator end of the scale). This was done for the subscale means and for items that showed a statistically significant difference on the independent t-tests. The comparisons show that the differences between the registered and unregistered graduates with disabilities are largely related to Cegep Environment items. Significant differences were found for the following items: Course schedule (Item 11); Attitudes of non-teaching staff (Item 14); Availability of computers on campus (Item 16); Availability of course materials (Item 18); Availability of disability related services at the Cegep (Item 23). On the Cegep Environment Subscale 76.3% of the scores of unregistered graduates averaged above 3.50 compared to 95.8% of the scores of registered graduates. The five Cegep Environment items that differed showed that graduates who registered had a higher proportion of scores above 3.5 than unregistered graduates. Item 5 on the Personal Situation questions (Level of personal motivation) also showed a statistically significant difference between graduates who were and who were not registered. This suggests that graduates with disabilities who registered with their disability service providers tended to report higher levels of personal motivation and experienced the Cegep Environment as more facilitating compared to graduates who did not register.

An analysis was also undertaken to determine whether there was a significant difference between registered and unregistered graduates on the 3 Subscales. In this case the sample sizes permitted us to carry out a one-way MANOVA comparison. Subscale means were compared including the disability related items. The test showed a significant difference between the registered and unregistered graduates, Wilks' $\Lambda = 0.85$, $F(3, 78) = 4.72$, $p = .004$.

Since the overall MANOVA was significant, follow-up independent t-tests were undertaken. Table 57 shows that there was a significant difference on the Cegep Environment Subscale (registered: $M = 4.56$, $SD = 0.81$; unregistered: $M = 3.94$, $SD = 0.81$). The overall difference in the subscale mean was 0.62, with registered graduates finding the Cegep Environment more facilitating than unregistered graduates, $t(174) = 3.63$, $p < .001$.

Table 57

CEQ Item Means Of Registered And Unregistered Graduates With Disabilities

	Unregistered			Registered			Test Results				
	N	Mean	Std. Deviation	N	Mean	Std. Deviation	t	df	Sig. (2-tailed)	Mean Difference	Sig p<=.05
1 Financial situation	142	3.56	1.66	19	3.89	1.85	0.81	159	0.422	0.33	
2 Paid employment	116	3.24	1.51	15	3.53	1.73	0.69	129	0.489	0.29	
3 Family situation	140	3.91	1.62	22	4.45	1.47	1.47	160	0.142	0.54	
4 Friends	146	4.66	1.43	23	5.00	1.21	1.07	167	0.286	0.34	
5 Level of personal motivation	156	4.66	1.46	24	5.33	0.82	2.21	178	0.029	0.67	*
6 Study habits	152	4.18	1.45	24	4.54	1.32	1.16	174	0.248	0.36	
7 Previous educational experience	146	4.53	1.36	21	4.67	1.15	0.43	165	0.671	0.13	
8 Health	139	3.60	1.82	21	4.29	1.76	1.61	158	0.110	0.68	
9 Impact of my disability	59	2.71	1.30	19	2.63	1.80	-0.21	76	0.833	-0.08	
Personal Situation Subscale (Exclude 9)	153	4.07	0.84	24	4.51	0.82	2.41	175	0.017	0.44	*
Personal Situation Subscale (Include 9)	153	4.02	0.83	24	4.33	0.86	1.68	175	0.091	0.31	
10 Level of difficulty of courses	151	3.54	1.24	23	4.00	1.28	1.67	172	0.097	0.46	
11 Course load	153	2.98	1.43	23	3.61	1.56	1.94	174	0.054	0.63	
12 Course schedule	152	3.50	1.40	24	4.33	1.31	2.73	174	0.007	0.83	*
13 Attitudes of professors	154	4.31	1.36	24	4.67	1.37	1.21	176	0.228	0.36	
14 Attitudes of non-teaching staff	125	3.94	1.45	22	4.95	1.00	3.17	145	0.002	1.02	*
15 Attitudes of students	148	4.11	1.44	22	4.36	1.18	0.77	168	0.440	0.25	
16 Availability of computers on campus	142	3.73	1.77	22	5.05	1.00	3.40	162	0.001	1.31	*
17 Training on computer technologies on campus	96	3.79	1.56	13	4.46	1.20	1.49	107	0.140	0.67	
18 Availability of course materials	141	4.38	1.32	21	5.05	1.12	2.22	160	0.028	0.67	*
19 Opportunity to participate in extracurricular activities	94	4.11	1.64	12	4.83	1.53	1.45	104	0.149	0.73	
20 Willingness of professors to adapt courses to my needs	137	3.88	1.39	23	4.48	1.27	1.92	158	0.056	0.60	
21 Accessibility of building facilities	141	4.63	1.31	16	4.63	0.89	-0.02	155	0.985	-0.01	
22 Accessibility of Cegep physical education courses	124	4.44	1.39	12	4.25	1.22	-0.46	134	0.643	-0.19	
23 Availability of disability related services at the Cegep	34	3.97	1.57	22	5.14	0.94	3.14	54	0.003	1.17	*
Cegep Environment Subscale (Exclude Q23)	152	3.94	0.81	24	4.51	0.52	3.37	174	0.001	0.57	*
Cegep Environment Subscale (Include Q23)	152	3.94	0.81	24	4.56	0.81	3.63	174	0.000	0.62	*
24 Availability of financial aid	62	3.58	1.78	11	3.45	1.92	-0.21	71	0.831	-0.13	
25 Availability of tutoring outside the Cegep	36	3.89	1.60	7	4.57	1.90	1.00	41	0.322	0.68	
26 Public transportation	136	4.46	1.67	17	4.53	1.81	0.15	151	0.879	0.07	
27 Availability of computers off-campus	97	4.40	1.64	15	5.20	1.26	1.80	110	0.075	0.80	
28 Training on computer technologies off-campus	35	3.43	1.85	2	2.00	0.00	-1.08	35	0.289	-1.43	
29 Disability related support services off-campus	17	3.47	1.88	5	4.00	0.71	0.61	20	0.549	0.53	
30 Availability of adapted transportation for people with disabilities	12	3.75	1.82	4	3.25	2.63	-0.43	14	0.674	-0.50	
31 Coordination between disability related services	9	3.78	1.92	4	3.00	2.45	-0.62	11	0.546	-0.78	
32 Availability of physical adaptations/technical aids at home	7	3.86	1.68	5	4.60	2.19	0.67	10	0.519	0.74	
Gov't and Community Supports & Services Subscale (Exclude 29-32)	69	4.17	1.24	16	4.43	1.02	0.77	83	0.442	0.26	
Gov't and Community Supports & Services Subscale (Include 29-32)	69	4.16	1.26	16	4.39	1.06	0.88	83	0.509	0.23	
Index of difficulty (Excluding disability specific Items)	154	4.02	0.70	24	4.50	0.37	3.30	54	0.000	0.48	*
Index of difficulty (Including disability specific Items)	154	3.99	0.71	24	4.43	0.37	2.95	54	0.000	0.44	*

When the disability specific item (Item 9 – Impact of my disability) was included the difference (0.31) on the Personal Situation Subscale (registered: $M = 4.33$, $SD = 0.86$; unregistered: $M = 4.02$, $SD = .83$) was not significant, $t(175) = 1.68$, $p = 0.091$. However, when Item 9 (Impact of my disability) was removed from the Subscale mean, the results were significant, $t(175) = 2.41$, $p = 0.02$. Inclusion of this item had a disproportional effect in lowering the scores of the registered group as nearly 100% of individuals in the sample answered this question, whereas only 38% (59) of the unregistered group replied. This low response among the unregistered group suggests that a large proportion of unregistered graduates did not feel the question applied to them. The overall average difference when this item is excluded was 0.44, with registered graduates experiencing their overall personal situation as more facilitating than did the unregistered participants. Independent t-tests on the individual items contributing to the Personal Subscale average indicate that the Level of personal motivation score (Item 5), although high for both groups, was significantly lower (0.67) for unregistered ($M = 4.66$, $SD = 1.46$) compared to registered graduates ($M = 5.33$, $SD = 0.82$), $t(178) = 2.21$, $p = 0.03$. It can be seen in Table 57 that there were no significant differences either on Government and Community Supports and Services individual item or Subscale scores.

An Index of Difficulty (IDF) was calculated for each graduate by averaging all questionnaire items. Only graduates who replied to at least 50% of the items (excluding the disability specific items) were included in the IDF calculations. The IDF was then calculated both including and excluding disability related items. The means and standard deviations are shown in Tables 56 and 57. Results indicate that the registered graduates had significantly higher scores than unregistered graduates, $t(54) = 3.30$, $p = .000$, and $t(54) = 2.95$, $p = .000$, for comparisons where disability specific items were excluded and included, respectively.

Comparing IDF scores of nondisabled graduates with those of graduates with disabilities who were, and those who were not registered to receive disability related services. Scores of these three groups were examined using one-way analysis of variance (ANOVA) comparisons. Disability specific items were excluded. The independent variable (Group) consisted of three levels (Registered, Unregistered, No Disability). The dependent variable was the IDF score. The ANOVA showed a significant difference among the three groups, $F(2, 1455) = 13.80$, $p < 0.001$. Because Levine's test of equality of variances among groups was significant, Dunnett's C test was used to evaluate the pair-wise differences. These showed significant differences on all pair-wise comparisons. It can be seen in Table 58 that the registered group had higher (i.e., more facilitative) IDF means ($M = 4.50$, $SD = 0.37$) than the nondisabled group ($M = 4.26$, $SD = 0.59$). Unregistered graduates with disabilities had the lowest IDF mean ($M = 4.02$, $SD = 0.70$), indicating that they found their experience less facilitative than the other two groups.

Table 58

CEQ Index of Difficulty Scores (IDF): Registered And Unregistered Graduates With Disabilities And Nondisabled Graduates

	Unregistered Graduates With Disabilities				Registered Graduates With Disabilities				Nondisabled Graduates			
	Mean	N	>3.5	<3.5	Mean	N	>3.5	<3.5	Mean	N	>3.5	<3.5
Index of difficulty (Excluding disability specific Items)	4.02	154	81.5%	17.2%	4.50	24	100%	0.0%	4.26	1280	89.8%	9.5%
Index of difficulty (Including disability specific Items)	3.99	154	80.5%	18.2%	4.43	24	100%	0.0%	4.26	1280	89.8%	9.5%

It is interesting to note that when disability specific items were included in the IDF, there was still a significant difference among the three groups of graduates, $F(2, 1455) = 4.22$, $p = 0.015$. In this case there was, however, only one difference on the post-hoc comparisons: the difference between registered and nondisabled graduates was no longer significant. The inclusion of disability related items tended to lower the scores for both groups of graduates with disabilities, and reduce the difference in means between nondisabled graduates and registered graduates with disabilities. The results on IDF scores where the disability related items were excluded suggest that registered graduates with disabilities view aspects of their experiences that are common to graduates with and without disabilities as more facilitating.

On the Index of Difficulty, 100% of registered graduates had means of 3.5 or over compared to slightly more than 80% of non-registered graduates with disabilities and 90% of nondisabled graduates (see Table 58).

Rank order of CEQ items for graduates with and without disabilities. To compare the aspects of their experiences that were perceived as easiest and hardest, CEQ item means of graduates with and without disabilities were ranked from highest (i.e., facilitator) to lowest (i.e., obstacle). Only the 26 items common to both graduates with and without disabilities were ranked. However, the disability specific items are included in the list so their position relative to the common items could be seen. These rankings are shown in Table 59. When we correlated the ranks of the 2 groups of graduates the Spearman-Brown correlation coefficient was highly significant, $r(24)=.809$, $p=.000$, showing that rankings of graduates with and without disabilities were closely related.

Table 59

Rank Order of CEQ Items For Graduates With And Without Disabilities

#	Item	Graduates With Disabilities			Graduates Without Disabilities			Diff. in Rank
		N	Mean	Rank	N	Mean	Rank	
5	Level of personal motivation	180	4.75	1	1283	4.74	4	-3
4	Friends	169	4.71	2	1214	4.87	2	0
21	Accessibility of building facilities	157	4.63	3	1067	4.81	3	0
7	Previous educational experience	167	4.55	4	1211	4.61	7	-3
27	Availability of computers off-campus	112	4.51	5	822	4.59	9	-4
26	Public transportation	153	4.47	6	1059	4.60	8	-2
18	Availability of course materials	162	4.46	7	1212	4.44	10	-3
23	Availability of disability related services at the Cegep	56	4.43					
22	Accessibility of Cegep physical education courses	136	4.43	8	1047	4.68	5	3
23	Attitudes of professors	178	4.35	9	1278	4.30	14	-5
6	Study habits	176	4.23	10	1284	4.37	12	-2
19	Opportunity to participate in extracurricular activities	106	4.19	11	819	4.43	11	0
32	Availability of physical adaptations/technical aids at home	12	4.17					
15	Attitudes of students	170	4.15	12	1257	4.31	13	-1
14	Attitudes of non-teaching staff	147	4.09	13	1087	4.10	16	-3
25	Availability of tutoring outside the Cegep	43	4.00	14	276	3.96	19	-5
3	Family	162	3.99	15	1144	4.66	6	9
20	Willingness of professors to adapt courses to my needs	160	3.97	16	1139	4.07	17	-1
16	Availability of computers on campus	164	3.91	17	1213	4.16	15	2
17	Training on computer technologies on campus	109	3.87	18	836	4.05	18	0
8	Health	160	3.69	19	1090	5.06	1	18
30	Availability of adapted transportation for people with disabilities	16	3.63					
12	Course schedule	176	3.61	20	1275	3.52	24	-4
1	Financial situation	161	3.60	21	1125	3.86	21	0
10	Level of difficulty of courses	174	3.60	22	1268	3.68	23	-1
29	Disability related support services off-campus	22	3.59					
24	Availability of financial aid	73	3.56	23	471	3.93	20	3
31	Coordination between disability related services	13	3.54					
28	Training on computer technologies off-campus	37	3.35	24	356	3.81	22	2
2	Paid employment	131	3.27	25	953	3.44	25	0
11	Course load	176	3.06	26	1274	3.11	26	0
9	Impact of my disability	78	2.69					

Note. Items that differed by 9 or more places are highlighted and boxed.

Not surprisingly, it can be seen in Table 59 that for graduates with disabilities the item that ranked as the greatest obstacle (i.e., had the lowest mean score) was Item 9 (Impact of my disability). Although Item 8 (Health) ranked first (facilitator) for graduates without disabilities it ranked 19th for graduates with disabilities. Item 3 (Family situation) also ranked much lower (15th) for graduates with disabilities than for graduates without disabilities (6th). These are also the items that showed a statistically significant difference between the two groups, with graduates with disabilities perceiving these aspects of their experience as less facilitating. Apart from these two items, however, there was a considerable degree of similarity between the two groups. For example, Item 11 (Course load) and Item 2 (Paid employment) ranked 25th and 26th for both groups. In addition Item 5 (Level of personal motivation), Item 4 (Friends) and Item 21 (Accessibility of building facilities) ranked in the top 4 for both groups. Items ranking in the bottom seven (least facilitating) for graduates with disabilities also ranked in the bottom seven for graduates without disabilities.

Rank order of CEQ items for registered and unregistered graduates with disabilities. In Table 60 item means were ranked from highest to lowest to compare aspects that made studies easier and harder for graduates with disabilities who registered and those who did not register for disability related services. Mean scores were ranked including the disability specific items. However, items where there were fewer than 10 responses in either group were not included. The Spearman-Brown correlation coefficient was highly significant, $r(24)=.704$, $p=.000$, showing that rankings of the two groups of graduates were closely related.

Not surprisingly, Item 9 (Impact of my disability) ranked lowest for both groups. Of the bottom seven items, six were common to both groups. However, Item 23 (Availability of disability related services at the Cegep) ranked near the top of the list (3rd) for registered graduates but only 13th for unregistered graduates. This indicates that those graduates who registered for services found that it was one of the main factors that made their Cegep studies easier. Item 16 (Availability of computers on campus) and Item 22 (Accessibility of Cegep physical education courses) also showed large differences in rankings. Item 16 (Availability of computers on campus) ranked 5th for registered graduates compared to 18th for unregistered graduates. Item 22 (Accessibility of Cegep physical education courses) ranked higher for unregistered (6th) graduates than for registered graduates (20th).

Table 60

Rank Order Of CEQ Items For Registered And Unregistered Graduates With Disabilities

#	Item	Not Registered			Registered			Diff in Rank
		N	Mean	Rank	N	Mean	Rank	
5	Level of personal motivation	156	4.66	2	24	5.33	1	-1
27	Availability of computers off-campus	97	4.40	7	15	5.20	2	-5
23	Availability of disability related services at the Cegep	34	3.97	13	22	5.14	3	-10
18	Availability of course materials	141	4.38	8	21	5.05	4	-4
16	Availability of computers on campus	142	3.73	18	22	5.05	5	-13
4	Friends	146	4.66	1	23	5.00	6	5
14	Attitudes of non-teaching staff	125	3.94	14	22	4.95	7	-7
19	Opportunity to participate in extracurricular activities	94	4.11	12	12	4.83	8	-4
13	Attitudes of professors	154	4.31	9	24	4.67	9	0
7	Previous educational experience	146	4.53	4	21	4.67	10	6
21	Accessibility of building facilities	141	4.63	3	16	4.63	11	8
6	Study habits	152	4.18	10	24	4.54	12	2
26	Public transportation	136	4.46	5	17	4.53	13	8
20	Willingness of professors to adapt courses to my needs	137	3.88	16	23	4.48	14	-2
17	Training on computer technologies on campus	96	3.79	17	13	4.46	15	-2
3	Family situation	140	3.91	15	22	4.45	16	1
15	Attitudes of students	148	4.11	11	22	4.36	17	6
12	Course schedule	152	3.50	23	24	4.33	18	-5
8	Health	139	3.60	19	21	4.29	19	0
22	Accessibility of Cegep physical education courses	124	4.44	6	12	4.25	20	14
10	Level of difficulty of courses	151	3.54	22	23	4.00	21	-1
1	Financial situation	142	3.56	21	19	3.89	22	1
11	Course load	153	2.98	25	23	3.61	23	-2
2	Paid employment	116	3.24	24	15	3.53	24	0
24	Availability of financial aid	62	3.58	20	11	3.45	25	5
9	Impact of my disability	59	2.71	26	19	2.63	26	0
<i>Items where n < 10 for at least one group</i>								
30	Availability of adapted transportation for people with	12	3.75		4	3.25		
28	Training on computer technologies off-campus	35	3.43		2	2.00		
31	Coordination between disability related services	9	3.78		4	3.00		
29	Disability related support services off-campus	17	3.47		5	4.00		
32	Availability of physical adaptations/technical aids at home	7	3.86		5	4.60		
25	Availability of tutoring outside the Cegep	36	3.89		7	4.57		

Note. Items that differed by 9 or more places are highlighted and boxed.

Comparisons of CEQ means by disability type. To determine whether there were differences in CEQ scores related to graduates' impairments, disability categories were combined. This resulted in 7 impairment categories. The number of graduates who fell in each of the categories is shown in Table 16. Item and Subscale means for the different disability classifications are shown in Table 61.

A MANOVA (7 Disability Categories X 2 Subscales) revealed no significant difference among the 7 levels of the variable on the Personal Situation and Cegep Environment Subscale scores, Wilks' $\Lambda = 0.90$, $F(12,332) = 1.43$, $p = .149$. The Subscale means included all disability items. The Community and Government Supports subscale was not included as there were not enough responses on the Subscale for meaningful analysis.

To examine trends we carried out a series of one-way ANOVAs (7 Disability Categories) on the 3 Subscale scores as well as on Index of Difficulty scores. None of these were significant. Means, F values and significance levels associated with the ANOVAs are shown in Table 62. A series of one-way ANOVAs (7 Disability Categories) was also carried out to evaluate whether there were any differences in CEQ item means among the 7 disability classification groups. Results of the ANOVAs are shown in Table 63. Items 28 to 32 of the Government and Community Supports items could not be included due to the small numbers of graduates responding to these items. Results indicate a significant difference only on Item 5 (Level of personal motivation), $F(6,173) = 2.45$, $p = .024$, and on Item 8 (Health), $F(6,153) = 5.52$, $p < 0.001$. After applying a Bonferroni correction to the alpha level only the health item remained significant. A post hoc test showed that graduates with a Learning Disability/ADD and those with Visual impairments had higher scores on this item than graduates with Medical and with Psychological impairments.

Table 61
CEQ Means by Disability Category

#		1 Learning/ADD			2 Medical			3 Psychological			4 Visual			5 Hearing			6 Multiple			7 Other		
		N	M	SD	N	M	SD	N	M	SD	N	M	SD	N	M	SD	N	M	SD	N	Mean	SD
1	Financial situation	15	3.93	1.91	31	3.26	1.59	35	3.26	1.80	40	3.88	1.54	9	3.56	1.94	22	4.05	1.62	9	3.33	1.58
2	Paid employment	13	3.15	1.63	26	3.54	1.48	27	2.81	1.49	33	3.15	1.33	8	3.75	1.98	19	3.53	1.65	5	3.80	1.92
3	Family	16	4.31	1.54	29	4.31	1.61	37	3.54	1.46	39	4.03	1.61	8	4.13	1.36	24	4.00	1.89	9	3.89	1.69
4	Friends	16	5.38	0.96	29	4.79	1.29	39	4.18	1.54	42	4.76	1.43	9	4.89	0.93	24	4.71	1.57	10	5.10	1.10
5	Level of personal motivation	18	5.56	0.62	33	5.06	1.20	41	4.41	1.67	45	4.58	1.41	9	5.44	0.73	24	4.54	1.56	10	4.30	1.25
6	Study habits	18	4.22	1.22	33	4.36	1.22	38	4.05	1.66	44	4.32	1.41	9	4.89	1.17	24	4.38	1.50	10	3.10	1.37
7	Previous educational experience	18	4.39	1.20	32	4.56	1.27	37	5.11	1.05	44	4.25	1.46	7	4.43	0.98	20	4.60	1.50	9	4.00	1.58
8	Health	16	4.81	1.38	30	3.00	1.26	39	2.82	1.85	37	4.54	1.86	7	4.14	1.57	21	3.62	1.77	10	4.10	1.73
9	Impact of disability	13	2.77	1.09	14	2.71	1.20	20	2.20	1.06	7	3.29	1.50	5	2.60	2.07	13	3.15	1.86	6	2.50	1.97
	Personal Situation Subscale (Exclude 19)	17	4.50	0.65	33	4.13	0.65	40	3.80	0.93	44	4.24	0.91	9	4.43	0.79	24	4.20	0.92	10	3.94	0.53
	Personal Situation Subscale (Include 19)	17	4.35	0.64	33	4.07	0.66	40	3.71	0.91	44	4.24	0.91	9	4.26	0.66	24	4.12	0.91	10	3.83	0.61
10	Level of difficulty of courses	17	4.06	1.34	32	3.69	1.18	38	3.47	1.08	45	3.47	1.27	8	3.50	1.20	24	3.79	1.56	10	3.20	1.03
11	Course load	18	3.11	1.41	33	3.03	1.33	39	2.69	1.34	44	2.98	1.55	8	3.63	1.77	24	3.63	1.56	10	3.10	1.37
12	Course schedule	18	3.89	1.41	32	3.63	1.45	40	3.63	1.23	44	3.27	1.42	9	4.22	1.56	24	3.96	1.40	9	3.11	1.76
13	Attitudes of professors	18	4.11	1.28	33	4.18	1.40	40	4.50	1.36	45	4.29	1.44	9	4.56	1.01	24	4.63	1.41	9	4.22	1.39
14	Attitudes of non-teaching staff	17	4.18	1.42	27	4.00	1.36	35	4.17	1.56	31	3.68	1.54	9	3.89	1.36	19	4.32	1.34	9	5.00	0.71
15	Attitudes of fellow students	17	3.94	1.34	32	4.31	1.18	37	3.86	1.57	43	4.42	1.28	8	4.13	1.25	24	4.08	1.72	9	4.00	1.50
16	Availability of computers on campus	16	4.25	1.65	31	3.84	1.66	37	3.81	1.79	42	3.76	1.83	9	3.56	1.51	20	4.05	1.85	9	4.67	1.73
17	IT training Cegep	10	4.20	1.40	26	3.69	1.59	27	4.15	1.46	23	3.91	1.68	5	3.40	1.14	14	3.71	1.54	4	3.25	2.06
18	Availability of course materials	18	4.56	0.92	29	4.76	1.27	39	4.26	1.63	42	4.31	1.20	7	4.29	1.11	21	4.62	1.32	6	4.83	1.17
19	Accessibility of extracurricular activities	8	4.75	1.04	23	4.30	1.52	23	3.70	1.99	26	4.35	1.44	5	4.20	0.45	16	4.00	2.16	5	4.80	0.84
20	Willingness of professors to adapt courses to my needs	15	4.20	1.08	30	3.93	1.53	35	4.14	1.26	40	3.85	1.48	8	4.38	1.06	23	3.83	1.44	9	3.56	1.67
21	Accessibility of classrooms/labs etc	12	4.50	1.09	29	4.97	1.27	38	4.95	1.23	43	4.21	1.30	6	4.33	1.03	22	4.50	1.41	7	5.00	0.82
22	Accessibility of Cegep physical education courses	13	4.23	1.17	28	4.61	1.55	31	4.68	1.22	38	4.26	1.22	4	5.00	0.82	16	3.94	1.69	6	4.67	1.97
23	Availability of disability related services	12	5.00	1.13	8	4.25	1.58	12	4.50	1.38	5	4.00	2.12	5	4.40	1.52	11	4.18	1.72	3	4.00	1.00
	Cegep Environment Subscale (Exclude 33)	17	4.14	0.65	33	4.04	0.82	40	4.00	0.71	44	3.91	0.95	9	4.13	0.64	24	4.07	0.81	9	4.07	0.87
	Cegep Environment Subscale (Include 33)	17	4.19	0.65	33	4.05	0.82	40	4.01	0.71	44	3.91	0.95	9	4.13	0.61	24	4.07	0.83	9	4.07	0.86
24	Availability of financial aid	8	3.75	1.28	13	2.92	1.85	15	3.33	1.80	17	4.06	1.98	7	3.57	1.40	9	3.33	2.06	4	4.50	1.73
25	Private tutoring	4	5.00	1.15	6	4.50	1.05	8	3.75	2.49	9	3.44	1.33	5	3.60	1.95	9	4.22	1.56	2	4.00	1.41
26	Public transport	13	4.77	1.17	31	4.48	1.65	36	4.17	1.90	39	4.38	1.55	9	5.44	0.53	19	4.11	2.13	6	5.83	0.41
27	Availability of computers off-campus	8	5.25	0.89	24	4.67	1.43	29	4.10	1.92	24	4.25	1.54	7	4.43	1.51	17	4.88	1.76	3	5.33	0.58
28	Computer technologies training off-campus	3	3.67	1.53	6	3.33	1.97	11	4.00	2.19	8	3.25	1.83	3	2.33	0.58	6	2.67	1.63	0		
29	Disability related support services off-campus	2	3.50	2.12	3	4.00	1.00	6	3.67	2.25	2	3.50	2.12	3	4.00	0.00	6	3.17	2.04	0		
30	Availability of adapted transportation for people with disabilities	1	5.00	.	3	3.67	1.15	3	4.33	2.89	2	3.50	2.12	0			6	2.67	1.97	1	6.00	.
31	Scheduling conflicts between disability related services	1	5.00	.	3	3.67	1.53	2	3.50	3.54	1	5.00	.	0			5	2.80	2.49	1	4.00	.
32	Availability of physical adaptations at home	1	5.00	.	1	2.00	.	1	1.00	.	2	5.00	0.00	2	2.50	2.12	5	5.40	0.89	0		
	Government & Community Supports & Services Subscale (Exclude 39-42)	11	4.94	0.74	16	4.05	1.20	18	3.73	1.30	19	4.40	1.29	8	4.17	0.95	10	4.15	1.22	3	4.72	1.25
	Government & Community Supports & Services Subscale (Include 39 - 42)	11	4.94	0.77	16	3.99	1.21	18	3.78	1.34	19	4.40	1.29	8	4.11	0.92	10	4.04	1.34	3	4.72	1.25
	Index of difficulty (Excluding disability specific items)	18	4.32	0.45	33	4.08	0.66	40	3.94	0.71	45	4.04	0.82	9	4.23	0.47	24	4.14	0.67	9	4.13	0.53
	Index of difficulty (Including disability specific items)	18	4.30	0.46	33	4.06	0.67	40	3.91	0.72	45	4.03	0.81	9	4.16	0.41	24	4.09	0.67	9	4.09	0.52

Table 62

Results Of One-Way ANOVAS On CEQ Subscales For Graduates In The 7 Disability Categories

Subscale	df	F	Sig
Personal Situation Subscale	6, 170	2.15	.050
Cegep Environment Subscale	6, 189	0.30	.934
Government & Community Supports & Services Subscale	6, 78	1.35	.245
Index of Difficulty (IDF)	6, 171	0.72	.635

Table 63

Results Of One-Way ANOVAS On CEQ Items For Graduates In The 7 Disability Categories

#	Item	df	F	Sig
1	Financial situation	6, 154	1.03	0.408
2	Paid employment	6, 124	0.89	0.502
3	Family situation	6, 155	0.80	0.573
4	Friends	6, 162	1.76	0.109
5	Level of personal motivation	6, 173	2.50	0.024
6	Study habits	6, 169	1.60	0.150
7	Previous education experiences	6, 160	1.83	0.096
8	Health	6, 153	5.52	0.000
9	Impact of my disability	6, 171	0.84	0.540
10	Level of difficulty of courses	6, 167	0.83	0.550
11	Course load	6, 169	1.25	0.281
12	Course schedule	6, 169	1.26	0.280
13	Attitudes of professors	6, 171	0.47	0.828
14	Attitudes of non-teaching staff	6, 140	1.20	0.311
15	Attitudes of students	6, 163	0.67	0.675
16	Availability of computers on campus	6, 157	0.54	0.778
17	Training on computer technologies on campus	6, 102	0.48	0.820
18	Availability of course materials	6, 155	0.66	0.681
19	Opportunity to participate in Cegep extracurricular activities	6, 99	0.70	0.649
20	Willingness of professors to adapt courses to my needs	6, 153	0.49	0.812
21	Accessibility of building facilities	6, 150	1.78	0.107
22	Accessibility of Cegep physical education courses	6, 129	0.86	0.523
23	Availability of disability related services at the Cegep	6, 49	0.47	0.829
24	Availability of financial aid	6, 66	0.74	0.617
25	Availability of tutoring outside the Cegep	6, 36	0.58	0.745
26	Public transportation	6, 146	1.64	0.141
27	Availability of computers off-campus	6,105	1.01	0.423

Note. Items that are significant are boxed.

What Happens After Graduation?

Based on graduates' responses on the Post Cegep questionnaire we were able to compare employment rates and examine the study and work status of the three groups of graduates 5 to 10 months after they received their diplomas.

The determination of activities following graduation (i.e., completion of a DEC) was based on the methodology used by the Ministère de l'Éducation, Loisir et Sport (MELS). It is outlined in their annual publication, "*La Relance au collégial*" (Ministère de l'Éducation, Loisir et Sport, 2004). Details of how this methodology was applied to the present data can be found in the technical document, "*Methodology for determining the employment and study status of Dawson graduates following graduation*" (Jorgensen, 2006).

The status of graduates following the completion of the DEC is shown in Table 64 for pre-university programs and Table 65 for career/technical programs. A chi-square test was conducted to determine whether there was a difference between graduates with and without disabilities in the activities they were pursuing following graduation. This was done separately for pre-university and career/technical programs. The two variables were Disability Group with two levels (With a disability, No Disability) and Activity with 5 levels (Working Full Time, Working Part Time, Looking for Work, Studying Unavailable for Work).

Table 64

Activities Of Graduates Following Completion Of A DEC - Pre-University Programs

Status	N	Working Full Time	Working Part Time	Looking for Work	Studying	Unavailable For Work	Total
With A Disability							
Registered	12	0.0%	0.0%	0.0%	91.7%	8.3%	100%
Not registered	78	11.5%	5.1%	1.3%	82.1%	0.0%	100%
Total Disability	90	10.0%	4.4%	1.1%	83.3%	1.1%	100%
No Disability	752	7.6%	5.1%	1.7%	84.2%	1.5%	100%
Total	842	7.8%	5.0%	1.7%	84.1%	1.4%	100%

Note. There were 844 pre-university program graduates. However, 2 did not reply to the work or study question.

Table 65

Activities Of Graduates Following Completion Of A DEC - Career/Technical Programs

Status	N	Working Full Time	Working Part Time	Looking for Work	Studying	Unavailable For Work	Total
With A Disability							
Registered	11	36.4%	9.1%	0.0%	54.5%	0.0%	100%
Not registered	75	53.3%	16.0%	1.3%	26.7%	2.7%	100%
Total Disability	86	51.2%	15.1%	1.2%	30.2%	2.3%	100%
No Disability	540	49.4%	13.7%	3.3%	30.9%	2.6%	100%
Total	626	49.7%	13.9%	3.0%	30.8%	2.6%	100%

Note. There were 629 career/technical program graduates. However, 3 did not reply to the work or study question. The profiles for graduates with and without disabilities were very similar and there was no statistically significant difference for either pre-university, $\chi^2(4, N = 842) = 0.92, p = 0.921$, or for career/technical programs, $\chi^2(4, N = 626) = 1.33, p = 0.856$. It can be seen in Table 64 that of graduates with disabilities in pre-university programs, 83.3% were studying compared to 84.2% of graduates without disabilities. These rates are consistent with the MELS Reliance data reported for pre-university programs (Ministère de l'Éducation, Loisir et Sport, 2000). It can be seen in Table 65 that approximately 30% of career/technical program graduates were continuing their studies in both groups. These relationships can best be seen in Figures 15 and 16.

Figure 15

Work Situation of Graduates From Career/Technical Programs

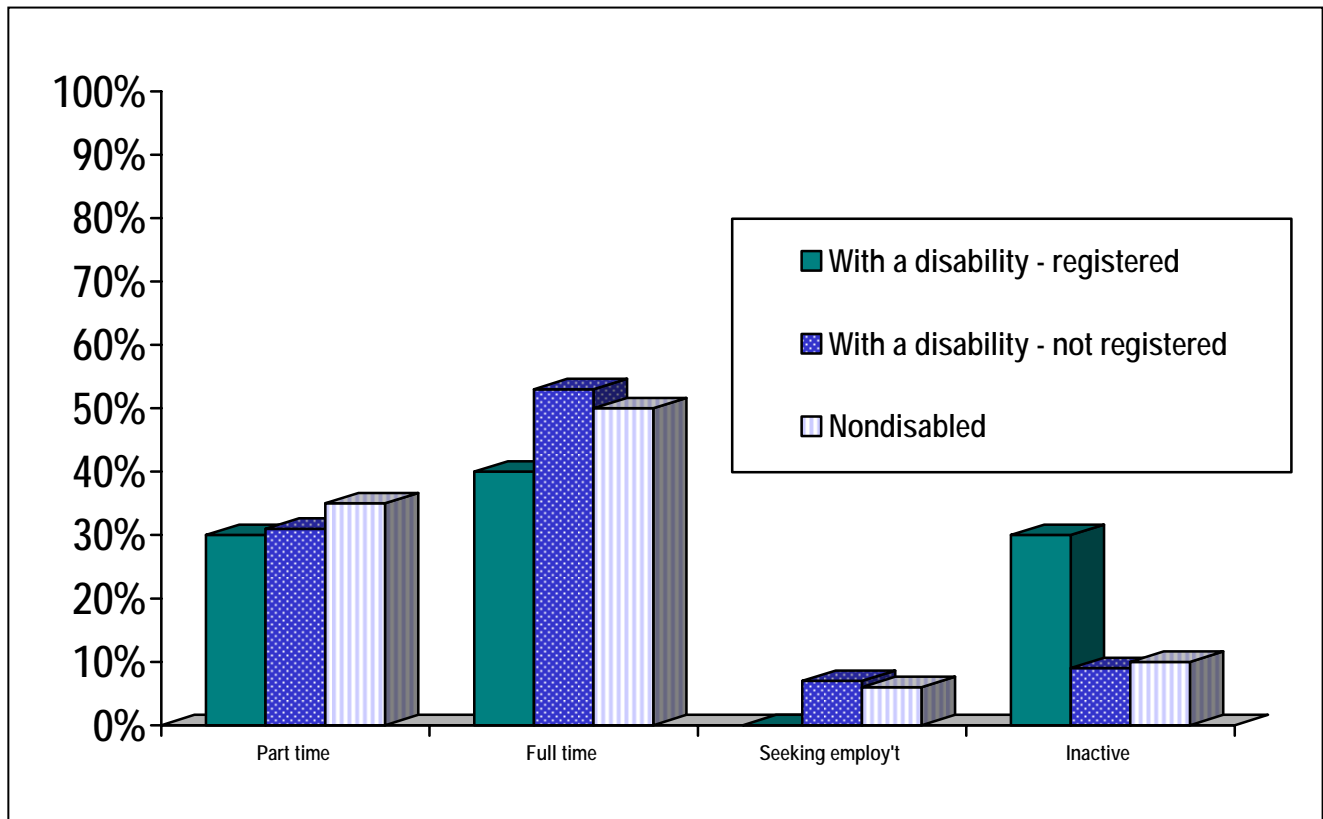
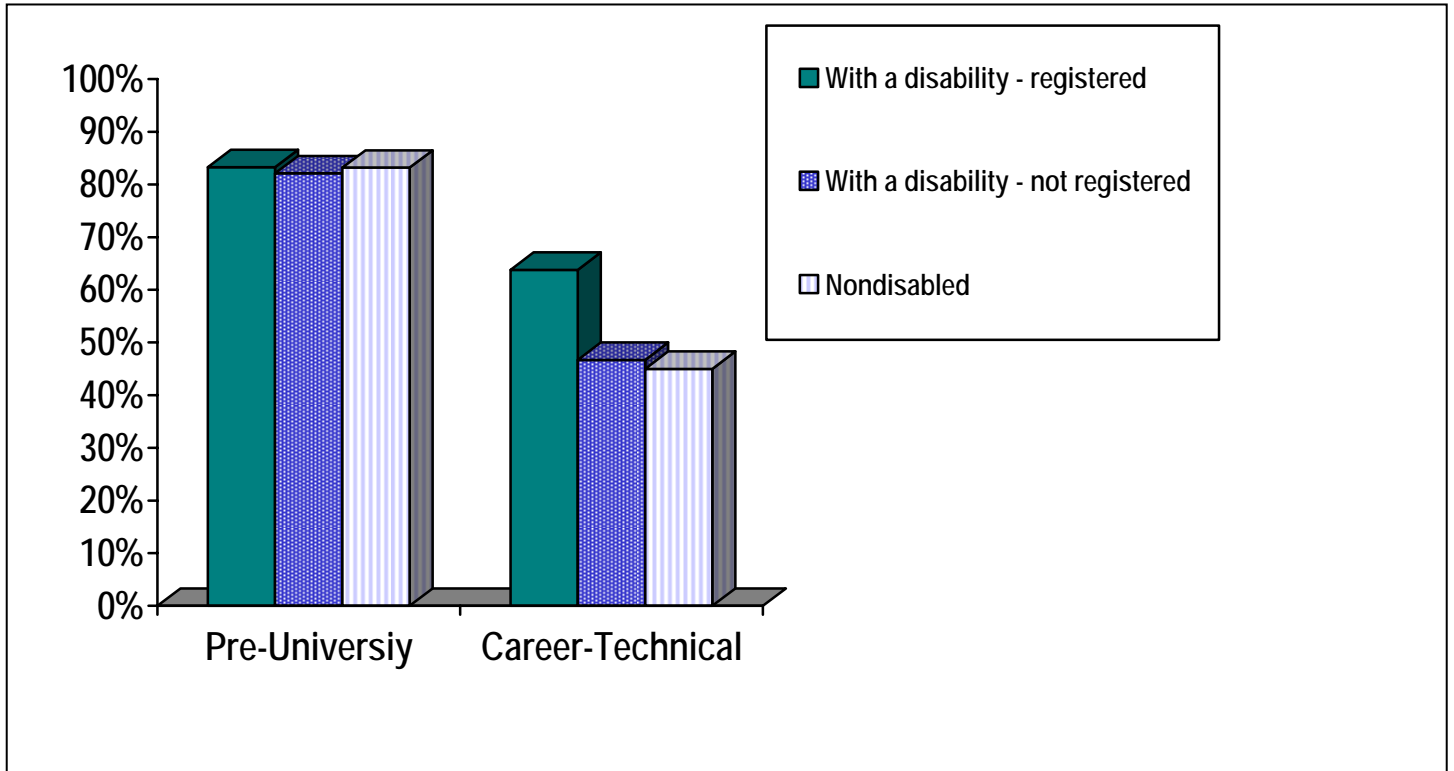


Figure 16

Graduates Studying Full Time



Calculation of the employment rate includes only those graduates who are working or actively seeking work. Those who are studying or claim they are unavailable for work are excluded. The percentage of the sample included in the employment rate calculations is shown in Table 66 for pre-university programs and in Table 67 for career/technical programs. Since the majority of pre-university graduates continue their studies, the number of these graduates actively involved in the labor market is relatively small compared to the total number of pre-university graduates in the sample. The employment rates for graduates of pre-university and career/technical programs are shown in Table 68 and Table 69, respectively.

Table 66

Proportion Of Sample Used In Calculating Employment Rates For Graduates Of Pre-University Programs.

Status	Total Replies To Work Question	Total Included In Employment Rate Calculation	Total Who Were Studying Or Not Looking For Work	% Included
With A Disability				
Registered	12	0	12	0%
Unregistered	78	14	64	17.9%
Total	90	14	76	15.6%
No Disability	752	108	644	14.4%
Total Pre-university	842	122	720	14.5%

Note. There were 844 pre-university program graduates. However, 2 did not reply to the work or study question.

A two-way contingency table analysis was conducted to determine whether there was a significant difference in employment rates between students with and without disabilities. The two variables were disability group with 2 levels (With a Disability, No Disability) and employment category with two levels (Employed, Not Employed). The chi-square test shows that there was no significant difference in the employment rates of pre-university graduates with disabilities (92.9%) compared to those without disabilities (88.0%), $\chi^2 (1, N = 122) = 0.29, p = .059$. There was also no significant difference in the employment rates of career/technical program graduates with disabilities (98.3%) compared to those without disabilities (95.0%), $\chi^2 (1, N = 417) = 1.24, p = 0.265$.

Table 67

Proportion Of Sample Used In Calculating Employment Rates For Graduates Of Career/Technical Programs

Status	Total Replies To Work Question	Total Included In Employment Rate Calculation	Total Who Were In Study Or Not Looking For Work	Total Included
<i>With A Disability</i>				
Registered	11	5	6	45.5%
Unregistered	75	53	22	70.7%
Total	86	58	28	67.4%
No Disability	540	359	181	66.5%
Total Career/Technical	626	417	209	66.6%

Note. There were 629 career/technical program graduates; however 3 did not reply to the work question.

Table 68

Employment Rates in Pre-University Programs

Status	Active	Working Full Time	Working Part Time	Looking for Work	Working Full Time	Working Part Time	Unemployment Rate	Employment Rate
<i>With A Disability</i>								
Registered	0	0	0	0	na	na	na	na
Unregistered	14	9	4	1	64.3%	28.6%	7.1%	92.9%
Total	14	9	4	1	64.3%	28.6%	7.1%	92.9%
No Disability	108	57	38	13	52.8%	35.2%	12.0%	88.0%
Total Pre-University	122	66	42	14	54.1%	34.4%	11.5%	88.5%

Table 69

Employment Rates In Career/Technical Programs

Disability Status	Active	Working Full Time	Working Part Time	Looking for Work	Working Full Time	Working Part Time	Unemployment Rate	Employment Rate
With A Disability								
Registered	5	4	1	0	80.0%	20.0%	0.0%	100.0%
Unregistered	53	40	12	1	75.5%	22.6%	1.9%	98.1%
Total	58	44	13	1	75.9%	22.4%	1.7%	98.3%
No Disability	359	267	74	18	74.4%	20.6%	5.0%	95.0%
Grand Total	417	311	87	19	74.6%	20.9%	4.6%	95.4%

Note. There were only 5 registered graduates who were "active."

A chi-square test was carried out to determine whether there was a significant difference between graduates with and without disabilities in the proportions working full time, part-time and seeking work. The two variables were Disability Group with 2 levels (With a Disability, No Disability) and Employment Category with 3 levels (Employed Full Time, Employed Part Time, Seeking Work). The test showed that there was no significant difference for either pre-university, $\chi^2(2, N = 122) = 0.72, p = .698$, or career/technical program graduates, $\chi^2(2, N = 417) = 1.28, p = .528$.

Are graduates working in the fields in which they studied? To calculate the percentage of graduates employed in the field of study of the program from which they graduated only those who were in full time employment and who replied to the field of study question were included. This is in accordance with the methodology use by the MELS in the Relance publications (Ministère de l'Éducation, Loisir et Sport, 2004). This left a sample of 66 pre-university and 310 career/technical program graduates. The percentages of graduates employed in the field of study of the program from which they graduated are shown in Table 70 for pre-university programs and in Table 71 career/technical programs.

Table 70

Pre-University Programs – Employment in Field of Study

Disability Status	Fully Related	Not Related	Partially Related	Grand Total	% Closely Related	% Partially Related	% Not Related	% Related (Fully+Partially)
With A Disability								
*Registered								
Unregistered	1	6	2	9	11.1%	22.2%	66.7%	33.3%
Total	1	6	2	9	11.1%	22.2%	66.7%	33.3%
No Disability	4	40	13	57	7.0%	22.8%	70.2%	29.8%
Pre-University Total	5	46	15	66	7.6%	22.7%	69.7%	30.3%

*There were no registered graduates who met the criteria for inclusion.

Table 71

Career/Technical Programs – Employment in Field of Study

Disability Status	Closely Related	Not Related	Partially Related	Grand Total	% Closely Related	% Partially Related	% Not Related	% Related (Fully+Partially)
With A Disability								
Registered	2	1	1	4	50.0%	25.0%	25.0%	75.0%
Unregistered	24	7	8	39	61.5%	20.5%	17.9%	82.1%
Total	26	8	9	43	60.5%	20.9%	18.6%	81.4%
No Disability	204	25	38	267	76.4%	14.2%	9.4%	90.6%
Career/Technical Total	230	33	47	310	74.2%	15.2%	10.6%	89.4%

The percentage of graduates employed in the field of study of their programs was lower for pre-university programs (30.3%) than for career/technical programs (89.4%). This is not surprising given that pre-university programs are designed to prepare graduates for university rather than for the workforce. There was, however, no significant difference between pre university graduates with and without disabilities employed in a field of study that was related to their program (33.3% vs. 29.8%), $\chi^2(1, N = 66) = 0.05, p = 0.83$. This was also true when the proportion of graduates in a field closely related to the program was compared, $\chi^2(1, N = 66) = 0.19, p = 0.67$.

There was, also no significant difference between graduates with (81.4%) and without disabilities (90.6%) in the proportion of career/technical program graduates employed in a field of study that was related to their program, $\chi^2(1, N = 310) = 3.33, p = 0.07$. However, when the proportions of graduates in a field closely related to their programs were compared, for graduates with (60.5%) and without disabilities (76.4%) the difference was significant, $\chi^2(1, N = 310) = 4.91, p < .05$. This suggests that although the employment rates for graduates with and without disabilities in career/technical programs are similar, graduates with disabilities are less likely to be employed in a field of study closely linked to their program. It was not possible to conduct a meaningful analysis of the registered graduates due to the small size of the sample. Similarly, employment rates by disability type were not calculated due to the small numbers in each category.

Results In Brief

Sample characteristics. Before discussing the findings it is important to note that there were five distinct samples in this investigation. The samples were

- 57 Cegep based disability service providers
- 300 current students with various disabilities who were enrolled at the time of testing at one of the public Cegeps and who were registered to receive disability related services
- 1486 recent Cegep graduates from 2 large French Cegeps and 1 large English Cegep
 - 1304 who were nondisabled
 - 182 who had a disability
 - 24 of whom were registered to receive disability related services from their college
 - 158 of whom were not registered to receive disability related services.

Cegep based disability service providers. The 57 disability service provider participants represent a response rate of 83%. They worked in 42 different Cegeps. Slightly over half were women. Although there was considerable variability, they had been working an average of 7 years providing services to students with disabilities. On average, providing services to students with disabilities constituted 20% of their workload, but again there was substantial variability. More than $\frac{3}{4}$ of the disability service providers had provided services to students with learning disabilities/ADD, mobility and hearing impairments. Less than half, however, had provided services to students with psychological/psychiatric disabilities, medically related conditions, or speech/communication impairments.

Current students with disabilities who were registered to receive disability related services. The mean age of the 300 students, who were enrolled in 32 different Cegeps, was 21. Almost $\frac{2}{3}$ were women. The return rate for current students was 32%. By far the largest number of students, over 90%, were enrolled in a diploma program with approximately $\frac{1}{2}$ enrolled in a pre-university program and $\frac{1}{2}$ in a career/technical program. Less than 7% were enrolled in an attestation program or in another course of studies. Students had various impairments. The most common impairment/disability was a learning disability/attention deficit disorder, followed by mobility impairment, hearing impairment, medically related disability, and psychological disability. It is noteworthy that approximately $\frac{1}{3}$ of the students had more than one impairment, with approximately 10% having 3 or more impairments.

Recent Cegep graduates. The 1486 graduates who responded to the survey represent a 28% return rate. The average age of the graduates was 22.5 years and 182 of them (12%) indicated that they had a disability. This percentage was similar in the three participating Cegeps. Of graduates with a disability, 24 (13%) were registered with their Cegep disability service provider and 158 (87%) were not registered. Again, these percentages were similar in the three Cegeps. Slightly over $\frac{2}{3}$ of both graduates with and without disabilities were female. Graduates with disabilities were slightly ($\frac{1}{2}$ year) but significantly older than graduates without disabilities. As was the case for current students with disabilities, approximately half of the graduates with disabilities were enrolled in a pre-university program and half in a career/technical program. This was true both of graduates with and without disabilities. There were substantial and significant differences in the nature of impairments of graduates with disabilities who had registered to receive disability related services compared to those who did not register. Registered graduates were more likely to have a learning disability/ADD or a hearing impairment and to have more than one disability. In addition, of the unregistered graduates, the largest percentage had a visual impairment, while none of the registered graduates reported this. Unregistered graduates were also more likely to have a medical or psychological impairment than registered graduates.

Implications of the demographic findings for the interpretation of the results. While the demographic section serves to describe the samples, in the present context it also provides vital information needed when interpreting the results. First, there are numerous implications of the very small sample of graduates with disabilities who were registered to receive disability related services. Our findings (Jorgensen et al., 2005) show that Dawson students with disabilities and nondisabled students graduate at the same rate given sufficient time. Nevertheless, our current findings show that the small proportion of students with disabilities registered to receive services in the Cegep system in 1999 (Fichten et al., 2003, 2005) continues to the present day. Only a small numbers of graduates with disabilities had registered to receive disability related services. Second, it is inappropriate to assume that the disability related obstacles and facilitators for students and graduates with one type of impairment are similar to those of individuals with a different impairment. Learners with

different impairments may require either similar accommodations (e.g., extended time for exams) or disability specific accommodations and services (e.g., a sign language interpreter). For example, while most students can benefit from lighter course loads and extended time for exams, it is primarily students with visual impairments and with learning disabilities who are likely to need materials in alternate formats. Students with psychiatric impairments and many medical conditions generally do not need this type of accommodation. Similarly, it is primarily students and graduates with mobility and neuromuscular impairments who are likely to need adapted transport, home care, and architectural modifications to their home. Students with many other impairments do not require this.

To make the Cegep Experience Questionnaire (CEQ) comprehensive, we included items that are likely, in varying degrees, to be important obstacles or facilitators to students with specific disabilities. This both increases certain types of validity (e.g., ecological validity, face validity) and complicates the evaluation of the findings because in certain cases this has meant very small numbers of participants answering certain questions.

Representation of students and graduates with disabilities in the cegeps.

Current students with disabilities registered to receive disability related services. We asked disability service providers how many students with a disability were registered with them to receive disability related services. Disability service providers from 44 of the 48 Cegeps provided data which ranged from 0 to 238 students with disabilities/Cegep, for a total of 1069 students. The average number of students with a disability per Cegep was 24, with a median of 12, which we believe better represents the findings. These figures translate into .84% of the student body (i.e., less than one student per 100 full time students).

We also obtained data from the 3 "centres d'accueil" about the total number of students with disabilities for whom the MELS funds the Cegeps. The findings show that Cegeps received funding only for 391 of the 1069 students (i.e., 37%). These figures translate into disability related funding for .31% of the student body (i.e., funding for approximately 1 in 300 full time students).

Changes from 1999 to 2004: Current students with disabilities registered to receive disability related services. One of our goals was to examine what changes occurred during the past 5 years in the proportion of students who are registered to receive disability related services at their Cegep. We did this because in a recent study of Canadian disability service providers we found that Québec had a smaller proportion of both college (2/3% vs. 6%) and university (1/2% vs. 2 1/2%) students with disabilities than the rest of Canada (Fichten, Asuncion, Barile, Robillard, Fossey, & Lamb, 2003). Our data show that the situation has improved, but not significantly.

Comparison of data from service providers concerning the number of students registered to receive disability related services from the Cegep from the same 31 Cegeps in 1999 and 2004 show that in 1999, of a full time student body of 105,153 students 787 students were registered to receive services from their Cegep (i.e., .75%). In 2004, the corresponding numbers are 940 students with disabilities among a full time student enrolment of 100,369 (i.e., .94%), with a trend toward a larger proportion of students with disabilities. When we carried out a t-test to compare the mean percentages, we found that the change was not significant.

We also compared data from 1999 and 2004 for the same 31 Cegeps. Variables included the number of students with disabilities enrolled, the overall enrollment at the Cegep, and number of students for whom the Cegeps received funding from the MELS. Here, the data show a similar change. In 1999, of a full time student body of 105,153 students the Cegeps were funded to provide disability related services to 252 students (i.e., .24% of the full time student body and 32% of the 787 students with disabilities registered to receive services). In 2004, the corresponding numbers are funding for 343 students with disabilities among a full time student enrolment of 100,369 (i.e., .34% of the full time student body and 36% of the 940 students with disabilities registered to receive services), with a trend toward a larger proportion of students with disabilities. t-tests of the proportion of the student body for whom the MELS provides funding showed that the MELS provides disability related funding for a significantly larger proportion of the full time student body in 2004 than in 1999. However, the test comparing the proportion of registered students for whom the Cegeps receive funding was not significant.

Changes over time in the proportions of students with different impairments: Current students with disabilities registered to receive disability related services. Our findings on current students with disabilities who are registered with their Cegep to

receive disability related services shows that the largest number had a learning disability with or without attention deficit/hyperactivity disorder. This was the case for students from both French and English Cegeps. Statistics provided by the managers in charge of services for students with disabilities at the 3 "centre d'accueil" Cegeps provided current and historical data for students who are registered to receive disability related services from a Cegep and for whom funding is provided by the MELS. These show important changes during the past decade in the proportion of students with different impairments. For example, in 1992 67% of students for whom the eastern portion of Québec received funding consisted of students with visual and hearing impairments. By 2004 that number had decreased to 37%, when students with learning disabilities, for whom funding is currently based on a lump sum rather than on a per student formula, are excluded. The number is 30% if students with learning disabilities are included in the calculations (Juhel, 2006). These figures show large increases in the number of students with a learning disability and those who fall into the "other" disability category, such as mobility and neuromuscular impairments, certain chronic medical and neurological conditions, and pervasive developmental disorders. Similarly, at Dawson College in the fall of 2006 only 35% of funded students had a visual or hearing impairment when students with learning disabilities are excluded from the computation (Havel, 2006). In the western portion of Québec in 1996 the proportion of students with visual and hearing impairments was 61% (Fiset, 2004). This percentage dropped to 57% in 2004 when students with learning disabilities are excluded from consideration and to 48% when these students are included (Fiset, 2006). As Daniel Fiset noted (Fiset, personal communication, 2004), "Learning disability is an English disease. But the French are rapidly catching it."

Graduates. 182 of the 1486 graduates who responded to the survey (i.e., 12%) indicated that they had a disability. This percentage was similar in the three participating Cegeps. Of graduates with a disability, 24 (13%) were registered with their Cegep disability service provider and 158 (87%) were not registered. Again, these percentages were similar in the three Cegeps. Many of the unregistered graduates have a medical or a psychological impairment.

Using the Cegep Experience Questionnaire (CEQ) to facilitate student success.

Refining the CEQ - Psychometric Analyses. The Cegep Experience Questionnaire (CEQ) measure we refined in this investigation is based on a modified version of Fougeyrollas et al.'s (1999, 2001) PPH model. It evaluates obstacles and facilitators from three vantagepoints: (1) the student's personal situation, (2) the Cegep environment, and (3) government and community supports and services. Therefore, in a previous investigation we grouped the 32 items of the Cegep Experience Questionnaire into three subscales and a total "Index of Difficulty."

Students make ratings on the 32 items of the Cegep Experience Questionnaire using a 6-point Likert-type scale (1 = much harder, 6 = much easier, and "not applicable"). We grouped the 32 items based on face validity into the following three subscales:

- Students' Personal Situation (9 items including 1 that is only applicable to students/graduates with disabilities)
- Cegep Environment (14 items including 1 that is only applicable to students/graduates with disabilities)
- Government and Community Supports and Services (9 items including 4 that are only applicable to students/graduates with disabilities)
- Index of Difficulty (IDF) (25 items are common to students with and without disabilities, 6 are applicable only to students/graduates with disabilities).

To be consistent with the goals of providing a scale that can be used on an item-by-item basis as well as having subscales, we used single item, subscale, and Index of Difficulty (IDF) scores in the analyses. Two versions of the Index of Difficulty (IDF) and of the subscale scores can be calculated: one set includes only those items which are applicable to both students/graduates with and without disabilities. These are best when comparing scores of students/graduates with and without disabilities. A second set was calculated that includes items that are disability specific. This set of scores is best used in analyses dealing only with students/graduates with disabilities. The items included in each subscale can be seen in Table 34. To compile subscale scores data only from participants who answered a minimum of 50% of items on the subscale in question are summed. IDF scores are summed only for those participants who completed at least 50% of all items.

In a previous investigation (Fichten, Jorgensen, Havel, & Barile, 2005) we provided preliminary psychometric information for the measure. In the present investigation we obtained additional indices of reliability and validity. This includes test-retest data from 159 current students with disabilities. Results indicate that on the item-by-item, subscale, and index of

difficulty test-retest correlations all coefficients are of moderate to large size and highly significant. Moreover, the vast majority of test and retest scores did not differ significantly. We also evaluated the internal consistency of subscales both for current students with disabilities as well as for graduates with and without disabilities. Cronbach's alpha scores range from .58 to .89, suggesting that the internal consistency of subscales is acceptable. In addition, the findings show modest significant correlations among subscales and high and significant correlations between subscale and Index of Difficulty scores.

What factors make cegep studies easier? Harder?

Analysis of open-ended obstacle/facilitator responses. Part of the process of determining the facilitators and obstacles that students with disabilities face in the Cegeps involved analysis of the responses of all participants to a series of two open-ended questions that dealt with factors that have made Cegep studies easier and harder for students. Campus based disability service providers responded based on their perception of the circumstances of students with disabilities. Current students with disabilities, graduates with disabilities, and nondisabled graduates responded based on their own experiences and circumstances. It should be noted that depending on the specific student's situation and on the specifics of the environmental conditions, the same topic could be either an obstacle or a facilitator. It should also be noted that all learners, whether they have a disability or not, are influenced by factors common to all students such as good and poor teachers.

Current students with disabilities and disability service providers. To provide a picture of similarities and differences between these two groups, obstacles and facilitators identified by current students with disabilities and campus based disability service providers were compared. In general, both students and campus based disability service providers indicated more Cegep based facilitators than obstacles and more student's personal situation and community and government supports and services obstacles than facilitators.

Facilitators: Current students with disabilities and disability service providers. Current students with disabilities, all of whom were registered to receive disability related services from their Cegep, were most likely to indicate that disability related accommodations were the most important facilitators. These include: services for students with disabilities in general and specific disability related accommodations such as having a note taker or interpreter in class, extended time for exams and assignments, and an accessible building, as well sensitization and information dissemination about disabilities.

Approximately half of the facilitators cited most frequently by students with disabilities were not specifically disability related but issues of concern to all students. These include: good teachers, the Cegep environment, tutors and learning centers (which assist with studying, writing, and exam taking skills and provide tutoring), the availability of computers and of support and help. Other factors that students indicated made their studies easier are the facilitating role of: friends and family, having a good schedule, and their financial situation, motivation, and study skills.

Although many of the important facilitators noted by current students with disabilities were also noted by campus based disability service providers, there were exceptions. For example, although students identified friends, their schedule, their family, finances, and the possibility to take a reduced number of courses and still be considered "full time students," disability service providers did not do so. Campus based disability service providers, on the other hand, indicated that a small college, the service provider being knowledgeable about disabilities, pre-registration for courses before other students register, helpful staff, and the availability of good counselling and academic advising were important facilitators, as well as the student's personal situation - factors not noted by students with disabilities.

Obstacles: Current students with disabilities and disability service providers. In general, obstacles noted by most students with disabilities were not specific to students with disabilities. Important obstacles included: poor teachers, difficult courses, poor schedules, having to hold a job, students' personal situations in general, the Cegep environment, transportation issues, students' finances, lack of availability of computers, too many courses, poor study skills, bad schedules, transition related issues, demanding and boring programs, poor motivation, and insufficient time.

Most obstacles noted by campus based disability service providers were also noted by students with disabilities. A notable exception relates to disability related accommodations, aspects of which close to ½ of disability service providers saw as an obstacle, while only 2% of students with disabilities did so. Other exceptions are as follows. Service providers noted that important obstacles included poor or few accommodations and services for students with disabilities, lack of information and sensitization about disabilities, disability service providers not having adequate knowledge about disabilities and accommodations, and students' poor self-advocacy skills. Students, on the other hand, noted the following important

obstacles that were not mentioned by service providers: too many courses, problems with their courses and programs of study in general, insufficient time, bad schedules, transition issues, having to hold a job, and poor motivation, study skills, and health.

Commonalities between obstacles and facilitators: Current students with disabilities and disability service providers.

Depending on the student's situation and on the specifics of the environmental conditions, the same factor was seen as either an obstacle or a facilitator. For example, for current students with disabilities teachers, the availability of computers, the Cegep environment, their schedules, and course load were seen either as facilitators or obstacles. The same was true of students' motivation, study skills, and finances.

Cegep based disability service providers also identified several factors as both obstacles and facilitators, depending on the circumstances: the accessibility of Cegep buildings, the overall Cegep environment, how knowledgeable the campus based disability service provider is about disability and accommodations, and sensitization and information about disabilities. Teachers, the availability of computers, and students' personal situations were also seen as both facilitators and as obstacles, depending on the circumstances.

Graduates. Facilitators and obstacles identified by nondisabled graduates and those with disabilities were compared as were the responses of graduates with disabilities who were, and those who were not registered to receive disability related services from their Cegep.

Facilitators: Graduates. Graduates with and without disabilities noted virtually all of the same important facilitators: good teachers, the Cegep environment, their motivation, program, friends, and finances, as well as good transportation, interesting courses, a favorable personal situation, good schedules, easy courses, good support and help, a helpful family, available computers, the library, and good study skills. There were only three exceptions: graduates with disabilities indicated that their classmates and the services for students with disabilities were important facilitators while nondisabled graduates noted that their academic preparation was important.

Obstacles: Graduates. Similarly, most important obstacles were also shared by graduates with and without disabilities. These include: difficult courses, poor teachers, the Cegep environment, poor schedules, a poor personal situation, having to work at a job, poor finances, too many courses, difficulties with one's program of study, transportation issues, poor study skills, and transition concerns. Exceptions are that graduates with disabilities also noted that their study skills, motivation, and family situations posed important obstacles along with the impact of their disability/impairment. Nondisabled graduates, on the other hand, noted that inadequate availability of computers and their academic schedules posed problems.

Graduates with disabilities who were, and who were not registered to receive disability related services. There were many dissimilarities between these two groups. For example, almost half of the graduates registered to receive disability related services noted that this was a facilitator, making this the second most popular option of this group. It is not surprising that students not registered for disability related services did not mention this. In addition, registered graduates noted that a learning center (which provides tutoring and assists with studying, writing, and exam taking skills) was important for them while graduates not registered noted other types of facilitators, such as the Cegep environment, their friends, family, finances, study skills, and personal situation in general as well as good transportation and library facilities.

Similarly, registered graduates were much more likely to indicate that their disability and health were obstacles along with poor access to computers. Graduates with disabilities who did not register, on the other hand, noted that their course load and program of studies posed obstacles along with transition issues, transportation problems their family situations and poor motivation. It is noteworthy that none of the registered graduates indicated that disability related accommodations posed an obstacle.

Analysis of Cegep Experience Questionnaire (CEQ) responses.

Current students with disabilities who are registered to receive disability related services and campus based disability service providers. Although it may seem obvious, it nevertheless needs to be underscored that students with disabilities are, first and foremost, students. To the extent that they attend college they are subject to many of the same obstacles and facilitators as nondisabled students.

Students with disabilities. That having been said, the results indicate that the availability of disability related services and accommodations was seen as the most important facilitator by students with disabilities and the impact of their disability was seen as the most important obstacle. In general, aspects of the Cegep environment were the most facilitating, students' personal situations posed the most difficulty, with government and community supports and services being in between. In particular, the following items were seen as the 10 most important factors that made students' college studies easier.

- Availability of disability related services at the Cegep
- Attitudes of non-teaching staff
- Availability of computers off-campus
- Accessibility of building facilities
- Accessibility of Cegep physical education courses
- Availability of course materials
- Friends
- Availability of computers on campus
- Level of personal motivation
- Attitudes of students

The following were seen as obstacles by students:

- Impact of my disability
- Course load
- Level of difficulty of courses
- Paid employment
- Financial situation
- Availability of adapted transportation for people with disabilities

We expected that the more impairments students had, the more obstacles they would encounter. The results show that for 9 of the 10 instances where there was a significant correlation, the more disabilities students had, the more likely they were to experience obstacles.

Nature of students' impairments and Cegep Experience Questionnaire results. Students with different impairments were expected to have different responses on disability specific items of the scale. For example, while factors such as accessibility of the class and coordination between needed external support services were expected to elicit ratings by students who use a wheelchair, these were expected to be answered "not applicable" by students with visual impairments. Too numerous to detail, these results can best be seen in Tables 43 and 46.

Campus based disability service providers. Disability service providers made importance rather than easy-difficult ratings, so their scores cannot be compared directly to easy-difficult ratings made by students. The results indicate that, in general, service provision items were seen as most important, followed by items dealing with students' personal situations, the Cegep environment, and government and community supports and services. In particular, the 10 most important service provision related items were:

- Collaboration between professors and disability service providers
- Availability of affordable diagnostic services (e.g., LD assessment) external to the Cegep
- Students' ability to express their needs
- Attitudes of the administration toward services provided to students with disabilities
- Identification of students' individual needs by the disability service provider
- Students' awareness of the impact of their disability
- Budget allocated for disability services at the Cegep
- Willingness of students to use suitable accommodations
- Students' choice of career
- Professors' level of knowledge about disability services / accommodations

Of the aspects which students also rated, the 10 most important factors seen as being implicated in the academic performance of Cegep students with disabilities were:

- Students' level of personal motivation
- Attitudes of professors
- Availability of disability related services at the Cegep
- Students' study habits
- Willingness of professors to adapt courses to the student's needs
- Students' health
- Accessibility of building facilities
- Availability of adapted transportation for people with disabilities
- Students' course load
- Attitudes of students

Comparison of disability service providers' importance ratings and current students' facilitators and obstacles ratings.

When we correlated campus based disability service providers' importance ratings with students' easy-difficult ratings we found that these were not significantly related. Similarly, we also carried out a direct comparison of service providers' and current students' importance ratings by collapsing the easier-harder scores of students (i.e., If an item was a major facilitator or a major obstacle we rated this as very important. Items with slightly easy-difficult scores were scored as unimportant. Items rated by the students as making their studies moderately easier or more difficult were scored as medium in importance. When we correlated these "importance" scores of students with the importance ratings by campus based disability service providers we found that the correlation was low and nonsignificant.

Nevertheless, on the top 11 items of importance students and service providers agreed upon most. Differences show that campus based disability service providers felt that the attitudes and willingness of professors to adjust their courses to students' needs were important as well as students' study habits, health, and course loads, and the attitudes of other students. Students felt that the availability of computers off-campus and of physical adaptations at home were important along with public transportation, the accessibility of Cegep physical education courses, and their friends and family situation.

We also examined items seen by disability service providers as most important, mid-range in importance, and least important and examined students' facilitator and obstacle scores in relation to these. The results show that the number 1 ranked facilitator, considered a facilitator by 70% of students, was the availability of disability related services at the Cegep, an item among those seen as the most important by service providers. The corresponding greatest obstacle, endorsed by 53% of students, was the impact of their disability; this item, however, was only seen as being of intermediate importance by service providers. In addition, among items rated in the most important range by disability service providers, two items had student scores in the obstacle range: availability of adapted transportation for people with disabilities and course load. In addition, three items that were seen as among the least important by disability service providers were seen as major obstacles by students with disabilities: financial situation, paid employment, and level of difficulty of courses.

Graduates. Three groups of recent graduates completed the CEQ: graduates who were nondisabled, graduates with a disability who were registered to receive disability related services from their college, and graduates with disabilities who were not registered to receive disability related services. While we did expect to find differences between graduates with and without disabilities on certain items as well as between graduates who had registered to receive disability related services and those who did not, (e.g., health), in most cases we expected more similarities than differences.

Graduates with vs. without disabilities. There was considerable overlap between the items that were perceived as the greatest obstacles and facilitators by graduates with and without disabilities. Three of the four items with the highest mean scores were common to both groups. The seven items with the lowest mean scores were also common to both groups. However, results on the 26 items which were applicable to graduates with and without disabilities (of the total of 32 items six are applicable only to graduates with disabilities) show that, overall, graduates with disabilities had significantly lower scores on the overall Index of Difficulty than nondisabled graduates. Examination of the items showed that graduates with disabilities had less facilitating scores mainly on items dealing with their personal situation. For example, graduates with disabilities rated their families as less supportive than did nondisabled graduates. As expected, graduates with disabilities, as a group, had significantly less facilitating scores on the health item as well. Comparison of scores of graduates with different disabilities shows that this is largely due to the nature of graduates' impairments, as health was more of an obstacle

for graduates with medical and psychological impairments while it was more of a facilitator for graduates with learning disabilities and visual impairments. It should be noted that although level of personal motivation was rated as a very important facilitator by most students, it was especially facilitating for students with learning disabilities and/or attention deficit disorder. Overall, there were no significant difference between graduates with and without disabilities on the Cegep Environment subscale. There was one notable exception however: graduates with disabilities in career/technical programs (but not pre-university programs) found professors less accommodating of their needs than graduates without disabilities.

It should be noted, however, that differences may often have been obscured by very small sample sizes. Therefore, we also examined similarities and differences in the relative rankings of scores by graduates with and without disabilities. The results show that rankings by graduates with and without a disability were closely related. Nevertheless, there were some important discrepancies. The health of nondisabled graduates was ranked first (i.e., most facilitating) while this item was ranked 19th out of 26 by graduates with disabilities. Similarly, while their families were ranked number 6 by nondisabled graduates, this item was ranked 15th by graduates with disabilities.

It is noteworthy that for both graduates with and without disabilities the following items were among the highest in the rankings (i.e., most facilitating).

- Level of personal motivation
- Friends
- Accessibility of classrooms/labs etc.
- Previous educational experience
- Availability of computers off-campus
- Public transport
- Availability of course materials
- Availability of disability related services (graduates with disabilities only)
- Accessibility of Cegep physical education courses

Similarly, for both graduates with and without disabilities the following items were among the lowest in the rankings (i.e., least facilitating).

- Course schedule
- Financial situation
- Level of difficulty of courses
- Disability related support services off-campus (graduates with disabilities only)
- Availability of financial aid
- Scheduling conflicts between disability related services (graduates with disabilities only)
- Computer technologies training off-campus
- Paid employment
- Course load
- Impact of disability (graduates with disabilities only)

Graduates with disabilities who were vs. were not registered for disability related services from their Cegep. We also compared the scores of graduates with disabilities who registered and those who did not register for disability related services. Here, the results are conclusive: graduates with disabilities who had registered to receive disability related services had scores that were more facilitating than graduates who did not register. This was true on the overall index of difficulty as well as on the Cegep environment subscale. Differences in favor of registered graduates were also found on specific items. These are:

- Level of personal motivation
- Course schedule
- Attitudes of non-teaching staff
- Availability of computers on campus
- Availability of course materials
- Availability of disability related services

Nondisabled graduates vs. registered graduates with disabilities vs. non-registered graduates with disabilities. When we compared the scores of the three groups of graduates directly, the results show that the registered group of graduates with disabilities had higher (i.e., more facilitative) overall index of difficulty scores than did nondisabled graduates, who, in turn had higher scores than graduates with disabilities who had not registered.

We also compared the rankings of the two groups of graduates. The results show that rankings of graduates with and without a disability were closely related. For example, the following items had the highest ranks (i.e., most facilitating) in both samples of graduates.

- Level of personal motivation
- Availability of computers off-campus
- Availability of course materials
- Friends
- Attitudes of professors
- Previous educational experience

Similarly, there were many commonalities among items with the lowest ranks (i.e., least facilitating). Not surprisingly, the item dealing with the impact of their disability ranked lowest for both groups.

- Course schedule
- Health
- Level of difficulty of courses
- Financial situation
- Course load
- Paid employment
- Availability of financial aid
- Impact of my disability

Nevertheless, there were some important discrepancies. For example the availability of disability related services at the Cegep ranked near the top of the list for registered graduates but was in the lower half of the ranking of unregistered graduates, suggesting that those graduates who registered for services found that disability related services was one of the main factors that made their Cegep experience easier. The items dealing with the availability of computers on campus as well as with the accessibility of Cegep physical education courses also showed large differences in rankings, with considerably higher rankings by registered graduates than by unregistered graduates.

What should be changed? Analysis of open-ended recommendations for changes.

Current students with disabilities and campus based disability service providers. Approximately 10% of students with disabilities felt that things were reasonably good and that no changes were needed, whereas this response was not given by any of the service providers. Of high priority to both students with disabilities and disability service providers was the need for sensitizing and informing others about disabilities. Other changes frequently suggested by both groups were improving general support and help in the Cegep, improving services for students with disabilities, including providing better access to computer technologies and better accessibility of building and facilities. Promoting collaboration and communication between staff, teachers and students, increased funding for their services, and better availability of tutoring were frequent suggestions made by disability service providers. Students, but not campus based disability service providers, also wanted easier courses, better teachers, and more human assistance.

Graduates. Changes suggested by graduates with and without disabilities were very similar and were generally aimed at the Cegep in general. Of greatest importance to both groups were better schedules and teachers, improving programs and courses in general, more available computer technologies and support and help from Cegep staff as well as improvements to the physical environment of the college. A slightly larger proportion of graduates with disabilities suggested the need for easier courses, better building accessibility and more government support.

What happens after graduation?

Studying. The activity profiles for graduates with and without disabilities were very similar; this was true for both pre-university and career/technical program graduates. For example, 83% of graduates with disabilities in pre-university programs were studying after graduation compared to 84% of graduates without disabilities, rates that are consistent with the MELS Reliance data reported for pre-university programs (Ministère de l'Éducation, Loisir et Sport, 2000). In both groups approximately 31% of career/technical program graduates were continuing their studies.

Employment rates. Calculation of employment rate includes only those graduates who were working or actively seeking work. Those who were studying or indicated they were unavailable for work are excluded. The results here, too, show that employment rates of pre-university graduates with disabilities (93%) and without disabilities (89%) were very similar. Nor was there a significant difference in the employment rates of career/technical program graduates with (98%) and without disabilities (95%); this was true whether they were or were not registered to receive disability related services from their Cégep. Employment rates by disability type were not calculated due to the small numbers in each category.

What about full time and part-time status? The results again show no significant differences between graduates with and without disabilities, whether they had registered to receive disability related services from their Cégeps or not, in the proportions working full time, part-time and seeking work for either pre-university or career/technical program graduates.

Are graduates working in the fields in which they studied? It was not surprising that the percentage of graduates employed in the field of study of their programs was considerably lower for pre-university programs than for career/technical programs. There was, however, no significant difference between graduates with and without disabilities in the proportion of pre-university graduates employed in a field of study that was related to their program. This was also true of the proportion of career/technical program graduates employed in a field of study that was related to their program: the rates were 81% and 91% for graduates with and without disabilities, respectively. However, when the proportions of career/technical program graduates in a field closely related to their programs were compared, for graduates with (61%) and without disabilities (76%) the difference was significant. This suggests that although the employment rates for graduates with and without disabilities in career/technical programs are similar, graduates with disabilities are less likely to be employed in a field of study closely linked to their program. It was not possible to conduct a meaningful comparison of registered and unregistered graduates or of graduates with different impairments due to small sample sizes.

Summary, Discussion, Conclusions, and Recommendations

Sample Characteristics And Representation Of Students And Graduates With Disabilities In The Cegeps

Summary: Campus based disability service providers and learners with disabilities in the Cegeps. Although this varied greatly, campus based disability service providers typically had seven years experience in the job and devoted an average of one day per week to providing services to students with disabilities. Over half of the campus based disability service providers reported that they had experience providing services to students with learning disabilities, and mobility and hearing impairments. However, less than half of them had experience providing services to students with medical and psychological disabilities.

As is the trend in all postsecondary education, Cegep students with disabilities and all three groups of graduates were more likely to be female than male. This is similar to results for Dawson College graduates from a previous investigation (Fichten, Jorgensen, et al., 2005). Consistent with the results of an earlier study (Jorgensen et al., 2005), where we found that Cegep students with disabilities take one semester longer to graduate, in the present investigation we found that Cegep graduates with disabilities are, on average, ½ year older than their nondisabled counterparts. The vast majority (over 90%) of both current students with disabilities and all three groups of graduates were enrolled in a regular diploma program: approximately ½ in a pre-university program and ½ in a career/technical program.

The nature of the impairments of those who register to receive disability related services from their Cegep has changed over the years. Among the most common impairments of current students and graduates alike are: a learning disability/attention deficit disorder, mobility impairment, hearing impairment, medically related disability, and psychological disability. Also, approximately 25% of those who register for disability related services have 2 or more impairments.

The impairments of many students with disabilities no longer fit the original tripartite Québec Ministère de l'Éducation, Loisir et Sport (MELS) division of visual impairment, hearing impairment, and "other." In fact, a learning disability, the most common impairment reported by current students registered to receive disability related services from their Cegep, is not funded according to the MELS's traditional funding formula. Other common impairments of students include certain health and psychiatric and psychological disabilities, impairments which are not recognized or funded by the MELS, and about which disability service providers know relatively little. This trend is similar to that reported for a large sample of American 2 year colleges (D'Amico, 2006).

The proportion of Cegep students who are registered to receive disability related services has risen slightly over 1999 levels. This change, however, is not dramatic and it may not be keeping up with corresponding increases in other provinces. Most troubling is that the percentage of students receiving disability related services continues to be under 1% of the student body. Similarly, the percentage of students registered to receive disability related services for whom the Cegeps receive funding from the Ministère de l'Éducation, Loisir et Sport has improved over the 1999 level, but only slightly: currently, the Cegeps receive funding only for approximately ⅓ of the students who are actually registered to receive services. This has resulted in serious service provision and funding issues. Cegeps handle this problem in various ways. For example, some Cegeps have "waiting lists" for service (Juhel, 2006, personal communication).

Our study of graduates suggests that the actual proportion of Cegep students who self-identify as having a disability hovers around 10%, but that most students with disabilities do not register to receive disability related services. The majority of unregistered graduates with disabilities had medical, psychological, visual or learning disabilities.

Conceptual issues. These include registered vs. unregistered students, funding issues, and the "emerging clientele" of students with disabilities in the Cegeps.

Registered vs. unregistered students. As is the case in the rest of North American colleges and universities, our results suggest that the majority (approximately 90% in our sample) of students with self-reported disabilities in the Cegeps do not register to receive disability related services or accommodations. Therefore, estimating the rate of disability in the Cegeps using only those students who register significantly under-reports the actual rate. This also raises the question of whether there really are, proportionally, very few students with disabilities with disabilities who require disability related services in

the Cegep system or whether the students are enrolled, but, for a variety of reasons, do not register to receive disability related services.

Nevertheless, because most students with disabilities are not registered to receive disability related services, accommodations are often not made for them by faculty or staff. Therefore, there is increased need for universal instructional design, which involves educational strategies that are accessible to all students, including those with disabilities (cf. Loewen, 2006; McGuire, Scott, & Shaw, 2003; Nguyen et al., in press; Scott, Loewen, Funckes, & Kroeger, 2003).

Universal instructional design is an outgrowth of the universal design movement in architecture (cf. Connell, et al. 1995). “Universal design is the design of products and environments to be usable by all people, to the greatest extent possible, without the need for adaptation or specialized design. The intent of universal design is to simplify life for everyone by making products, communications, and the built environment more usable by as many people as possible at little or no extra cost. Universal design benefits people of all ages and abilities (Center for Universal Design, 2006).

The principles of universal instructional design, adapted from McGuire, Scott, and Shaw (2003), Nguyen et al. (in press), and Scott, Loewen, Funckes, & Kroeger (2003) are presented in Table 72.

Table 72

The 9 Principles Of Universal Design For Instruction

Principle	Definition	Examples of recommendations
Equitable use	The design does not disadvantage or stigmatize any group of users	An access ramp is available in the establishment; multiple modes of presentation of class material (can help diminish language related obstacles)
Flexibility in use	The design accommodates a wide range of individual preferences and abilities	Offer choices or alternative ways of completing the course workload (can help decrease course difficulty)
Simple, intuitive use	Use of the design is easy to understand, regardless of the user’s experience, knowledge, language skills, or current concentration level	Eliminate all material that is unnecessarily complex, use concise vocabulary and speak clearly
Perceptible information	The design communicates necessary information effectively to the user, regardless of ambient conditions or the user’s sensory abilities	Use PowerPoint presentations and/or a projector to communicate class material (using a large font and a good contrast); make the content available online prior to each class
Tolerance for error	The design minimizes hazards and the adverse consequences of accidental or unintended actions	When providing computer based or online exams ensure that it will not be made invalid by an accidental keystroke
Low physical effort	The design can be used efficiently and comfortably, and with a minimum of fatigue	Avoid unduly long exams
Size and space for approach and use	Appropriate size and space is provided for approach, reach, manipulation, and use, regardless of the user’s body size, posture, or mobility	Classrooms used for exams should take into consideration the number of students and ensure their comfort
A community of learners	The instructional environment promotes interaction and communication among students and between students and faculty	Assign students to groups or give them group projects - this will promote greater communication and inclusion among students
Instructional climate	Instruction is designed to be welcoming and inclusive. High expectations are espoused for all.	Assert your availability to all students; underline your openness to discuss individual needs

Funding issues. Extrapolation suggests that there are approximately 15,000 students with disabilities currently enrolled in the Cegeps (i.e., approximately 10%), although only approximately 10% of them register to receive disability related services from their Cegep. In turn, Cegeps receive funding for only about 1/3 of students who are registered, suggesting that there are serious financial concerns around providing services for students with disabilities.

The "emerging clientele." Reports from the disability service providers and from the managers in charge of services for students with disabilities at the three "centre d'accueil" Cegeps show important trends in the types of impairments presented by students to whom they provide services. Many of these are impairments for which Cegeps receive little or no funding from the MELS. The trend over time shows that the "emerging clientele" of students with learning disabilities, psychiatric and medical conditions has been increasing dramatically, resulting in even more important funding concerns. The "emerging clientele" has also posed difficulties for disability service providers who feel inexperienced and inadequate in providing services to students with some of these impairments (e.g., psychiatric disabilities, Asperger's). This situation has resulted in additional important funding concerns.

The "emerging clientele" has translated into only very modest funding increases to the Cegeps (e.g., a total of \$30,000 for all students with learning disabilities in the entire eastern portion of the province (Juhel, 2006, personal communication). Nevertheless, there are some positive developments concerning the "emerging clientele" of students. For example, the MELS has already instituted changes in the Cegeps to ensure that students with learning disabilities receive increased attention from faculty and administration. For example, the entire February 2006 issue of *Correspondance* (2006), a MELS funded magazine distributed to all professors of French at the French Cegeps, was devoted entirely to students with learning disabilities. In this issue helpful guidelines for accommodating students with learning disabilities in general are provided and there are specific recommendations about accommodations to help these students succeed on the "épreuve uniforme" (i.e., Ministerial Examination of College French (or English) also known as the Exit Exam), a four-hour examination that all Cegep students must pass to obtain their college diploma (DEC) (Fortier, 2006).

Using The Cegep Experience Questionnaire (CEQ) To Facilitate Student Success

We have developed the content of the 32 item closed-ended Cegep Experience Questionnaire and established that it has acceptable reliability and validity. Regular print, large print and digital (Word) versions are provided in the Appendix in French and English. Disability specific items are designated in Table 34. There are no "norms" per se. However, average scores for students with disabilities in general are provided in Table 38. Mean scores for a smaller number of students with specific impairments are provided in Table 45.

What Factors Make Cegep Studies Easier? Harder? What Should Be Changed?

Conceptual issues. These concern the comparison of open-ended listings with Cegep Experience Questionnaire results, the PPH model, and the commonalities and differences between individuals with disabilities who do vs. those who do not register for disability related services.

Comparison of open-ended listings with Cegep Experience Questionnaire results. A one-to-one comparison of open-ended listings and Cegep Experience Questionnaire scores is not possible. The open-ended listing looks at the frequency of how many students spontaneously indicated a topic as a facilitator or an obstacle. The CEQ, on the other hand, provides a mean score for students on the item. Nevertheless, examination of items with "facilitating" mean scores suggests that many of these items also appear on the open-ended listings. This is also true of obstacles, providing additional evidence for the validity of the CEQ measure. For example, for students with disabilities, disability related accommodations were the most frequently mentioned facilitators on the open-ended measure; this is also one of the top ranked item on the CEQ. Health and the impact of one's impairment were the most frequently mentioned obstacles on the open ended listings by students and graduates with disabilities: these are also common obstacles noted on the CEQ.

Data from the findings of others also provide confidence that the CEQ measure is measuring what it is supposed to measure. For example, several of the facilitator concepts were also reported by the sample of 71 individuals interviewed at Baylor University (Graham-Smith & Lafayette, 2004). Here, researchers found that of accommodations offered at the university,

the largest percentage of responses dealt with the attitudes of the staff, a quiet place for exams, extended time for exams, and study skills training and tutoring. Similarly, in a study by Smith and Nelson (1993) the results show that the following were deemed important in influencing college studies: level of personal motivation, study habits, previous education experiences, attitudes of students, attitudes of professors, and disability related services at the college.

PPH model. We examined the obstacles and facilitators to student success at Cegep that students with disabilities, campus based disability service providers and graduates with and without disabilities reported from the vantagepoint of Fougeryollas' PPH model (Processus de production du handicap: Fougeryollas, Lippel, St-Onge, Gervais, Boucher, Bernard, & Lavoie, 1999). The PPH model was developed in Québec (Fougeryollas, Cloutier, Bergeron, Cote, & St Michel, 1998) and is widely used in the rehabilitation community. According to this model the presence of a handicap reduces the ability to perform daily activities; this results from the interaction of personal and environmental factors (Fougeryollas et al., 1999). In the case of education, daily activities ("habitude de vie") involve attending college, studying, writing, reading and participating in the extracurricular and social activities offered at the college (cf. Lemieux-Brassard, 1996). This approach recognizes that through the individuals' abilities, and with appropriate interventions, the obstacles that the individual who has an impairment encounters in the educational setting can be overcome. These interventions in Cegeps are often mediated through the campus based disability service providers who provide various accommodations to students with disabilities who register for disability related services.

Our findings show that a very large percentage of students with disabilities may not receive such support to help them overcome obstacles they may encounter as a result of their disability because they do not register for disability related services. The findings show that these unregistered individuals with disabilities report experiencing more difficulties, especially obstacles related to the Cegep environment, than do individuals who either have no disabilities or who do have a disability and have registered to receive disability related services from their college.

Certain factors can serve as both a facilitator as well as an obstacle, depending on the circumstances, and it is the interaction between personal and environmental factors that create either obstacles or facilitators. It is these "common" frequently endorsed items (i.e., those that can be obstacles as well as facilitators) that need to be paid special attention when trying to ensure that Cegeps provide a supportive environment to students. For example, the availability of computers on campus was a popular facilitator - and a popular obstacle - to students. Clearly, if computers with needed adaptations are available in settings where the student needs to work on these, then it is a facilitator. When it is not available or when the available computer does not have needed accessibility features, then it can pose an obstacle.

Future research needs to examine whether it is the same individual who has identified a particular item as both an obstacle and facilitator or whether it is different students who did this (e.g., designate the Cegep environment as a facilitator or an obstacle). Exploring this issue can help determine good student-Cegep environment fit, which may be especially important for students with disabilities. For example, if students who are blind typically indicate that the Cegep environment is an obstacle, while students with mobility impairments indicate that this is a facilitator, then the nature of environmental solutions to best solve problems are likely to differ. In this instance the environment of the Cegep is a constant, so its evaluation as either an obstacle or a facilitator is the result of an interaction between personal aspects and the Cegep environment.

On the other hand, some obstacles and facilitators may not reflect a person-environment interaction, but, rather be exclusively based on the individual or on the environment. An example of an exclusively environmentally based evaluation would occur if virtually all students were to, for example, rate specific teachers as good and other teachers as poor. An exclusively personal evaluation would mean that a single student evaluates specific teachers as good when most others evaluate the teacher as poor or the converse. That each of these situations can occur is evident from an examination of teacher ratings at RateMyTeachers.Ca (2006) and at RateMyProfessors.Com (2006).

Registered vs. unregistered individuals with disabilities. The findings also show that those individuals with disabilities who did not register with their Cegep based disability service provider perceived the factors that influence success at college as less facilitating than either individuals with disabilities who did register or individuals without disabilities. This was true on the overall Index of Difficulty, on the Cegep environment subscale, and on specific Cegep environment items, including course schedules, the attitudes of non-teaching staff, and the availability of course materials and computers on campus.

Our recent research at Dawson College showed that students with disabilities who registered to receive disability related services from their college can and do achieve good academic results and that they are just as likely to graduate as

nondisabled students given sufficient time (Jorgensen, Fichten, Havel et al., 2003; Jorgensen, Fichten, Havel, et al., 2003; Jorgensen, Fichten, Havel, 2005). But what about the very large number of students with disabilities who do not register to receive disability related services? Does a decision not to register and, therefore, to receive no disability related services result in a less facilitating environment that impacts on the academic success of the unregistered students? Does not registering compromise their ability to graduate and to successfully compete for admission to university? Future research needs to investigate this issue by examining the academic outcomes of students with the same types of impairments who do and those who do not register to receive disability related services.

It is important to know whether graduates who chose not to register for disability related services might have fared better if they had registered. If so, students should be encouraged to use available services in their Cegeps. Comparing academic outcomes of the three groups will provide insight into whether disability related services not only help eliminate perceived educational obstacles faced by learners because of their disability but also helps students succeed in their studies. Making the findings available to those involved in planning pedagogical changes, advising students, and providing disability related services will help assure quality education and post-graduation opportunities for all Cegep students and graduates, including those with disabilities. How does this group compare academically to students with disabilities who are registered to receive disability related services? Are their impairments similar or different? What could - or should - be done to assist these students?

Summary. In general, all participants (i.e., students with disabilities, campus based disability service providers, and graduates with and without disabilities) indicated more conditions that made Cegep studies easier than harder. This was especially notable in the case of Cegep based factors, which were generally seen as both important and quite facilitating. Students' personal situations and community and government based services were less so. Consistent with the findings of our previous investigation (Fichten, Jorgensen, et al., 2005), in general, the more impairments a student reported having, the more obstacles he or she encountered.

Disability service providers identified numerous issues related to their function as service providers that they considered important to student success. These include: good collaboration between professors and disability service providers; affordable diagnostic services external to the Cegep, such as evaluations of learning disabilities; students' ability to express their needs; the attitudes of the administration toward services provided to students with disabilities; identification of students' individual needs by the disability service provider; students' awareness of the impact of their disability; the budget allocated for disability services at the Cegep; willingness of students to use suitable accommodations; students' choice of career; and professors' level of knowledge about disability services and accommodations.

Most facilitators and obstacles reported by individuals with and without disabilities were common to both groups. Individuals with disabilities who did not register for disability related services, however, had significantly and substantially less facilitating scores overall as well as on several Cegep environment related items than nondisabled individuals or individuals with disabilities who did register. These results, which are based on data from Cegep graduates, are very similar to our findings on current students with and without disabilities (Fichten, Jorgensen, et al., 2005).

Good teachers, tutors and learning centers (which assist with studying, writing, and exam taking skills and provide tutoring), and the availability of computers both on and off-campus were generally seen as important facilitators by current students and by all three groups of graduates. Friends, good schedules, easy and interesting courses and programs, a good financial situation, good motivation and good study skills were also identified as facilitators by all groups. On the other hand, poor teachers, difficult courses, poor schedules, having to hold a job during the academic term, transportation problems, a poor financial situation, lack of access to computers, having to take too many courses, poor study skills, demanding and boring programs, poor motivation, and insufficient time were generally seen as obstacles.

Consistent with the finding that the availability and accessibility of computers, both at the Cegep and off-campus, were seen as important facilitators, other investigations have also found that computers were rated as important facilitators by students with disabilities (e.g., Burgstahler & Doe, 2006). In addition, a recent investigation shows that computer use on the job is associated with higher salaries for employees both with and without disabilities (Canadian Council on Social Development, 2004). Nevertheless, Abrami et al. (2005), who showed that eLearning initiatives are important in Canadian postsecondary education, also noted that very little is known about eLearning needs and concerns of students with disabilities. Clearly, more research is needed. The role of computers in the education of individuals with disabilities was recently reviewed by Berkowitz (2006), who also highlighted the need for campus based disability service providers to become more knowledgeable about assistive computer technologies.

Although level of personal motivation was rated as a very important facilitator by most students, this was seen as especially facilitating by students with learning disabilities. This finding is consistent with other research, as personal motivation was identified by students with learning disabilities to be among the most important facilitators, along with family and friends (Greenbaum, Graham, & Scales, 1995).

Nondisabled graduates and graduates with disabilities who were and who were not registered to receive disability related services. The results also show that, overall, graduates with disabilities had significantly lower scores on personal situation items as well as on the overall Index of Difficulty than nondisabled graduates. Examination of the items shows that graduates with disabilities had less facilitating scores mainly on items dealing with their personal situation. Issues of concern to students with disabilities in particular include poor health and the impact of their disability/impairment.

Improvements suggested by current students with disabilities as well as by graduates with and without disabilities were very similar and were generally aimed at aspects of the Cegep environment. Of greatest importance to all groups were better schedules, improving the college system, improving programs and courses in general, having better teachers, more available computer technologies, support and help as well as improvements to the physical environment of the college. Changes suggested by disability service providers generally focused on improving the accessibility of classrooms and facilities as well as aspects of their services. Promoting collaboration and communication between staff, teachers and students, increased funding for their services, and better availability of tutoring were also frequent suggestions among disability service providers.

The data also suggest that it may be important for students with disabilities to register with their disability service provider. For example, graduates with disabilities who registered for disability related services experienced certain aspects of their Cegep environment, such as the availability of computers and course materials, as more facilitating than their peers with disabilities who did not register. They also had overall Index of Difficulty (IDF) scores that were more facilitating than graduates with disabilities who did not register. In fact, graduates with disabilities who did not register for services generally had the worst scores, especially on Cegep environment related items. The IDF score for graduates who had registered for disability related services was similar to that for graduates with no disabilities. However, when disability related items were excluded, the registered graduates had IDF scores that were, on average, more facilitating than those of graduates without disabilities. This was not true for unregistered graduates.

Consistent with reports by others (e.g., Skinner, 2004; Stewart & Morris-Wales, 2004), individuals with disabilities who were registered to receive disability related services from their Cegep overwhelmingly indicated that disability related accommodations were among the most important facilitators, along with sensitization and information dissemination about disabilities to teachers. In the present investigation specific accommodations seen as helpful were: having a note taker or interpreter in class, extended time for exams and assignments, accessible facilities, as well as Ministère de l'Éducation, du Loisir et du Sport (MELS) and college policies which permit students with disabilities to take a reduced number of courses and still be considered "full time students."

Not only has extended time been shown to be especially important to students with learning disabilities (Greenbaum, Graham, & Scales, 1995) but it has also been shown to improve their scores. This has been found to be the case for both algebra and reading comprehension tasks where students with learning disabilities, who initially scored significantly lower than nondisabled peers under regular timing conditions, improved their scores and did not differ from nondisabled peers when both groups experienced extended time conditions (Alster, 1997; Runyan, 1997).

Comparing students with disabilities and campus based disability service providers. In most cases students and service providers agreed on what was important and on the nature of obstacles and facilitators. Exceptions show that although students identified a variety of "personal situation" variables such as friends, their schedule, computers off-campus, physical adaptations at home, and their finances as facilitators, disability service providers did not do so. Also, students noted the following important obstacles that were not indicated by most service providers: too many and difficult courses, bad schedules, the impact of their impairment, a problematic financial situation, and having to hold a job during the academic term.

Campus based disability service providers, on the other hand, indicated that a knowledgeable service provider, pre-registration of students with disabilities for courses before other students register, the attitude and willingness of professors to adjust their courses to students' needs, and good counselling and academic advising were important facilitators – factors

generally not noted by students with disabilities. On the other hand, although students did not identify these concerns, service providers were dissatisfied with various aspects of the disability related services and accommodations that they provide, with the lack of information and sensitization about disabilities in the Cegep, with not having adequate knowledge about disabilities and accommodations themselves, and with students' poor self-advocacy skills. Indeed, more knowledge about computer based disability accommodations (Fichten et al., 2000, 2003, 2004; Gitlow & Wade, 2006) and students' self-advocacy skills have long been seen as important for academic success by disability service providers (Stewart, Cornish, & Somers, 1995) and the importance of the evolving role of faculty in the successful outcomes of students with disabilities has been stressed in several recent publications (e.g., Burgstahler & Doe, 2006; Shaw & Scott, 2003; Vogel et al., 2006).

What Happens After Graduation?

Our findings show little difference in the percentage of graduates with and without disabilities who continued their studies after Cegep or in the percentages of those who were working full time or part time. Similarly, there was no significant difference between the employment rates of graduates with and without disabilities.

The employment rates of graduates in career/technical programs was very high - over 95% for both graduates with and without disabilities. Students enrolled in career/technical programs often have a work based component such as an internship or a stage. Research has shown that this is seen as especially valuable by students with disabilities (Burgstahler, 2001; Burgstahler & Bellman, 2005).

Canadian statistics for people with and without disabilities in general also show little difference in the employment rate of adults with and without disabilities (e.g., Statistics Canada 2001d, 2001e: 89% vs. 93%, respectively). There is an important caveat, however, because the overall statistics for Canada show a huge difference between the proportions of people with and without disabilities who are not in the labor force (i.e., 51% vs. 21%, respectively). This was not found for our sample of Cegep graduates as the proportions of graduates with and without disabilities who were studying or not available to the labor force for other reasons were very similar. These results resemble recent data from McGill University, where 60% of a sample of individuals with disabilities who graduated two to three years previously indicated that they were employed. The remaining 40% reported being enrolled in a graduate program, pursuing mainly Master's or Ph.D. degrees (Wolforth, 2006).

Also, there was no significant difference between graduates with and without disabilities concerning whether their employment was related to their field of studies. That the employment of graduates' with disabilities is related to their studies was also found both at McGill University (Wolforth, 2006) as well as in a large U.S. study of university graduates (Horn & Berkold, 1999). Indeed, the only important difference we found between graduates with and without disabilities was that graduates with disabilities in career/technical programs were less likely than nondisabled graduates to obtain employment in a field "closely" related to their field of study. This parallels findings showing that while most employees with and without disabilities are satisfied with their jobs, workers with disabilities were somewhat less likely to be satisfied than nondisabled employees (i.e., 80% vs. 91%, respectively: Canadian Council on Social Development, 2004).

Limitations Of This Investigation

One limitation of this investigation is that the graduate data are based on self reports of disability, and not on documented conditions. It could be argued that self-definition is a key element in evaluating the impact of an impairment. This could, of course, have affected our estimates of the number of individuals with disabilities in the Cegeps. Another, more important concern in this regard involves the large number of unregistered graduates who indicated having a visual impairment. Because we did not add the caveat that a visual impairment excluded individuals who simply needed glasses, it is possible that several graduates who noted that they had a visual impairment may not have been considered to have a disability by most definitions. Examination of the responses of these graduates suggests that in many cases they answered disability specific questions in similar proportions to graduates with other impairments. Yet, in other cases the scores of graduates indicating a visual impairment who responded to these items were more facilitating than expected (e.g., Availability of course materials). In an attempt to eliminate any possible confounding of the results we re-ran the analyses on graduates after excluding all who indicated a visual impairment; we are pleased to note that this did not change either the direction or

the nature of the findings. In addition, when it comes to a consideration of the proportion of graduates with and without disabilities, it should be noted that even if we remove all 44 graduates who indicated having a visual impairment from the sample of 182 graduates who indicated having a disability and from the whole sample of 1486 graduates who participated, the 138 graduates who have a disability other than a visual impairment still constitute a substantial percentage of the total number of graduate participants: 10%. Nevertheless, this important limitation needs to be considered when interpreting the findings on graduates.

Another limitation revolves around the fact all that participants were volunteers, and, thus, may not have represented all disability categories equally. In addition, it was possible that graduates without disabilities may not have bothered to answer our questionnaire because the content seemed to be geared to graduates with disabilities. Although this possibility exists, we do not believe that it is likely. First, most questions on the survey are equally applicable to graduates with and without disabilities. Second, at Dawson College our portion of the institutional evaluation mailing constituted a small part of the total questionnaire package. Yet the proportion of graduates with and without disabilities at Dawson College and at the other two Cegeps was very similar, as was the overall response rate, especially keeping in mind that the Dawson questionnaire package was considerably longer than that sent to graduates at the other Cegeps. So we do not believe that the nature of the questionnaire had a large effect on the relative proportions of responses by graduates with and without disabilities. Moreover, the proportion of current Dawson College students who self-reported having a disability on other recent college-wide surveys was very similar to that found for the graduates in the present investigation (Jorgensen, 2006).

Conclusions

Overall, when it comes to individuals with disabilities in the Cegeps, the findings of this investigation show more positives than negatives. The proportion of Cegep students with disabilities has increased during the past five years. Participants reported substantially more facilitators than obstacles to student success, especially facilitators related to the Cegep environment. And, graduates with and without disabilities continued their studies and successfully joined the labor force in equal proportions.

There are, however, three major reasons for concern. First, the growth during the past five years in the number of students with disabilities who registered to receive disability related services from their Cegep has been limited and remains under 1% of the student body, compared to the approximately 6% we found for the rest of Canada five years ago. Second, the findings show that approximately nine out of 10 Cegep graduates who had a disability did not register for disability related services. Furthermore, these unregistered graduates with disabilities experienced more obstacles and, in particular, more Cegep related obstacles, than nondisabled graduates or graduates with disabilities who had registered for services. Third, the findings highlight serious funding problems for Cegep based disability related services that need urgent attention.

Recommendations

Research recommendations.

Evaluate obstacles and facilitators to students with different impairments before and after changes are made to Cegep policies and practices at the college.

- The Cegep Experience Questionnaire (CEQ) can be used to evaluate obstacles and facilitators for current students with and without disabilities as well as in institutional research surveys of students and graduates

Routinely include questions related to students' disability status and the nature of their disabilities in research.

- Include disability related questions on all Cegep based surveys and make sure these are available in alternate formats
- Include disability related questions on SRAM (Service régional d'admission du Montréal métropolitain) and SRAQ (Service régional d'admission au collégial de Québec) surveys

Conduct research on the accessibility of eLearning and computer technologies.

- Given that the availability of computers and information technologies was seen as either an important obstacle or an important facilitator, research on the accessibility of eLearning and computer technologies needs to be carried out at the Cegeps

Evaluate the impact of funding of Cegeps' disability related services.

- The academic outcomes of students for whom the Cegeps receive funding should be compared to those of students who are registered but for whom funding is not available (i.e., those with “recognized” vs. “not recognized” disabilities). High school leaving grade can be used as a covariate or as a basis for equating the two groups of students

Gather more information about students with disabilities who do not register to receive disability related services

- Those with disabilities who did not register for disability related services at their Cegep experienced more obstacles to academic success than either individuals with disabilities who had registered for services or nondisabled individuals.
- To ensure appropriate services to unregistered students with disabilities, more information is needed about them: Why do they not register? What are their needs and concerns? How can their educational needs best be met when they are not registered? Would they be better off academically if they were to register?
- There is a need to compare the academic outcomes of students with disabilities who are registered to receive disability related services and those who are not. Here, too, high school leaving grade can be used as a covariate or as a basis for equating the two groups of students

Evaluate the effectiveness of each type of Cegep based disability accommodation for students with different disabilities.

- Disability related accommodations were among the most important facilitators for individuals with disabilities

Conduct prospective and retrospective studies to investigate what happens to Cegep graduates.

- What happens to Cegep graduates with disabilities?
- Since such a large proportion of Cegep graduates continue their studies, how do graduates with disabilities fare at university compared to their nondisabled peers?
- How do the careers of technical program graduates, including their salaries, progress in the long term?

Practice recommendations. These are intended primarily for MELS and college personnel, including campus based disability service providers, faculty, managers of disability related resources, personnel responsible for student services, financial aid, information and computer technologies, professional development, etc.

There is a need for evidence based practice in providing disability related funding, services and accommodations in the Cegeps.

- Inform campus based disability service providers about relevant research findings to promote evidence based practice
- Use the newly developed Cegep Experience Questionnaire (CEQ) in program evaluation and in evaluations of how students with disabilities are faring at the Cegep
- Disability service providers can regularly administer the (CEQ) to their clientele to provide a snapshot of students' current situations. This can help improve services by incorporating the students' views, tracking changes over time, evaluating the impact of any improvements, and providing evidence to facilitate decision making by Cegep and MELS based administrators

There are fewer students with disabilities who are registered to receive disability related services in Québec's colleges compared to other provinces. Also, relatively few Cegep students with disabilities are registered to receive disability related services from their Cegep. In addition, appropriate accommodations and information dissemination about disabilities to the college community were seen as especially facilitating. This suggests that there is a need for greater visibility of disability related services and accommodations in a variety of contexts.

- Increase the visibility of disability related services at the college to incoming students by sending pamphlets to all students upon admission to the Cegep
- Develop a college guide for students with disabilities which provides information about the types of accommodations, resources and facilities available, and information about successful outcomes of students with disabilities, and make this available to all students, not only those with disabilities
- Develop a promotional video and pamphlet to discuss the services available to students with disabilities in the Cegeps. Include services that could benefit students with learning, psychological/psychiatric, and medical disabilities
- Publicize the success of students with disabilities and the availability of disability related services in various settings (e.g., within the Cegep, in high schools, in rehabilitation centers, to community groups, to the Ordre des conseillers et conseillères d'orientation et des psychoéducateurs et psychoéducatrices du Québec, to Emploi Québec, to adapted employment centres such as the SEMOs)
- Include information on disability related accommodations available at the Cegeps at open house and high school visits
- High school professionals and teachers need to motivate high school students with disabilities to attend Cegep
- Include disability related information in SRAM (Service régional d'admission du Montréal métropolitain) and SRAQ (Service régional d'admission au collégial de Québec) publications such as the "Guide aux études" and the "Guide général d'admission"
- Given the high priority accorded by both students with disabilities and disability service providers to sensitizing and informing others about disabilities, design and distribute promotional materials to sensitize and inform college personnel, especially faculty, about disabilities and appropriate accommodations
- Promotional materials could be designed and distributed to all college personnel, with a special emphasis on faculty
- Promote the benefits of registering for disability related services in Cegep newsletters, web sites, and other publications
- Suggest to faculty that they include a statement such as, "If you have a disability you may want to get in touch with the Cegep's campus based disability service provider so that he or she can provide appropriate accommodations to support your success" on all course outlines
- De-stigmatize registration for disability related services by including these among other services offered in the Cegeps (e.g., exam invigilation service, not intended exclusively for students with disabilities)

Students stated that their financial situations and their need to work at a paid job during the term posed obstacles.

- College personnel and MELS policy makers need to pay more attention to students' financial situations. There is an urgent need for better financial assistance to students with disabilities to reduce the need to work during the academic term
- Lobby for more government support to students with disabilities
- Get involved in committees to make improvements to government financial aid and compensation programs for students (e.g., social assistance, funding related to students' Cegep studies)
- Publicize the availability of scholarships to students with disabilities (cf. AQEIPS (Association québécoise des étudiants ayant des incapacités au postsecondaire), NEADS (National Educational Association of Disabled Students))

Students with disabilities indicated that friends constitute an important facilitator.

- Help develop a system of peer mentoring for students with disabilities

Employment is an important post-Cegep outcome.

- Provide support and training to students and graduates with disabilities to help them find summer and permanent jobs and internships
- Encourage prospective employers and adapted employment agencies (e.g., IAM CARES, SEMOs) to recruit on campus

Computer and information technologies, universal instructional design, and knowledgeable faculty were seen as important facilitators.

- Enhance access to computer technologies with needed adaptations for both Cegep and off-campus use
- Promote universal instructional design and the accessibility of eLearning to Cegep based organizations such as APOP (Association des applications pédagogiques de l'ordinateur au postsecondaire), AQPC (Association québécoise de pédagogie collégiale), profWeb (2006), Clic (Bulletin collégial des technologies de l'information et des communications)
- Provide more information about universal instructional design at professional development activities for faculty, disability service providers, and eLearning practitioners and specialists at the Cegep (e.g., PERFORMA, education degree programs)
- Enhance professors' knowledge by developing faculty teams which can promote accessibility to their peers
- Include consideration of the accessibility of eLearning in Cegep information and communication technology initiatives and activities
- Sensitize rehabilitation centers and officials from various ministries about the importance of computers for off-campus use
- Lobby for better funding for Cegep based adaptive and accessible computer technologies

Campus based disability service providers believe that they are not sufficiently knowledgeable and that providing services to students with disabilities is not an important Cegep priority.

- Improve the status, recognition and relevance of disability service providers in the colleges
- Ensure more job stability of campus based disability service providers
- Provide additional opportunities for professional development for campus based disability service providers to become more knowledgeable about adaptive computer technologies and about how to better meet the needs of the increasing numbers of "emerging clientele" students with disabilities (e.g., students with medical and psychological impairments), whether these students are registered with the service or not

Improving services and accommodations for students with disabilities was seen as an important issue by both students and service providers.

- Given that personal situation factors posed significant obstacles to students with disabilities, campus based disability service providers need to pay more attention to ameliorating problematic situations in this realm.
- Provide services to students with all types of impairments
- Provide supplementary transportation services to supplement adapted transport
- Ensure better availability of tutoring
- Improve the accessibility of college buildings and facilities
- Because a good schedule was seen as an important facilitator, offer pre-registration to students with disabilities to permit them to obtain schedules that better fit with their impairments
- Because having too many courses was seen as an obstacle by many, inform students with disabilities that they are permitted to register for fewer courses and still be considered full-time students and encourage career/technical program coordinators to allow students to complete their studies in more semesters than specified in the program description
- Provide better links between inexperienced campus based disability service providers and the Eastern and Western Quebec "centre d'accueil" Cegeps

Improved funding for disability related services at Cegeps was seen as an important priority.

- The MELS needs to reconsider its funding formula for services to students with disabilities. Changes need to acknowledge the "unrecognized" disabilities of the "emerging clientele," such as learning disabilities, certain medical conditions and psychiatric disabilities

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Appendix - Cegep Experience Questionnaire: English and French Versions

English versions: CEGEP EXPERIENCE QUESTIONNAIRE

- Regular print
- Large print
- Word

French versions: QUESTIONNAIRE SUR VOTRE EXPÉRIENCE AU CÉGEP

- Regular print
- Large print
- Word

CEGEP EXPERIENCE QUESTIONNAIRE

Using the following scale, indicate in what way each of the items below has **affected your Cegep studies** by making them:

1	2	3	4	5	6	[N/A]
Much Harder	Moderately Harder	Slightly Harder	Slightly Easier	Moderately Easier	Much Easier	Not Applicable

Put a number beside all items. If an item is not applicable to you, respond with **N/A** (not applicable).

Personal Situation

1. _____ Financial situation
2. _____ Paid employment
3. _____ Family situation
4. _____ Friends
5. _____ Level of personal motivation
6. _____ Study habits
7. _____ Previous education experiences
8. _____ Health
9. _____ Impact of my disability

Cegep Environment

10. _____ Level of difficulty of courses
11. _____ Course load
12. _____ Course schedule
13. _____ Attitudes of professors
14. _____ Attitudes of non-teaching staff (e.g., registration staff, financial aid staff)
15. _____ Attitudes of students
16. _____ Availability of computers on campus
17. _____ Training on computer technologies on campus
18. _____ Availability of course materials
19. _____ Opportunity to participate in Cegep extracurricular activities (e.g., clubs, sports, social activities)
20. _____ Willingness of professors to adapt courses to my needs
21. _____ Accessibility of building facilities (e.g., doorways, classrooms, labs)
22. _____ Accessibility of Cegep physical education courses
23. _____ Availability of disability related services at the Cegep

Government and Community Supports and Services

24. _____ Availability of financial aid
25. _____ Availability of tutoring outside the Cegep
26. _____ Public transportation
27. _____ Availability of computers off-campus
28. _____ Training on computer technologies off-campus
29. _____ Disability-related support services off-campus
30. _____ Availability of adapted transport for student with disabilities
31. _____ Coordination between disability-related support services (e.g., attendant care, adapted transport) and school
32. _____ Availability of adaptations / career/technical aids at home (e.g., ramp, TDD)

Cegep Experience Questionnaire

Using the following scale, indicate in what way each of the items below has **affected your Cegep studies** by making them:

1 = Much Harder

2 = Moderately Harder

3 = Slightly Harder

4 = Slightly Easier

5 = Moderately Easier

6 = Much Easier

N/A = Not Applicable

Put a number beside all items. If an item is not applicable to you, respond with **N/A** (not applicable).

Personal Situation

1. _____ Financial situation
2. _____ Paid employment
3. _____ Family situation
4. _____ Friends
5. _____ Level of personal motivation
6. _____ Study habits
7. _____ Previous education experiences
8. _____ Health
9. _____ Impact of my disability

Cegep Environment

10. _____ Level of difficulty of courses
11. _____ Course load
12. _____ Course schedule
13. _____ Attitudes of professors
14. _____ Attitudes of non-teaching staff (e.g., registration staff, financial aid staff)
15. _____ Attitudes of students
16. _____ Availability of computers on campus
17. _____ Training on computer technologies on campus
18. _____ Availability of course materials
19. _____ Opportunity to participate in Cegep extra-curricular activities (e.g., clubs, sports, social activities)
20. _____ Willingness of professors to adapt courses to my needs
21. _____ Accessibility of building facilities (e.g., doorways, classrooms, labs)
22. _____ Accessibility of Cegep physical education courses
23. _____ Availability of disability related services at the Cegep

Government and Community Supports and Services

- 24. _____ Availability of financial aid
- 25. _____ Availability of tutoring outside the Cegep
- 26. _____ Public transportation
- 27. _____ Availability of computers off-campus
- 28. _____ Training on computer technologies off-campus
- 29. _____ Disability related support services off-campus
- 30. _____ Availability of adapted transport for student with disabilities
- 31. _____ Coordination between disability related support services (e.g., attendant care, adapted transport) and school
- 32. _____ Availability of adaptations / technical aids at home (e.g., ramp, TDD)

Thank you for your participation.

Cegep Experience Questionnaire

For items 1-32, using the following scale, indicate in what way each of the items below has **affected your Cegep studies** by making them

- 1 = Much Harder**
- 2 = Moderately Harder**
- 3 = Slightly Harder**
- 4 = Slightly Easier**
- 5 = Moderately Easier**
- 6 = Much Easier**
- N/A = Not Applicable**

Questions 1 to 9 concern your **Personal Situation**. Use the scale above, where 1 equals much harder and 6 equals much easier. Indicate to what extent each item has affected your Cegep studies. If an item is not applicable to you, respond with **N/A** (not applicable).

1. Financial situation:
2. Paid employment:
3. Family situation:
4. Friends:
5. Level of personal motivation:
6. Study habits:
7. Previous education experiences:
8. Health:
9. Impact of my disability:

Questions 10 to 23 concern your **Cegep Environment**. Use the scale above, where 1 equals much harder and 6 equals much easier. Indicate to what extent each item has affected your Cegep studies. If an item is not applicable to you, respond with **N/A** (not applicable).

10. Level of difficulty of courses:
11. Course load:
12. Course schedule:
13. Attitudes of professors:
14. Attitudes of non-teaching staff (e.g., registration staff, financial aid staff):
15. Attitudes of students:
16. Availability of computers on campus:
17. Training on computer technologies on campus:
18. Availability of course materials:
19. Opportunity to participate in Cegep extracurricular activities (e.g., clubs, sports, social activities):
20. Willingness of professors to adapt courses to my needs:
21. Accessibility of building facilities (e.g., doorways, classrooms, labs):
22. Accessibility of Cegep physical education courses:
23. Availability of disability related services at the Cegep:

Questions 24 to 32 concern **Government and Community Supports and Services**. Use the scale above, where 1 equals much harder and 6 equals much easier. Indicate to what extent each item has affected your Cegep studies. If an item is not applicable to you, respond with **N/A** (not applicable).

24. Availability of financial aid:
25. Availability of tutoring outside the Cegep:
26. Public transportation:
27. Availability of computers off-campus :
28. Training on computer technologies off-campus:
29. Disability related support services off-campus:
30. Availability of adapted transport for student with disabilities:
31. Coordination between disability related support services (e.g., attendant care, adapted transport) and school:
32. Availability of adaptations / technical aids at home (e.g., ramp, TDD):

Thank you for your participation.

QUESTIONNAIRE SUR VOTRE EXPÉRIENCE AU CÉGEP

À l'aide de l'échelle suivante, indiquez comment chaque item a **influencé vos études au Cégep** en les rendant :

1	2	3	4	5	6	[N/A] Non Applicable
Plus difficile	Modérément plus difficile	Légèrement plus difficile	Légèrement plus facile	Modérément plus facile	Plus facile	

Inscrivez le chiffre correspondant pour chaque item. Si un élément ne s'applique pas à votre situation, répondez par **N/A** (non applicable).

Situation personnelle

1. _____ Situation financière
2. _____ Travail rémunéré
3. _____ Situation familiale
4. _____ Ami(es)
5. _____ Degré de motivation personnelle
6. _____ Gestion du travail scolaire (méthode, organisation)
7. _____ Expériences scolaires antérieures
8. _____ État de santé
9. _____ Impact de mon incapacité

Environnement du Cégep

10. _____ Degré de difficulté des cours
11. _____ Charge reliée au nombre de cours
12. _____ Horaire des cours
13. _____ Attitude des professeurs
14. _____ Attitude du personnel non enseignant (ex. : personnel du registrariat /de l'aide financière)
15. _____ Attitude des étudiants
16. _____ Disponibilité des ordinateurs dans le Cégep
17. _____ Formation sur les technologies informatiques au Cégep
18. _____ Disponibilité du matériel de cours
19. _____ Opportunité de participer aux activités parascolaires au Cégep (ex. : clubs, sports, activités sociales)
20. _____ Ouverture des professeurs à adapter les cours en fonction de mes besoins
21. _____ Accessibilité des installations physiques (ex. : portes, salles de cours, laboratoires)
22. _____ Accessibilité aux cours d'éducation physique au Cégep
23. _____ Disponibilité des services au Cégep pour les étudiants ayant des incapacités

Soutien et services de la communauté et du gouvernement

24. _____ Disponibilité d'une aide financière
25. _____ Disponibilité de tutorat à l'extérieur du Cégep
26. _____ Service de transport public
27. _____ Disponibilité des ordinateurs à l'extérieur du Cégep
28. _____ Formation sur les technologies informatiques à l'extérieur du Cégep
29. _____ Services adaptés pour les étudiant(es) ayant des incapacités à l'extérieur du Cégep
30. _____ Disponibilité d'un moyen de transport adapté pour les étudiant(es) ayant des incapacités
31. _____ Coordination des horaires des services spécialisés pour les étudiant(es) ayant des incapacités (ex. : préposé(e) aux soins, transport adapté) et du Cégep
32. _____ Disponibilité des adaptations / aides techniques à mon domicile (ex. : rampe d'accès, ATS)

Questionnaire sur votre expérience au cégep

À l'aide de l'échelle suivante, indiquez comment chaque item a influencé vos études au cégep en les rendant :

- 1 = Plus difficile**
- 2 = Modérément plus difficile**
- 3 = Légèrement plus difficile**
- 4 = Légèrement plus facile**
- 5 = Modérément plus facile**
- 6 = Plus facile**

N/A = Non Applicable

Inscrivez le chiffre correspondant pour chaque item. Si un élément ne s'applique pas à votre situation, répondez par **N/A** (non applicable).

Situation personnelle

1. _____ Situation financière
2. _____ Travail rémunéré
3. _____ Situation familiale
4. _____ Ami(es)
5. _____ Degré de motivation personnelle
6. _____ Gestion du travail scolaire (méthode, organisation)
7. _____ Expériences scolaires antérieures
8. _____ État de santé
9. _____ Impact de mon incapacité

Environnement du cégep

10. _____ Degré de difficulté des cours
11. _____ Charge reliée au nombre de cours
12. _____ Horaire des cours
13. _____ Attitude des professeurs
14. _____ Attitude du personnel non enseignant
(ex. : personnel du registrariat /de l'aide financière)
15. _____ Attitude des étudiants
16. _____ Disponibilité des ordinateurs dans le cégep
17. _____ Formation sur les technologies
informatiques au cégep
18. _____ Disponibilité du matériel de cours
19. _____ Opportunité de participer aux activités
parascolaires au cégep (ex. : clubs, sports,
activités sociales)
20. _____ Ouverture des professeurs à adapter
les cours en fonction de mes besoins
21. _____ Accessibilité des installations physiques
(ex. : portes, salles de cours, laboratoires)
22. _____ Accessibilité aux cours d'éducation
physique au cégep
23. _____ Disponibilité des services pour les
étudiants ayant des incapacités au cégep

Soutien et services de la communauté et du gouvernement

- 24. _____ Disponibilité d'une aide financière
- 25. _____ Disponibilité de tutorat à l'extérieur du cégep
- 26. _____ Service de transport public
- 27. _____ Disponibilité des ordinateurs à l'extérieur du cégep
- 28. _____ Formation sur les technologies informatiques à l'extérieur du cégep
- 29. _____ Services adaptés pour les étudiant(es) ayant des incapacités à l'extérieur du cégep
- 30. _____ Disponibilité d'un moyen de transport adapté pour les étudiant(es) ayant des incapacités
- 31. _____ Coordination des horaires des services spécialisés pour les étudiant(es) ayant des incapacités (ex. : préposé(e) aux soins, transport adapté) et du cégep
- 32. _____ Disponibilité des adaptations / aides techniques à mon domicile (ex. : rampe d'accès, ATS)

Merci de votre participation.

Questionnaire sur votre expérience au cégep

Ce questionnaire contient 32 items.

Pour les items de 1 à 32 utilisez l'échelle suivante et indiquez comment chaque item a **influencé vos études au cégep** en les rendant

1 = Plus difficile

2 = Modérément plus difficile

3 = Légèrement plus difficile

4 = Légèrement plus facile

5 = Modérément plus facile

6 = Plus facile

N/A = Non Applicable

Les items de 1 à 9 portent sur votre **situation personnelle**. Indiquez comment chacun de ces items a influencé vos études au cégep en utilisant l'échelle ci-dessus, où 1 signifie le plus difficile et 6 signifie le plus facile. Si un élément ne s'applique pas à votre situation répondez par **N/A** (non applicable)

1. Situation financière :
2. Travail rémunéré :
3. Situation familiale :
4. Ami (es) :
5. Degré de motivation personnelle :
6. Gestion du travail scolaire (méthode, organisation) :
7. Expériences scolaires antérieures :
8. État de santé :
9. Impact de mon incapacité :

Les items 10 à 23 portent sur l'**environnement du cégep**. Indiquez comment chacun de ces items a influencé vos études au cégep en utilisant l'échelle ci-dessus, où 1 signifie le plus difficile et 6 signifie le plus facile. Si un élément ne s'applique pas à votre situation répondez par **N/A** (non applicable)

10. Degré de difficulté des cours :
11. Charge reliée au nombre de cours :
12. Horaire des cours :
13. Attitude des professeurs :
14. Attitude du personnel non enseignant (ex. personnel du registrariat /de l'aide financière) :
15. Attitude des étudiants :
16. Disponibilité des ordinateurs dans le cégep :
17. Formation sur les technologies informatiques au cégep :
18. Disponibilité du matériel de cours :
19. Opportunité de participer aux activités parascolaires au cégep (ex. clubs, sports, activités sociales) :
20. Ouverture des professeurs à adapter les cours en fonction de mes besoins :
21. Accessibilité des installations physiques (ex. portes, salles de cours, laboratoires) :
22. Accessibilité aux cours d'éducation physique au cégep :
23. Disponibilité des services pour les étudiants ayant des incapacités au cégep :

Les items 24 à 32 portent sur le **soutien et les services de la communauté et du gouvernement**. Indiquez comment chacun de ces items a influencé vos études au cégep en utilisant l'échelle ci-dessus, où 1 signifie le plus difficile et 6 signifie le plus facile. Si un élément ne s'applique pas à votre situation répondez par **N/A** (non applicable)

24. Disponibilité d'une aide financière :
25. Disponibilité de tutorat à l'extérieur du cégep :
26. Service de transport public :
27. Disponibilité des ordinateurs à l'extérieur du cégep :
28. Formation sur les technologies informatiques à l'extérieur du cégep :
29. Services adaptés pour les étudiant (es) ayant des incapacités à l'extérieur du cégep :
30. Disponibilité d'un moyen de transport adapté pour les étudiant (es) ayant des incapacités :
31. Coordination des horaires des services spécialisés pour les étudiant (es) ayant des incapacités (ex. préposé(e) aux soins, transport adapté) et du cégep :
32. Disponibilité des adaptations / aides techniques à mon domicile (ex. rampe d'accès, ATS) :

Merci de votre participation.