

# Executive Summary - College Students with Disabilities

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## Executive Summary

### Abstract

The objective of the research reported here was to start the process of developing a measure that explores self-perceived individual and environmental correlates of successful and unsuccessful academic outcomes for Cegep (junior/community college) students with disabilities. The intent was to provide a measure for general use in all Cegep institutional evaluation activities.

Here we summarize the findings related to the development of such a measure. This involved compiling and evaluating both French and English versions of the 31 item "Cegep Experiences Questionnaire." The measure uses 6-point Likert-type scaling and evaluates personal and environmental factors (both within and outside the Cegep) that students with disabilities may view as facilitating and/or hindering their academic progress. It is based on the PPH model (Processus de production du handicap). The current version of the measure is provided in the Appendix of the full report.

The following activities were carried out: focus groups, analysis of open-ended questions, and psychometric analyses, including comparisons of scores of students with and without disabilities. The sample involved 138 current Cegep students and recent Cegep graduates with disabilities and 670 nondisabled Cegep students and recent graduates.

We found that the Cegep Experiences Questionnaire has good reliability. Validation was not part of the scope of this research and sample sizes did not permit most such analyses. The validation that was carried out suggests that the items and the total score have good validity, although there may be problems with the item content of some of the PPH based subscales. A larger study that builds on the present findings is currently ongoing in our laboratory to establish validity and further refine the measure.

Part of the process involved analysis of students' responses to the questions: What factors have made your Cegep studies easier? Harder? The findings on the facilitators and obstacles they listed in response to these questions are interesting in their own right. Among the highlights is the finding that students with disabilities indicated that disability-related accommodations were important facilitators. Nevertheless, about half of the most frequently cited facilitators noted by these students were not specifically disability related and are shared by nondisabled students. In general, obstacles noted by most students with disabilities are the same as those noted by nondisabled students, although some disability related issues also posed important obstacles. In particular, students noted that their disability and health adversely affect their studies. These results affirm the importance of providing adequate disability related services to students with disabilities in the Cegep.

Another part of the process was examining whether the item scores of students who re-enrolled or graduated (i.e., students who were retained in the two semesters following the administration of the questionnaire) differed from those who left their studies. When students with and without disabilities were compared, there were no significant differences in the retention rate into either the first or second semesters. When item scores between the retained and non-retained groups were compared, there was some suggestion that students who were retained had higher item scores (i.e., scores toward the facilitative end the scale). These positive findings highlight the success of students with disabilities at Cegep and emphasize the importance of providing adequate disability related services.

## Goals

The objective of the research reported here was to start the process of developing a measure that explores self-perceived individual and environmental correlates of successful and unsuccessful academic outcomes for students with disabilities. The intent was to develop a measure for general use in Cegep institutional evaluation activities. Use of the measure, once it is fully developed, will provide answers to the questions, "What are the obstacles that make Cegep studies more difficult for students with disabilities?" "What are the facilitators that make Cegep studies easier for these students?" "What can students, Cegeps, government and community based organizations do to facilitate successful academic outcomes for these students?"

We summarize the findings related to the development of such a measure below. This involved compiling and evaluating both French and English versions of the 31 item "Cegep Experiences Questionnaire." It uses 6-point Likert-type scaling and evaluates personal and environmental factors (both within and outside the Cegep) that students with disabilities may view as facilitating and/or hindering their academic progress. The measure is based on Fougeyrollas et al.'s PPH model (Processus de production du handicap). Once it is fully validated, the measure will have the potential to be used to facilitate planning, enhance and evaluate services, improve pedagogy, and ameliorate student retention and success. The current revision of the measure is provided in the Appendix of the full report.

The intent of the present research was to provide the item content and format and to ensure usability and reliability. Validation requires much larger samples than those of the research originally proposed. The full validation of the Cegep Experiences Questionnaire is part of a larger study that builds on the present findings and is currently ongoing in our laboratory.

## Method

To develop the Cegep Experiences Questionnaire / Questionnaire sur les expériences au Cégep we prepared content that was both theoretically and empirically based. In addition, we formulated questions so as to allow both item-by-item evaluation as well as evaluation using subscales and the total score. Of the 31 items on the scale, 25 are applicable to both students with and without disabilities and 6 are applicable only to students with disabilities. Because the measure was designed to reflect both the key concepts of the PPH model (i.e., personal and environmental obstacles and facilitators) as well as the realities of Cegep students, who encounter obstacles and facilitators of their academic success both within the Cegep as well as in the community, we grouped items into three conceptual subscales:

- Personal Situation (9 items including 1 that is applicable to students with disabilities only)
- Cegep Situation (13 items including 1 that is applicable to students with disabilities only)
- Community Situation (9 items including 4 that are applicable to students with disabilities only)
- and a Total Scale score (25 items are common to students with and without disabilities, 6 are applicable only to students with disabilities).

To determine reliability and test hypotheses we

- held three focus groups with 18 francophone and anglophone Cegep students to help define the content of the measure
- formulated and pre-tested multiple preliminary versions of the Cegep Experiences Questionnaire and other related questions and scales
- translated, "back translated," and pretested English and French versions of the final questionnaire in regular print and alternate formats (e.g., large print, Word)
- administered the measure to
  - 74 Dawson College (an anglophone Cegep that enrolls primarily English speaking students) and 25 francophone Cegep (primarily French speaking) current students who had a disability (students who had only a learning disability and/or ADD were not part of this investigation)
  - 154 Dawson College current nondisabled students
  - 516 Dawson College recent nondisabled graduates and 21 recent graduates who had a disability (other than only a learning disability)
- administered the measure a second time, six weeks later, to 27 Dawson and 25 francophone Cegep current students with a disability and to 64 current Dawson nondisabled students to determine test-retest reliability
- formulated a 60 item coding manual of facilitators and obstacles and used this to evaluate open-ended questions about factors that made Cegep studies easier and harder for students
- conducted statistical tests on Cegep Experiences Questionnaire items to determine psychometric properties and to test hypotheses

## Findings and Conclusions

### Sample Characteristics

The mean age of current students from all three samples was very similar, 20 to 21 years, with a range of 17 - 44 years. Approximately 1/3 of all samples were male and 2/3 female. Eighty-two percent of Dawson nondisabled students and 70% of Dawson students with disabilities in our samples were enrolled in a two-year pre-university program, while the remaining students were enrolled predominantly in three-year career/technical programs. Forty percent of the students with disabilities from francophone Cegeps were enrolled in two-year pre-university programs, while the remaining students were enrolled predominantly in three-year career/technical programs. The great majority of students were enrolled in diploma (DEC) programs.

Dawson graduates with disabilities were approximately 1 year older than nondisabled graduates (23 and 22, respectively). Approximately 1/3 of both samples were males and 2/3 females. Graduates with disabilities were slightly more likely to have graduated from a pre-university program (81%) than were nondisabled graduates (72%).

Most current students with disabilities had only one disability/impairment (56% Dawson, 59% francophone Cegep), with almost a third having 2 impairments (32% in both samples), and the rest having 3 or more impairments (8% Dawson, 12% francophone Cegep). Among Dawson graduates, a much larger proportion had a single impairment (90%). It is noteworthy that even though we deliberately excluded students who indicated that their only impairment was a learning disability and/or ADD, almost a third of current students with other disabilities (31% Dawson, 32% francophone Cegep) indicated that they also had a learning disability.

The most common impairments that current students reported were health/medically related impairments and psychological/psychiatric disabilities. The next most common disability was a visual impairment followed by hearing and mobility impairments. The graduate sample reported no psychiatric/psychological impairments. Otherwise, the distribution of disabilities for graduates was similar to that of currently enrolled students.

To make the Cegep Experiences Questionnaire comprehensive we included items that are likely to be important obstacles or facilitators to students with specific disabilities. In certain cases this has meant very small numbers of students answering certain questions. A study with larger samples which extends and builds on the present findings is currently ongoing in our laboratory.

### What Factors Make Cegep Studies Easier? Harder? Analysis of Open-Ended "Easier and Harder" Question Responses

Part of the process of determining the psychometric properties of the Cegep Experiences Questionnaire involved analysis of students' responses to the open-ended questions: What factors have made your make Cegep studies easier? Harder? The findings are interesting in their own right. It should be noted that depending on the specific student's situation and on the specifics of the environmental conditions, the same topic can be either an obstacle or a facilitator.

**Facilitators.** Students with disabilities were most likely to indicate that disability-related accommodations were important facilitators. These included: services for students with disabilities in general and specific disability related accommodations at Dawson College such as the opportunity to pre-register for courses, having a quiet place to take exams, extended time for exams and assignments, having a note taker in class, and policies which permit students with disabilities to take a reduced number of courses and still be considered "full time students."

About half of the facilitators cited most frequently by students with disabilities were not disability related and were shared by students without disabilities. These include: good teachers, the overall Cegep environment, availability of computers on campus, availability of support and help, and the Dawson Learning Center. This Center provides tutoring and assists with studying, writing, and exam taking skills. Important items noted by nondisabled students, but not by students with disabilities, were the facilitating role of: friends, the library, having a good schedule, a variety of courses to choose from, their financial situation, and good study skills.

**Obstacles.** In general, obstacles noted by most students with disabilities are the same as those noted by nondisabled students: bad teachers, too many and difficult courses, bad schedules, poor study skills, the Cegep environment, and language issues such as not being sufficiently fluent in the language of instruction and professors with heavy accents. For students with disabilities, again, disability related issues also posed important obstacles. For example, they noted that their disability and their health were obstacles, that there were problems related to the accessibility of their courses, and that the nature of accommodations and services for students with disabilities also caused difficulties. Nondisabled students noted a variety of obstacles including: difficulties with finances, holding a job, transportation problems, personal issues, high stress, and poor exam or assignment schedules.

## **Development of the Cegep Experiences Questionnaire: Psychometric Evaluations And Hypothesis Testing**

**Reliability.** Two kinds of reliability were evaluated: temporal stability (test-retest) of single items, conceptual subscale, and total scale scores and internal consistency evaluations of subscale scores. In general, test-retest reliability for all items, subscales, and total scores was good, suggesting that scores on the Cegep Experiences Questionnaire have good temporal stability. The same is true for evaluations of the internal consistency of subscales.

**Relationships between Cegep Experiences Questionnaire scores and other variables.** Even though validation was not part of the original scope of the present project we did conduct some preliminary validation and hypothesis testing. In general, individual items and total scale scores appear to have good validity. There are some difficulties with the validity of the conceptual subscales, however. We tried to use factor analysis to reformulate the content of the subscales. The findings on nondisabled graduates, the only sample large enough to permit this, suggest that only a minor adjustment to subscale composition is needed. We will examine the possibility of a different composition for subscales in the context of our ongoing study with larger samples.

**Similarities and differences between students with and without disabilities on the Cegep Experiences Questionnaire.** Results on the 25 items which were applicable to students and graduates with and without disabilities (on the total of 31 items, 6 of which are applicable only to students with disabilities) show that, as expected, both current students and graduates with disabilities indicated that their health posed obstacles for them. This item was also found to go a long way in predicting whether a student has a disability or not. Apart from health, there were no significant differences between items for either current students or graduates with or without disabilities. It should be noted, however, that differences may have been obscured by sample sizes that were often very small. Therefore, we also examined similarities and differences in the relative rankings of scores by students with and without disabilities.

We compared the ranking of Cegep Experiences Questionnaire mean scores of current students, with and without disabilities, to those of graduates with and without disabilities. In general, there was good consistency between the rank orders of items of current students and graduates with a disability as well as between the rank order of items of current nondisabled students and nondisabled graduates.

For both graduates and current students with disabilities, the availability of disability related services at the Cegep was ranked as the most important facilitator. The most important obstacle for both groups was the impact of their disability. Scheduling conflicts between disability-related support services, such as attendant care and adapted transport and school was also rated as a very important obstacle by both current students and graduates.

We also examined items where there were large differences in ranking (as measured by a minimum of 10 point differences in rank order) between students with and without disabilities. Only a single item emerged as a greater facilitator for both current students and graduates with disabilities relative to those without disabilities: private tutoring. Similarly, only one item emerged as a greater facilitator for graduates without disabilities: health.

**Comparison of open-ended listings of facilitators and obstacles with Cegep Experiences Questionnaire results.** Although a one-to-one comparison was not possible, examination of items with "facilitating" mean scores suggests that many of these items also appear on the open-ended listing of students. This is also true of obstacles, providing some evidence for the validity of the measure.

**Number of students' impairments and Cegep Experiences Questionnaire results.** We predicted that students with several different impairments would have higher obstacle scores than student with a single impairment. To test this hypothesis we correlated the number of students' impairments with their scores on all single items as well as on subscale and total scores. Taking into account the relatively few students with more than two impairment and the constricted range in the number of students' impairments, the finding that 1/3 of the 31 coefficients based on item-by-item correlations were significant and in the predicted direction is very impressive. It is also noteworthy that every single coefficient has the same sign, whether it was significant or not. In addition, all three subscale coefficients were significant as was the coefficient for the total scale score. This suggests that items, subscales, and total scale score are, indeed measuring obstacles and facilitators.

**Successful and unsuccessful students and Cegep Experiences Questionnaire results.** We expected that students who are "successful" would be more likely to have higher (more facilitating) scores than students who are "unsuccessful" at Cegep. For this comparison we defined success in terms of student retention and graduation. Students who graduated or continued their studies

into the following two semesters were considered successful and those who failed to return or graduate were considered unsuccessful.

It should be noted that results on "success" (i.e., retention rates) are consistent with our previous findings and show no significant difference between students with and without disabilities. The retention rate for students with disabilities into the semester following the administration of the survey was 93%, compared to 87% for students without disabilities. Retention into the second semester following the administration of the survey was 90% for students with disabilities and 80% for students without disabilities. These positive findings highlight the success of students with disabilities and underscore the importance of ensuring their presence in the Cegeps.

There were no significant differences in the mean scores on the test items between students who were "successful" and those who were "unsuccessful." However, the sizes of the "unsuccessful" groups were small and some large differences existed between the successful and unsuccessful groups. When Cegep Experiences Questionnaire items were examined for students without disabilities, 68% of the scores for successful students were higher (i.e., more facilitating) than those of the unsuccessful students. The corresponding percentage for students with disabilities was 81%, indicating that for both students with and without disabilities the majority of the differences favored (scores were more facilitating) the retained students.

## **Conclusions**

We have developed the content of the 31 item closed-ended Cegep Experiences Questionnaire and established that it has good reliability. Validation was not part of the scope of this project and the sample sizes did not permit most such analyses. What validation we did carry out suggests that the items and the total score have good validity, although there may be problems with the item content of some of the PPH based conceptual subscales. A larger study, that builds on the present findings, is currently ongoing in our laboratory to establish validity and further refine the measure.

## **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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