

{ NEWSLETTER }



# TARGET

## STUDENT RETENTION and SUCCESS

### INTRODUCTION

We are very pleased to present you with this third issue. The research results described here provide a singular glimpse into the world of CEGEP students.

For many young people, starting CEGEP is a time to reassert their autonomy and expand their social networks. In the first article, research results show us how important the influence of family and social networks is to student retention at the CEGEP level, while the second article examines the transition from CEGEP to university.

There is also useful information in the “What’s New?” section. It suggests support strategies that favour academic success in CEGEP, for example, how to encourage young people to participate in various school life activities and how to make the environment more accessible to young people with disabilities.

We very much welcome any comments you might have on this newsletter. Producing it is a challenge and knowing that it is read and used in the education system spurs us to continue improving it. Thank you to everyone who writes to us to share their opinions.

Happy reading!

**Diane Charest**

Coordinator, Service de la recherche et de l'évaluation

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### RESEARCH

Although they have taken another step towards autonomy by starting postsecondary studies, CEGEP and university students still need a lot of support. Their decision to stay in school is always very closely related to the quality of the relationships they form and the networks they join in the course of their studies. Two research studies illustrate the degree to which the interaction between individuals' characteristics and their environment plays a fundamental role in the decision to continue with or drop out of college. The first study looks at the influence of networks, including the family, on CEGEP students. The second presents the school experience of students enrolled in technical training in CEGEP who have decided to continue their studies at the undergraduate university level. Both studies clearly show the influence of external factors on student retention and academic success.



## STUDENT RETENTION IN CEGEP: THE IMPORTANCE OF FAMILY AND SOCIAL NETWORKS

An education sociologist and professor in career counselling at the Université de Sherbrooke, Sylvain Bourdon adopted an unusual approach in his research. By analyzing the makeup of the support received by CEGEP students from their social and family networks, Bourdon and his team made a breakthrough in understanding the factors that determine student retention in CEGEP. Without a doubt, family support and social integration play central roles for CEGEP students who decide to stay in school.

In spite of a recent increase in the success rate of CEGEP students, only 41% of newly enrolled students in preuniversity programs obtain their diploma within the scheduled two-year period, while a total of 68% have graduated after an additional two years. According to the researchers, one's social network undergoes a massive reconfiguration during college, which can, in turn, influence academic progress. While several studies have shown the importance of external factors in student retention, the dynamics involved have been poorly understood until now.

According to the researchers, any study of academic progress must examine the unsettling events that can affect one's social environment. For example, a late divorce by parents, a relationship break-up, poor social skills, lack of long-term plans or a total lack of support can all have a significant impact on the decision to continue with or drop out of CEGEP.

To better understand retention among students who are at risk of dropping out of CEGEP, Sylvain Bourdon and his team surveyed the school experience of 50 female CEGEP students and 46 male CEGEP students, all with an average age of 17, at the Lionel-Groulx, Sherbrooke and Vieux Montréal CEGEPs. Half the students in the sample from each college were enrolled in the Social Sciences program. The other half were from a program targeted by each institution because



of problems with student retention: *Accounting and Management Technology* (Sherbrooke), *Electrical Engineering Technology* (Vieux Montréal) and *Social Sciences* (Lionel Groulx).

### FAMILY SUPPORT: A DECISIVE FACTOR

According to this study, CEGEP students have networks made up of thirty members on average, of which 20% are family and 80% are from outside the family. Sylvain Bourdon's team expected to find that starting CEGEP would cause the students' networks to change and add new people, given, for example, the change in school or in some cases geographical distance. "In fact, the change we observed was much more significant than we had anticipated," states Sylvain Bourdon. "Every seven months, 25% of the members in a student's network change!" The greatest turnover occurs with friends and romantic relationships.

This period of life is thus a time when the networks of CEGEP students are constantly shifting and reforming, and when most

students' prime activities are "talking, discussing and inviting each other to meals," either with family members or people outside the family. Furthermore, they discuss their studies and academic work more with people outside their families and, regardless of the student's gender, they ask women—including their mothers—for advice twice as often as they ask men.

Whether providing moral, material or financial support, parents occupy a key role in the world of young people and many of them put pressure on their children to stay in school as long as possible. The team's research also reveals that, while parents want their children to find fulfilment doing something that is meaningful to them, at the same time they suggest looking for a steady, well-paid job. "Young people's search for identity, far from being completed in CEGEP, plays out in this tension between the message they get from their parents and individual aspirations," Sylvain Bourdon explains.

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- **A participant in this study, Rébecca, is a student in social sciences at the Cégep de Sherbrooke. Almost twenty, she lives with her parents, whose support means a lot to her, as shown by this quotation.**

“With my parents, we talk all the time at supper. I tell them about what I’m doing, what I’m learning, and things like that. And sometimes, because I leave my schoolwork lying around the house, my mother even reads it and tells me what she thinks, or we’ll just discuss it together. I think that’s the thing that’s really important, that my parents really want to know what’s happening with me and my studies. I have friends whose parents don’t care at all, and then it’s like you feel all alone inside. But basically, my parents really want to know, and I know they want me to go further, like to university. They encourage me a lot that way.”

- **On the other hand, Martin appreciates his parents’ support, but is looking for ways to affirm his own identity. The account of this student, who is enrolled in social sciences at Cégep Lionel-Groulx, is a good example of the tension between autonomy and dependence.**

“My parents still support me financially to help me pay for certain books. I get moral support too, if I’m having a problem, they can support me in my decisions. My parents are very concerned about my education. They want me to do well. And their efforts have gotten results; in high school, I was one of the top students in my class. That’s the way it is. But sometimes, I get fed up because they’re too concerned about my education... it’s suffocating. They’d like me to accept their decisions instead of making my own.”

### UNLIKELY PATHS

One of the most distinctive features of this research was its use of the concept of “unlikely paths” to better understand the academic progress of CEGEP students. This concept refers to the outcomes experienced by people who began their academic careers by repeating years multiple times or taking special classes and who, as unlikely as it may seem, finally obtain graduate university degrees. It also applies to people who had never been considered at risk and who, once again as unlikely as it may seem, decide to quit school. With this approach, it is possible to understand to what extent social integration and young people’s networks have a significant impact on student retention.

The study identified three categories of young people, defined by the probability of their path. The *likely path* (N=70) describes students who began CEGEP with poor academic performance in high school and who quit college and those who began with average or high grades and who stay in school, with or without changing programs or institutions. Next, the *unlikely path of retention* (N=17) refers to young people who, in spite of poor academic performance in high school, stay in CEGEP. Finally, the *unlikely path of dropping out* (N=9) represents young people who, in spite of good marks in high school, drop out of college.

“The young people who stayed in school in spite of a low initial probability of doing so have more members of their network outside the family, who they have met in the workplace and at sports activities,” Sylvain Bourdon

observes. “This could be an indication of better social integration.” These students also have distinctive social networks that feature a greater number of members with postsecondary education than other young people. It is as if spending time with graduates had a positive influence on their paths.

At the same time, the researchers found that the young people who quit school in spite of a low initial probability of doing so spend their time with people with much less schooling. “This attachment to a less-educated social environment could explain in part why they left school.” Those who dropped out had more long-distance relationships, with people they met through others or in the neighbourhood. Another interesting fact about these young people for whom dropping out seemed unlikely is that they maintain many more relationships via the Internet, a form of socializing that is more invasive when one should be studying.

In terms of intervention, since 25% of a CEGEP student’s network changes every seven months, Sylvain Bourdon recommends encouraging them to socialize with studious young people who have clearly defined educational goals. “One thing is certain: it is necessary to increase awareness of the role played by family and social networks in student retention in CEGEP,” concludes the researcher.





## THE TRANSITION FROM TECHNICAL TRAINING IN CEGEP TO UNIVERSITY:

### A TRULY INTEGRATED EXPERIENCE

Though there is no magic recipe to ensure academic success, researchers agree that establishing a learning environment that encourages student retention and success is fundamental. This observation is especially true when applied to students in technical training at CEGEP who have decided to continue their studies by going directly to university. Whether the program in question is nursing science, accounting or tourism management, it must be designed to make students feel they are learning and are well integrated into the social and academic life of the field of study.

In the last decade or so, a growing number of universities and CEGEPs throughout Québec have established partnerships to offer students in technical training in CEGEP the possibility of continuing their studies at the undergraduate level. These initiatives not only meet the need of adapting university programs to a diverse student population, but also the demand for an increasingly skilled labour force.

However, the structure of these so-called “integrated” programs (in contrast to regular programs) varies from one field to another. Depending on the field of study, students take part of their training in a CEGEP for two or three years, and the other part at a university for a period of time varying from five semesters to less than three years. In general, the college and university programs are integrated to ensure an ongoing learning process while respecting each education level’s fields of training.

**We paid particular attention to the students’ classroom experience since this determinant has not yet been studied much.**

Given the relative newness of these programs, several questions need to be answered. How well do these students adapt to university? What are their perceptions of the integrated programs? What is the rate of student retention? In order to better understand the school experience of students with this

profile, Louise Ménard, a professor in the Département d’éducation et de pédagogie at UQAM, and her research team carried out a study on the determinants of academic success and retention of students enrolled in the following integrated programs offered at various universities: *Tourism and Hotel Management, Nursing Science and Accounting and Business Administration.*

The research team conducted interviews with the program administrators and students. The latter were given questionnaires during the first and second terms of an undergraduate program. In total, 307 students were surveyed during the first term and 223 during the second. “We paid particular attention to the students’ classroom experience since this determinant has not yet been studied much,” notes Louise Ménard.

### RELATIVE SATISFACTION

“One of the challenges of integrating training between two levels of education is to avoid unnecessary duplication of content,” notes Louise Ménard. A higher proportion of the students in the sample had family responsibilities: 14.6% of them have children, compared to 4.3% of students enrolled in the regular programs. They are also more involved outside the university: 35% of all the BA students worked 21 hours or more a week while studying, but this average rises to almost 40% among the students enrolled in the integrated programs. Moreover, for 68% of the students in the integrated programs, their jobs “sometimes” or “frequently” prevent them from devoting time to their studies, compared to 44% of students in the regular stream.



The researchers also found that 65.4% of the students in the integrated programs considered the transition from CEGEP to university rather or very easy, while this proportion rose to close to 80% among the students in the regular stream, who were also overall more satisfied with their university studies (92% versus 75%).

Most of the students surveyed are satisfied with their classroom experience, but those in the regular stream were more so: 85.3% versus 73.5% feel that the professors and lecturers are not wasting their time.

With regard to student retention, the study found very distinct data for the two streams. “We observe that a higher percentage of the students in the integrated stream stayed in school, compared to their colleagues enrolled in the regular stream,” states Louise Ménard. “The students enrolled in tourism



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### ● VINCENT TINTO'S MODEL

Among the many models for analyzing student retention, the team adopted that of Vincent Tinto, an education professor at Syracuse University. This conceptual model, which is most commonly cited to explain the process that leads to dropping out, is based on the idea of interaction between the individual and the educational institution. In other words, a decision to stay in school or drop out is influenced both by the student's individual characteristics and by the characteristics of the school environment.

According to Tinto, dropping out is not a result of an inability to do the work, but is due to a range of factors such as the student's goals and commitment, the availability of financial resources and extracurricular commitments. Moreover, this researcher maintains that the students' degree of social and academic integration upon entering university is directly related to the decision to drop out or stay in school since it has a direct impact on their level of commitment.

Vincent Tinto divides the journey through school into three phases: separation from a previous educational environment, transition from the former context to the new one, and incorporation into the new group. Dropping out can occur at various times and, for the researcher, it is related to the difficulties experienced by the students in adjusting academically and/or socially.

"Students can experience a lot of stress and isolation during the separation and transition phases," explains Louise Ménard. "Thus the characteristics of students, their capacity to adapt, their learning plans and their commitment to the university influence their tolerance for and response to stress."

In the late 1990s, Vincent Tinto observed that social and academic integration take place essentially in the classroom. Research has shown that there is a relationship between students' involvement in the classroom, their academic and social integration, academic performance, learning and student retention.



stick with the program in larger numbers than the others, i.e. 90.1% compared to 88.8% for those in nursing science and 75.8% for their colleagues in accounting and business administration."

Among the determinants related to student retention, past school experiences seem to play an important role. Many of the students who stayed in school had maintained mutual aid relationships in CEGEP; they also had higher R scores than those who quit during their first year of university, nearly 15% of whom said that CEGEP prepared them very poorly for university. Moreover, compared to those who dropped out, students who stayed in school were more committed to completing their BAs without interruption.

**For the students, learning means acquiring new knowledge that will be useful to them in their work.**

### PRAGMATIC CONCEPT OF LEARNING

This research confirms that a combination of determinants has an impact on student retention and varies depending on the context in which the programs are developed, who they are intended for and how they are taught. Each of the integrated programs had its strengths and weaknesses, according to the researchers. "This fact does not prevent us from making more general recommendations," Louise Ménard observes.

For the students, learning means acquiring new knowledge that will be useful to them in their work. With this in mind, to avoid repetition, which can give students the perception that they are not learning anything, the researchers recommend better harmonization between CEGEP programs and BA programs. At the same time, support for the development of the professors' pedagogical and relational skills is of key importance, since these skills influence students' perception of learning, just like the harmonization of theoretical knowledge with knowledge based on practical experience.

Finally, it would be useful to better inform students about program content, administrative and institutional resources, and support services—which are used very little by the students. "To foster the development of a social life, which is a factor in the students' adaptation to university, institutions would benefit from organizing activities to welcome and help integrate students," notes the research team. "All the students would have appreciated integration and information activities when they started their studies. This would have facilitated their integration into university life."



## WHAT'S NEW?



**With regard to facilitating the academic success of students with disabilities, the CEGEP environment continues to be perceived as a very significant factor.**

Available services and accessible facilities help create a positive college experience. Other factors are attitudes among both teaching and nonteaching staff and the availability of course materials. While these elements seem self-evident, they are not yet well enough established to meet the needs of students with disabilities.



Although this clientele represents 10% of the student population in CEGEPs, there is very little data on their overall school experience. To remedy this deficiency and stimulate the development of institutional practices aimed at meeting the specific needs of this clientele, Catherine S. Fichten, a teacher at Dawson College, and a team of researchers surveyed the school experience of 182 CEGEP graduates with disabilities and 1 304 graduates without disabilities from three CEGEPs (two Francophone and one Anglophone), 57 disability service providers and 300 students with disabilities registered to receive such services from their CEGEP.

“We observed that students with disabilities take approximately one term longer than their peers without disabilities to complete their CEGEP studies,” indicates Catherine S. Fichten. Half of the students surveyed were enrolled in a preuniversity program while the other half were in a technical or vocational program.

Moreover, in spite of increased numbers of students with disabilities, Québec is the province with the lowest proportion of students who use specialized services in college: 90% of students with disabilities are not registered for the specialized services available in the CEGEPs. What is the reason behind this situation?

According to Fichten, the nature of student disabilities has changed in recent years. Today, the most common disabilities are learning disabilities and attention deficit disorders, mobility impairments, hearing impairments, medically related problems and psychological disabilities. In addition, nearly 25% of the students registered for disability related services have more than one disability.

According to the researcher, the impairments of many students are not on the list of traditionally funded disabilities.

Among the changes needed in CEGEPs to foster better integration, students with disabilities would like to see better class schedules, better teachers, more available computer technologies—“which help a lot of students with disabilities”—support and help, as well as improvements to the physical environment of the college. The possibility of having a note-taker or interpreter in the classroom would be very helpful, as would extra time for examinations and assignments.

“This research confirms once again the importance of universal instructional design,” maintains Catherine S. Fichten. In order to encourage students with disabilities to continue their college studies, the team believes there is a need for greater visibility of disability related services and accommodations.



**There is a very effective intervention model that can improve the success and retention rate of boys enrolled in technical training in college.**

Establishing support groups in the classroom at the beginning of the school year and a teacher-student tutoring system consisting of three to five thirty-minute meetings, had an impressive impact on the boys involved in the experiment. Given that only 46% of the boys in Québec technical training programs make it all the way to graduation, the model should be more widely used.

“The results are significant, both qualitatively and quantitatively,” maintains Gilles Tremblay, director of this action research and a professor at the École de service social at Université Laval. The students participating in the experiment not only had better rates of student retention and success compared to those who had not been part of the support program, but the general classroom climate was also substantially improved.



The proactive model implemented by the team, which also included a group of teachers and professionals, included other actions that used support groups and training adapted to the teachers involved to directly affect the school environment. “Social marketing” activities consisting of positive messages disseminated in the CEGEP about academic success were also part of the researchers’ strategy.

The proactive model targeted boys enrolled in the *Electrical Engineering Technology* and *Computer Science Technology* programs at Cégep de Limoilou. This college has the distinction of offering more technical programs than other CEGEPs in Québec and attracts more boys than girls. These two programs also bring in students who are at risk of dropping out. In addition, research has provided a lot of evidence that boys are less successful than girls in CEGEP. “Boys seem to have more problems than girls when it comes to managing stress and emotions, something that is severely put to the test during the transition period,” explains lead researcher Tremblay.

The research team is unanimous: any measure aimed at fostering student success will fail without the support of the teaching staff. Teachers are key to how students relate to their college. “The act of

teaching and the perception of boys are two topics that need to be emphasized,” maintains Gilles Tremblay. The measures tested as part of this action-research project required that CEGEP staff make changes to their professional practices and the way they view and interact with boys.

Even though this model was experimental, the measures brought results. The support groups, for example, helped create social ties quickly, fostered a climate of mutual aid and imbued students with the basic values of success. The boys therefore learned to make the effort needed to succeed and to develop good work habits and ask for help if necessary.



### To favour student retention and academic success in CEGEP science programs, teachers are well-advised to promote student participation in experimental activities rather than emphasizing rote memorization.

This observation, which comes from a study headed by Steven Rosenfield, a mathematics teacher at Vanier College, confirms that the characteristics of the learning environment is one of the most decisive factors in student retention in the sciences. Since we know that CEGEPs have a serious retention problem with students in science programs (50% of students decide to change programs in the course of their studies), it would be a good idea to review teaching methods in the sciences.

The team of researchers surveyed a cohort of students enrolled in natural sciences in four Anglophone CEGEPs in Montréal. Of this cohort, close to 20% dropped out during their first year in CEGEP while another 15% did so during the second year. Among the graduates, only 53% intend to continue in science at university. This comes at a time when Québec, unless the situation turns around, could experience a shortage of scientists. On this point, education researchers are unanimous: the appeal of the sciences has never been so low.

Many measures could be implemented to reverse this trend. “Teachers must be aware of the relationship between students’ perceptions of a learning environment and student retention,” recommends the research team. Their work clearly shows that an interactive environment that encourages student participation increases motivation and enhances learning among boys and girls in the sciences.

This type of approach, focusing more on the active construction of knowledge and student autonomy, is relatively rare in science programs. Among the teachers surveyed in this study, only 35% are prone to create this type of environment and 46% said they use pedagogical practices that are associated with the traditional transmission of knowledge. However, research has clearly shown that the more a learning environment fosters collaboration among students and active involvement, the more students remain interested in scientific subjects.



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### FOR FURTHER INFORMATION:

Bourdon, Sylvain, et al. *Famille, réseaux et persévérance au collégial*, 2007.

Ménard, Louise, et al. *La persévérance et la réussite scolaires dans un contexte de continuum de formation: des programmes techniques au baccalauréat*, 2007.

Fichten, Catherine, et al. *College Students With Disabilities: Their Future and Success*, 2007. <http://adaptech.dawsoncollege.qc.ca/pubs/abCollegeStudentsWithDisabilitiesTheirFuture.pdf>

Tremblay, Gilles, et al. *Recherche-action pour développer un modèle d'intervention favorisant l'intégration, la persévérance et la réussite des garçons aux études collégiales*, 2006.

Rosenfield, Steven, et al. *Study of Factors That Influence the Success and Perseverance in Science Programs in Anglophone CEGEPs*, 2005. [http://sun4a.vaniercollege.qc.ca/fqrsr/reports/fr\\_22.pdf](http://sun4a.vaniercollege.qc.ca/fqrsr/reports/fr_22.pdf)

All the research reports were published as part of the Research Program on Student Retention and Academic Success (RPSRAS) and can be downloaded from the following Web site: <http://www.mels.gouv.qc.ca/sections/PRPRS/index.asp?page=recherches>.

### INFORMATION

1. Discover a survey of research on behavioural difficulties.

Visit the Internet section of the RPSRAS program to learn about the new summary that has just been uploaded there. Entitled "Behavioural Problems: New Knowledge, New Initiatives," this document presents the highlights of three research studies:

- Behavioural problems, special education and the student's experience with services offered
- Various educational paths taken at the beginning of adulthood: identify personal, social and educational factors from a developmental perspective to better understand them and take action
- Reviews of the literature on the effectiveness of intervention programs for girls with behavioural disorders: successful action through understanding

Click on the link: <http://www.mels.gouv.qc.ca/sections/PRPRS>.

2. Access the research on student retention and academic success!

We have created, especially for the education system, a search engine that gives access to the directory of research subsidized under the Research Program on Student Retention and Academic Success (RPSRAS). There you can find the research summaries and final reports. Click on the link: <http://www.mels.gouv.qc.ca/sections/PRPRS>.

3. Subscribe online!

Don't forget that you can subscribe to the Target, Student Retention and Success newsletter on the MELS Web site to ensure you are always notified as soon as a new issue of the newsletter is published.

Click on the link: <http://www.mels.gouv.qc.ca/ministere/abonnement>.

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The work of Steven Rosenfield's team also shows that feelings of self-efficacy or personal competency are especially strong among students who continue in CEGEP science programs. "The students who dropped out were not weaker academically, they had the potential and the marks to be successful," states the mathematician, "but they become less confident of their abilities to tackle tasks after one term of studies in the Science Program." Boys also tend to maintain slightly higher feelings of competency than girls.

According to the researchers, there should be a concerted effort to increase both the quality and quantity of science teaching, particularly in chemistry and physics, before formal science instruction in Secondary IV and V. This is all the more important given that students' attitudes with respect to mathematics and science form long before secondary school. "Young students who show an interest in science should be identified, stimulated and supported more by their teachers," they conclude.

**Research and development**

Nathalie Dyke, professional editor

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