Note 8

ACADEMIC PATHWAYS
AMONG FIRST-GENERATION STUDENTS IN CEGEPS

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Academic Pathways
among First-Generation Students in CEGEPs

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Abbreviations

DEC	A two- or three- year college diploma (Junior college/Associate degree)
FGS	First-generation student (A measure of the parent's educational capital)
MELS	Quebec Ministry of Education, Recreation and Sports
Non-FGS	A student whose mother or father attended a college or a university
Non-FGS-C	A student who has at least one parent who attended a college, but not a university
Non-FGS-U	A student who has at least one parent who attended a university
PSE	Post-secondary education

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Introduction

Canada's programs to extend access to higher education to a much broader population, implemented over the last forty years, have made Canada the top nation in the number of post-secondary degrees per adult. This growth in post-secondary education (PSE) has mostly been carried out by youth, their parents, and those adults who have chosen either to continue their education or to return to school. This movement was made possible by an institutional growth in university education and by the development of junior college education in the provinces. The latter has taken a different form from one province to another. There is a great difference, on both educational and institutional levels, between/among Ontario's community colleges, Alberta's regional colleges and Quebec's CEGEPs[1].

The movement to broaden higher education allowed an opening and a certain democratisation of post-secondary education, but some limitations remain. Opening university education to the masses does not necessarily imply its democratisation. In Canada, the educational capital of parents has had a growing influence on student's access to higher education in the 1990's and early 2000. Access to higher education has increased in families with more educational capital, while it had stagnated and even sometimes slightly regressed in families with lower educational levels (De Broucker and Underwood, 1998; Finnie et al., 2004). Thus, rather than achieving an 'equalizing' democratisation, the result is more a 'uniform', or even 'segregative', democratisation (Merle, 2000)[2].

In Quebec, this tendency was identified as early as the 1980's. Dandurand (1990), in an analysis of the long-term effects of the Parent Report and of the following education reform, emphasized that the advances in the democratisation of education "are unequal according to the social groups one belongs to. Women, francophones and adult students had all 'gained ground' in the educational sphere. However, the situation for working-class youth does not seem to have changed in a significant way" (pp. 12-13)[3]. More recently, Kamanzi, Doray et al. (2009a) have also concluded that there are differences in access which are not the result of the educational level of parents: among youths with an equivalent educational family background, those who are more socially-advantaged are

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[1] The word 'CEGEP' is a lexicalised French acronym and common name that signifies a: college of general and vocational studies. It designates public postsecondary non-university institutions.

[2] Merle's article is based on an analysis of the situation in France, but the three types of democratisation that he mentions do apply, *mutatis mutandis*, to the situations in Quebec and Canada, and in fact, to those in North America. The three types of democratisation result, first and foremost, in a "general increase in the level of education according to age". Equalizing democratisation implies "a decrease in the gaps in level of access according to social origin" in the various forms of higher education. Uniform democratisation "corresponds to a type of status quo of the positions of each social category". Finally, segregative democratization is characterized by "an increase of the social differences in the access to the various paths of higher education considered" (Merle, 2000: 23-24).

[3] The page numbers cited refer to the electronic version of Dandurand's text, published online in the site "Les classiques des sciences sociales": http://classiques.uqac.ca.

also those who are more academically advantaged, which shows the persistence of the social reproduction effects.

Overall, social inequalities in terms of education are still very much present in the Canadian educational systems. To better understand the causes, we analyse this persistent sociological phenomena through the concept of "first-generation students (FGSs)". A relatively new reality has given this analytical category even more relevance: on one side, the most-accessible universities and colleges have seen their FGS populations increase considerably, and, as a corollary, there has been a similar increase in the importance given to questions relative to the acquisition of a post-secondary culture and the effects of increased socio-professional mobility. The opening of higher education to various segments of the population who previously had very little access raises the questions of both access and of the success of these "new" types of students. To answer these questions, we analyse those characteristics that affect access and persistence among FGSs, with the objective of determining if this intergenerational variable makes a difference between FGSs and their non-FGS peers in Canada and in Quebec.

After laying down the theoretical and methodological groundwork, our analysis follows two complementary tracks. The first uses the data of the Youth in Transition Survey (YITS) to paint a portrait of college-going youth in Canada and in Quebec. Two questions guide our process: How important is this population? What are their social characteristics? The second track explores the different pathways taken by college students in Quebec in two different sectors: pre-university education and technical education.

1. First-generation students: theoretical signposts

According to a critical survey of the field by Auclair et al. (2008), the concept of a first-generation student (FGS) had been used in an administrative sense before being used in research. Originally (towards the end of the 1970's), the notion of FGS was a category instituted by the administrators of the TRIO[4] program, a program created by the federal government of the U.S. to promote academic achievement. The concept served to standardize the multiple access criteria to different governmental assistance programs which, before 1980, were used in a more independent fashion. This unique criterion of admissibility was then adopted by the U.S. Congress in the framework of the Education Amendments of 1980.

The concept of FGS has been used progressively in the scientific literature as a factor to explain the differences in access and in persistence. According to Billson and Terry (1982), Adachi (1979) was the first to have taken up this concept in an institutional research study of students admitted within the framework of the *Upward Bound* TRIO program. This was done at the University of Wyoming (Division of Student Educational Opportunity). For their part, Billson and Terry (1982) published a scientific article on academic persistence that systematically used the expression first-generation student for the first time. They effectively argued, as did Adachi, that the variable "low income", on its own, was not statistically important enough to explain attrition. They put forward that the level of a family's educational capital rather than their income was a better means to identify students likely to have academic difficulty (Billson and Terry, 1982, p. 58, note 2).

Throughout the 1990's, the concept of FGS was used in scientific literature on access to and persistence in higher education. As its use was growing, its definitions diversified (Auclair et al. 2008). On one side, attempts were made to define the category 'FGS' by taking into account, for example, the educational level of both parents and in distinguishing between those parents who had some PSE experience themselves and those who had completed a degree. On the other side, the use of the category 'non-FGS' or 'second-generation student' became common as well. Meanwhile, the existence of different definitions often resulted in methodological problems and contributed to diversify the results while limiting their generalizability.

Two theoretical questions are at the base of these conceptual variations. What should be considered as a significant indicator of a post-secondary educational experience: having completed a degree or merely having attended a college or university? Which should serve as criterion for the inclusion or exclusion in a given category? Is the experience of having only attended college significantly different than that of attending university, thus introducing a distinction, even a gradation, between these levels of education and of educational experience?

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[4] Between 1965 and 1968, the Office of Postsecondary Education of the U.S. Department of Education launched three programs with the goals of encouraging access to and success in higher education., These have become known as the TRIO programs (OPE, 2008). Today, TRIO comprises eight programs with diverse objectives and target populations.

Currently, the most common definition of FGS is one that affirms the importance of the first question, which is to say that a FGS is a student for whom neither parent had attended a post-secondary educational institution. However, when the variable FGS is constructed in a dichotomous manner, the non-FGS category contains all of the other students. When the variable contains more than two categories, it becomes quasi-continuous and the categories of non-FGS become more refined, so as to distinguish, for example, those parents who have a diploma from their post-secondary education from those who only had a brief higher-education experience, or even to distinguish those who had only attended a community college or those who had attended a university. In other words, this type of definition presumes a classification of students as a function of the academic experience of their parents.

1.1 FGSs in American colleges

There are now a number of studies that analyse the academic experience of FGSs in community colleges in the U.S., in terms of both access and persistence. In this aspect, Brown and Burkhardt (1999) have stated that the results of research describing the socio-demographic characteristics, the academic preparedness and the non-cognitive traits[5] of FGSs have been well-confirmed, but that the conclusions relating to characteristics of enrolment and of academic achievement remain inconclusive: "While research has demonstrated that first-generation students differ somewhat from other students in various academic success [measures], it is often erroneously inferred that first-generation status caused such differences" (p. 19). In addition, according to Pascarella, Wolniak et al. (2003), there is a considerable amount of data on the academic preparedness and the transition to university of FGSs, while this is not the case for college-level experience or for the cognitive and psycho-social development of college students.

According to Nomi (2005), the FGSs at community colleges are more likely to be women, to be older than the average student, to be working full-time and to be responsible for others. The portrait painted by Lee, Sac et al. (2004) is complementary to Nomi's, indicating that FGSs are more likely to have a low income and financial difficulties, to be Latin-American/Hispanic, to have had a lower grade average in high school, to be the principal wage earner in their household and to have difficulty understanding English.

According to the Institute for Higher Education Policy (1997), FGSs constituted 45 % of the student population in post-secondary institutions in 1994. These FGSs were in large part (61 %) enrolled in two-year programs at colleges or universities. And of these, only 8 % were enrolled in the private sector. Nunez and Cuccaro-Alamin (1998) have also concluded that FGSs were present in larger numbers at institutions with two-year programs (51 %) than in those with four-year programs (29 %). However, a later study by Horn and Nunez (2000) indicates that, if the direct effect of the FGS variable was isolated from the other socio-cultural controlling variables, the relation is inversed. They suggest

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[5] For example, emotive reaction, beliefs, aspirations, social comportment, etc.

that enrolment in four-year programs is 42 % attributable to the FGS effect, as opposed to 28 % for two-year programs.

Academic preparation is one factor that can explain why FGSs are found in larger numbers in two-year programs. For example, Choy (2001) showed that half of the FGSs he studied did not have the required background to be admitted to a four-year academic program (as opposed to 33 % for students who had at least one parent with some higher-education experience and 15 % for students who had at least one parent with a university degree). According to Nomi (2005), the motivations for attending college or university vary according to the category of student: most students who have highly-educated parents and who attend a community college have the objective of continuing at a four-year institution, compared to FGSs, who more often aim to attain an '*associate's degree*' to enhance their professional skills.

The differences between FGSs and non-FGSs are also noticeable in the overall study conditions. Pascarella, Wolniak et al. (2003) concluded that in comparison to the non-FGS considered to be at 'a high level'[6], the FGSs were significantly disadvantaged as to their pattern of attendance (they most often attended part-time), in the time dedicated to their studies, the number of science, mathematics and humanities courses attended, and by their work responsibilities. They also tended to participate less in extra-curricular activities. However, the differences between FGSs and those non-FGS classified as 'moderate-level'[7] were less marked.

Despite college-level experiences that put them at a disadvantage, FGSs develop a form of resilience that allows them to take advantage of their studies. The academic experiences of FGSs are even more beneficial than they are to high-level or moderate-level non-FGSs in terms of an amelioration of their writing ability and their appropriation of academic success ("internal locus of attribution for academic success"). At the same time, their academic aspirations are less developed than those of moderate-level non-FGSs (Pascarella et al. (2003). FGSs also express a higher level of satisfaction vis-à-vis their social and academic experience (Nomi, 2005). Finally, it is intrinsic motivation, academic achievement and social integration which are the dimensions of the academic experience that contribute most to their academic success, which is not the case with the non-FGSs (Prospero and Vohra-Gupta, 2007). In addition, those FGSs who achieve a high level of success have some common characteristics, such as social competency, the ability to resolve problems, a critical conscience, a high level of autonomy, and a better sense of purpose (Parrent, 2008). Their motivation remains somewhat fragile, since even if FGSs like the majority of their courses and consequently have a higher likelihood of doing the required readings and being present in class, their work habits could be quickly replaced by more pleasurable activities or by paid work if they see that their courses are not necessary for them to achieve their career goals (Prospero and Vohra-Gupta, 2007).

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[6] For these authors, these students were those who had two parents that had each obtained their bachelor's degree.

[7] For these authors, these were students who had at least one parent with some college experience or a two-year degree.

In terms of family support, the parents of FGSs would have less of an influence on their educational decisions than those whose parents have a post-secondary degree (Nomi, 2005). Analogously, Parrent's qualitative analysis (2008) reports that FGSs express a lack of familial support after they have been admitted to college. Inversely, York-Anderson and Bowman (1991) reveal that the only significant difference between FGSs and 'second-generation students' (non-FGSs) can be explained by the better familial support received by the latter[8].

In sum, researchers have found several differences as to the effects, variable in intensity, of several factors on academic pathways and on the characteristics of the educational experience, such as familial support (York –Anderson and Bowman, 1991), the number of courses taken in each term (Brown and Burkhardt, 1999), the pattern of school attendance, the time dedicated to studying, the selection of classes according to discipline, social integration and the acquired intellectual competencies (Pascarella et al. 2003).

As to the weight of the FGS factor, the interpretations vary. Brown and Burkhardt (1999) have shown that in the prediction of a cumulative grade average, factors linked to social origin ('background variables') are more significant than the level of enrolment or FGS status. They also suppose that economic resources, previous academic preparation, nationality and age are the factors that have more influence on the overall academic experience of the population studied than social origin measured by the educational level of student's parents. According to Hodges (1999), no difference could be observed between FGSs and non-FGSs in their persistence when one calculates the number of credit-hours in the first term of studies: "The personal demographic characteristics of the individuals; the effects of generational status, type of high school, ethnicity, age, income, father's education, and mother's education; were not predictive of their success in college as measured by credit-hour completion".

These conclusions remain summary. On one hand, it seems that a significant fraction of FGSs orient themselves towards community colleges or other two-year college programs, which could indicate that they are aiming for technical studies. On the other hand, the results based on studies of academic experience show two tendencies. The academic pathways of FGSs are somewhat different than those of second-generation students (the non-FGSs). However, the academic success of FGSs is not necessarily hampered by more difficult conditions, as they display various forms of resilience that allow them to still profit from their studies. The nature of the sample bases could help to explain results which differ from one study to another.

1.2 Research on FGSs in Canada and in Quebec

The Canadian literature on access to and persistence in higher education includes few studies presenting results that explicitly use the concept of FGS, and there are even fewer such studies dealing with college-level students. However, works that have considered the effect of parent's educational level are more numerous. For example, some studies

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[8] As far as the knowledge of college life, the personal engagement in studies and the perception of family pressure, the authors have not found a significant difference.

sponsored by Statistics Canada compare groups of students whose parents do not have a diploma from a post-secondary institution with those whose parents have such a degree (De Broucker and Lavallee, 1998; De Broucker and Underwood, 1998; Lambert et al. 2004). In fact, till just recently, only Grayson (1995; 1997) had explicitly used the concept of FGS, and only in the context of university students. Grayson stated that in universities, the degree of academic commitment of FGSs and non-FGSs is often different, without claiming that this difference was associated with academic results. However, class participation did have a positive effect on the academic achievements of FGSs (1995). In addition, these students were only slightly disadvantaged in terms of academic results during their first year (Grayson, 1997).

A recent study, undertaken by the Acumen Research Group (2008), explores the perceptions of FGSs. They came to the following conclusions: FGSs achieve, on average, a higher score on the scales of identity anxiety, of preoccupations linked to indecision, and of the fear of becoming indebted. They received lower scores in a measure of the cost/benefit evaluation of post-secondary education, of the importance that their parents gave to higher education, of the encouragement from their immediate social environment to continue in higher education, of their discussions with parents about higher education, of the money saved for their education, and, finally, of the knowledge of the different types of stipends offered. This study also concluded that the higher a family's cultural capital, the higher a student's aspirations.

For their part, Marcoux-Moisan et al. (2010) note that the educational level of parents has a significant influence on the aspirations expressed by high school students, all throughout their studies, except for those students who had intended all along to complete their education at the end of high school level or to finish at the college level. The originality of their results is that it empirically demonstrates the reproduction of the cultural capital process. In other words, the aims of students, collected four times over a period of eight years, were significantly influenced by their parents' educational level.

First-generation students aimed, in larger numbers, to achieve a two-year college diploma rather than a university degree. However, statistically, the probability that they would be enrolled in a community college was not that much different than that of other youth[9]. The Acumen Research Group also compared the non-FG and the FG students who achieved grades of 'A' in high school; the latter were less likely to enrol in a university than the non-FGS-university category, a phenomenon which is even more marked for young FG women. To explain these phenomena, the Acumen Research Group's hypothesis is very similar to that of Lambert, Zeman et al. (2004), and in fact takes up the argument of Boudon: the decision to continue to higher education has to be evaluated with its costs and benefits. In addition, young people coming from an environment where higher education is not a part of normal expectations overestimate the financial costs of such an education and exhibit a stronger degree of indecision when facing the prospect of starting their post-secondary education.

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[9] A test with the remainder adjusted gave a result close to statistic significance.

For Kamanzi, Doray et al. (2009a), the factors which exert a positive impact on access to college and university studies in Canada are the educational capital of parents, their annual revenue and their cultural capital. Among these, the influence of the parents' educational capital diminishes when taking a student's previous academic experience into consideration, but it still remains significant. Also, having at least one parent with some university experience makes a positive impact on a students' persistence and on the directness of their academic path. Another study by Kamanzi, Doray et al. (2009b), on the choice of university programs, reveals that certain social variables (the educational level of parents and their socio-professional level) are not significant in determining the choice of program for a student, in contrast to gender and previous academic experience, for example.

When parents possess a high level of cultural capital, it acts as a global positive influence towards participation in higher education. That said, it results in a push more in the direction of university rather than college-level studies (Finnie et al. 2005, note 12). Moreover, colleges recruit more FGSs that come from families with a lower level of educational capital.

The use of the concept of FGSs in the context of francophone colleges can be summarized in a single study (Veillette, Auclaire et al. (2007), which indicates that FGSs have more of a tendency to take longer for their secondary studies (see also Acumen Research Group, 2008). More precisely, having parents with no post-secondary degree doubles the probability that a student will take longer to complete his or her secondary studies. However, the influence of parents' educational capital acts more on secondary studies than on college-level studies, as their analysis confirmed the earlier work of Terrill and Ducharme regarding the "absence of the influence of the educational level of parents on academic progress at the college level" (Terrill and Ducharme 1994, pp. 109-110).

In addition, without explicit reference to the concept of FGS, the effect of the educational capital of parents on the social composition of the student population of Quebec has been verified in a number of studies (Higher Education Council, 1991; (2003). In fact, there is a great consensus that the higher the educational level of parents, the more likely their children will attain a higher educational level (De Broucker and Lavallee, 1998; De Broucker and Underwood, 1998; Perron et al. 1999; Lambert et al. 2004; Finnie et al. 2005; Association of Community Colleges of Canada, 2007).

Terrill and Ducharme's study (1994) brought some precision to the question of the influence of the parents' educational level. The authors indicate first of all the existence of a "relatively important connection between grade average in secondary school and the parent's educational level[10]" (p. 182). The proportion of students whose parents had a high level of education was two times higher among those who had achieved the best grades (the highest quartile). One can observe the same logic in reverse, and in the same proportions, among those students whose grades were below average (the lower quartile). The sense of the relation between these variables is the same at the college-level, but with a

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[10] Their analysis categories were very defined: parents with a low educational capital: secondary-school diplomas or less; parents with a high-level: two parents with at least a university degree; and parents with a medium-level: all others.

lower intensity, the ratio going from about 2 to 1 at the secondary-school level to about 1.5 to 1 at the college level. However, if the academic results of college students in the lowest and highest quartiles are analysed independently, the authors state that the relation is no longer significant. They conclude that "the educational level of parents is the quasi-perfect example of a variable that loses its influence the further a student advances in their higher education studies, after having nonetheless played an important role in access to higher education" (p. 185). This also holds true for academic success at the end of the first semester. As for the dropout rate after one year, the parents' level of education plays a very weak role, resulting in approximately a 5 % difference between the influence of parents with a high level of education and that of parents with a lower level, on students who were in the two lower quartiles in high school.

On their part, De Broucker and Lavallee (1998) also remark that even more than having parents with a high level of education, to have parents with a professional occupation has a stronger effect on access to higher education. "Financial stability" would thus also guarantee an environment conducive to learning.

According to these same authors, the effect of the educational level of parents is also associated with cultural practices: "There is a close relation between the parent's level of education, reading and a student's academic achievement" (p. 25), because parents with a higher PSE are more likely to offer books to their children than parents without a post-secondary degree. This behaviour could be explained simply by the fact that the former generally have a higher income. On the other hand, time devoted to reading with their children is not linked to a family's financial means. This interpretation is in agreement with the results of Finnie and Mueller (2008), which show that adding the OECD's Programme for International Student Assessment (PISA) reading test scores in their explanatory model lessens the direct effect of parent's education on access to PSE, as does adding secondary school grades and academic participation. The results of Kamanzi, Doray et al. (2009a) complete this interpretation. They affirm that the influence of social and cultural determinants are exerted both through the reproduction of social inequalities and through the academic mobilisation of certain social categories. Social determinants and previous education still exert more of an influence on access to higher education than they do on persistence, the latter being explained by the characteristics of the academic system. They conclude by postulating that persistence is influenced by the academic results achieved at the beginning of a student's career, which could be encouraging or discouraging, and by the level of their commitment towards their higher education studies[11].

The research of Roy (2006) on CEGEP studies points in a different direction: "the variables linked to social ability (relational satisfaction) and to solidarity (moral and financial support) exert as much influence on the predictors of success as do the educational levels of parents" (p. 35). No matter the socio-economic background, he

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[11] The authors do warn us: these results are perhaps the fruit of a harvest of data that is too fresh, and which might not have allowed enough time for all of the students to finish their studies. If this hypothesis is correct, the results should differ with the inclusion of the next cycle of YITS data. This provisional hypothesis does have an echo in the article by Andres and Adamulti-Trache (2008).

reiterates, family support is appreciated and is concurrent with academic success. The latter could act as a lever, aiding a student's social ascent, compared with his/her socio-economic origins. Family--parents, brothers and sisters can act as models, for example.

1.3 The Canadian and American college education systems

One cannot mechanically transpose the results of American studies to the situation in Quebec and Canada. The mission and the structure of colleges are different in the two countries, without mentioning the internal differences between provinces or states. Nevertheless, drawing parallels between the different types of establishments allows us to interpret American research results in the context of the Canadian system.

In the U.S. there are several types of post-secondary education, from professional or technical colleges to large research universities (Eckel and King, 2004). The Bureau of International Information Programs of the U.S. State Department counts six types. Three of these are particularly pertinent here: the Vocational and Technical Colleges, the Community or "Junior" colleges, and the universities (Baccalaureate Institutions)[12]. The first two do not grant university diplomas, but rather certificates of professional study, Associate degrees or transfer degrees. The vocational and technical establishments only offer programs of less than two years in their vocational fields. Community or Junior colleges also grant technical degrees, but also, and more importantly, degrees that lead to university study. They do not limit enrolment and have low admission fees. The majority of students attend them with the aim of advancing to a four-year program. These transfer degrees offer a general preparation, which corresponds to the general education given by four-year institutions to students in their first two years. This division is somewhat similar to the pre-university/university education approach in Canada. Finally, the universities (both colleges and research universities) offer four-year bachelor's degrees which can lead to professional programs (law or medicine, for example) or to graduate studies. There are two types of universities – those that are focussed on research, normally larger and that also offer higher degrees (master's, doctorate), and those that are more focused on undergraduate education, particularly in the humanities and liberal arts.

As for to the situation of college-level teaching in Canada, its heterogeneous character is mostly due to the fact that education is a provincial responsibility (Dennison, 1995). As in the U.S., there are two types of diplomas, which are easily associated with certain types of institutions, even if a difference persists in certain provinces. University colleges offer bachelor's programs that take from three to four years, and the community college programs generally take one or two years. Community colleges are known by different names according to the province, most are known as either regional colleges, institutes of technology or CEGEPs[13].

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[12] Bureau of International Information Programs:
http://www.ait.org.tw/infousa/enus/education/edu_overview.html

[13] The Association of Community Colleges of Canada (ACCC) counts 175 establishments which are know by diverse names, such as "college", "community college", "institute of technology", "university college" and "CEGEP".

Within the ten provinces, some academic systems stand out, especially by their connection to other educational institutions (principally universities, but also secondary schools and adult education). The Quebec system is itself a particular form of higher education, as students who wish to go to university must usually first follow a two-year pre-university program offered by the CEGEPs (general and vocational colleges)[14]. These establishments also offer three-year professional technical training programs, which lead to a diploma that can also give access to further study at a university. CEGEPs also award general certificates for shorter training programs, which are considered to be the equivalent of similar certificates offered in other provinces and in the territories.

For Gallagher and Dennison (1995), another type of college system is found in Ontario and in Prince Edward Island, where the college system has the goal of supporting the university sector. In these two provinces, these new types of colleges are also charged with developing adult education, to offer this population the path to professional development, the means to change careers or to reach personal objectives not directly linked to their careers.

In opting for a structure inspired by that of California, Alberta, British Columbia, and, to a lesser degree, Saskatchewan have created a third type of college system. Their colleges offer courses closely linked to those offered by universities, as a way to facilitate the transfer of credits. The objective is to facilitate university access in these provinces where it is somewhat limited by the geographical dispersion of the population.

Finally, the colleges in Manitoba, New Brunswick, Yukon and in the North-West Territories as well as in Newfoundland and Labrador constitute another type of system. Still according to Dennison and Gallagher (1995), the mission of the colleges in these provinces and territories has nothing to do with transferring credits to university. Dennison and Gallagher conclude that this model emphasises short-term post-secondary education aimed at the job market.

Despite this diversity, community colleges do share certain objectives which distinguish them: ease of access, openness to the education and training needs of the local population, the capacity to adapt to the changing needs of students, a firm engagement to offer a high-quality education, tuition that is set lower than that of universities and the integration of effective student support services (Dennison).

1. 4 Objectives of this note

The objective of this note is to examine the access and especially the persistence of first-generation students (FGSs) enrolled in colleges. We first examine certain aspects of access to college. The analysis is based on Statistics Canada's Youth in Transition Survey (YITS) data. Two questions guide this analysis: When do FGSs arrive at college/CEGEP? What are the differences between the provinces?

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[14] There are some exceptions to this rule: it is possible to be admitted to a university program without having first obtained a Diploma of college studies (DEC).

We then look at another aspect, by analysing the progress of a group of first-generation students who participated in the RELÈVE study described in section 2.2. More precisely, we develop a longitudinal qualitative analysis of the academic pathway of college students enrolled in technical or pre-university programs. The questions addressed are: What are the pathways of first-generation students? Are these different from those of non-FGSs?

In performing this analysis, we wish to examine the academic experience of college students, from their entry to the program to their exit. In doing so, we will shed light on the different aspects associated with students' continuing in or leaving their programs. This analysis completes the existing research by describing pathways that are the result of the interactions between systemic effects and individual biographies.

We understand academic pathway to include all of the decisions and events that affect the presence of students in an academic system, and, in this case, in a given training program. The pathways depend on the academic structure, but also on the choices of students as to their career goals, on their CEGEP experience right from the start, and on their life situation throughout their studies, which can fluctuate from one year to another. More specifically, four dimensions allow us to better frame these pathways (Doray, Picard et al., 2009).

1. Pathways are formed in the transactions between the individual biographies and institutional structures. They take shape in the choices of individuals dealing with particular institutional characteristics, such as the selection mechanisms that are a part of numerous programs, which serve to restrict the range of options.

2. The interaction between events and their significance constitute the second analytical dimension. The events could be the triggers for action and could focus the choice of individuals. On a subjective map, the importance and influence of a particular event may vary from one individual to another. An academic set-back, for example, could as well be a factor of renewed focus as a factor for demobilisation.

3. The interaction between academic experience *stricto sensu* and extra-curricular experiences reminds us that the life of students includes more than classes and study, and that events and decisions with no direct link to higher education can still have an influence on an individual's academic pathway. It is necessary to account for personal incidents as well as the work/study balance, or even the juggling of work/family/study. Other biographical transitions, such as becoming an adult, beginning a professional career or leaving one's family home can also be events or situations that affect a student's academic pathway. In other words, one must take note of the interdependence of the different social spheres.

4. The insertion of the academic experience in a scheme of larger time frame allows us to take into account an individual's past, their social and cultural heritage, as well as their learning achievements. This also helps us be aware of the future, of goals and projects, which are the motivating elements for most students. The connection between the different temporalities is not mechanical, as indicated by those pathways deemed improbable, such as students with 'good' academic

backgrounds who drop out, or the long and successful academic pathways of students from disadvantaged backgrounds – often considered to be students at risk.

2. Methodological framework

Our analysis, as we have already emphasized, has both a qualitative as well as a quantitative aspect. This will help us to better define FGSs' access to college and their academic experience once there. The status of FG or non-FG students is determined by the highest level of education claimed by one or both parents. An FGS is therefore described as a student whose parents have no more than a high school education (the reference category). Post-secondary education that did not lead to a diploma (on the part of the parents) or the academic experience of siblings was not taken into account. The non-FGSs, for their part, are divided into two sub-groups. In the first, the non-FGS-collegial, the parent with the highest degree has no more than a college degree, and in the other group, non-FGS-university, at least one parent has a university (bachelor's) degree. The relevance of using the highest degree achieved by one or the other of the parents has been confirmed by the International Study of Literacy (De Broucker and Underwood, 1998, p. 35). Also, the methodological choice to sub-divide the category of non-FGS is supported by several studies that have shown its relevance (Nunez and Cuccaro-Alamin, 1998; Pascarella et al., 2003; Lee et al., 2004; Pascarella et al., 2004; Ishitani, 2006; and Martinez et al, 2009).

2.1 The Quantitative aspect

We use the data from the nationwide Youth in Transition Survey (YITS) as our source data. Administered by Human Resources and Social Development Canada and by Statistics Canada since 2000, this survey is longitudinal and based on a representative panel of youth, age 15 in 1999, who were then in school (this panel is named Cohort A in the jargon of this survey).

Considering the question addressed here – the influence of FGS status on access to and perseverance in college –we use the data from the first four cycles of this survey. The database contains information on the level of education of the parents of the respondents and on the academic pathways of the students, at the secondary as well as post-secondary levels. In addition, the YITS has put together information on the socio-demographic characteristics of students (for example, their gender, their associated ethno-linguistic group, their county of birth, their age and the year they started college or university) and the environment in which they live. In brief, it is a collection of data that allows us to make a broad portrait of the youth who attend college or university in Canada.

Insert 2.1 – Presentation of the variables

Name	Definition and function	Categories
SOCIAL AND CULTURAL CHARACTERISTICS		
Gender		1) Women 2) Men
Social-professional category of the parents	Construed as a function of the profession and employment status at the time of the first gathering of data (employed or working independently).	1) Executive or manager 2) Business owner 3) Professional 4) Liberal profession 5) Salaried white collar (reference category) 6) Self-employed white collar 7) Blue collar 8) Artisan 9) Unemployed
FGS Status	Variable measured by the highest level of education of one or both parents. In cycle 1 of YITS, each parent was asked to specify the highest level of education they attained.	1) Parent has a secondary-school diploma (or less) (reference category), 2) Parent has at most a college degree, 3) Parent has a bachelor's degree.
Cultural capital	A variable determined based on scores for items of cultural and educational resources available in a family. These are developed in association with the following dimensions: 1) Social and relational (for example, visits to museums, etc.); 2) Self-actuated (for example, time spent reading); 3) Materialised (for example, having a dictionary, textbooks, etc.).	On a scale of 1 to 4.
GEOGRAPHICAL SITUATION		
Residential environment	This variable has been established by Statistics Canada from geographic indicators based on the Statistical Area Classification that identify a region as rural or urban (2001 census geographical data).	1) Rural 2) Urban
Province of residence	This variable is measured according to the student's province of residence in the YITS cycle 2, which means (in most cases) at the end of secondary studies. This is also the time when a minority begin their post-secondary studies.	The ten provinces of Canada.

Insert 2.1 (continued) – Presentation of the variables

ACADEMIC BACKGROUND

Overall grade-point average (high school)	General averages in the last year of secondary school in mathematics, in language and in science.	1) 90 - 100 % 2) 80 - 89 % 3) 70 - 79 % 4) 60 - 69 % 5) Less than 60 %
Time spent on homework per week	This variable was created based on responses to the question: Approximately how many hours do you usually spend each week on homework outside of class (i.e. during free periods and at home)? (YSA6)	1) Less than one hour 2) 1 to 3 hours 3) 4 to 7 hours 4) 8 hours or more

COLLEGE-LEVEL ACADEMIC PATHWAY

Pause during the program	This variable indicates if a student has stopped and then resumed their studies (not including summer months).	1) Yes 2) No
Longest duration of this pause (per two-year study cycle)	If there was a pause, how long it lasted.	1) Less than one month 2) 1 to 5 months 3) 6 to 11 months 4) 12 to 17 months 5) 18 months or more
Status at the end of studies in 2007	At the end of the YITS cycle 4, the final status of a college student in their first post-secondary study program.	1) Continuing 2) Graduated with a diploma 3) Left the program 4) Non-specified 5) No information
Type of college-level program in Québec	Type of college-level program in Québec	1) Pre-university 2) Technical/professional

2.2 The qualitative aspect

A qualitative and longitudinal methodological approach type was employed, to better understand the pathways of students and to follow them individually. This methodological choice allows us, on one hand, to focus our attention on the sense of the actions and the decisions made by the individual students. On the other hand, those factors likely to influence the path and the academic experience could be revealed, especially those that students themselves identify as having been determining factors.

To accomplish this, we used the semi-directed interview technique, which offers us the possibility to follow those events that make up an academic pathway: changing programs, taking a break from studies, returning, obtaining a degree. Students were interviewed in a diverse range of programs. A follow-up of each student in the subsequent months and years grounds this empirical approach in the logic of pathways, allowing us to compare various moments in the course of pursuing a college education. In addition, this approach allows for a relation of trust to develop between the researchers and the

student respondents. This relationship makes it much easier for researchers to obtain richer and more detailed data on an individual's experiences. Meeting with the respondents several times means that complementary information that may have been omitted, forgotten or incomplete in previous interviews can be recovered in subsequent interviews.

2.2.1 The sample base

Our panel consist of 233 students at Quebec colleges (CEGEPs), enrolled in their first term, and recruited at random. From this number, 195 participated in our study. Out of the 38 cases that were rejected, 18 students removed themselves from the study of their own will. As for the other 20, it was more that their files were not compatible for this analysis, for various technical reasons (defective audio recordings or even erasures, transcriptions destroyed after the recordings had been erased, etc.). The final status of these students and their type of pathways could therefore not be determined, which would invalidate the longitudinal analysis of their situation.

Of the 195 cases studied, 107 were enrolled in three technical programs (laboratory technology, electrical engineering technology and information technology) and 88 in pre-university natural science programs (Doray et al., 2003a and b). We began to follow these technical and pre-university students at one-year intervals, at the beginning of the fall 2000 and 2001 terms, at the time of their first enrolment in their programs. These students were enrolled in six colleges (five CEGEPs and one private college) in two urban regions in Quebec. We met them at least two times (when then started and when they left their program, if necessary, and at the end of their first year) and we also conducted a third and last interview with those who continued, at the end of their last term[15]. We have opted to use the more inclusive term "persistent" rather than "graduated" given the presence of some students who, according to all appearances, would have received their degrees shortly after the end of our interviews. In these cases, we knew that approximately 90 % of these persistent students received their degrees. All of these students participated in this study on a voluntary basis[16].

Table 2.1 – **Status of the participants in the RELÈVE study, Québec, 2000-2005**

Cases studied	**195**
Graduates/persistent students	124
Left without a degree	71
Cases abandoned	**38**
Total	**233**

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[15] We should remark that the majority of these students took more than three years to complete their program.

[16] Voluntary participation was a condition imposed by the Quebec Commission on access to information.

2.2.2 The response grid

Each member of the research team was presented with a list of themes judged to be relevant. Only a certain number were retained and discussed, from which an interview guide was developed, based on five dominant themes. The interviews were framed in a manner that gave respondents leeway to express their experience in their own words. The five themes of the interview guide are:

- o The initial experience: the courses, the professors, the fellow students and the institution itself, as perceived by the respondent;
- o The choice of program and of college: the reasons and considerations cited by the respondent to justify their choice of program and of institution;
- o Previous experience: how the respondent performed in high school or in a post-secondary study program other than the one he/she enrolled in at the time of the start of this study, paid work experiences or professional experiences;
- o Extra-curricular activities: the pastimes, paid work and living situation of the respondent;
- o The projects: The goals of the student in terms of education, career and short and long-term lifestyle.

An additional questionnaire was used to collect the respondent's socio-demographic information.

2.2.3 Analyzing the data

Our global approach is longitudinal and qualitative. It presents a number of advantages which amply justify this choice. At the same time, it is not without its limits. The most obvious, of course, the time required to collect the data, which lasted close to five years – until the last students had obtained their degrees.

Our analytical approach is similar to be what is called grounded theory. At the same time, the organisation of the research and the magnitude of the sample make the application of certain principles of this theory difficult, such as dealing iteratively with several phases of data gathering, their analysis and then the return to the field guided by the hypotheses formed. For example, the constraints surrounding the preparation of the information (transcription of the interviews, training the interviewers) do not allow for a profound analysis of the material before being immersed in another phase of data gathering.

In our analysis, we used a dialectical approach that is in-between an inductive and a deductive approach. In effect, as we were immersed in the gathered material and identifying, by deduction, tendencies and processes at work in the experience of the students, we were refining our theoretical definition of their pathways as a function of the four analytical axes presented in section 1.3. Thus, the theoretical work was nourished by the empirical analysis which itself was being remodelled little by little through the theoretical redefinitions.

The analysis consisted of a reading oriented towards the different interviews done with each student. They were read by several researchers of the team with the aim of determining the characteristics of each pathway and those elements which appeared to be acting as the "triggers" to action. For example, the researchers tried to identify which events could explain a change in a student's pathway. The conclusions of each researcher were discussed in a group in order to arrive at a consensus. Two major general questions guided our reading:

- What are the events that mark out a student's path?
- What are the situations, the decisions, the events, the factors which act as triggers in orienting a student's pathway, as much on the level of continuity as that of breaks (discontinuity) between different moments of academic and other experience?

Each "case" was analysed by several researchers and the subsequent discussions brought about a consensus as to the interpretation of the material. Afterwards, we re-examined and re-grouped the individual pathways in order to produce a typology. Each researcher proposed a typology, and each of these was examined collectively with the goal of coming up with a single one.

3. Access and presence of FGSs in Canadian colleges

The broadening of post-secondary education in the last fifty years has been notably manifest in the development of colleges in the majority of the provinces, even if the mission of these colleges varies from one province to another, as discussed above.

3.1 Interprovincial comparison: FGSs and non-FGSs

Table 3.1 shows the province of origin of college students. The proportion of first-generation students in the student population varies from one province to another, reaching a high of 37 % in Prince Edward Island and in New Brunswick, to 17 % in British-Columbia. That is to say, throughout Canada, the majority of students come from families where at least one parent has a post-secondary degree, especially one from a college. It is the proportion of students from families with at least one parent with a university degree which is the lowest in all of the provinces. Two provinces have the highest proportion of these students: Québec and British-Columbia, where respectively 31 % and 32 % of college students come from a family where the educational capital is considered to be high.

Table 3.1 – **Province of origin of Canadian college students according to their FGS status, YITS, cohort A (%)**

	FGS	Non-FGS-C	Non-FGS-U	Total
Newfoundland and Labrador	33	59	8	100
Prince Edward Island	37	50	12	100
Nova Scotia	26	58	16	100
New Brunswick	37	52	11	100
Québec	27	42	31	100
Ontario	33	46	22	100
Manitoba	36	50	14	100
Saskatchewan	32	52	16	100
Alberta	24	55	20	100
British-Columbia	17	51	32	100
Canada	28	46	25	100
Canada, without Québec	28	50	22	100

N.B. Some totals add up to 99 or 101 due to rounding.

If FGSs constitute a minority recruitment source for colleges in all of the provinces, it remains that they are proportionally more numerous there than in the universities (Graph 1). However, we should also emphasize that the proportion of FGSs in Canadian universities is relatively equal from one province to another, while in the colleges, it fluctuates by more than 20 percentage points.

Graph 1 – Proportion of FGSs in universities and in colleges, by province or origin, YITS, cohort A (%)
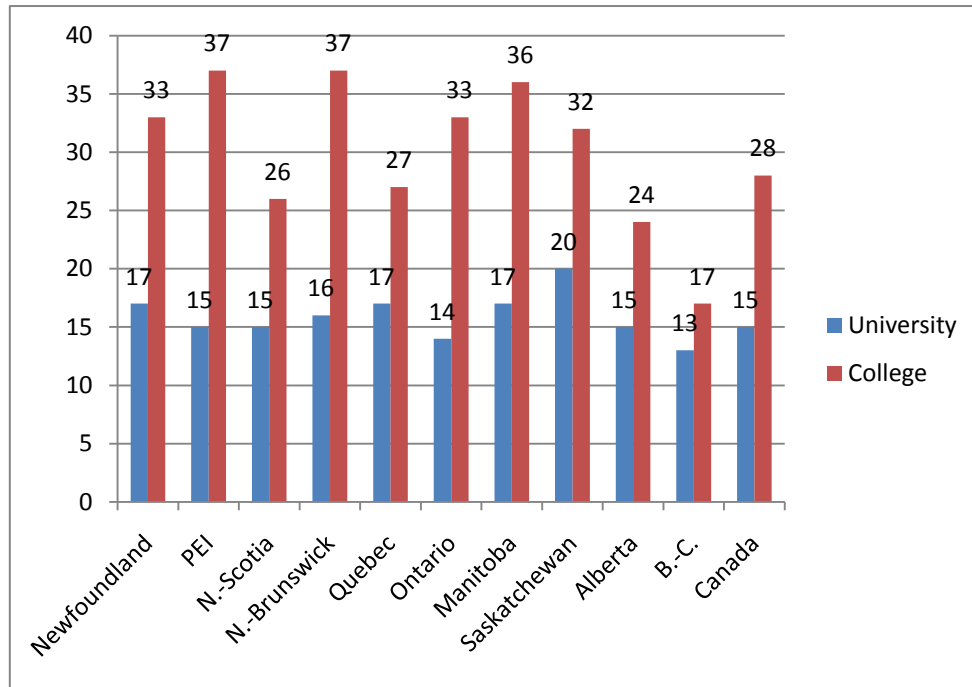
Alberta is the only province where the proportion of students, at first enrolment in post secondary studies, is higher in colleges than in universities (Table 3.2). At the other end, the provinces of Nova Scotia, Prince Edward Island and Manitoba stand out with a proportion of college enrolment slightly less than 30%. In five other provinces, the proportion of college enrolment is between 34 and 40%. As for the Canadian average, it is at 52% for the first post-secondary programs, but this average is pushed higher by Québec, given its heavy demographic weight and the particularity of its post-secondary system. In fact, if the average is calculated excluding Quebec, the proportion of Canadian students choosing college as their first post-secondary program is 33%.

As for the parents' educational capital, students from families with a higher level of academic capital are more likely to attend a university. Inversely, FGSs are more likely to enrol in colleges.

In all of the Canadian provinces except Quebec and Alberta, the most-frequented educational institutions after completion of high school are universities (Table 3.2). In Québec the mass attendance at colleges (97 %) is explained simply by the structure of its

educational system, which considers college attendance as the means of access to university and as the place for technical and professional training. This situation merely reflects the structure of the formal educational pathways in Quebec.

Table 3.2 – Distribution of students by level of post-secondary institution according to their FGS status and their province of residence, first program of post-secondary education, YITS, cohort A (%)

	University	College	Total
Newfoundland and Labrador	**62**	**38**	**100**
FGS	45	55	100
Non-FGS-C	60	40	100
Non-FGS-U	85	15	100
Prince Edward Island	**72**	**28**	**100**
FGS	50	49	100
Non-FGS-C	69	31	100
Non-FGS-U	89	11	100
Nova Scotia	**70**	**29**	**100**
FGS	58	41	100
Non-FGS-C	63	36	100
Non-FGS-U	87	13	100
New Brunswick	**65**	**34**	**100**
FGS	45	55	100
Non-FGS-C	64	35	100
Non-FGS-U	85	14	100
Québec	**2**	**97**	**100**
FGS	1	98	100
Non-FGS-C	2	97	100
Non-FGS-U	2	97	100
Ontario	**59**	**40**	**100**
FGS	39	61	100
Non-FGS-C	54	45	100
Non-FGS-U	76	23	100
Manitoba	**70**	**29**	**100**
FGS	53	46	100
Non-FGS-C	65	33	100
Non-FGS-U	87	12	100
Saskatchewan	**62**	**37**	**100**
FGS	51	49	100
Non-FGS-C	60	39	100
Non-FGS-U	76	24	100
Alberta	**47**	**52**	**100**
FGS	35	64	100
Non-FGS-C	36	65	100
Non-FGS-U	69	31	100

Table 3.2 (continued) – Distribution of students by level of post-secondary institution, according to their FGS status and their province of residence, first program of post-secondary education, YITS, cohort A (%)

British Columbia	**64**	**35**	**100**
FGS	57	42	100
Non-FGS-C	58	41	100
Non-FGS-U	72	27	100
Canada	**47**	**52**	**100**
FGS	32	68	100
Non-FGS-C	43	56	100
Non-FGS-U	62	38	100
Canada, without Québec	**67**	**33**	**100**
FGS	51	49	100
Non-FGS-C	61	39	100
Non-FGS-U	81	19	100

N.B. Certain totals come to 99 or 101 because of rounding.

The difference between the proportion of FGSs and that of non-FGS who have at least one parent with a university degree (non-FGS-U) varies according to the provinces (Table 3.2). This difference is the smallest in British Columbia (15 points between the two categories) and is the largest in New Brunswick, with a 40 point difference.

Finally, we note that the presence of students in colleges and universities follows the logic of social reproduction, which is a function of the parent's education. First-generation students are proportionally more numerous in colleges, while the non-FGSs are more numerous in the universities. In Québec, this logic does not apply, because of enrolment in college as a mandatory step towards university. However, this logic would still be respected in Québec, if the CEGEP technical programs are considered to be in the category of community colleges and the pre-university programs as part of the university category (Table 3.3). In addition, the presence of students from university families at colleges is higher in British Columbia (27 %) and in Alberta (31 %), two provinces that have introduced a first-phase of post-secondary education in their colleges in order to facilitate access to universities.

In sum, the recruitment of students into post-secondary educational institutions remains largely marked by the logic of social and cultural reproduction. The access to the two levels of post-secondary education follows two opposite tendencies. In addition, FGSs attend colleges in greater numbers than do non-FGSs, especially those whose parents have had some university experience (the FGSs-U).

3.2 The situation in Québec

Even if the data used here do not allow the influence of parent's educational capital on students' academic pathways to be easily detected because of the formal organisation of the academic system in Quebec, we can still examine if this capital has an influence on the type of education, and ask if FGSs are oriented in larger numbers towards technical programs rather than towards university study.

FGSs are proportionally more numerous in technical programs than in pre-university CEGEP programs (table 3.3). The situation is similar for non-FGSs-C, but the difference between the two programs is much smaller. However, the situation is inversed in the case of non-FGSs-U. Since the technical CEGEP training also offers direct access to university, the non-negligible presence of non-FGS-Us in technical programs can be understood as a new strategy on the part of students who enrol in a technical program that better corresponds to their particular interests. For example, young people take the technical program in computer science in CEGEP with the goal of continuing to a bachelor's program in computer science, rather than taking the pre-university science program, where they would have to take biology courses.

Table 3.3 – **Distribution of Quebec students according to the type of their college program and their FGS status, YITS, cohort A (%)**

	Pre-university program	Technical program	Total
FGS	22	30	25
Non-FGS-C	40	45	42
Non-FGS-U	38	25	34
Total	100	100	100

N. B. Certain totals come to 99 or 101 due to rounding.

A second question arises: even within the category of FGS, are other factors at play in the choice between pre-university or technical programs? Reading Table 3.4, which presents the situation of FGSs as a function of several significant variables, we can state that access to pre-university programs is proportionally larger among the following groups:

- women;
- children of businessmen/women;
- children from families where the cultural capital is high;
- students from urban areas;
- students who achieved high grades in secondary school;
- students who devoted more time to their studies; and
- students who had never interrupted their studies or who had done so only for a very short time.

As for the choice of a technical program, it is proportinally larger among the following groups:

- men;
- children of white collar workers;
- children from families where the cultural capital is lower;
- students from more rural areas;
- students who had lower grades in secondary school, except for their mathematics grades; and
- students who had had an interruption of their studies

This last analysis indicates that, among first-generation students themselves, differences exist as to their choice of college program. In addition, FGSs from families that are considered to be more socially and culturally 'blessed' are more represented in pre-university programs than in technical ones. We also find a similar effect related to the level of academic achievement in high school, except for the grades in mathematics, and a student's having had an interruption of their studies. We again find an effect of academic meritocracy: success at secondary school opens students to the possibility of university studies. In this sense, academic success, even for those whose social or cultural capital is lower, opens up the possibility of university education. As such, it is an important element in the movement of academic mobilisation.

Table 3.4 **– Distribution of Quebec FGSs according to the type of their college program and different social and academic dimensions, YITS, cohort A (%)**

	Pre-university	Technical	Total
Proportion	42	58	100
Gender			
Women	64	59	62
Men	36	41	38
Total	100	100	100
Parent's social-professional category			
Executive/manager	40	22	34
Business owner	8	5	7
Professional	6	4	5
White collar	20	40	27
Blue collar	13	18	15
Craftsperson	13	10	12
Total	100	99	100
Index of cultural capital			
Levels 3 and 4	39	26	34
Levels 1 and 2	60	74	66
Total	99	100	100

Table 3.4 (continued) – Distribution of Quebec FGSs according to their college program and different social and academic dimensions, YITS, cohort A (%)

Place of residence			
Urban	72	62	68
Rural	28	38	32
Total	100	100	100
Grade-point average in the last year of secondary school			
90 – 100 %	8	1	5
80 – 89 %	50	39	45
70 – 79 %	38	52	44
69 % or less	4	7	5
Total	100	100	100
Average grade in mathematics			
90 – 100 %	14	3	9
80 – 89 %	25	33	28
70 – 79 %	35	36	36
69 % or less	27	28	26
Total	100	100	100
Average grade in language (French)			
90 – 100 %	11	4	8
80 – 89 %	40	28	35
70 – 79 %	38	42	40
69 % or less	10	26	17
Total	99	100	100
Average grade in sciences			
90 – 100 %	21	10	16
80 – 89 %	32	36	34
70 – 79 %	28	31	30
69 % or less	19	23	20
Total	100	100	100
Time spent on homework per week (outside of class)			
Less than one hour	19	30	24
1 to 3 hours	41	47	44
4 to 7 hours	30	21	26
8 hours or more	10	3	7
Total	100	100	100
Maximum time of a pause in studies (par cycle)			
0 to 5 months	84	59	73
6 to 11 months	0	16	7
12 months or more	16	25	20
Total	100	100	100

N. B. Certain totals combine to 99 or 101 because of rounding.

4. Academic Pathways in Science and in Technology

What happens to FGSs once they start their college studies? Which sort of route do they take? What facets of their academic experience or of their living conditions drive their progress in their chosen program and at their academic institution? To answer these questions, we have used longitudinal data gathered from more than 195 CEGEP students enrolled in either science programs (pre-university) or technical programs[17] to re-construct their pathways and take up the four analytical dimensions presented in section 1.4 above. We then could determine a typology of the academic pathways of CEGEP students.

4.1 The pathways – an overview

A first analysis brings us to differentiate the paths of being persistent from those of dropping out of a program (leaving without a degree). The first category comprises a variety of ways of living the student experience throughout one's studies, from requests for admission until obtaining a diploma, even up to the choice of a university program. Globally, we have determined nine pathways of persistence, which is to say, nine types of academic experiences which differ according to the relationship that students establish with the organisational and pedagogic structure of a college, by the emphasis they give to events, by the impact of their living conditions in general and by their integration of their past experiences and their projects. As for the dropouts (non-persistent students), six pathways that end in leaving a program without a degree were identified.

In Tables 4.1a and 4.1b, we present all of the pathways reconstructed by our analysis. Two general challenges are apparent. First of all, the weights of the different paths are different, some contain a large number of students and others, very few. Since our sample cannot pretend to be representative of all college students, we cannot extrapolate the relative importance of each path to the whole body of Quebec CEGEP students. For example, based on the data in the preceding chapter we could assume that pre-university programs recruit 22 % of FGSs and technical programs 30 % (YITS data). These proportions are, for our sample, 27 % and 38 %, respectively.

In our sample, three pathways stand out due to the number of students that take them. The first is what we have called the *Pleasure route*, whose principal trait is the marked interest of students for the contents of their program in particular and in their studies in general. The two others, in terms of the number of students concerned, are the *Rough road* and the *Change of direction*. The former encompasses those students for whom the college pathway takes the form of a test; those who change their initial program to finish their studies in another fall in the latter category.

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[17] In the remainder of this text, we designate as "science" the pre-university programs of natural science and of the 'double DEC' (natural and human sciences), and as "technical" the three technical programs (information, electrical and biochemical technology).

Table 4.1a – Distribution of respondents in the different college pathways, according to FGS status, genre and type of program, RELÈVE Study, Québec, 2000-2006 (%)

The pathways	Total respondents		FGS status		Gender		Type of study program	
	Number	%	% of FGSs	% of non-FGSs	% of women	% of men	% pre-university	% technical
PERSISTENT STUDENTS								
1. The pleasure route	49	25	20	28	25	25	28	22
2. The rough road	22	11	14	10	14	9	18	6
3. The race to excel	8	4	5	4	8	1	3	5
4. The autonomous track	4	2	5	1	4	0	1	3
5. Taking one's time	16	8	6	9	1	15	9	7
6. Guided by the future	9	5	5	5	1	8	1	7
7. One small step at a time	2	1	2	1	0	2	0	2
8. Same route, different destination	8	4	0	6	5	3	9	0
9. The double path	6	3	0	5	5	1	6	1
Total persistent students	124	**64**	**55**	**68**	**64**	**63**	**76**	**53**
STUDENTS LEAVING WITHOUT A DIPLOMA								
1. The false start	3	2	2	2	1	2	3	0
2. The collision course	14	7	11	5	9	6	6	8
3. Going off the road	16	8	8	8	9	8	3	12
4. A fork in the road	9	5	3	5	4	5	3	6
5. The planned exit	4	2	5	1	0	4	2	2
6. The change of direction	25	13	17	11	13	13	6	19
Total students leaving	71	**36**	**45**	**32**	**36**	**37**	**24**	**47**
Total in percentage		**100**	**100**	**100**	**100**	**100**	**100**	**100**
Number of students	195	195	65	130	92	103	88	107

Table 4.1b – **Description of the different college pathways, according to FGS status, genre and type of program, RELÈVE Study, Québec, 2000-2006 (%)**

The pathways	FGS status		Gender		Type of program			Total respondents
	% of FGSs	% of non-FGSs	% of women	% of men	% pre-university	% technical	%	Number of students
PERSISTANT STUDENTS								
1. The pleasure route	27	73	47	53	51	49	100	49
2. The rough road	41	59	59	41	73	27	100	22
3. The race to excel	38	63	88	13	38	63	100	8
4. The autonomy track	75	25	100	0	25	75	100	4
5. Taking one's time	25	75	6	94	50	50	100	16
6. Guided by the future	33	67	11	89	11	89	100	9
7. One small step at a time	50	50	0	100	0	100	100	2
8. Same route, different destination	0	100	63	38	100	0	100	8
9. The double path	0	100	83	17	83	17	100	6
Total of persistent students	**29**	**71**	**48**	**52**	**54**	**46**	**100**	124
LEAVING WITHOUT A DIPLOMA								
10. The false start	33	67	33	67	100	0	100	3
11. The collision	50	50	57	43	36	64	100	14
12. Going off the road	31	69	50	50	19	81	100	16
13. A fork in the road	22	78	44	56	33	67	100	9
14. The planned exit	75	25	0	100	50	50	100	4
15. The change of direction	44	56	48	52	20	80	100	25
Total of students leaving	**41**	**59**	**46**	**54**	**30**	**70**	**100**	71
Totals	**33**	**67**	**47**	**53**	**45**	**55**	**100**	
Overall number of students	195	65	130	92	103	88	107	195

The second challenge is due to the fact that FGSs are found in almost all of these pathways, and that their concentration is very variable. They are proportionally more numerous in certain paths, including those that are more difficult, such as the *Rough road*,

the *Race to excel* and the *Collision*. However, they are not present at all in two pathways which only contain a few students. In this sense, the range of possible paths is possibly less spread out than it is for the non-FGSs, which suggests that the academic experience takes less varied forms among FGSs.

In our sample, the proportion of persistent students after five years is 64 %, or almost two-thirds (table 4.2). The first difference appear: the persistence rate among the non-FGSs is slightly above (68 %) this average, while that of FGSs, comparatively lower, indicates that only a little more than half (55 %) of them had persisted.

From another angle, the lack of further strong differences between FGSs and non-FGSs is congruent with the American research on FGSs in community colleges, and agrees with the research on Quebec students indicating that the educational capital of parents is more a determinant for access than it is for academic experience. Before we can draw any further conclusion on this matter, it is necessary to examine the different pathways in order to determine the qualitative differences.

Table 4.2 – Persistence in college according to FGS status,
RELÈVE Study, Québec 2000-2006 (%)

	FGS	Non-FGS	Total
Persistent students	55	68	64
Students leaving w/o a diploma	45	32	36
Total	100	100	100

In table 4.3, one can clearly see that the FGSs in our sample preferred technical programs to pre-university programs. The non-FGSs, however, were equally divided between the two sectors. The difference between the FGSs and the non-FGSs could be explained by two factors: 1) the FGSs achieve lower grades, which limits their access to the more selective pre-university programs; and 2) the FGSs have less aspirations to achieve a university education, which leads them to opt for a choice that is more immediate and which offers more of a "return" in the medium term, and so they choose a technical education.

Table 4.3 – Choice of college program according to FGS status,
RELÈVE study, Québec 2000-2006 (%)

	FGS	Non-FGS	Total
Pre-university	37	49	45
Technical	63	51	55
Total	100	100	100

By placing these last three variables within the same table (table 4.4), one can see that, among the persistent pre-university students, the non-FGSs perform better than the FGSs. At the same time, the FGSs are slightly better at persisting than the non-FGSs in the technical programs. Despite the selection process for entrants to the pre-university program, it is in the technical programs where the FGSs show more persistence. Nevertheless, they do not attain the same level of persistence as the non-FGSs in either types of program.

Table 4.4 – Student persistence according to their college program and their FGS status, RELÈVE study, Québec 2000-2006 (%)

	FGS	Non-FGS	Total
Persistent students	**55**	**68**	**63**
Pre-university	23	40	34
Technical	32	28	29
Students leaving w/o a diploma	**45**	**32**	**37**
Pre-university	14	9	11
Technical	31	23	26
Total	100	100	100

In table 4.5, we present the situation according to the grades students received in their 4th and 5th years of secondary school. Whereas among those students who have the lower (65-70 %) and the higher grades (85-90 %) there is almost no difference between FGSs and non-FGSs as to their persistence or to their likelihood of dropping out of their studies, among students whose (average) grades were between these two categories, the non-FGSs were twice as likely to have been persistent than the FGSs. One could arrive at the hypothesis that the more average students are the ones more susceptible to the effect of their parent's educational capital on their academic progress.

Table 4.5 – **Persistence in college according to grade-point average in the 4th and 5th year of high school and FGS status, RELÈVE study, Québec 2000-2006 (%)**

	FGS	Non-FGS	Total
Persistent students	**55**	**68**	**64**
65-70	12	5	8
75-80	15	33	27
85-90	28	30	29
Students leaving w/o a diploma	**45**	**32**	**36**
65-70	8	9	8
75-80	29	17	21
85-90	8	6	7
Total	100	100	100

4.2 The nine pathways of persistence

First of all, it is important to remark that the college experience occurs in different ways for many students. Some paths fall under a label of being easy, with pleasure and success. However, others are much more difficult. Finally, certain pathways can only be better understood when one can consider the motivations that are not strictly academic. This introduces a first source of differentiation for college-level students.

1) The pleasure route

The academic experience of this first group, the largest in terms of the number of students, happens in the realm of pleasure. The choice of programs is based on previous experience, whether academic, familial or individual. For example, the discovery of certain disciplinary fields in high school opens the route to develop interests, even real passions, for certain domains of study. In this pathway, skills, projects and ongoing experience connect in a fluid manner to give a sense of an all-over positive academic experience. Thus, its main driver is that the students' experience is marked by success, and for many, a relative ease. In this sense, the four analytical dimensions of a pathway operate in interaction, reinforcing one another in a dynamic, virtuous circle.

We note that for mature students—which we find almost exclusively in technical programs—the return to school is their putting into action a professional project, implying a rupture in their lives, a professional re-orientation or even the desire to catch up in an area of studies that they find interesting, often an area discovered in the course of their professional career.

As to the composition of the student body, we find almost as many young women (23) as young men (26). These students are also divided equally between pre-university and technical programs. Among the 49 students found in this pathway, 13 are FGSs, 7 in technical programs and 6 in pre-university studies.

Their interest and curiosity in their chosen programs are translated into a taste for learning, to such a degree that most of these students reach their educational goals. Their positive experience confirms that they have chosen the right program. Enjoying the process of studying in a domain that one has discovered a strong affinity for is not to say that it is not also necessary to work hard or that the content is considered to be easy. In fact, the students in this category have made academic progress their priority. They generally do well and attribute their success to their hard work or to a certain ease stemming from having mastered student skills. These students are able to overcome with ease any difficulties they encounter (academic or personal).

As for their social integration, these students rapidly create a group of friends. A network of assistance and support is thus created, which reinforces their enjoyment of being students and of achieving their educational goals. The interaction with their peers stimulates their motivation.

The living conditions of the students in this pathway are conducive to studying. The conciliation between access to economic resources and their studies is easily achieved. A good number of them are single, with neither children nor other family responsibilities. Most of these students are encouraged or otherwise supported by their families. During their regular terms, especially for those in pre-university programs, paid work hours per week do not exceed 15 hours. Several of these students also lighten their course load by taking a summer class or by adding one extra term to their college-level education. They thereby benefit from a prolonged timeframe for their first post-secondary educational experience, which makes their class load each term less intensive and often more enjoyable.

Being a student is a good occasion for a re-examination of personal goals, which can lead to a confirmation of expectations. The further one advances in one's chosen program, the more it is possible to appreciate a field and thereby further reinforce interest and engagement in studies. Science students (in pre-university programs) already anticipate continuing their science education at the university level.

A variant of this route, which we have identified as the 'Excellence track', reveals this virtuous circle. Enjoying one's studies is not the only measure in this track and its destination is more than academic success. The students on this track aim to get the best grades, do get them, and in addition they participate in various activities, at school and elsewhere (sports, music, committees, volunteer programs, etc.). Even if these students feel that they have a heavy load at times, their academic work continues at a high level because they master student skills. This helps them to efficiently organise their work and not get behind. Even if certain courses might be less appreciated, all of them are considered to be useful by these students, who appreciate general education courses as much as their science classes. In the same vein, students in this 'Excellence track' may express some criticisms towards some professors, but their overall judgement remains positive–they view most teachers as competent and available.

Vincent and Romain are two FG science students who incarnate this variant of the *Pleasure route*. They were very well prepared for college studies when they finished high school, and they show several of the life conditions conducive to their success. By

attending very good high schools, they have been prepared with excellent student skills. One attended an International school, the other a private one. They both claim to have a comfortable enough financial situation, the solid support of their parents and high academic aspirations.

Their transition to college studies was easy, and their integration into the college itself, including its intellectual and social aspects, was very positive. In Vincent's case, having a brother at university (accounting/finance) and being a work colleague of a friend of his brothers (in information technology) is beneficial and shows how socialisation has the effect of contributing to social and cultural capital and increases his likelihood of being predisposed to have a worthwhile and enjoyable college experience.

The interest these students show for one or another field of science has been confirmed by their experience in the science program. Furthermore, this path leads to an excellent academic performance and to a general grade average of over 80 %. Thus, Romain can consider a career in medicine while Vincent aims for computer science.

The two students come from families that are focused on academic success, which is made evident by their having attended selective high schools. They have acquired the attitudes and skills that lead to success at CEGEP. They benefit from supportive living conditions and social networks that contribute to high expectations and which support those ambitious educational aspirations. The combination of an investment in education and the quality of their high schools served to ease their path to success at the CEGEP level.

2) *The rough road*

This second pathway is, in some ways, the reverse of the first. It contains those students for whom the CEGEP experience has been in some ways a rough road. These students can be distinguished as being very far from those in the first category, as they emphasize their difficulties, their stress and the obstacles they must overcome. Their path as students is an academic and psychological ordeal.

Their entry to the program was immediately perceived as a sort of 'trap'. These students were confronted with a heavy workload and saw their program as more difficult than they had anticipated. A feeling of being overloaded rapidly became 'normal'. Any obstacles or low grades led to 'soul-searching' and then the implementation, by the students, of strategic voluntary and calculated adjustments. Acquiring a new means of studying and a reorganisation of their time appears to be necessary to simply pass or to augment their R score[18]. In this sense, these students prove themselves capable of making the strategic adjustments they need to complete their studies.

A variety of adjustments can be made by students: taking an extra semester of classes or dropping an enriched program to lighten the class load, taking non-credit courses that can improve their study habits, devoting more time to their studies, being more vigilant students (do all of the exercises, both those required and those recommended), reducing their non-school based activities (for example, reducing their hours of paid work), better organise their time, become part of a group to benefit from the support of fellow students,

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[18] The R Score is an evaluation tool used for determining access to most Quebec universities.

moving so they save on commuting time, improve their relation with their teachers (for example, ask questions in class and consult their TAs). By making these adjustments, their student skills are enriched—to varying degrees, which often translates into an improvement in their grades in their second term or in their second year. By going down this path, these students can better appreciate their classes, lighten their work load, and see their grades rise and their stress levels go down.

The *Rough road* category contains 22 students, nine FG and 13 non-FG. As with the *pleasure route*, the families' educational capital seems to make little difference, seeing that the proportion of FGSs in this pathway is slightly higher than in the whole of the pathways of persistent students (45 vs. 38 %).

The most significant aspect of this pathway is in the type of education: the pre-university students are very different than those in the technical programs. The former come directly from high school, while the latter are older students returning to school. Some of the older students have children or otherwise have a more complicated work/family/school situation, while the pre-university students often still live with their parents and do not mention having difficulties with that situation. Among the technical students, academic difficulties are piled on top of having somewhat difficult living conditions; while with the pre-university students, academic difficulties fall more into a continuity deriving from their high school days, when they failed to adopt good study habits. In addition, the younger, pre-university students do generally manage a good level of social integration from the beginning of their college life and build a positive relationship with their institution. They appreciate the mutual help between classmates and the availability of their professors and TAs. This is not the case for the technical students, who find it much more difficult to become socially integrated at their college, either because they have very little time and/or because of their age. Befriending classmates then becomes an adaptive strategy to be more successful.

This pathway has its variants which are rooted in the depth of the obstacles to overcome. For example, in a first variant, the difficulty is continuous. Students describe their experience as punishing and difficult throughout all of their time in CEGEP. This experience is often a continuation of the difficulties these students had in high school. Some examples: Baptiste (social integration difficulties because of his small size); Melissa (too stressed by the rigidity of the school rules); and Isabelle (depression); three students who had personal problems in high school that partially explain their lack of preparation for college-level education. Once in college, they worked hard, but they judged that the grades they received were not proportionate to the efforts expended. They made strategic adjustments, but these were not necessarily effective. These students felt stressed and exhausted. Nevertheless, they did receive their diplomas, and, during the last interview, they considered their college experience as having been positive and worthwhile. Most of these students were proud to have succeeded and said they would have chosen the same program if they had been given another opportunity. Above all, these students benefited from a valuable asset: the support of their parents (lodging, financial and moral support). In addition, their family's academic mobilisation helped them to overcome obstacles despite their deficient student skills.

A second variant is more akin to a bad patch characterised by temporary difficulties. These students encounter difficulties at the beginning of their program. They fail or drop many classes in the first term. They decide to take a pause from their program so they can better reflect on their academic future. This pause can happen within their program's academic framework (enrolling in the orientation and transition program for Ismael, only taking core curriculum classes for Véronique) or outside of it (a sabbatical from studies for Vivianne). Their reflection complete, they return to the regular courses of their chosen program and exhibit new motivation.

These types of difficulties are faced by FG as well as non-FG students. They originate in the difficult transition between the academic level of high school, considered to be 'easy', and that of CEGEP or college, which is not. Vivianne is an FGS whose family is very proactive on the education front. She was enrolled at a small, private high school for girls, where she was highly supervised. She states that she was not lazy and that it was easy for her to succeed at her studies. In college, she still lives with her parents, a situation she judges advantageous for her studies. When she started her program, she had a certain lack of confidence in her ability to succeed. She says that she had a feeling of panic, because "everything is going faster" and she questioned whether she belonged in the program. The class load is heavy and the program is considered to be difficult. She drops and fails classes. In other words, her start in college was a "ordeal". The second term was also marked by a certain frailty—she admits that she had lost her self-confidence. She made use of the support services available at her college (tutoring, individual pedagogical assistance, and help with homework). In her second term, Vivianne only takes the core curriculum classes; and then takes a year off. She returns to her program and starts liking science again. She is more motivated and her grades improve. Formulating a more precise professional objective also helped to improve her motivation.

This variant of the *Rough road* is an example of what several studies have emphasized: the difficulties of the transition from high school to college, as well as the importance of the first term for the rest of a student's program. It seems that this bad patch arises from the significant difference between earlier schooling experience (private school or an enriched program with easy success) and the academic conditions in college. Among other factors, living situations (here globally favourable) and academic conditions, as well as the support of parents, have obviously helped students to overcome their difficulties and to find a second wind.

A third variant takes the form of a dead end. This one, shared by two students, is characterized by an unfailing insistence at carrying out a project that is manifestly unrealistic, that of going into medicine. Repeated failures and forced withdrawal from one or two institutions as a result of not respecting the minimal passing conditions did not succeed in convincing these students that their goal was impossible. They mounted a fierce battle and used diverse strategies to complete their science studies: enrolling in study-methods workshops, taking their classes on a part-time basis, taking evening classes, followed by a return to regular classes, and then, after being dismissed from one institution, changing to another and returning to evening classes. This fierce determination

points to an obvious distress caused by incapacity to modify an unrealistic plan when faced with an academic experience that is objectively more than gruelling[19].

In sum, one factor brings these students together: they experience academic difficulties right from the start of their college life. However, instead of being discouraged by these obstacles, they 'roll up their sleeves' and deal with their situation by means of strategic adjustments which, for the most part, have a positive effect on their studies and allow them to continue in their chosen programs. The observed differences stem from the variety of the obstacles encountered (lack of student skills and gaps in their academic preparation, and a difficult transition from high school to college), their intensity and their duration. In addition, these students have the support of their family (parents or partners) and they enjoy the type of lifestyle that allows them to make these adjustments and to extend the length of their schooling when a pause is deemed necessary.

3) *The race to excel*

The students on this track are characterised by their overriding desire to excel, a recurrent term in their interviews throughout their studies. They describe their experience in terms of performance, effort, stress (even when their grades are excellent) and even of competition. Classes and studying entirely absorb their time and their attention—they take part in few or no activities and have a minimal level of social engagement at their CEGEP. Obtaining the desired diploma in the prescribed time and with the best grades possible are the sole drivers for their determination and their involvement in their program.

Family environment contributes to this complete concentration on school work. Not only do these parents support them financially, they also encourage them to continue and offer a significant amount of moral support. Their natural abilities, developed throughout their secondary studies, have encouraged regular and intense study habits, so that the adjustment to their new educational regime is quick and without the usual problems of transition, despite the pressure of a heavy course load.

This group contains eight students, of whom seven are young women and a total of three are FG. We can observe that all three of the FGSs are enrolled in technical programs and that the sole male is in this category. It also should be noted that the young women are intentionally creating this pressure so they will rank high in the job market (for those in the technical programs) or so that they will have top grades (côte R) to gain acceptance to the university program of their choice (pre-university students). In any case, for all of these students, grades become an end unto themselves. These students wish to standout from their fellow students and view their studies as part of a competition. This pressure is interior—no outside agent is asking them for such performance.

This pathway is clearly distinguished from that of the pleasure route by the importance given to studies—a stroll in one case and a race in the other.

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[19] We have classified these two students as being persistent, because they continue to follow their academic objective against all obstacles and in spite of poor performance.

4) *The autonomy track*

The fundamental characteristic of this pathway is a desire to gain distance and independence from one's original milieu. Even if the intensity of this desire varies, it remains strong enough to constitute a central motivational element in a student's college career. In our study, two types of cases are typical of this track: first, we have three young women who are seeking very specifically to distance themselves from their families. A second case is Eliane, a student who is distancing herself from her family, but also and above all, from her original region's socio-cultural background, to which her family belongs.

The first three students are taking steps to become more independent of their families. They have chosen technical/laboratory programs after having already followed other programs at the college or university level. This re-orientation creates some distance from their family, their family's expectations, and especially from their mothers, thus helping them achieve social and cultural autonomy. They really feel the need to free themselves from their parent's "guardianship" and to actively respond to (in this case, by rejecting) their parents' influence; so they have decided on an academic program that their mothers do not agree with. Between an affirmation and a challenge, these students want to live out their choice and show a sceptical family circle that they are indeed capable. Thus, they have each chosen a program in a CEGEP that is far from their families.

For the more specific case of Eliane, two factors explain her pathway: her social-academic mobility and her distancing from her original milieu (community and/or family). Eliane experiences her social-academic mobility when she decides to pursue her studies to the college level, refusing to work towards a DEP[20], like almost all of the other students from her background. Motivated by her excellent grades in high school, she decides to enrol in a pre-university program, and to then go on to university. To do so, she chooses, on a whim, to enrol in a CEGEP that is far from her community, thereby distancing herself geographically and culturally. She prefers the lifestyle of her new milieu. She can critique the values of her original milieu without breaking contact with her family, which she continues to visit.

In addition to the above reasons, the choice of a program is very much made according to one's affinity for its contents. A liking for laboratory work is something developed in the course of previous academic experiences, at CEGEP or at university. These young women were previously pursuing a science education. Previous academic experience is an advantage, because several courses in the core curriculum and/or in the sciences are already completed, which lightens the course load. Fewer classes per term can mean a part-time job and/or extra-curricular activities, along with more time and energy for class work. Sports and music enthusiasts, they hold on to this leisure time. They frequently go out as a part of social network, which is very important to them.

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[20]A DEP is a vocational high school degree, not usually leading to further study.

This pathway is noteworthy because its main motivation comes from outside the school environment. A student's past is the dominant timeframe, as it provides the justifications and the motivation they need to work hard despite the socio-economic difficulties that come with their becoming autonomous in a new socio-academic situation.

5) *Taking one's time*

Three elements stand out in this pathway: a growth in social life and extra-curricular options and their influence, a motivational level that varies or is relatively low, and a minimalist work ethic. These students treat their CEGEP program as a stage they must go through to reach their university or professional goals. At the same time, their pathway is marked by their hedonistic behaviour. One could say that their CEGEP period is the best time in their lives and that they are intent on getting the most out of it.

In this group of 16 students there are four FGSs and one young woman. The parents of most of these students have a university degree. All 16 went to either private high schools or to selective public schools. These students were able to achieve good grades without investing much effort; they have obviously not acquired good study habits.

The overriding dominance of their social life shows in how these students go to CEGEP for the social relationships they can build there -- these relationships become a source of academic motivation. In general, their generous background in educational capital has given these students the option to weigh their ongoing education as a function of their long term objectives and to not worry too much about their future, especially about studying at their anticipated university. We can add that, for the students in this category enrolled in technical programs, their various academic failures are not a source of stress or worry, but rather are perceived as the result of a lack of effort which could be corrected with some good will. The longer time needed to complete their studies is thus explained by the importance of their extra-curricular activities and their difficulties in balancing studies, social life and paid work. This balancing act is admittedly difficult, but one that is performed willingly since education is not a priority. Despite failures, having to drop classes and short-lived wavering in their determination, at no time do these students doubt that their choice of a program and CEGEP was truly based on their interest in the material or on the good conditions associated with their career prospects.

At the same time, a change of gear can happen as a result of some chance event leading to a "conversion to studies", driving these students to focus on their studies so as to complete their degree. A romantic relationship is most often mentioned as a motivator for this change in attitude. In fact, a powerful influence can come from getting to know someone who considers his or her own studies to be important and worth investing a significant amount of work in. From this point, their studies take priority over other activities: the students concentrate on finishing their program. They say they have become serious, and often attribute this change to their age. These students can become very strategic in their efforts to achieve their goals.

As mentioned above, these students generally come from families with a higher level of education. They have had the financial and moral support necessary for their initial 'free ride' attitude towards their studies. Having a job and structured activities is not

really appreciated by these students. Free time is mostly spent socializing and if there are any jobs, they tend to be intermittent and oft-changing. However, among those enrolled in technical programs, paid work can become so important that it results in skipping classes.

6) Guided by the future

The main characteristic of this pathway is that projecting into the future acts as the prime driver for the choice of program and for a student's commitment to his or her studies. The vision of these students is very clear: career-wise, they know where they're going and how they're going to get there. Their choice of program is absolutely strategic, in the sense that it serves their objective. They are very confident in their career choice and adjust their academic pathway to be sure to get there.

This pathway counted nine students, three FG and six non-FG. Technical students are, not surprisingly, strongly represented (eight). Also noteworthy, these eight are also young men. The only woman was also the only pre-university student, enrolled in the science program. Except for this last 'exception', all of these students came to their CEGEP directly after finishing high school and lived with their parents. Violaine was returning to her studies after having worked for a short time. She no longer lives with her parents, but is married and had a baby at the beginning of her CEGEP program.

Talking with these students reveals recurring themes: they are all studying so that they can obtain the skills and knowledge they need to realize their career objectives. They hint that they are solely responsible for their choice and are very self-assured as to the outcome of their education. They are committed to their studies, but speak very little of their classroom experience. Even though their time in CEGEP is seen as an obligation, they say that they are satisfied with their progress and do not feel constrained. On the contrary, they offer the impression that their studies have allowed them to aspire to a rewarding future and to realise their goals. The main driver, which gives this pathway its coherence, is this projection into what is ahead. In this sense, the present is at the service of the future.

This pathway is the opposite of that of Céleste, *Same route, different destination* (below), because of the importance of this projection into the future. Here, the future drives the academic experience all throughout the program, while for Céleste, anticipation cannot play this role, as no professional goals stand out. The search for a project, even the incapacity to formulate one, is a trait specific to this last pathway.

7) One small step at a time

This route is only found among students in technical programs and could be considered as the opposite of the previous one focused on the future, because here the future offers no guidance. On the contrary, it is a source of uncertainty that leads to a desire to prolong one's time in college. This is a group of two young men, over 20, who like the college environment and have some apprehension about being on job market. They associate their fear of leaving college with the idea that they are insufficiently prepared for the job market. This hesitation to take steps towards the job market also seems to be linked to an unwillingness to think of themselves as autonomous and

responsible. They all seem to be uncomfortable about living with their parents, as they see it as an unjustified dependence.

In addition to being differentiated by their social origin (1 FGS and 1 non- FGS), these students also differ in their backgrounds, their educational experience and its articulation with extracurricular life. In fact, their only point in common is that they see college as a good place to be, comfortable, even protective, and as such a reassuring environment that it becomes difficult for them to think about leaving, while at the same time, a place where they can satisfy their curiosity and their wish to increase their qualifications.

8) Same route, different destination

Although there are no FGSs in this pathway, or on the following one, it is worthwhile to present them, if only to examine dimensions that can illuminate the situation of FGSs in colleges. As we stated in the methodology section, our sample is not fully representative of students in CEGEPs. It is therefore possible that the absence of FGSs in this pathway might be the result of chance rather than of their absence in the programs surveyed.

These students, a total of eight, all in a pre-university/science program, say that they liked science when they were in high school. Given their good grades and their wish to keep their career options wide open, they decided to continue in science in college. This group is composed of five young women and three young men.

Except for one student, all had studied in a selective high school, either a private school or in an international program. For all eight of these students, their living situation and life outside of classes does not have a direct effect on their pathway. Most have a job, participate in organised activities, but make sure that the time invested in these outside activities does not interfere with their academic obligations—education remains their top priority.

After transitioning into college, which went rather well, they found that they were losing their interest in science. Some were discouraged because of academic difficulties, others simply wanted to get away from the sciences. They began to rethink their academic goals or at least better define them. They have to make a break between their past and their previous expectations and their new future. Even if their previous education has led them to the sciences, it is clear that their growing dissatisfaction means that they need to change to another field. The present, rather than the past or future, becomes the dominant timeframe, as the ongoing studies come to define their academic pathway. These students change their goals to focus on non-scientific university options, while continuing in their pre-university science program so that they do not lose any time, an essentially strategic decision.

Corey and Constance had already made a sort of switch when they enrolled for a double-DEC so that they could take humanities classes while maintaining their achievements in the science program. Regine's case stands out: from her first interviews she reiterates her plan to study medicine, but has to abandon this dream because of her poor grades. She is disappointed and frustrated, but she finally finds another educational pathway thanks to her father's influence and her personal readings.

The strongest expression of indecision was displayed by Céleste, who all through her time at CEGEP questions her choice and exhibits chronic indecision as to her professional options. She likens her situation to that of her friends who had changed programs, and blamed it on the real probability that she could not meet the required pre-conditions of any career choice she might eventually make. Furthermore, her choice of university program was made at the last minute and without much reflection or justification. It remains, for now, uncertain.

Neither Céleste's family situation nor her secondary school performance could help explain this incapacity to make a decision. One could say, however, that her good performance in high school might have created the conditions that contributed to her situation. By developing good study habits and achieving good grades, she was able to opt for the DEC in natural sciences, to "survive academically" in that program and even get her degree despite her wavering motivation. However, this experience did not help her discover a field that she was truly interested in.

Céleste's case is an example of a common college situation, and one that occurs most often in the science programs: indecision about professional goals expressed by questioning one's participation in a program, by a lack of academic or professional objectives and a difficulty in formulating a long-term goal. Their projection into the future is deficient.

The pathways of these students who remained in their original programs while changing their goals shows both their dissatisfaction with the sciences and their ability to follow through with what has become a very utilitarian option. This pathway includes a high number of students who complete their science studies but will never have a career in the field of science..

9) *The double path*

This pathway's distinguishing feature is the preponderant role of extra-curricular activities (time devoted to leisure and sports, to paid work and or to political activism), a situation that is rarely conducive to being a successful student. These students have made their extra-curricular activities their priority, with the resulting pressure on time for their studies. Furthermore, their lives, like anyone's, are subject to significant changes – personal (sickness, injuries, depression, etc.) and/or parental (a parent's loss of employment, illness in the family), that only add to the already considerable amount of time they invest in their activities. This situation leads to lower academic performance and prolongs their time in college, often for much longer than the educational system has allowed for.

Six students, five young women and one young man, all of them non-FG, are in this category. We found two variations within this group: the first is composed of four students who found it very difficult to balance their studies with their extra-curricular and other activities; and the second is the two students who had decided that their political activism and their extra-curricular efforts were their principal focus.

These students who could not maintain a viable balance between their studies and their activities do share other common traits. First of all, they had all achieved excellent

grades in high school. They also seemed to be similar in their self-evaluations of their work efforts, in their systematic use of work methods, and by the fact that they had attended advanced high school programs. Even more, their family's influence, either that of their parents or of the extended family, had carried some weight in their choice of program. Their science orientation had its source at home, as it was their parents' preference. In addition, these students were financially supported by their parents. Finally, their transition from high school to college was difficult and required a significant adjustment in their study habits. None of these students completed their program in the usual two-year period. Overall, these four did say that they were happy with their college experience, because they had acquired good work habits and positive attitudes towards their studies. They also very much appreciated the ambiance of their college (social life, safety), the quality of the resources available to them (library, competent professors) and the social integration made possible by their studies.

The other variant of this *double path*, that of focussing on political activism, is also characterized by an overwhelming amount of energy invested in school-based extracurricular activities, and, to a smaller degree, activities outside of the campus (cultural endeavours, volunteering). This type of commitment, which indicates a strong social integration, sometimes leads to an extension of the time required to complete a program, even to losing motivation and to a certain amount of weariness. However, these students perceive their education not as an end in itself, but rather as a means to develop some of their 'activist' skills.

To sum up, their learning achievements and their background seems to have pre-disposed these students to their *double path* from the beginning of their college days. At the same time, their academic progress is difficult because of the priority they give to their activities, both school-based and otherwise, creating a pressure on their educational calendar. Their college experience is, however, very important since it is the base for the connections they make outside of CEGEP, and because their science training can become a practical advantage. Their high levels of participation in extra-curricular activities as well as personal events lead to failures that prolong their time in school and to a re-evaluation of their career objectives.

Do the particular characteristics of the two variants of this *double path* explain the absence of FGSs? We can only respond to this question by forming a hypothesis. But first, remember that out of the 14 students that are in these last two pathways, 12 are pre-university science students[21]. We could think that the FGSs who choose pre-university programs have specific educational and professional objectives and that they do not simply want to keep their options for later decision-making. Some American studies also suggest that FGSs are less integrated into the campus social life--they do not live on or very close to campus and they show less participation in school-based activities. If this is also true of Quebec CEGEPs, then it is possible that in the case of FGSs, these extra-curricular or school-based activities do not impinge on the time dedicated to studying.

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[21] Only one student is in a technical program, Catherine, who has taken the path of political activism and whose parents each have a university background.

4.3 Leaving without a diploma – six pathways

More than a third of our respondents did not have a degree at the end of our study: they dropped out of their program before getting their diploma, but they did not necessarily end their education. We now make a distinction between leaving a program and abandoning plans for completing a degree. We can see that several pathways lead students to drop out of their programs. The main factors are low or failing grades, a lack of intellectual and social integration (often in combination with the first factor) in their new institution and difficulties in balancing paid work and the pursuit of their studies.

1) The collision

This first pathway is the archetypical route to dropping out: leaving a program after a number of failures. These students leave on their own initiative or are dismissed from their program because of college rules about repeated failures

Several of these students brought about a quick end to their program, as they saw that they were not making progress and continuing did not hold much promise. Their academic failures and disillusionment made short change of any commitment to their education or career plans. These students 'hit a wall'. They leave in the first year, and mostly in the first term. Of those who left a technical program, none had continued their education nor did they plan to in the near future. Among the pre-university science students, however, they had all changed their focus and continued, either in the humanities (pre-university) or in a technical program.

A principal cause of dropping out is academic difficulties, encountered right at the start of a program. This is often combined with a negative opinion of the college itself. Students complain that that the course load is too heavy, that they have a hard time understanding the material, that some teachers have poor pedagogical techniques, that the core curriculum courses are useless, etc. Between their high school studies and their college programs, the step seems so high that these students feel a total lack of a "base" they can rely on.

Another reason for dropping out is the disillusionment that students face in their academic program, a result of the opposition between the impressions they have of the field and the perspectives presented by the program and its instructors. For example, several students who are returning to school see computer technology as a professional career that will be a source of social mobility. But, from the start of their program, the content does not correspond to their expectations.

These students also indicate that social integration at their CEGEP is difficult. An entourage of "little geniuses" greatly erodes their own desire to be better integrated and is cited as another reason to want to get away. These returning students perceive that, between themselves and this entourage, there is a difference due as much to age as to gender. Additionally, they have to deal with balancing paid work and their education.

Seven non-FG and seven FG students were in this pathway, which also included students whose parents had the highest non-science training (71 %) and employment levels (71%) in the sample. In addition, these students indicated a lack of educational

capital, expressed by a limited ability with computer technology and a difficulty to make use of the student skills they had acquired earlier. These lacunae caused their failures which led to their dropping out. These students also had had guidance problems; disenchantment with a program thus explaining many departures.

2) *The false start*

The *false start* differs from the previous pathway in that the three students here did not have any academic difficulties in high school, and they enjoyed a very good level of intellectual and social integration at their college. They also benefitted from the significant financial and moral support of their parents, and their activities outside of school did not have a negative impact on their academic experience (for example, they did not have a job and played sports without neglecting their studies). However, they did not like the sciences; they were in the wrong place. Their choice of program was perhaps motivated by the prestige of a "double DEC", a choice made quickly, without knowing what the program entailed or based on inaccurate information supplied by a high school guidance counsellor. For example, Istèbe had no academic difficulties—he was successful in his classes with average grades of 80 %. He realized that he had made his decision without thinking it through. He was well-integrated at his college --socially, institutionally and intellectually--but he had suffered from poor guidance in his choice of a CEGEP program. He discovered that he disliked the sciences. This situation reminded him that in high school, he had wanted to become a police officer.

 The initial college experience of these students allowed them to discover that they had made a 'mistake', and to then switch to a program that they knew more about and that was a better match.

3) *Going off the road*

Just as with *the collision* route, *going off the road* is defined by students dropping out. This exit is due to the difficulty of balancing the requirements for one's educations and outside pressures, especially in terms of living situation. These students were mostly already adults, and they could not maintain a balance between their student life and their family responsibilities. Among the students in this category who had started CEGEP immediately after high school, thus younger and generally still living either with their parents or with roommates, it was personal incidents that had disrupted their equilibrium to the detriment of their studies.

This pathway counted 11 non-FG and 5 FG students. Of these only three were pre-university science students. In fact, their exits are due to personal incidents that put a different spin on their educational goals or that disrupted the balance between their family and their education. For example, two students who are mothers left their program because they had to be with their child who needed medical treatments. A scheduling conflict between the treatment appointments and a class meant that they had to withdraw from their program. These 'exits' could also be impulsive decisions prompted by disillusionment with a program. Incidents like these reduce the available intellectual capacity for studies, bring about changes in a student's living situation and put a great

strain on the balance between school, work and family. In other words, the educational capital of a family is not a determining factor for these exits, which are more tied to particular and difficult personal situations.

4) A fork in the road

This pathway differs from the preceding ones in two aspects. The academic experience here is not seen as a difficult challenge, and a switch is stimulated by participation in outside activities or by the discovery of a new field of interest and new career objectives. From that moment, these students start to think about an alternative academic and career path and become conscious of their "true path". Even though some difficulties may have arisen in their original program, these were not the reason behind abandoning it—these students do not feel disappointed or discouraged. On the contrary, several of them had been doing very well, and even had a certain amount of interest. However, their new career goal sends them down a different path. This is the second distinctive aspect of this pathway: these students now know their new destination, and not because of a false start, but thanks to the discovery of new career options.

This pathway was composed of nine students: two FG and seven non-FG. Three were enrolled in science and six in technology. There were no differences among except for their program or FGS status. All said that they became aware of these new possibilities through their extra-curricular or outside activities, including paid employment. In *A fork in the road*, the idea of leaving a program is not perceived as a failure – instead it is viewed as quite the opposite.

5) *The planned exit*

This type of pathway for non-persistent students was taken by four men who had returned to their studies, three FGSs and two in technical programs who, from the beginning of their program, had predicted that they would drop out. The science students were younger adults, while the two in technical programs were older, were fathers and had been working for some time in the same job. So it was that Bertrand enrolled as a sort of insurance policy in the face of uncertainties in the workplace, Benoit aimed for a as change of career, while Victor and Eric were studying to achieve a career objective.

To be sure that he would be able to find another job in case his employer's problems continued and forced him to leave his position, Bertrand decided to go back to school in a program that could open the doors to several businesses whose economic situation he perceived as more stable. He left his program after the first interview, because his employer's economic situation improved and his "insurance policy" no longer seemed necessary.

Benoit already had a vocational certificate in electro-mechanics and a DEC in humanities, and he had started his university studies in political science before dropping out to work full time. He had decided that his real desire was to get a bachelor's degree in computer science, but he needed two math courses as pre-requisites to be accepted in that program, which is why he had returned to CEGEP.

Victor and Eric were also trying to complete prerequisites which they needed in order to study at military college. In these two cases, students had to finish one year of college studies and get the grades that would increase their chances of being accepted at their chosen institution.

6) *The change of direction*

This pathway is another one characterised by an exit from a program, often following a very difficult experience. In contrast to the previous pathway, there is no complete abandoning of a program, but a career re-orientation. Academic or professional disenchantment is the prime driver for this change of direction. The degree of complexity of the studies, the study time required and the program contents are all factors leading to an educational experience marked by trials and discouragement, thus explaining the decision to leave. These students work diligently without getting the commensurate academic results. They feel discouraged, but they do not want to drop out. Therefore, they actively look for another program that better matches their expectations and/or abilities.

This pathway was taken by 25 students: 11 FG and 14 non-FG. Twenty of these were in technical programs and five in science. There was roughly the same number of young women and men (12 and 13). For the students in technical programs, the transition into college is easy enough at first, but further contact with the material of their disciplines leads them to question their initial career goals. The science students, on the other hand, encounter academic difficulties from the word go; their main problem is a difficult adaptation to the college regime. The results for both groups, however, are the same: their grades and their motivation falter, failures and difficulties accumulate -- diminishing the confidence they have in their own skills. However, this situation does not lead to dropping out; instead, they begin to look for an alternative. This *change of direction* pathway is roughly similar to that of *the collision*, but with a much lower degree of intensity, so that in this case academic difficulties "push" students out of their programs, but not out of college.

4.4 A synthesis of these pathways

Our analysis has identified the two most important axes for determining the differentiation of these pathways and their relative positioning. The first is the articulation between school and the other aspects of a student's life; the second is the weight of the different time frames. It is possible to combine these two axes and then locate the various pathways on the graph thus produced (figures 4.1 and 4.2).

Among the persistence pathways, the *Pleasure route* is at the center of the graph (figure 4.1), because the different dimensions of each aspect (background and skills, experience in class and projects) interact and mutually reinforce each other. On one side, skills from high school contribute to students' intellectual and social integration in their college programs; and on the other, they find that their projects are confirmed by the knowledge and the professional information they acquire in their chosen program. Moreover, these students are completely committed to their studies without having relinquished their participation in other activities, whether school-based or otherwise (family, paid work). Their living

situation also contributes to their focus on their education. In sum, the various dimensions combine in a virtuous circle that promotes their academic success and, above all, their general pleasure in studying.

Another pathway lies on the same time axis: that of *Same route, different destination*. Here, the ongoing academic experience determines the overall structure of the path. An initial disappointment regarding the curriculum is the reason for a change in career orientation, or for an ongoing indecision, even if these students have decided, purely for strategic reasons, to continue in their program and to get their degree. The main issues of this pathway are career objectives and the lack of influence by any factors outside of the classroom.

The *Rough road* shares some characteristics with the *Race to excel*, as they both focus on academic performance and emphasize that the college experience is stressful and full of obstacles to overcome. However, the former lacks the advantageous learning achievements and living conditions of the latter. Students in the *Rough road* pathway have living conditions that act as a hindrance to their success, a handicap in addition to their lacking in some of the preparations for college (study habits and knowledge) that others acquired in high school, all contributing to making their college experience difficult.

Meanwhile, the *guided by the future* pathway lies at the extreme right of the graph, since projects and the future are the main drivers. This is also where we find *One little step at a time*, but here, instead of a being a driving force, the future acts as a force that pushes back to delay a student's entry into the job market and delay the exit from college as long as possible.

The pathways *Race to excel* and the *double path* are opposite each other on the axis of commitment; the first motivated most by a commitment to their studies and the second by a commitment either to extra-curricular (but not academic/professional) activities or other activities related to their living situation or interests. Students who "took their time" can be found not far from those in the double path, but in the lower-left quadrant, because their college experience reproduced their previous (high school or otherwise) experience in terms of the importance they gave to extra-curricular activities (especially those related to socializing), up to their conversion which led them to focus on their studies. Finally, the main motivations for the *autonomous track* students are also not based on their studies, but come out of their wish to establish some distance from their family and background, and influence the type and the physical location of their college programs.

Figure 4.1 – **The pathways of persistence**
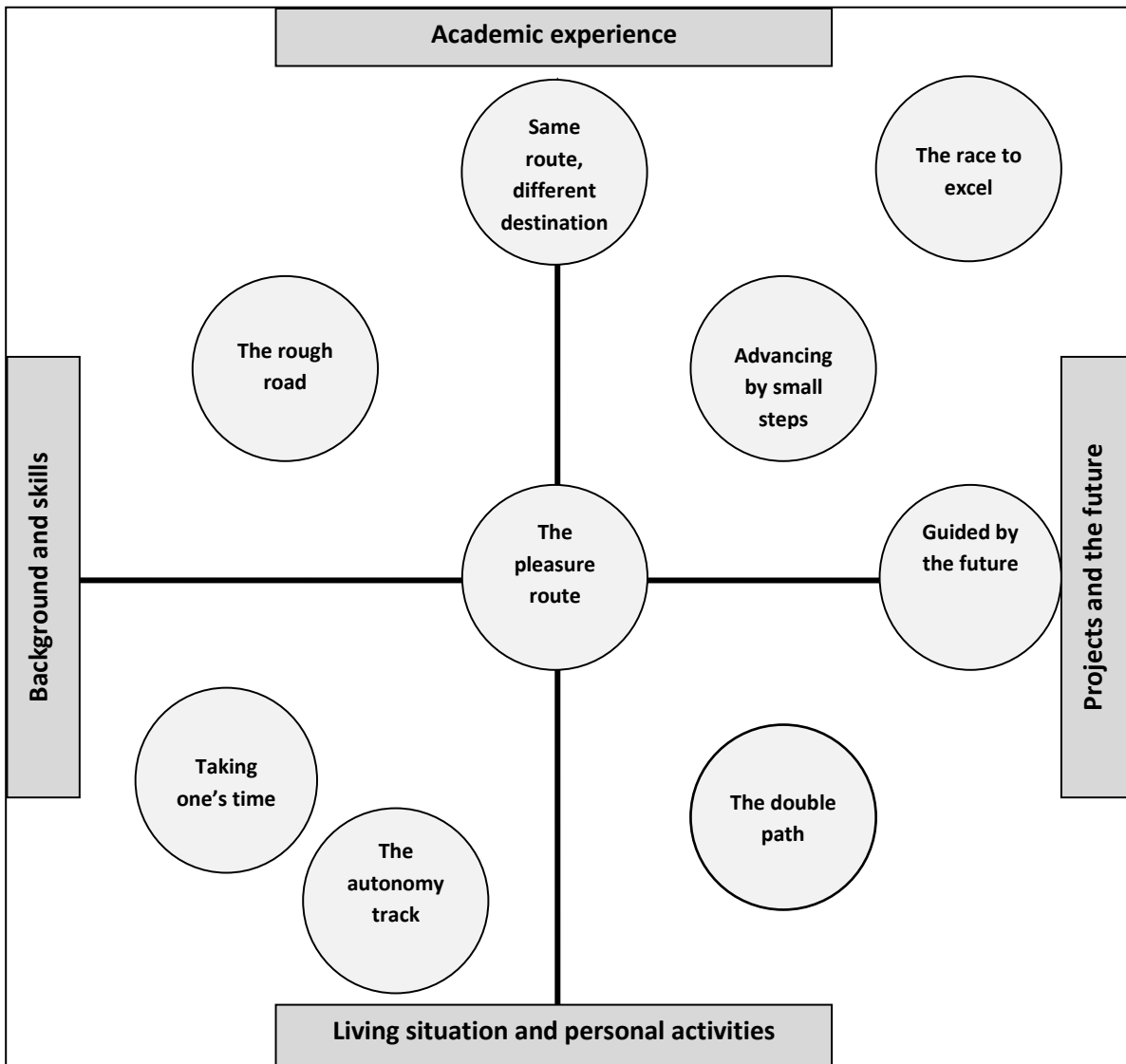
As for the students who leave without a degree (figure 4.2), the most frequent exit path is the *change of direction*. For these students, their college experience has been full of obstacles. It is disenchantment, both academic and professional, which leads them to drop out of their programs. At the same time, this break is not seen as definitive, because they can very easily return to study in a program that better meets their needs and interests. In this sense, their experience is not completely negative, as it can lead to new perspectives.

Three other pathways to leaving share the condition of not having been caused by a serious, ongoing difficulty. The *false start* pathway does show up a problem with academic choices, as it occurs right from the beginning of the first term. One could even say that it is the college admissions process that is at the root of the problem, since it causes these students to leave their programs very quickly. The *planned exit* can be considered as an academic framework explained by a student's living situation. However, in both of these cases, the link to the future is what determines the exit. Changing employment conditions can make career change or professional development very important or much less so. Not wanting to lose any time in terms of one's education and future plans led one student to begin a computer technology program even though he knew he would not complete it. In the case of the *Fork in the road*, the discovery of new fields of interest thanks to outside experiences/activities led to an exit towards another program.

Figure 4.2 – The pathways to leaving without a degree
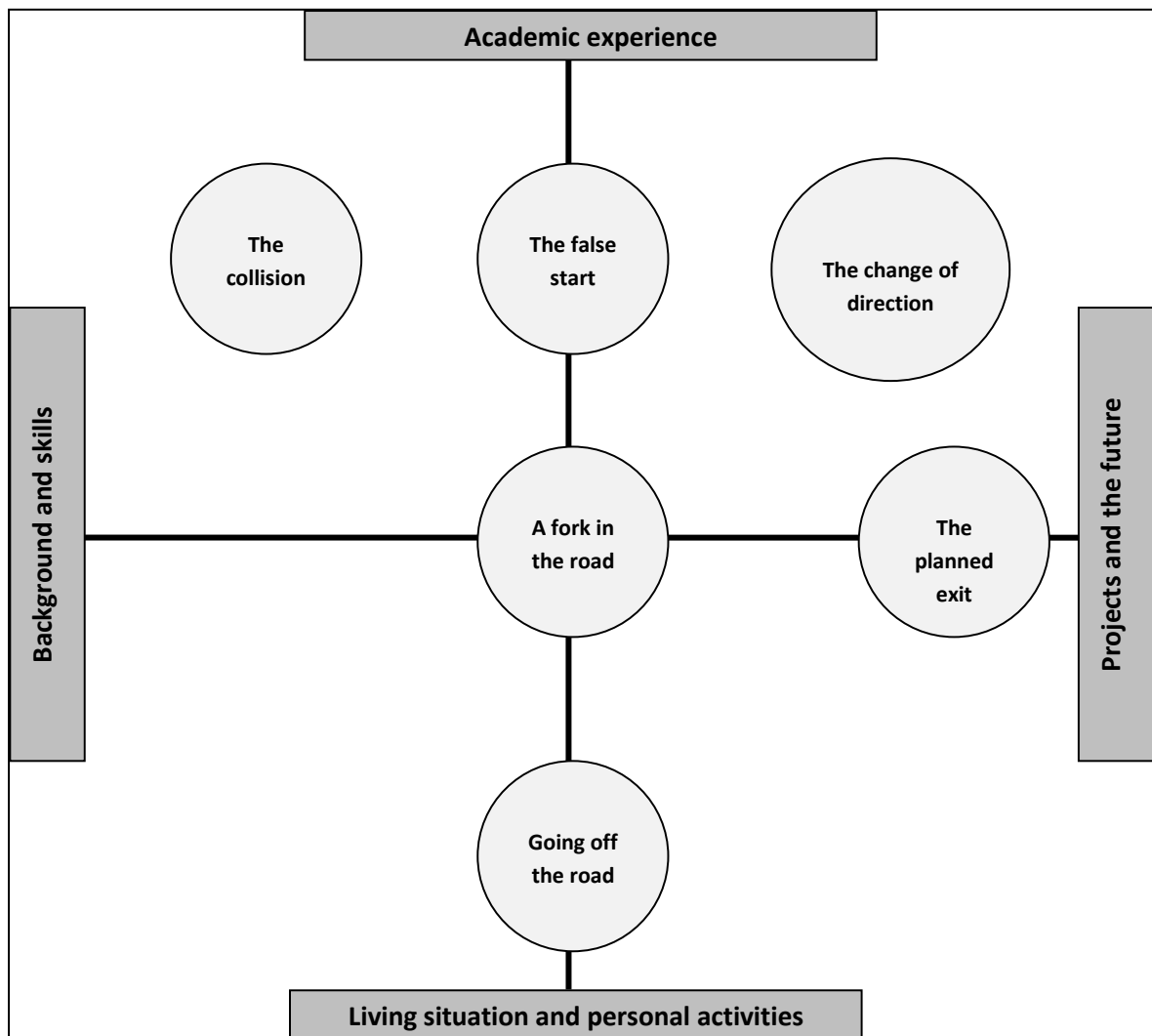
5. A few interpretive suggestions

In this section, we return to some general themes that appear from analyzing the situation of FGSs in Canadian and Quebec colleges by taking on three aspects central to the use of the concept of FGS: the relative weight of FGSs in the student population, their social composition and their academic experience.

5.1 FGSs in Canadian colleges

In Canada, colleges have been an important factor in the democratization of access to higher education, especially in comparison to universities--28 % of young adults from the same FGS cohort will go to college, while only 15 % will go to university. In other words, for each FGS who enrols in university, two FGSs will enrol in a college program. At the same time, this is not to say that access is free of any social determinism. Thus, almost three out of ten young students are from families where the parents have never attended a post-secondary institution, while close to half (46 %) of all students come from families where at least one parent has pursued their PSE and a quarter are from families with some university experience.

In fact, this global portrait hides some very important differences among the provinces. Even if colleges go by the same name, their educational mission changes from one province to another. A first difference is the distinction between technical programs and pre-university programs. Since their creation, the public colleges in Quebec – or CEGEPs – have been very different from the regional or community colleges in the other provinces because of their mandatory pre-university programs. Thus, 97 % of the Quebec youth studied (YITS, cohort A) who continued their PSE enrolled in a college. A few years ago, British Columbia also added access to university to the mission of its colleges, but with a very different implementation. This could explain why it is Quebec and British Columbia that show the highest levels of students from families with university-educated parents enrolled in colleges.

In Quebec, even though FGSs can take the pre-university route in college, they are proportionally more numerous in the technical programs, while the situation is the reverse for students whose parents have university education. A technical degree appears to be the way to professional (even social) mobility for a sizeable proportion of FGSs. As for students coming from families with a higher educational capital, one could suppose that their choice of a technical program is part of a new educational path: they prefer to study in an area they have an affinity for and then continue their education on a university level rather than taking the usual pre-university track directly to university. MELS data shows that the proportion of students going directly from a technical CEGEP program to study full-time at a university increased though the years, up till 2005-06 (table 5.1). Afterwards, this proportion went down.

Table 5.1 – **Proportion (%) of people aged 24 or less who graduated from college and continued studies full-time at a university without interruption, according to their type of college program**

	1983-1984	1993-1994	2002-2003	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008
Pre-university	**86,0**	**79,9**	**77,7**	**78,1**	**77,4**	**77,9**	**78,5**	**78,9**
Men	87,7	79,0	79,3	78,4	77,8	78,2	78,7	78,1
Women	84,3	80,5	76,7	77,9	77,1	77,8	78,4	79,5
Technical	**17,4**	**18,6**	**20,8**	**22,2**	**24,9**	**25,0**	**21,1**	**21,8**
Men	21,9	21,0	25,9	28,8	28,1	28,5	23,3	23,8
Women	14,4	17,1	17,3	17,8	22,8	22,9	19,7	20,5

Source: MELS, *Indicateurs de l'éducation*, 2009, pp. 66-67.

NOTE: The statistics produced between 1983-1984 and 1999-2000 are taken from the "La relance au collégial" surveys. These statistics represent the proportion of people who completed their CEGEP degrees and who, on March 31st of the reference year, were studying full-time or part-time without paid employment. The statistics from 2001 onwards are from the university student body data management system (Gestion des données sur l'effectif universitaire - GDEU). The statistics from 2000-2001 to 2005-2006 represent the proportion of people granted college degrees who, by the following fall, were continuing their education full-time at a Quebec university. In calculating the index stemming out of the surveys , the inclusion of some college graduate that are part-time students and the reference date (March 31st) have a combined effect of producing an indicator.

Another difference between colleges in Canada is the range of professional training they offer. CEGEPs in Quebec offer technology programs (vocational training is offered at the high school level), while in other provinces the colleges provide professional training at varying levels. This could explain, at least in part, why there are significantly more FGSs who enrol in colleges in Prince Edward Island, New Brunswick and Manitoba. At the same time, a finer analysis of the programs and training offered by colleges on a provincial basis would be required to strengthen this hypothesis. It would also be necessary to account for the economic contexts of each province. For example, a large number of jobs available, even if they were not very good ones, could be an incentive for young people to leave college to go to work.

In sum, we re-state that access to college is based on social factors: on one side, as a function of the parent's educational capital, and on the other, based on the provincial differences in terms of the type of education offered, and as a consequence, as a function of how the PSE establishments are organized.

5.2 The social composition of FGSs

The work of American research on FGSs have also sought to determine if other factors could influence their participation in 2-year colleges, by examining their social composition compared to that of non-FGSs. First-generation students include,

proportionally, more young women and older students with dependents. There were also proportionally more individuals from ethno-cultural minorities (among others, Hispanics and Blacks), groups in which the average grade levels in high school were lower and groups that had some of the most difficulties with English.

The situation in Canada is also characterized by inequalities in access: the composition of the student population therefore reflects these inequalities. This composition is the result of two tendencies that have left their mark on the structure of access to college education. On one side, we can say there is the inertial force of social reproduction, which means less access to pre-university programs for the children of white and blue collar workers or simply the influence of a family's cultural capital. On the other hand, a movement in academic mobilisation is underway, which can be observed by the growing presence of women in colleges, now numbering more than men.

Another demonstration of the effect of academic mobilisation is the parental support that contributes to the persistence of FGSs. In other words, the student population stands out in the financial and effective support of their parents, and by the cultural capital of their family of origin. The substantial support of their educational goals by family members is one factor that distinguishes the persistent FGSs from those who drop out (Dufresne, 2011). This support can take different forms: an appropriate place to study in the home, material help (food shopping, babysitting if the student is a parent), approving a student's choice of program because it opens up career opportunities and matches their interests, etc. At the same time, many FGSs emphasize the limits of their parents' actions because of a cultural gap that can be very wide between generations. This situation has already been described by Terrail (1990), where he emphasizes that achieving an improbable level of academic advancement in a working class environment is linked to the mobilisation of the family as well as the commitment of the student.

5.3 The academic experience of FGSs

This third dimension was investigated by evaluating the various academic pathways, thereby also allowing us to put this experience within timeframes. A first conclusion stands out: FGSs do not necessarily take different pathways than non-FGSs. Even if they are proportionally more likely to enrol in a technology program, to leave the program they first started in and to have difficulties or obstacles (*the Rough road*, *the Autonomy track*, *the Race to excel*, and the most difficult routes to leaving), their overall differences compared to their non-FGS peers were not that significant. It must be said that the sample composition, essentially students in the "difficult" science and technology programs that have a strong entry selection effect, could perhaps explain the similarities of the two student groups. As to those differences that remained they tended to fade with time, among the persistent students, since the FGSs proved to be very resilient and because the academic experience is often more beneficial to them than it is to their non-FGS peers. These results follow the trends observed in several studies on FGSs ((Choy, 2001; Pascarella et al., 2003; Nomi, 2005).

Our analysis has allowed us to delineate several pathways that are distinct from one another, even if some are followed more often than others. The total number of pathways is perhaps a bit high, especially if the implicit representation one has of the student population rests on the two archetypal student figures in postsecondary education, the heir and the scholarship holder. Members of the first group have access to higher education because of their social origins, which grant them access to the economic and cultural resources that are the keys to the world of higher education. In the framework of an educational meritocracy, the high grades of scholarship students grant them access to the economic resources to continue their education. However, through the years, studies on students have cleared the way to see that there are a number of roles or types, as emphasized in the work of Dubet (1994), who distinguished between eight types of university student experiences, in that of d'Astin (1993), who produced a seven-type topology of college students, or of de Sales (1996), who created a typology of university students by turning in part to automatic classification tools.

Comparing these pathways, it is possible to determine five motives for action through which similarities or differences between pathways can be established: the pleasure of learning, the ordeals, becoming an adult, a professional perspective and the pressures of life outside of school.

The first driver is the **pleasure of learning** which harmoniously articulates the factors of the various timeframes. Learning achievements, meaning intellectual aptitudes, skills and abilities specific to academic success, are a solid foundation that can continue to help students throughout their program. Having career objectives gives a sense of purpose, and helps rekindle motivation and commitment throughout a program, which is then experienced in a socially positive way. At the same time, we note a complementarity between school-based and other experiences. Good living conditions are conducive to academic success, and participation in activities, such as part-time work, school-based activities or other pursuits, do not interfere with solid academic results. This element is mostly associated with the pathway called *the pleasure route*, which is noteworthy for the large number of students it contains.

The next element for determining an academic pathway is the opposite of the first – **the ordeal**. A student's progress is marked by varies difficulties, some exclusively academic, others not. Disappointing grades, failing classes and a difficult social integration are common pitfalls all along a student's path. The experience can be overwhelmingly difficult because of the uncertainty associated with the process of professional certification. In fact, the career perspectives—particularly in the case of the technology programs—proposed by guidance counsellors and by the programs themselves (by means of classes and practical work) can conflict with the concept of a "trade" that students have imagined based on their previous school or other experiences. Science students describe an analogous process: they can see that the sciences "are not for them". Some have seen their own preconceptions confirmed, but many others have experienced disappointment, even academic disenchantment. In any case, their pathways become very difficult.

We should also acknowledge that the educational regime prevalent at the college level also constitutes a possible source of obstacles. At the time of transition, the academic autonomy required for a college education, much greater than that in high school, is not always easy to master. Sometimes, this skill remains deficient and students continue to have problems with doing the required work or they do not put enough time into their studies; failures multiply and students finally drop out of their programs. These students are among those that are most critical of the institutional regulations and of the teachers.

The rough road contains examples of gruelling experiences. At the same time, these students demonstrate their capacity to make strategic adjustments so as to overcome their difficulties and maintain their career objectives. However, in *the collision course*, the chronic academic difficulties and disappointments mean that students could no longer see any future in their studies, and so they drop out of their program or even out of school. The *same route, different destination* path is an example of a pre-professional test, since these students very rapidly learn that their choice of program was based on some incorrect premises, and that the fact that they do not like the sciences means that a change of direction is in order. Any pleasure in learning disappears and what remains is only the utilitarian aspect of their program—getting their degree. The *race to excel* pathway is also a tough one, because the pressure to succeed causes students to resent their educational experience as a stressful situation. Their success does not lead to a positive experience, but rather to ongoing uncertainty.

Thus, the college experience contains ordeals in triplicate: academic when it tests a student's mastery of student skills, professional when it questions career goals, and existential when schoolwork itself becomes a source of stress.

The third driver is that of **becoming an adult** (Galland, 2007). For the younger students, starting CEGEP is the same as starting adult life. In the *Taking one's time* pathway, the young men refuse to really start being adults so that they can "enjoy their youth", as they say. They try to stop time and live their social life to the fullest. Youth is also associated with hedonistic activities that interfere with daily life and lead to multiple academic problems. At the same time, their academic behaviour changes with their first step towards adulthood; this often begins when they fall in love, for example. From then on, time dedicated to studying increases, has more relevance, and they get their degrees. In the *One small step at a time* pathway, students are also trying to put off their adulthood because it signals on one hand, work and responsibilities, and on the other, leaving the school environment, which they know well and where they feel comfortable. On the other hand many young women are seeking more autonomy, a fact we've described in the *autonomy* pathway. In this case, it is the desire to begin adult life that motivates their decisions for their education and career. Thus, they choose a program that "forces" them to move some distance from their original families, and especially from their mothers.

The fourth driver is what we have called a **professional perspective**. This has direct and powerful influence on the logic behind educational choices in the cases where one's route is essentially dictated by career objectives. The pathways *Guided by the future* and *Planned exit* are the two clearest examples. In the former, all of the educational process is

put at the service of a career goal. In the latter, the decision to leave a program is based on purely professional objectives.

However, the professional perspective also has the effect of introducing uncertainty into the educational experience when the direction to take remains unsettled or when it is put in question by the educational process itself. We have observed a high level of indecision, career-wise. For example, students often opt for a science program due to their state of indecision, rather than by choice, which we have called the "opening doors strategy". Without knowing which field to choose, the "good" students enrol in a science program so that they will be able to make a decision later from the widest possible field of options. Also, it is not because someone has chosen to get a degree in science at CEGEP that one really wants to pursue a career in science. We can add that career objectives are not always definitive; they are frequently re-evaluated in the course of a student's experience in CEGEP, often following academic failures that force students to review their choice, or following academic disenchantment. Two pathways are emblematic of career indecision: *A fork in the road* and *Change of direction*.

The two remaining pathways, *taking an exit* and the *double path*, show the influence of a fifth driver: the **pressures of life outside of school**. In both of these pathways, the academic dynamic is subordinated to the student's living conditions. In the first, dropping out of their program, or even out of school, is related to a change in the work-family-study balance. This balance is disrupted by biographical events. Since it is easier to be "liberated" from their classes than from their family responsibilities, the solution is to withdraw from their classes. In this case, their being adults, with adult responsibilities, is what makes students doubt they can continue their education. However, in the second pathway, the *double path*, it is the extracurricular activities—such as being a political activist—that lead to its particular morphology: prolonging the time to finish and disrupting the balance between the time for school and the time spent on everything else.

Conclusion

Over the years, the development of post-secondary education has mainly been carried out in the creation of CEGEPs and colleges, which is why our focus is on the situation of students, particularly FGSs, in these types of establishment. To this end, we have established that, in all of the Canadian provinces, FGSs have a greater tendency to enrol in college. One explanation is the large number of jobs that now require a college degree, which was not necessarily the case 40 or even 30 years ago. At the same time, a technical degree can become a means of educational and social mobility for young adults from families with a low level of educational capital. The college network (including the technical programs), with its ease of access, offers an alternative pathway to FGSs (and also to non-FGSs) who are not yet prepared to go to university.

The global results agree with the results of earlier research that emphasize that access is as susceptible to be influenced as is persistence. The differences in the rates of access to colleges in the U.S. and in Canada are linked in large part to the structure of colleges themselves, which used to offer only technology programs, except for Quebec. Only recently have colleges in some Canadian provinces offered pre-university programs, becoming thus somewhat similar to CEGEPs.

The student experience in college, as examined from the aspects of academic pathways, takes multiple forms. This conclusion is not in itself original, as several studies and researchers have already stated this. The current research has added more precision in two aspects. The multiple experiences do not necessarily separate pre-university from technology students. Also, they often appear in the changes that occur in the course of an educational experience, as our longitudinal analysis has demonstrated.

Thus, what each pathway describes is a way to experience student life in a CEGEP, whether it is marked by persistence or by an exit, which is to say, a temporary or a permanent withdrawal. The presence of returning mature students also suggests that several of those who leave their studies only do so as a pause in their own individual education plan.

Persistence is not only associated with good experiences or ease in being successful at school. In many cases, it exists alongside high stress and difficulties large and small. The drivers behind the different pathways—and thus the factors that allow the pathways to be differentiated—can be of a very diverse nature; some are directly relevant to the academic sphere and others not. Non-persistence is also a multi-faceted experience. We find within it planned exits that cannot be associated with failure. Other exits actually lead to a revision of goals and a more profound reflection on career orientation. Still others show

the stress and disappointment that can be associated with an exit or failure. These exits are not only for academic reasons—they are often linked to directions taken solely as a function of job prospects, or to the difficulties of balancing family, work and study responsibilities.

Since several of the causes linked to students leaving have no direct relation to the educational system, the solutions available to educational reformers are somewhat limited. However, making it easier to take classes part-time or in the evenings in CEGEPs could make it easier to maintain a family-work-study balance. One answer is to make part-time studies free, to create a more flexible school schedule and to plan for more evening classes.

Another means would be to ensure that the programs in place to promote student persistence are effective in reaching their targets and their goals. This means periodic evaluation of these programs. These evaluations should lead to the identification of the conditions conducive to the deployment of effective strategies for assisting students and preventing them from dropping out. At the same time, these programs and their evaluations should also contribute to a better understanding of the following paradox: despite the plethora of special programs for support and help that have been proposed by teaching establishments, it is difficult to find a significant improvement of the overall situation (Chenard and Doray, 2005). For example, between 1995 and 2006, the proportion of young adults graduating with a DEC went from 38.2 % to 39.6 %. This was a small increase, but it has mostly been attributed to the growth of short programs (Attestations of college studies or Attestations of college training). This "stable" result leads to three questions: Do the measures put in place reach the targeted clientele and are they the ones who benefit the most? Are the measures effective? Is there a growth in access to college by 'weaker' students that neutralizes the positive effect of the measures put in place?

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