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Note : Cet article synthèse est également disponible en français.

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## **A Comparative Study of Academic Success among College Students based on a Socio-ecological Model**

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### **Synthesis Report and Intervention Guidelines**

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## 1. Introduction

This study has two main objectives :

- to offer a synthesis of the main research findings
- to present the ensuing intervention guidelines in terms of academic success.

The synthesis of the research findings from the study entitled *Étude comparée sur la réussite scolaire en milieu collégial selon une approche d'écologie sociale* reiterates the prominent features, as well as the main trends observed among college-level students during their studies.

The intervention guidelines are found in Chapter 7 of the study. They were developed based on the results of the study and were governed by the consultations of an advisory committee from the three colleges who participated in the study.

As far as academic success is concerned, we have chosen to publish the intervention guidelines in the current document in order to transmit its findings to other colleges. We hope that a significant number of colleges will be able to adapt the results of the study and the recommended intervention guidelines to their needs.

## 2. Synthesis of the Research Findings

The study was conducted over a 2-year period (2003-2005). The sample size was made up of 744 students from three colleges in different sociological environments: Cégep de la Gaspésie et des Îles, Cégep de Sainte-Foy and Cégep du Vieux Montréal. There are two components: a quantitative component based on a survey completed by the subjects and a qualitative component based on a sampling of 60 college students divided into focus groups with specific themes.

The survey was conducted during the first year of the study. The design of the questionnaire reflects the theoretical model chosen to examine college-level academic success, in other words the socio-ecological model. This model allows for analysis of academic success based on ties that college students have with different aspects of their lives (school, family, work, social network, etc.). In a more general way, it puts into practice the principle underlying the research and it demonstrates that young people's relationship to society conditions their academic achievement. In this context, the study explores social factors, along with endogenous factors, which condition college students' academic success.

Statistical analysis was conducted (chi<sup>2</sup>, factorial analysis, multiple regression, etc.) to identify the main predictors of academic success. For research purposes, academic success has been measured according to two indicators: academic performance (based on students' grades) and academic persistence (based on students' intentions to either continue or drop courses).

The qualitative component was conducted based on three themes: the values of college students, the balance between part-time jobs and school, and the situation of students from various ethnic backgrounds. The last theme was added to the study, once it was underway, due to the significant number of students from ethnic communities at Cégep du Vieux Montréal. For each theme, students were interviewed in small groups (6 – 12 students) with respect to their perception of the survey results and certain specific dimensions, which according to the survey data required further examination.

Since this is a comparative study, special attention was paid to differences according to social environments. Likewise, the themes of values and balance between part-time jobs and school were part of a specific examination keeping in mind the underlying objectives of the study.

## Well-adjusted College Students

In this study, two-thirds of the students (65%) are female subjects. All the students are almost equally split into two groups: those studying in technical programs (54%) and those studying pre-university programs (46%). The students' average age is 19 and a half. The majority of these students live with their parents (63%). There are fewer college students from Gaspésie who live with their families during the school year due to geographical distance (51%).

In general, the students are well adjusted to college life. They have adapted well (89% qualify their adaptation to college as "very easy" or "fairly easy"). A large proportion of them (94%) are doing "extremely well" or "well". Most of these students find college stimulating. Furthermore, the students' interest level is high (82%). Moreover, 9 out of 10 students are "satisfied" or "very satisfied" with the contact they have with their teachers, as well as with their classmates. Nevertheless, a minority (16%) has considered dropping out of school either "occasionally" or "seriously".

According to the subjects, their parents are a source of moral support while in school. It was noted that 8 out of 10 students are "very satisfied" or "satisfied" with their relationship with their parents. During the course of their studies, they feel "very" encouraged by their parents (almost 7 out of 10 students) and 72% of them receive financial support from their parents. Family occupies an important place in the lives of college students, as much in terms of values as it does in terms of family solidarity, even though they are attempting to forge their own identity and are searching for independence.

The mental and physical health of the college students in the study is comparable to the mental and physical health of Quebec youth according to public data. It was observed that almost one-fourth of these students "often" feel depressed (23%). This information must be put into perspective with the results of the most recent social study on health conducted amongst the population in Quebec. Similarly, this study showed that 28% of young people between 15 and 24 experienced signs of psychological distress compared to 20% of the population in the province<sup>1</sup>.

## A Culture of Success

The values of college students represent an incontestable reference point during their studies; 8 out of 10 consider the value of academic success "very important" (83% of girls, 72% of boys). Values such as knowledge acquisition, the importance of investing effort to succeed (meritocracy), professional competence, independence, and gaining a more general culture appear at the top of the list. According to the statistical results, in addition to data collected during the focus groups, values linked to hedonism and consumerism are secondary and subordinate to their academic aspirations. Today's college students appear more pragmatic and less idealistic than previous generations; they seem inclined to a rather functional way of thinking in which school and the future merge into a single quest for success. Neither nihilists, nor slaves to consumerism, students are much more involved in a race against the clock in their personal and academic lives to "succeed". In the manner it was observed on the Western scale<sup>2</sup>, spiritual values are not a priority for college students. However, it has been observed that students from ethnic communities tend to favour spiritual values.

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1. Statistics Quebec (2001). *Enquête sociale et de santé 1998*, Collection « La santé et le bien-être », Québec, Gouvernement du Québec.

2. See the work by Raymond Boudon, *Déclin de la morale? Déclin des valeurs?*, Québec, Éditions Nota Bene, 2002.

## **Balancing Part-time Jobs and School: A Social Change**

Seven out of ten students hold a part-time job while studying. This trend has risen sharply over the last two decades. However, college students view paid work as practical since it helps them achieve a certain independence from their parents and it puts them in a better position as consumers. In addition to school, paid work also contributes to personal development. Nevertheless, according to the focus groups in which students reacted to the survey data, academics is clearly more of a priority than a part-time job. It is noteworthy that the threshold for students who are most at risk for either failing or dropping classes has, over the years, gone from 15 to 25 hours of paid work per week. It has even been observed that students who spend 15 to 19 hours a week at their part-time job obtain the highest marks.

Almost one-third of these students find their financial situation “not very satisfactory” or “unsatisfactory” (note that the survey took place in the fall of 2003, thus, changes had not yet been made to the Student Loan and Bursary Program by the MELS (Ministère de l'Éducation, du Loisir et du Sport). Also, it is important to note that in this study, the students from Gaspésie were more often recipients of loans and bursaries (proportionately at least twice as many students as those in the two other colleges) from the provincial government.

## **The Predictors of Success**

In college, there is a combination of social and endogenous factors, which conditions academic success. As previously mentioned, it was evaluated based on academic performance (students' grades) and academic persistence (students' willingness to remain in or drop courses). Upon analysis, these two factors appeared separate, yet complementary.

First of all, students' values, then, their personal well-being, social and family connections, along with their socio-economic conditions are categories for social factors which may significantly influence academic success. According to the research findings, satisfaction with the student-teacher rapport, level of adjustment to college life, and finding college a stimulating learning environment are all the most striking endogenous factors with respect to success.

The synergy of these predictors must be considered when analyzing them. The combination of various social and endogenous factors enables the best prediction of academic success or failure.

As mentioned earlier, college students' values occupy an important place when examining predictors of success. Thus, they alone account for more than one-third of the variables associated with academic performance and they remain part of the multiple regression analysis used to determine the best combination of factors which predict academic success (performance and persistence).

It must be stated that academic performance and persistence are two fields of observation that do not always adhere to the same logic. For example, parental support given to students has more of an effect on persistence than it does on grades. With this in mind, it is important to consider the impact of these factors on one or both of the predictors of academic success when evaluating the necessary course of action.

## Convergences and Divergences According to Environment and Gender

One of the study's main conclusions was to take into consideration the "universal" nature of the findings that transcend the social environment in question (the three colleges). In fact, there were no real trends observed that distinguish one college from another with respect to the central dimensions of the study, which are the students' values, the duality of paid work and academic studies, as well as the group of other predictors of academic success. Indeed, differences were occasionally noticed among the three colleges, but these differences did not have a significant effect on the group of variables associated with academic success.

The global picture is more complex, one could even say heterogeneous when it comes to the differences between boys and girls. The analysis could be summarized as follows: by comparing the subjects, there is no real, fundamental distinction based on the gender of the students. Differences arose here and there throughout the study; however, without fundamentally influencing the predictors of academic success. Differences according to gender are, at times, significant among students at risk in terms of academic success. This is where the divide occurs! Based on careful examination of the variables associated with academic success, the existence of two models can be suggested: a model of *commitment* among girls at risk and a model of *withdrawal* among boys at risk. This demonstrates, among other things, that girls experiencing difficulty at school indicate workload as a reason for dropping out, whereas for boys, lack of interest is flagrant among those who are prone to dropping out of school.

## 3. Intervention Guidelines

The intervention guidelines proposed represent a synthesis of the results found after conducting the survey and meeting with the focus groups. These guidelines are mainly "constructed" from the results of the study itself. They are presented according to the precepts of the socio-ecological model used in the framework of the study. Consequently, the tendency would be to focus on the guideline with regard to the different environments in which students evolve. The following list details the different spheres of the socio-ecological model:

- ontosystem : the group of characteristics, states, competencies, abilities, or deficiencies of the student, either innate or acquired;
- microsystem : the student's immediate environment;
- mesosystem: the group of places where the student spends time outside the student's immediate environment. Inter-microsystem links are relevant;
- exosystem : the places or sites where a student does not actively spend time, but where decisions are made which may have an impact on the student;
- macrosystem : the group of beliefs, values, standards, and ideologies in society and in the community;
- chronosystem : the group of time considerations that characterize an event.

Having stated the basics, it is necessary to identify which intervention guidelines appear to be the most important in the current context of the study.

### GUIDELINE 1 –The College's Culture

College is a place for education and socialization. In this respect, it is important for the academic institution to affirm its values and promote learning, as well as academic success among its students. Young college students evolve in a society where there are various, not always positive, influences, which affect learning; thus, the college's role becomes even more imperative. In this way, the college offers an alternative dialogue to other more dominant ones in society, which devalue learning and knowledge.

This guideline is specifically related to the macrosystem in the socio-ecological model, which is made up of basic values. It was observed that certain students held values that did not promote academics. Undertaking actions aimed at consolidating the existence of a common culture at the college, which would thus reaffirm the importance of school studies for students' personal success, would allow for intervention among the unmotivated students or among those more influenced by external values, ones which create distance between them and their studies. These actions could also result in reinforcing other students in their choice to make academics a priority.

At each college, the range of actions to define is relatively broad with respect to this guideline. Among them, the sector of extra-curricular activities could be taken advantage of by colleges. More specifically, these are activities aimed at strengthening student identity to school programs and other activities that support an open-minded view of the world and society in order to promote the personal development of student citizenship. A college's program committee is another important lever, which is an effective way to contribute to the coherence of programs in order to enable the development of a common language among the college's community. Lastly, the translation of these sought-after cultural elements into specific teaching policies could prove to be relevant in order to achieve a more concrete common vision (for example, an attendance policy, a policy on setting up schedules, etc.). In their own way, these dimensions could contribute to the implementation of a college culture, which rallies students around a collective educational project.

## **GUIDELINE 2 – Adaptation to College**

According to the research findings, successful adaptation to college is influenced by many inter-related variables, which are first and foremost the values of independence and self-satisfaction. Furthermore, there is a time dimension that affects the results, for example, during the first semester of college.

Thus, the adaptation guideline is related to many spheres of the socio-ecological model, but more specifically to the ontosystem, which is the group of individual characteristics of the student, and to the chronosystem, which is made up of the group of time considerations that characterize an event (this usually occurs during the students' first semester in college), and last, to the mesosystem, which refers to the group of places where students spend time outside their immediate environment.

According to the students in the focus groups, integration into college would be facilitated if they had detailed and specific information about their program and its requirements. In addition, if students were given more information about work methods when they arrived, their integration into college would be easier. Many students also found the lack of course content and requirements in high school unfortunate. These elements stand in stark contrast with courses in college.

Preliminary measures have been undertaken to help students with their integration, such as giving high school students the opportunity to be a college student for one day and open houses at the college, which students seem to appreciate. Other pedagogical activities, ones that welcome students during their first semester in college, have been pursued in order to ease integration for all newcomers. Various activities need to be developed. For example, it may be necessary to focus on mastering specific study methods and tools starting in high school, like how to do a research paper, how to use the library, defining plagiarism, citing Internet and other sources, etc.). This dimension was ranked first by the students among ways to help newcomers in college<sup>3</sup>; thus, it takes on even more relevance. It would also be advantageous for high school education to invest more in the sphere of socio-affective abilities (self-affirmation, self-esteem, independence, etc.), which also contribute to developing student performance.

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3. See the document *Les indicateurs de l'enseignement au collégial. Tableau de bord 2004-2005*, Fédération des cégeps, 2005, p. 116. This document reports various charts taken from the survey *Aide-nous à te connaître*, produced by the SRAM (Service régional d'admission du Montréal métropolitain). It involved 17 371 students in 28 participating colleges in 2004. One of the charts detailed the answers to the following questions: "What could be done to help you succeed in college?" (*Pour mieux réussir tes études collégiales, en quoi pourrions-nous t'aider?*). Measures which aim at "developing better work methods" and "better time management" were at the very top of the list.

Similarly, there is also room to implement extra-curricular activities that solidify student relationships, contribute to their personal development, and even deepen their sense of belonging to the college. Along the same lines, setting up other activities that enable students to identify with their school program could also be beneficial to adapting to college. Thus, the already existing program of peer tutoring and the less widespread practice of teacher assistance are among the possible ways for fostering better student adjustment to college life.

Generally, interventions could be made which reinforce college as a “complete life environment”, an environment that is both stimulating and friendly. In this context, intervention seems even more necessary since it links different predictors associated with academic success (to feel comfortable in college, to be satisfied with teachers, to consider college a stimulating environment, to feel well adjusted, etc.).

### **GUIDELINE 3 – The Student-teacher Relationship**

The relationship between teachers and their student plays an important role in academic success. Statistically speaking, the quality of contact with teachers comes first and foremost in predicting academic success and persistence, as previously cited. In addition, the ability of teachers to establish contact with students (in terms of a warm attitude and remaining available for students) and to communicate with them, along with the respect they show students, their personal commitment and interest shown for the material taught, all of these appear among the main characteristics mentioned by students when describing teachers who contribute to academic success.

Teachers who contribute to academic success also know how to facilitate discussion among students, which favours the sharing of experiences. These teachers are also able to take students’ personal lives into account and can occasionally become a confidant for students. All together, these characteristics are related to the interpersonal aspect.

Furthermore, the students surveyed also mentioned elements related to teaching that contribute to academic success. Methods that encourage class participation and student adaptation include the selection of teaching material that is both stimulating and varied. A model teacher is somewhat of a facilitator when it comes to learning course content or the learning that takes place in other activities, as for example, a practicum. Last, a model teacher remains open-minded in terms of improving pedagogical methods.

For students, improving relationships with teachers, on an interpersonal and pedagogical level, can only contribute to academic success and starts with teacher evaluations. However, the majority of colleges seem systematically to evaluate only non-permanent teachers. For permanent teachers, teacher evaluation practices vary from college to college.

In this respect, the following course of action is recommended: developing permanent ways to evaluate not only content, but also teachers to encourage academic progress and a better relationship between teachers and students. It would also be beneficial to define a local policy and establish evaluation grids for all courses offered. These grids could include communication skills, interpersonal abilities, oral and written expression and of course, knowledge of the material (the ability to remain up-to-date). Lastly, it is recommended that colleges offer training to its teaching and support staff on the culture of young people and on ways to adapt teaching to certain features of this culture (new relationships with authority, college students’ attitude towards participation, willingness to adapt material, presence of a utilitarian way of thinking, etc.).

In the ecological model, this situation is specifically related to the mesosystem; in other words, the complete life environment of college, and more specifically the context of the student-teacher rapport in the classroom.



## GUIDELINE 4 – Career Choice

For most students, beginning college is synonymous with a key moment in their lives. In fact, it is the time when students must make many decisions about their future career path. It is when students define themselves as young adults and active citizens in society.

Therefore, it is an intense period when many students experience uncertainty and question their choices. In addition, changing programs or questioning decisions about future career plans should be considered more of a normal process in college instead of a lack of interest in school. This was illustrated in the focus groups.

According to the CSE (Conseil supérieur de l'éducation), approximately 30% of college students are hesitant about their career choice. The CSE's statistics state that 20% of students who plan to go to university have determined their future academic path. This results in 36% of students changing programs at least once<sup>4</sup>. This statistic must be put into the bigger picture of college students' search for identity, which characterizes their time in college. Due to its strategic position in the educational system, college, as a matter of fact, represents an ideal place that embodies students' quest for identity in terms of multiple career choices for the future available to them. There is a contradiction here between youth culture and certain ministry guidelines, which stipulate that students complete their diplomas within a specific time frame.

It is also believed that general education courses play an active role in students' career choice since their aim is integral personal development. The CSE (Conseil supérieur de l'éducation<sup>5</sup>) also shares this belief. It emphasizes the more important role played by general education courses when students consider their future career path.

The results of the study established significant links between academic success and the interest that students have in their studies, including the number of hours they invest in schoolwork. However, can students really show interest in schoolwork if they don't see the underlying meaning? If they question course objectives? Lastly, can students really show interest in schoolwork if they do not feel any moral support? Some students who experience these situations mentioned during the study that they have asked themselves these questions.

Thus, academic success in college can be jeopardized if students aren't clear about their future; therefore, they may not get actively and effectively involved in their programs. Since it is among the main factors of academic persistence<sup>6</sup>, determining a future career path cannot be minimized due to the fact that it represents a high stake when it comes to academic success. So, young people need to become familiar with other experiences in order to better define themselves. This process will enable them to find meaning in their schoolwork and overall education.

From this perspective, it is necessary to develop new methods that allow students to better define their professional identity. A possible solution would be to provide access to a greater number of guidance counsellors and information, starting in high school, as well as access to academic advisors, in addition to strengthening personalized professional services that already exist in colleges. Lastly, it would be useful to reflect on the necessary link between general education courses and students' career choice so that they view course material as concrete and as playing an active role in their search for personal and professional identity.

The guideline of career choice is specifically related to the college as a whole. Thus, it is related to the mesosystem in the ecological model.

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4. Ministère de l'Éducation (2004). *Le cheminement des élèves, du secondaire à l'entrée à l'université*, Quebec, Quebec Provincial Government, p. 21.

5. Conseil supérieur de l'éducation (2004). *Regard sur les programmes de formation technique et la sanction des études : poursuivre le renouveau au collégial*, Avis du Conseil supérieur de l'éducation au ministre de l'Éducation, Quebec Provincial Government.

6. Conseil supérieur de l'éducation (2002). *Au collégial. L'orientation au cœur de la réussite*, Avis du Conseil supérieur de l'éducation au ministre de l'Éducation, Quebec Provincial Government.

## **GUIDELINE 5 – Balancing Part-time Jobs and School**

The current study shows that 7 out of 10 students (both girls and boys) work part-time while studying. It was also observed that students who work 25 hours or more a week are more susceptible to failing or dropping courses.

The focus groups revealed that students hold part-time jobs for various reasons, for example, to buy goods, develop confidence, and become independent, which all affect their social network. Therefore, working is beneficial to their personal development and students can gain work experience. The majority of student who work are those with part-time and weekend jobs that are not related to their field of studies. They claim to be aware of the pitfalls that come with working part-time while in school, for example, the lack of time for their schoolwork. Consequently, students indicate that the relationship with their employer is important because they have to be able to be assertive when negotiating the number of hours they plan on working and make sure that neither their schoolwork nor their health are compromised. Some of them find their financial situation difficult because of the fact that their parents cannot always support them. Thus, they feel forced to work more hours, which may interfere with their academic success.

Employers are therefore a significant factor to consider with regard to the number of college students affected by the issue of working while in school. This guideline is connected to the mesosystem, which is the group of places where students spend time outside their immediate environment. It would be advantageous for organizations related to the workplace to be called upon to play an active role in balancing paid work and schoolwork, which, in turn, would promote academic success. Various projects involving different organizations could be initiated with regard to subjects linked to paid work (for example, defining and sending out work standards for student jobs, information campaigns for students and employers, implementing or consolidating networks geared to finding a consensus between the socio-economic and academic fields to better define courses of action in the economic community, etc.).

Within colleges, for example, tutoring and practicum supervision could prove to be worthwhile opportunities to sensitize students, in a more personal way, to the impact of working part-time while in school.

## **GUIDELINE 6 – Family**

The research findings underline the influence of the family network, especially on academic persistence. Notably, the study demonstrated that family represents a value itself, perhaps the most ideal to attain for the majority of students. The findings also revealed that the traits of family sociability and solidarity definitely are found among students and these traits have a positive impact on them during their studies.

Discussions with students in the focus groups about the quality of their relationships with their family demonstrate that students are generally satisfied with this rapport. In addition, even if many of them feel the need to distance themselves from their families in order to become more independent, they also indicate the importance of their relationship with their family. Students think of family, more specifically parents, as those whom they can count on and will count on during their time in college. This support system is appreciated and recognized by students, particularly when they need to feel encouraged to pursue and succeed in their schoolwork.

The guideline of family is related to the microsystem (the student's immediate environment) in the socio-ecological model. Therefore, it is a guideline to be considered with respect to academic success. The family is definitely a necessary partner to take into account given the specific type of relationship it fosters with a student.

Various courses of action can be undertaken with respect to this guideline, bearing in mind different mentalities and local conditions (geography, culture). Parent associations, which are more present and active in colleges throughout the province, represent an interesting vehicle for information or even involvement with respect to academic success. Information sessions about parental influence on academic success and activities that make people aware of the culture and the reality of students could prove to be worthwhile in strengthening parental support while students are in college.

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These are the intervention guidelines that were inspired by the results of the research project. This list is not exhaustive. Nevertheless, the proposed guidelines appeared to be the most significant in light of the different sources consulted.

These guidelines suggest that work definitely needs to be done. This work fits into the context of the study's initial paradigm: the examination of academic success with regard to the relationship between youth and society. In this respect, the socio-ecological model was used to structure reflection about the intervention guidelines so that the connection between students and different spheres of the ecological model could be taken into account.

Each college will be able to adapt the intervention guidelines locally according to its organizational context and the needs of its student body in order to identify the best ways to attain academic success and persistence. That is the gist of the article! Also, it is believed that effective courses of action for success must incorporate endogenous factors related to college, such as those traditionally reported, and socio-exogenous factors, which also condition students' academic path. The interconnection of endogenous and exogenous factors offers an overview and a particular synergy, which enables a better understanding of the field of intervention to be defined, as well as a bridge between initiatives for success and the social reality of students.

On another level, it is also believed that academic success is an objective that concerns all employees at a college. To achieve this, it would be beneficial to multiply the pathways, on an organizational level, between different departments and services to encourage dialogue about this subject and to develop, therefore, shared, integrated initiatives for success, because they will have benefited from shared experiences and diversified knowledge. This preoccupation, which has been expressed many times by advisors in colleges, is completely consistent with the socio-ecological perspective that was chosen as a model to examine academic success.

We sincerely hope that these stated guidelines support the collective thinking of the advisors in the college network towards academic performance and persistence.