CPRN CANADIAN POLICY RESEARCH NETWORKS

RCRPP RÉSEAUX CANADIENS DE RECHERCHE EN POLITIQUES PUBLIQUES

Implementing the School-to-Work Transition in Québec

Pierre Doray
Louise Ménard
Anissa Adouane

Pathways to the Labour Market Series – No|7

CPRN Research Report | March 2008

Contents

Foreword

Young Canadians are looking for more choice when it comes to learning options – before and during their careers. That was a strong message coming out of CPRN's Youth Dialogue in November 2005. These young people told us that some form of post-secondary education should be available to everyone – whether it is university, college, trades programs or experiential learning. They told us there should be a variety of well supported learning opportunities.

CPRN is in the middle of a two year project to examine the ways young people navigate from high school through to the labour market. The goal is to identify what supports or hinders youth's ability to find pathways that lead to good jobs, and to examine attitudes and underlying values about the different pathways.

This report, by Pierre Doray, Louise Ménard, and Anissa Adouane, is the seventh in our series on *Pathways for Youth to the Labour Market*. The authors describe efforts in Québec over the last twenty years to revitalize vocational education. They also analyze enrolment patterns and the implementation of reforms in an effort to assess the degree of success of this revitalization.

Looking at vocational education in Québec is particularly important because this is the province where the highest percentage of young people attends vocational programs in secondary school. Examining the evolution of Québec's vocational policies and programs over the last twenty years, as well as the response of its young people, may bear interesting lessons for the rest of the country.

Doray, Ménard, and Adouane conclude that there has been a clear strengthening of the vocational curriculum in Québec and the building of bridges between different educational streams. However, implementation of the new measures has been uneven and cooperative education, involving work placements as part of a program of study, is still relatively undeveloped.

I would like to thank the authors for this important contribution to our understanding of the process of reform of vocational pathways from school to the labour market in Québec. I would also like to thank the RBC Foundation and an anonymous donor for their financial support.

Sharon Manson Singer, PhD
March 2008

Executive Summary

This document examines the synergistic relationship between education and the economy in Québec. More specifically, it looks at a number of approaches followed by Québec's educational institutions in the transition between school and work. In this sense, it makes no attempt to analyze the process of recruitment and professional transition of individuals in this situation, instead focusing on measures adopted by the educational establishment to support and facilitate interactions between education, work and employment.

This analysis is presented in three phases. We first take a look at the organization of the Québec school system. Then, we offer a brief history of instances in which measures were adopted or institutionalized linking education, work and employment. Lastly, we describe these various measures in greater detail and seek to assess the degree to which they have been implemented.

The Québec Education System

Québec's education system is distinct from that in other provinces owing to the institutional separation of curricula with respect to vocational education offered at the secondary level and programs for technical education at the college level. Vocational education focuses on skilled occupations while technical education addresses technical jobs. In certain disciplines, it is also possible for vocational graduates to pursue further studies in technical education owing to arrangements adopted among levels of education. Movement between technical education and corresponding university education has also been rendered increasingly easy owing to bridges now linking technical education and university programs.

Following are our findings concerning those enrolled in these programs:

- In programs leading to professional accreditation, the attainment of professional specialization or recognition of vocational education, most students have returned to their studies. Several are *returners*, having spent certain periods of time in the labour force before returning to pursue their studies at the secondary level. Some are in transition from unemployment while still others are students with college education.
- The number of full time students enrolled in the Diploma of Collegial Studies (DCS) program continues to fall, as it does among adult or mature students, whose numbers are relatively low in any case. Pre-university DCS enrolment has declined as well since 1993, along with that for short term technical education programs. Only enrolment in the DCS technical education program has enjoyed continuous growth since 1990.
- Adults at CEGEPs most often enrol in courses of study leading to the Attestation of Collegial Studies (ACS). However, numbers have declined since 1999.

History of Vocational and Technical Education since 1980

Since the mid-1980's, the whole field of vocational and technical education has been altered by a series of significant transformations in the training offered to young students (initial education) as well as that provided to mature students.

These changes got underway with the creation of employability programs aimed at promoting social and professional integration of jobless persons (particularly young people). Preliminary measures were adopted on a temporary basis as early as 1983. They made it easier to find work by allowing individuals to complete secondary school studies or obtain work experience. These measures mobilized the school system (through return to school programs) along with firms (workplaces) and community groups who obtained public funding to support young people in difficult circumstances and who now offer *external job placement services*.

In the area of vocational education, the first goal pursued was to promote a new appreciation of vocational education among *the young*, undertaken to address declining enrolment. One of the strategies employed was to raise the entrance requirements for vocational education. This strategy did not produce the results anticipated as declining enrolment continued among young students. The Department then opted for computer assisted learning and teaching methods that also meant closer ties with the workplace. Introduced initially on an experimental basis, this strategy has been adopted progressively and has led to diversity in the measures proposed, including:

1. Creation of a career exploration program;
2. Development of programs aimed at semi-skilled trades;
3. Concomitance of general and vocational education;
4. Treating workplaces as places of training with the introduction of new forms of instruction such as apprenticeships, co-operative education, and training periods;
5. Establishment of bridges between secondary and college levels;
6. Introduction of a specific teaching formula for scientific disciplines: the technology-oriented path.

Running parallel with the introduction of these measures, we have also witnessed the creation of an apprenticeship program in the workplace by Emploi-Québec. At the community and socio-economic level, a large number of firms have also been set up in efforts to integrate disadvantaged youth.

Another key goal of reforms in vocational and technical education was to promote these of programs in the *workplace*. In this regard, we identified:

1. The revision of content in all programs;
2. Use of a skill-based approach in the development of training programs;
3. Reform in the way programs are planned to promote greater involvement of the workplace;
4. Creation of numerous sectoral and regional bodies engaged in planning continuous learning as well as initial education.

Important changes have also occurred in adult education and training through a process of increasing professionalization with the introduction of government programs encouraging firms to develop training programs for their employees and as a result of the Québec law dealing with the development of labour force training (Act 90) adopted in 1995.

Generally speaking, the movement toward professionalism in vocational and technical education has come about through the introduction of numerous measures and various mechanisms aimed at reconciling the planning and implementation of programs and activities geared to workplace training. These measures are designed to intervene more systematically and become a more direct player in educational initiatives. From the standpoint of professional integration, this means it should become far easier for individuals to obtain employment because their training is recognized as being relevant and they have acquired direct work experience in the companies.

Bridging Measures: An Analysis of Their Institutionalization

This chapter looks at the degree to which various measures proposed have been institutionalized in the pursuit of the policies formulated. In this regard, we noted that institutionalization is slow and variable depending on the measures. Educational establishments have been slow to embrace co-operative education even though planning and conception of programs has undergone rapid transformation. The development of inter-level bridges has occurred unevenly, those at the SSVD-DCS (secondary-college) interface being less developed and having attracted fewer students than those at the DCS-undergraduate degree (college-university) level, which have seen sustained growth.

A number of reasons might be cited to explain the slow acceptance of many of these measures. Firstly, these reforms have been introduced at a time when governments have declared deficit reduction a priority; this has had an impact on budgets earmarked for education. In addition, the implementation of several measures calls for voluntary effort on the part of local teaching teams to introduce a series of reforms. In a situation where the priorities and the resources were inconsistent, choices had to be made and certain measures were dropped. Other initiatives involved negotiations between various levels of education, and this has often worked to the detriment of their implementation because they were not perceived to be of equal benefit to all parties concerned.

Conclusion

Many changes have been made in the field of vocational and technical education in recent years. Following are our conclusions:

1. In general, the organization of vocational and technical education has changed greatly in terms of initial education as well as continuous learning.
2. Training offered has seen important changes reflecting movement away from general educational planning toward increased specialization that responds to multi-faceted work environments. These reforms have had a double impact on professional transitions: indirectly through improvement in program content and directly through contacts with workplaces.

3. The challenges and measures adopted have not been identical for teaching at the vocational and technical levels.
4. In as much as workplaces occupy increased presence in the process of planning and regulating vocational and technical education, it is not surprising to see problems arising in the partnership.
5. Institutional acceptance varies with the measures and the environments. The political context (addressing the deficit in public finances) has limited the economic resources available to implement measures. Moreover, development has been slow to occur given the fact that modes of implementation often depend on voluntary effort calling for the adoption of multiple reforms.

Implementing the School-to-Work Transition in Québec

1. The Project

This document analyzes how Québec is bridging the gap between education and the economy. Specifically, this involves examining a number of institutional approaches used by Québec's educational institutions to implement school-to-work transitions. The study does not intend to look at the school-to-work transition and the integration process as a whole, but rather to understand the steps taken by educational authorities to support and facilitate the transition from school to work in the skilled trades.

The study will attempt to answer the following questions:

1. How valuable is the preparation for skilled trades provided by Québec's secondary schools, colleges and universities? By preparation, we mean training courses, work-study programs, technical courses, apprenticeships, etc.
2. How important are the school-to-work transition opportunities available to students?
3. How important are the gateways created between the different teaching levels?
4. Has Québec developed structures to support the transition from the secondary school to the work environment (School-to-Work Transitions)?

For the most part, the study is based on an analysis of existing statistics dealing with the development of vocational and technical training, and on studies already carried out on three levels of education: secondary education, college education and university education. These studies come from (i) university research or (ii) public service agencies: the *Ministère de l'Éducation, du Loisir et du Sport* (MELS), the *Conseil supérieur de l'éducation* (CSE) or the *Ministère de l'Emploi et de la Solidarité Sociale* (MESS). The study also uses relevant existing data. We can already make an initial observation: there are very few studies on vocational and technical education other than the institutional research carried out at the *Ministère* or at the *Conseil supérieur de l'éducation*.

The report is comprised of three sections. This structure will facilitate our understanding of recent developments in the way educational authorities have implemented transition-to-employment programs. Chapter One describes Québec's educational structure and the way it differs from the educational system in the other provinces. Among other things, it stresses the importance of vocational education at the secondary level. Chapter Two presents recent changes incorporated into the organization of education to ensure a better alignment between education and work. This involves defining and describing the overall parameters of the reforms that were gradually introduced. Chapter Three describes the way the various measures were actually developed; it does this by referring to studies on this topic and the available data on each measure taken. The analysis will allow us to reveal how the various measures actually spread, including measures designed to support the school-to-work transition. As much as possible, this involves evaluating the scope of the measures in terms of programs, educational institutions and students.

2. The Structure of Québec's Educational System

Each province in Canada has a different educational system, since the Canadian constitution, and in particular Section 93 of the British North America Act, gives the provinces the right to "exclusively make Laws in relation to Education". This explains in part the differences among the provinces concerning educational systems and the way they function.

The present Chapter describes the educational structure in Québec's educational system at every teaching level, including adult education services, and explains in detail changes in enrolment at every educational level.

2.1 Québec's Educational Structure

The educational system in Québec consists of four teaching levels (see Inserts 1 and 2): the primary level, which includes kindergarten; the secondary level, which is the final stage of compulsory schooling; college education, which prepares students for either the labour market or university and, lastly, university education.

Children have the opportunity (if they are at least four years of age) to attend preschool education for one or two years before starting the primary level. Enrolment in the first grade is compulsory for all children six years of age. Since 1997, school has been mandatory for children from six to 16 years of age. Individuals who are no longer obliged to attend school have access to educational services provided by the *Régime pédagogique des adultes* (the program organization for adults). Properly speaking, adult education is not a teaching level. Rather, it constitutes an educational service designed for individuals who are no longer required to attend school, and wish to obtain a general education diploma (an SSD, a high school diploma leading to college education) or a vocational education diploma (a DVS, leading to the labour market). The school boards are in charge of adult education; colleges and universities, too, offer courses in adult education.

a) Primary and Secondary Education

Public primary and secondary schools in Québec are managed by school boards, which are found in every part of the province. The role of the primary school is based on three principles: to teach, to socialize (to learn how to live together) and to meet (educational) requirements; in sum, its role is "to create the conditions whereby all students can succeed at school, and to facilitate their social and occupational integration (MELS, 2006a, p. 3). Primary school lasts 6 years – excluding preschool education (or kindergarten, which lasts one or two years). Thus, once they have reached the age of 12, students start secondary school.

Secondary school takes 5 years. These years are divided up into two cycles of instruction. The first cycle, which lasts three years, provides instruction in core subjects, whereas the second cycle offers choices (sciences, arts, etc.) that correspond more closely to students' needs and motivation. This level of instruction culminates in the awarding of a secondary school diploma (SSD). In Québec, secondary school ends with Secondary 5, that is, after eleven years of schooling (not counting pre-school); this sets it apart from other provinces, in which the

secondary level ends after twelve or thirteen years of schooling. Once students have completed this level of education, they are no longer required to register in the school system.

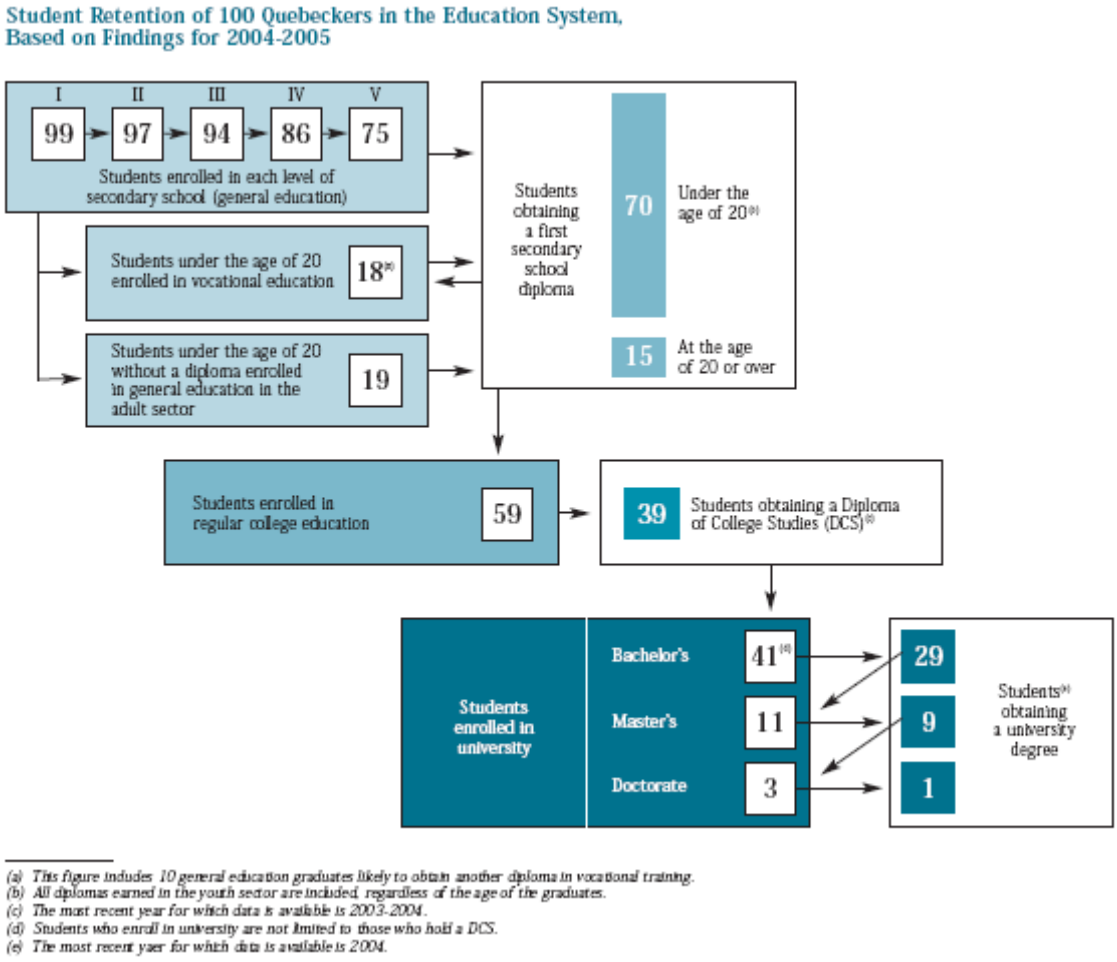
At the secondary level, there are also vocational education programs leading to a vocational diploma (Diploma of Vocational Studies, DVS), to an Attestation of Vocational Specialization (AVS) or to an Attestation of Vocational Education (AVE). This training is given in vocational education centres, which manage their resources autonomously. In 2002-2003, there were 169 vocational education centres and 3 governmental institutions offering 144 programs leading to a DVS, and 27 programs leading to an AVS.

Insert 1. The Institutional Framework: The Educational System in Québec

Primary		6 years (not counting preschool)
Secondary	General	5 years
	Vocational	600 to 1,800 hours
	DVS	Gateway to technical education for programs of 1,800 hours
CEGEP	Pre-University	2 years
	Technical	3 years
		Gateway to a BA for certain programs
University	BA	3 years
	MA	2 years
	PhD	3 years (officially)

Source: Adapted from Doray and P. Bélanger (2006, p. 28).

Insert 2. The Paths Taken by 100 Young Québécois in the School System, by Actions Observed in 2004-05



(a) This figure includes 10 general education graduates likely to obtain another diploma in vocational training.
(b) All diplomas earned in the youth sector are included, regardless of the age of the graduates.
(c) The most recent year for which data is available is 2003-2004.
(d) Students who enroll in university are not limited to those who hold a DCS.
(e) The most recent yaer for which data is available is 2004.

Source: MELS (2006c, p. 11).

A DVS leads to the labour market. Specifically it aims:

1. to ensure that students acquire work-related skills;
2. to prepare students for labour-market tasks;
3. to develop their autonomy so that they are fulfilled personally and socially;
4. to develop and deepen their professional knowledge;
5. to foster their occupational mobility.

The programs take between 600 and 1,800 hours, extending over a one- or two-year period. It is now possible for students who have graduated from any one of 13 secondary-level, 1,800-hour programs to continue their technical education at the CEGEP level, via bridging (or gateway) courses straddling the programs of the two teaching levels developed for this purpose. For other graduates, completing their secondary school diploma (SSD), in addition to a vocational diploma,

continues to be a requirement if they wish to go on to university. To obtain a vocational diploma (DVS), students must meet one of the following conditions:

- either have a SSD or its equivalent;
- or have reached the age of 16 by September 30th of the school year and acquired the requisite Secondary 3 or Secondary 4 learning units, depending on the program selected, or obtain recognition for the learning equivalents in the language of instruction, second language and mathematics and, if required, specific additional units for admission to certain programs;
- or have obtained conditional admission to a program if the adult has obtained Secondary 3 or Secondary 4 learning units in two or three prescribed subjects, in addition to the requirement of concurrently obtaining the missing units ;
- or have reached the age of 18 and have the established functional prerequisites;
- or have accumulated Secondary 3 units in the three prescribed subjects when the young student enrols in a program requiring Secondary 4 learning units within the framework of the diversified pathways to vocational education (parts 4 and 5): these new procedures support vocational education that is acquired concurrently with the prescribed Secondary 4 academic subjects.

Students can be admitted to a program of studies leading to an AVS if they hold, as a pre-requisite, the DVS required by the program of studies, or if they have the learning equivalents. An AVS allows holders of a DVS, or of the equivalent, to specialize in their trade. Completion of 450 to 900 hours of training in a program offered in a vocational education centre leads to an AVS.

Students can be admitted to a program of studies leading to an AVE if they are at least 15 years of age and have passed basic Secondary 2 subjects in their language of instruction, second language and mathematics. This attestation leads to a semi-skilled trade (assistant cook, assistant baker, hotel industry clerk, sporting goods repairer, labourer, panelling assembler in a plant) for students who have passed Secondary 2 in the basic subjects: language of instruction, second language and mathematics. The attestation of vocational education is designed to integrate students into the labour market rapidly and in an appropriate manner. In 2007, there were 175 programs leading to an AVE, comprised of a maximum of 900 hours of training (www.mels.gouv.qc.ca/rens/brochu/fpt.htm#format).

b) College Education

College education is not compulsory and constitutes the first level of higher education. The college network comprises 48 public CEGEPs (general and vocational colleges) as well as governmental schools such as conservatories of music, agri-food technology institutes and the *Institut de tourisme et d'hôtellerie du Québec*, which are the responsibility of sectoral ministries other than the *Ministère de l'Éducation, du Loisir et du Sport* (MELS). This level of instruction also includes distance education centres, as well as about twenty private institutions called colleges. Colleges are governed by their own regulations, and each college is managed by a board of governors.

Admission to a CEGEP or college is not automatic; students must first be accepted by the institution if they wish to take one of its training programs. To this end, they must first obtain a DVS or an SSD and pass the Secondary 5 mathematics courses (or the Secondary 4 equivalent). They must also have passed Secondary 5 language courses (mother tongue and second language) or have completed studies considered equivalent, and satisfy the particular conditions of their program. There is no tuition fee for academic education.

CEGEPs and colleges offer pre-university and technical programs at the same location, which differentiates them from Canadian community colleges. Students in all programs must take language of instruction and literature courses, second language courses, philosophy and physical education. There are ten pre-university programs leading to a Diploma of Collegial Studies (DEC; Translator's note: this is the standardized bilingual abbreviation in Québec): social sciences, arts education, literature, speech science, music, visual arts, nature sciences, arts-and-literature, science, history and civilization. These programs take two years and lead to their corresponding university programs.

Technical programs take three years and lead to the labour market. They have two main streams: (i) mastering trades or techniques, and (ii) basic training. The first refers to specific skills, that is, those that are directly linked to carrying out the functions of a particular position or profession, whereas the second covers general skills that may go beyond the immediate framework required to perform a trade or profession, and apply to a variety of tasks and situations in professional life. They also have their own general education component in the language of instruction and literature, second language and philosophy, a complementary general education component and a specific training component. There are 115 programs leading to a technical Diploma of Collegial Studies (DEC). These training programs produce technicians and technologists. It is gradually becoming easier for holders of a technical DEC to pursue studies at the university level since they often are able to obtain recognition for one or two courses, owing to the existence of "gateways" and integrated DEC-Bachelor's programs. Indeed, after examining the "DEC-BAC" program in question, universities generally recognize certain technical program courses they consider equivalent to those taken at the bachelor's level.

In addition to programs leading to a DEC, CEGEPs and colleges offer programs of shorter duration allowing students to obtain an attestation of college studies (ACS). These technical programs are meant for adults; they are not open to youth who have just completed their secondary education. In addition, adults can register for general education and technical education programs.

c) University Education

Only institutions recognized by the government are allowed to describe their education programs as *university level* and grant degrees, certificates or other attestations of university studies. Moreover, universities are legally independent unities and have much autonomy. University programs are offered in every region of Québec. Courses are also available through the use of various media. TELUQ, an institution in the *Université du Québec* network, specializes in this form of distance education.

University education has three cycles. The first cycle (bachelor's degree) in Québec generally lasts three years, which differentiates it from other provinces whose first cycle lasts four years. The second and third cycles are similar to their counterparts in the other provinces. To be eligible for a first-cycle program, a person must normally have a DEC. Adults can also be admitted to a university if their education is considered equivalent to a DEC and if they are able to meet the requirements of the educational institution in which they wish to enrol. In most cases, these requirements are linked to a minimum age (often 21 years of age) and relevant experience on the labour market. Admission to the second cycle requires a bachelor's degree or the equivalent, whereas admission to a third cycle program requires a second cycle degree, that is, a master's degree. Universities also offer first- and second-cycle cycle programs of short duration allowing students to obtain complementary or specialized professional training.

d) Adult Education

Adult education is defined as a sector of the educational system that meets the educational, training, cultural and social advancement needs of adults, that is, individuals of an age at which they are no longer subject to compulsory schooling. As needed, adults can upgrade their skills to get a job, begin or complete their general education, or simply try to develop specific skills. The length and schedule of the programs varies, allowing students to take part-time or full-time courses, either during the day or in the evening. Program content is similar to that offered in regular education and leads to equivalent attestations. Adults can take advantage of educational services at the secondary, college or university levels.

Québec's school boards offer educational services in vocational education and general education, including literacy training. Most CEGEPs also provide educational services meeting adults' general and technical educational needs. These two educational levels can also initiate specific programs that meet immediate needs in the area of training, re-training and advanced training. Ministries and companies often pay for these individualized learning activities. It was in this context that close collaboration developed between MELS and Emploi-Québec (see http://emploiquebec.net/francais/index.htm) and that various programs were introduced, including the apprenticeship system, social and vocational integration services, work-based learning sessions, learning services for the social integration of persons with a disability, upgrading, training in a correctional setting, training in an Aboriginal setting, etc.

2.2 Enrolment in Various Levels of Education Leading to Labour Market Entry

a) Individuals Pursuing Vocational Education

In 2002-2003, 79,737 students were registered in a vocational education program at the secondary level. Of these, 30% (23,200 students) were under 20 years of age.[1] Most of these students were returning to their studies rather than continuing them. Several of these *returners* had worked for a while on the labour market before returning to their studies. Others were unemployed persons undergoing re-training, while yet another group were students with a college education (or even a university education) who were changing their educational orientation and career. While students under twenty years of age represented 30% of the total number of students, there were significant regional disparities.[2]

Table 1 allows us to observe changes in the total number of vocational students over an eight-year period. Overall, between 1997-1998 and 2004-2005 the number of students increased. This increase is linked primarily to the participation of students 20 years of age and over, since the number of students under 20 years of age did not increase significantly – on the contrary, during this period there was a decline in most enrolments. This trend was evident both in vocational programs and other programs that were obviously set up for persons 20 years of age and over.

Table 1. Enrolment in Vocational Education from 1997-98 to 2004-05

	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05
Secondary education	**93,274**	**94,263**	**99,884**	**95,991**	**99,063**	**101,040**	**103,821**	**104,301**
Under 20 years of age	26,923	26,476	26,031	25,514	25,480	24,923	25,281	25,466
20 years of age and older	66,351	67,787	73,853	70,477	73,583	76,117	78,540	78,835
Regular track DVS, SSVC, AVS et AVE	**75,786**	**77,127**	**75,890**	**76,559**	**79,395**	**80,288**	**83,707**	**85,730**
Under 20 years of age	25,818	25,208	24,623	24,343	24,044	23,232	23,542	23,940
20 years of age and older	49,968	51,919	51,267	52,216	55,351	57,056	60,165	61,790
Other programs	**17,488**	**17,136**	**23,994**	**19,432**	**19,668**	**20,752**	**20,114**	**18,571**
Under 20 years of age	1,105	1,268	1,408	1,171	1,436	1,691	1,739	1,526
20 years of age and older	16,383	15,868	22,586	18,261	18,232	19,061	18,375	17,045

Source: MELS (2006c, p. 143).

[1] Ever since adult vocational education and vocational education for youth were integrated into a single institutional entity, MELS has produced statistics that differentiate between two sub-categories: youth under 20 years of age and youth 20 years of age and older. One of the reasons was to determine the percentage of the group continuing their studies and the percentage that had decided to return to their studies after spending time on the labour market. One objective of the reforms undertaken in vocational education was to raise the value of such education to the youth; this indicator is useful to measure or evaluate whether this objective was attained.

[2] Depending on the region, the percentages varied between 17.8% and 44% of students under 20 years of age.

Table 2 highlights enrolment in vocational studies among students under 20 years of age by gender and according to whether or not they have a high school diploma. Their degree of access to vocational education declined between 1984-1985 and 1995-1996. It then fluctuated between 16% and 17% depending on the year, though maintaining a slight upward trend. This continuous rise since 1998-1999 was due entirely to non-holders of an SSD, especially males. On the whole, more boys than girls registered for vocational training. Another interesting trend derives from the fact that holders of a general secondary school diploma (SSD) registered in increasing numbers for vocational education, while the proportion of non-holders remained at the same low level as of 1995-96.

Table 2. Proportion of Young People Accessing Vocational Education Prior to the Age of 20, Youth and Adult Sectors (in %) between 1984-1985 and 2004-2005

	1984-85	1989-90	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2002-03	2003-04	2004-05
MALE											
Total Registrations	**21. 8**	**18. 0**	**15. 0**	**17. 4**	**20. 5**	**19. 6**	**19. 0**	**19. 6**	**21. 0**	**21. 9**	**22. 4**
Students without an SSD	18. 2	11. 5	6. 6	7. 2	8. 7	8. 3	8. 5	8. 9	10. 6	11. 8	11. 5
Students with an SSD	3. 6	6. 5	8. 4	10. 2	11. 8	11. 3	10. 5	10. 8	10. 4	10. 1	10. 8
FEMALE											
Total Registrations	**24. 8**	**10. 6**	**10. 4**	**12. 2**	**13. 8**	**14. 0**	**13. 1**	**13. 0**	**12. 2**	**12. 7**	**12. 8**
Students without an SSD	19. 1	5. 0	3. 4	3. 7	4. 0	4. 3	4. 0	4. 2	4. 6	5. 0	5. 2
Students with an SSD	5. 7	5. 5	7. 0	8. 5	9. 8	9. 7	9. 1	8. 9	7. 6	7. 7	7. 6
COMBINED											
Total Registrations	**23. 3**	**14. 4**	**12. 8**	**14. 8**	**17. 3**	**16. 9**	**16. 1**	**16. 4**	**16. 7**	**17. 4**	**17. 7**
Students without an SSD	18. 7	8. 4	5. 0	5. 5	6. 4	6. 4	6. 3	6. 6	7. 7	8. 5	8. 4
Students with an SSD	4. 6	6. 0	7. 7	9. 4	10. 9	10. 5	9. 8	9. 8	9. 0	8. 9	9. 2

Source: MEQ (2000c, 2006c).

b) Individuals Pursuing College Studies

Table 3[3] gives student enrolment in college education between 1980 and 1998. Between 1980 and 1985, we observe growth in the total number students registered in a Technical DEC, followed by a decline until 1990. Later, enrolment increased once again until 1998. The total number of students in short programs, which are reserved for adults, increased until 1992 and then fluctuated annually. This fluctuation related largely to the funding provided by the *Ministère de l'Emploi et de la Solidarité sociale*.

Table 3. Evolution in the Total Number of Students in General and Technical Education at the College Level, 1980 to 1998 *(Public and Private Colleges, Fall Session)*

	Pre-University DEC	Technical DEC	Short Programs (Technical Education)	Not in a Program
1980	80,147	76,319	12,751	32,857
1981	83,130	79,642	13,843	29,090
1982	86,765	84,064	17,818	30,541
1983	87,912	87,791	21,903	32,737
1984	91,029	85,713	20,411	35,952
1985	94,622	85,777	18,107	42,124
1986	94,919	84,285	18,774	40,303
1987	92,678	80,533	19,489	42,626
1988	93,060	77,716	21,574	44,422
1989	90,946	74,580	20,946	46,595
1990	90,963	75,715	22,383	47,664
1991	93,230	78,905	24,272	48,389
1992	98,981	81,762	32,530	39,740
1993	97,851	84,013	32,012	36,407
1994	95,638	85,332	28,571	30,514
1995	92,888	85,926	31,702	22,848
1996	92,785	87,306	24,577	16,168
1997	88,073	88,274		
1998	86,223	88,050	22,422	12,372

Source: Doray and Fusulier (2002, p. 283).

[3] Tables 3 and 4 present the evolution of enrolment in college education from 1980 to 2004-2005. We were unable to find a homogeneous long-time series in the available literature. Given the circumstances, we preferred to present the evolution of enrolment in two tables, thereby ensuring the internal consistency of the definitions used in each table. Thus, it is not possible to compare Tables 3 and 4.

Table 4 indicates that the ACS is primarily adult programs: the number of students registered in continuing education is greater than the number of students following the same program in regular education. Also, since 1999 enrolment in these programs has declined by 7,000 students. This can be attributed to an important reduction in funding by the government as part of the latter's active measures in labour-market management (the reduction by *Emploi Québec* in purchases of training from educational institutions).

Overall, enrolment in regular college studies since 1999 has declined, both in pre-university education and technical training. This trend may also be observed in adult education, which experienced a decline following the reduction in students pursuing an ACS. Lastly, adults constitute a minority population in college education, accounting for less than 18% of overall CEGEP enrolment in 2003.

Table 4. Enrolment in Regular Education and Continuing Education in Institutions Providing College Education, by Educational Sector and Type of Program, 1999 to 2003 (Fall Session, Full-Time and Part-Time Enrolment)

	1999	2000	2001	2002	2003
Total Regular Education	**171,653**	**166,970**	**164,732**	**163,071**	**160,975**
DEC (pre-university)	79,233	76,222	74,463	74,812	75,966
DEC (technical training)	85,108	83,517	83,172	81,083	78,180
DEC (induction et transition)	4,982	5,068	5,198	5,992	5,976
ACS (technical training)	1,883	1,682	1,396	719	361
Non-program	65	116	118	78	64
Total Continuing Education	**47,559**	**46,460**	**41,636**	**37,694**	**34,467**
DEC (pre-university)	3,022	2,927	2,735	2,622	2,373
DEC (technical training)	3,856	3,984	3,665	3,601	3,391
DEC (induction et transition)	24	43	36	64	53
ACS (technical training)	30,923	30,760	28,273	25,541	23,604
Non-program	9,734	8,746	6,927	5,866	5,046

Source: MELS (2006b).

c) Individuals Pursuing a University Education

Table 5 shows the recent evolution in the number of students registered in Bachelor's, Master's and Doctoral programs, from 1995-1996 to 2004-2005. Prior to that period, the number of students enrolled in university had nearly doubled between 1975 and 1992. There was a decline in enrolment in 1996-97, then a slight rise starting in 1999-2000.

Table 5. Evolution in University Enrolment in Québec, by Educational Level

	1995-1996	1996-1997	1997-1998	1998-1999	1999-2000	2000-2001	2001-2002	2002-2003	2003-2004	2004-2005
Bachelor's Programs	194,196	187,565	183,700	183,157	187,014	187,514	189,452	195,132	201,132	202,081
Master's Programs	34,271	34,086	34,281	34,558	36,120	37,192	40,808	44,573	46,730	48,199
Doctoral Programs	9,343	9,290	9,326	8,923	8,763	8,757	8,837	9,453	10,462	11,409
TOTAL	**237,810**	**230,941**	**226,977**	**226,638**	**231,897**	**233,463**	**239,097**	**249,157**	**258,324**	**261,689**

Source: MELS (2006b, p. 141).

2.3 Key Points

Québec's educational system differs from that of the other provinces in several respects. First, secondary education is of shorter duration. Second, vocational education for specialized trades and for higher-level employment is given at two educational levels: (a) vocational education centres managed by school boards, and (b) CEGEP (technical training). These institutions have a two-fold mission: to prepare students for university or the labour market. Third, the first cycle of university education lasts three years instead of four years. As for changes in enrolment, we note the following:

- In programs leading to a DVS, AVS or AVE, most students were returning to school. Some of these were *returners* – having worked on the labour market for a period of time, they were now returning to their studies. Others were unemployed persons undergoing retraining, while a third group were students pursuing a college education.
- Enrolment in college studies has continued to decline in recent years. The decline has been more significant among regular students registered for the DEC than among adult students who, nonetheless, have a relatively low enrolment in DEC programs. Registration for the pre-university DEC has continued to decline since 1993, as has that for the short programs in technical training. However, registration in the Technical DEC has continued to climb since 1990.
- Programs leading to an ACS are more popular than any other type of training in the CEGEP continuing education sector. However, the number of students enrolled has declined since 1999.

3. The History of Vocational and Technical Education since 1980

3.1 Introduction

In the early 1980s, the economic environment in Québec (as well as in Canada) was marked by recession, one manifestation of which was a major employment crisis. Youth unemployment increased significantly. During the same period, companies introduced numerous technological changes made possible by the development of computers and micro-electronics. These changes also looked to employment to deal with the crisis. Governments gradually developed vocational education programs to prop up employment and the economy. This period also provided an opportunity to create various tools to support the transition from school to work, and to develop in-company training.

Certain programs, often called employability programs, were created to support the social and vocational integration of unemployed individuals (particularly youth). In 1983, the first steps were taken: a return-to-school program (essentially in the path intended for adults taking secondary-level studies), access to training courses and community projects. They were supposed to facilitate job access by allowing individuals to complete their secondary education or obtain work experience. These measures were established for job seekers under thirty years of age; participation was voluntary. Simultaneously, community groups obtained public funds allowing them to become *external employment services.* In so doing, these groups directed their support toward youth, especially youth with disabilities.

At the same time, continuing education underwent significant change. The government created programs to support in-company training. It introduced measures to fund training in companies with a view to developing this segment of adult education. In 1984, the Government of Québec adopted an action plan in continuing education that channelled financial and human resources toward greater professionalization of activities, largely to support economic development and technological change.

3.2 The Reform of Vocational Training

In 1986, the provincial government introduced an important reform in vocational education with its publication of an action plan. The objective was to enhance the value of vocational education in the eyes of youth, their parents and employers.

As was the case in many countries, the primary impact of the increase in school enrolment starting in the 1960s was in general education. In Québec, while schools provided vocational education alongside general education (designed to make access to the former more democratic), general education rapidly gained the upper hand and attracted an increasingly greater proportion of youth. Individual and family investment in education placed greater value on general education; vocational education was (or remained) relegated to students with learning disabilities. Furthermore, at both the secondary and college levels, enrolment in vocational education had always been weaker than that in general education. Above all, there was a major decline in vocational education enrolment in the 1970s and 1980s. Beaudet (2003) characterizes this period as one of a system in crisis. Thus, between 1980-1981 and 1985-1986, the total number of full-

time teachers declined by over 30% (from 5,266 to 3,652), a direct result of the decline in the number students. Whereas in 1977-1978 105,944 students were enrolled in vocational education for youth, in 1986-87 this number declined to 43,747 and in 1993-94 was no higher than 7,537 (*Bulletin statistique de l'éducation*, 1999). Since general education did not experience a similar decline, we cannot invoke demography to explain the decline in enrolment. Between 1983 and 1991, the CEGEPs also experienced a decline in enrolment, but not to the same extent as in vocational education (Tables 3 and 4).

Beginning in 1986, the government sought to reverse the trend in vocational education by implementing a double strategy. On the one hand, this involved increasing the value of vocational education by increasing its scholastic standards. By making access more difficult through an increase in minimum entrance requirements, it hoped to make vocational education programs more attractive to students and their parents. On the other hand, it started to significantly revise the content to counter criticisms bearing on the inadequacy of program content. Thus, changes in content and the utilization of an ability-based approach (considered important in ensuring a better match between employment and training programs) were deployed in the vast program reform. There was also a proposal to *de-school* certain forms of teaching by promoting on-the-job training courses, work-study programs (WSP) and apprenticeships. Lastly, it announced and implemented a strengthening of structures linking the educational system and companies. The government accomplished this by creating school-employment committees organized on a local, sectoral or regional basis. In reality, this linking would be largely carried out by sectoral workforce committees, which were put into operation in the 1990s in more than 25 industrial sectors.

However, the 1986 reform did not produce the expected results – at least not among the targeted populations. To be sure, there was no increase in enrolment in this area among youth embarking on their initial training. On the contrary, the mass exodus continued. Overall enrolment was sustained by adult students and by individuals returning to their studies, since the government had taken advantage of the introduction of the significant changes to merge adult vocational education with vocational education for youth.

By the early 1990s, a new strategy to increase the standing of vocational education was gradually taking shape. It was based on *professionalizing* vocational education and increasing the autonomy, vis-à-vis general education, of its educational models. Training models found in successful economies, such as the German *dual system*, would serve as beacons to guide the formulation of new practices in vocational training. The new strategy was based on the use of new educational formulas and special pedagogical tools. It involved using the distinctive characteristics of vocational education to enable the greatest number of students to succeed. Some of these approaches were designed explicitly to create stronger links between the workplace and training, while others sought a new balance between theoretical training and practical training. This was accomplished either through the introduction of a progression in learning a trade (training leading to semi-skilled trades, which laid the groundwork for a transition to fully-skilled trades), or by adjustments to the theoretical or practical courses. Some of these approaches were proposed on an experimental basis in the early 1990s (the experimental project to diversify vocational education paths for youth). They were later taken up again and

formalized in the *Pagé Report* (1995), the report of the Estates General on Education (1996) and the vocational education policy (Marois, 1997).

There were seven facets to the strategy of enhancing the status of vocational education through pedagogical approaches:

1. **An occupational exploration program.** School boards could initiate a career exploration program for youth with no fixed occupational path. This program was designed to help youth confirm their tastes and interests in different trades by including in their general education courses promoting occupational exploration. It was intended for youths in Secondary III or Secondary IV (general education). The objective was to confirm the occupational choice of youths who were ready to embark upon vocational training. It involved incorporating vocational education units of the program they had selected into their Secondary IV (general education) program.

2. **Upgrading the value of the workplace as an educational setting** through the implementation of new pedagogical formulas, such as apprenticeships, work-study programs and courses of instruction.

3. **Semi-skilled trades**. Attestations of vocational education (AVE) in semi-skilled trades could later be integrated with a diploma in a skilled trade. They were intended for youth with learning difficulties who were unable to meet the minimal requirements for access to vocational education in a trade. The approach consisted in creating training modules that could be considered as parts of complete trades corresponding to existing labour-market occupations. These programs were developed by school boards and met a local employment need identified by regional authorities. They were developed in collaboration with companies in associated fields. Students successfully completing the program earned qualification certificates. The latter are part of a ministerial bank of skills, initially made up of DVS and AVS skills.

4. **Concomitance between general studies and vocational studies**. The principle underlying this formula was to allow youth who had not yet obtained the general education prerequisites for vocational education to register for this training. These students would then complete these prerequisites while they were taking their vocational training. This experiment allowed young students in Secondary III who had interrupted their occupational choice to begin their studies in the program, starting in Secondary IV; at the same time, they completed their general education at this same level.

5. **Gateways between the secondary and college levels.** It was also agreed to create so-called standardized training programs considered to form a continuum with technical education. In fields where their application was a realistic undertaking, these programs were designed to enable students to pursue studies beyond vocational training, and to do so via educational content that was continuous. Thus, a student who held a DVS could register in a program leading to a DEC.

6. **The technology-oriented path**. In general education, certain school boards have experimented with yet another pedagogical formula: the so-called technology-oriented path. The latter would be suitable for students experiencing difficulty with pedagogical approaches based on abstraction and theory. It involves using practical technological supports to ensure that skills are acquired in the main general education subjects.

7. **The work-based learning program.** In the fall of 1996, the Government of Québec announced the gradual implementation of a learning program intended for youth who had completed Secondary III. However, this initial formula did not have the success expected and was replaced by the skills program, which in turn was replaced by the work-based learning program. By developing the skills needed to practice a trade, the program promoted access to trades by more individuals already earning wages. It involved a learning program in which an apprentice trainee was coupled with a journeyman for a given time to acquire the skills recognized by the trade. The learning program was based strictly on "compagnonnage" (a "buddy system") and, consequently, provided apprentices with the potential to develop their know-how by working alongside an experienced worker (Emploi-Québec, 2007). Sectoral workforce committees were responsible for developing occupational standards and certification requirements (Appendix 1).

At the college level the situation was different, since there was no drastic decline in technical education enrolment. On the other hand, the movement for program reform had begun, and all the technical programs had to be reviewed using a framework that employed a competency-based approach. A second modification was made: the introduction of short or dedicated programs leading to an Attestation of College Studies (ACS). In principal, these programs were reserved for individuals on the labour market (wage-earners or the unemployed) who had left their studies for at least one year. The ACS was another change introduced to meet the needs of the local labour markets. It was a short-duration diploma marking the successful conclusion of studies for adults, wage-earners or the unemployed (within the framework of training purchased by Emploi-Québec), and whose content was usually conceived around a theme related to the labour market.

3.3 Outside the Educational System

There were also initiatives other than those undertaken by educational system and labour: community organizations developed vocational integration enterprises to qualify youth with learning or economic difficulties for trades with varying levels of specialization. The vocational integration enterprises collective defines these as "community organizations and social economy enterprises. Their mission is social integration, and their originality resides in coordinating the combination of an integration/training function with a real economic activity, though the latter is non-profit. The special characteristic of vocational integration enterprises is that they meet the training and coaching (supervisory) needs of individuals having serious difficulties entering the labour market, and their general objective is to combat social exclusion and poverty" (www.collectif.qc.ca). For example, SOS VÉLO collects used bicycles to recycle them. At the same time, young people of 18 to 30 years of age can learn the trade of bicycle mechanic. Another example is INSERTECH, a company that provides training in assembling computers.

> Every year, Insertech provides 45 young people with six months of paid work experience in the computer field. Trainees get personal, social and technical training, and individualized follow-up to resolve problems so that they can get on with their lives. The good news? About 90% of the young people who finish the program are then able to successfully re-enter the labour market or return to their studies. All training and integration activities at Insertech take place in workshops for recycling, refurbishing and repairing computer equipment and assembling computers (www.insertech.qc.ca). [Translator's translation]

3.4 Reform of Planning Methods

At the time of the vocational education reforms, there was also a reform of program planning methods, resulting in closer linkages with labour forecasting studies conducted by Emploi-Québec. Thus, MELS regularly publishes the list of occupations in demand and corresponding vocational and technical education programs. To illustrate, here are the 50 programs that were most in demand in 2006 (see Insert 3).

The reform of planning methods led to important changes in ways of identifying and selecting the knowledge required and integrating it into new programs. This had two features. The first was a greater involvement of the workplace (which relied on experts in the field to identify economic development trends) on (a) sectoral labour committees[4] and (b) employees, who described their tasks within the analytical framework of work situations. Sectoral labour committees and the *Comité national des programmes d'études professionnelles et techniques* (CNPEPT, "National Committee on Vocational and Technical Educational Programs)[5] also had a central role to play in project approval. In addition, there were stakeholders on regional development committees, which later became the *Conferences régionales des élus* (regional economic councils). These committees permitted the various regional stakeholders (economic, political, educational and cultural) to identify the local supply of vocational and technical education falling within the scope of strategic regional development plans.

The second feature derived from the use of the skills-based approach, which according to its users was effective in linking the skills identified in the workplace with those transmitted via the programs.

[4] Sectoral committees were created in the 1990s to support the development of the workforce in one industrial sector in particular. Among their attributions, these committees represented the sector's companies in meetings with the MELS.

[5] The CNPEPT is a multi-party committee made up of representatives from the world of work (employees and employers) and the field of education. The committee is the authority approving modified programs and new programs.

Insert 3. The Top 50 in 2006

Training Sector	Vocational Education (DVS or AVS)	Technical Education (DEC)
Administration, Commerce and Computer Technology	5054 – Representation (AVS)	410.C0 – Insurance and Financial Advising
	5227 – Medical Secretary (AVS)	420.A0 – Computer Science Technology (Specialization in Network Management)
	5196 – Sales-Advising (DVS)	420.A0 – Computer Science Technology (Administrative Data Processing)
		420.A0 – Computer Science Technology (Indsutrial Data Processing)
Agriculture and Fisheries	5167 – Milk Production (DVS)	152.A0 – Farm management and Technology (Livestock Production)
		152.A0 – Farm management and Technology (Crop Production)
Food Services and Tourism	5268 – Retail Butchery (DVS)	154.A0 – Food Processing
Arts	No program	570.C0 – Industrial Design Techniques
Wood and Related Materials	5028 – Mass Production of Furniture and Softwood Lumber Products (DVS)	233.B0 – Furniture Making and Cabinetmaking (Architectural Woodworking)
		233.B0 – Furniture Making and Cabinetmaking (Mass Production)
Chemistry and Biology	No program	210.02 – Chemical Technology Engineering
		210.A0 – Laboratory Technology (Biotechnology)
		210.A0 – Laboratory Technology (Analytical Chemistry)
		210.B0 – Chemical Process Technology
Building and Public Works	5146 – Stationary Engineering (DVS)	221.D0 – Realty Appraisal (Construction Estimating)
		221.D0 – Realty Appraisal (Property Evaluation)
		230.A0 – Geomatics (Cartography)
		230.A0 – Geomatics (Geodesic Surveying)
Electrical Engineering	No program	243.06 – Industrial Electronics Technology
		243.15 – Computerized Systems Technology
		244.A0 – Applied Physics Technology
Motorized Equipment Maintenance	5055 – Mechanics of Construction Equipment (DVS)	No program in this sector figures in the Top 50
	5259 – Diesel Engine and Electronic Control Mechanics (AVS)	

Mechanical production	5225 – Industrial Design (DVS) 5294 – Industrial Machine Operation (DVS) 5193 – Operation and Adjustment of Moulding Machines (DVS) 5249 – Manufacture of Molds (AVS) 5041 – Die Forging (AVS) 5267 – Composite Materials Processing (DVS) 5269 – Cable and Circuit Assembly (DVS) 5042 – Toolmaking (AVS) 5223 – Machining Technology (DVS) 5244 – Precision Sheet-Metal Working (DVS) 5224 – Numerical Control Machine Operation (AVS)	235.B0 – Industrial Engineering Technology
Maintenance Mechanics	5006 – Industrial Maintenance Mechanics (AVS)	241.D0 – Industrial Maintenance Mechanics
Metallurgy	5308 – Manufacture of Metallic Structures and Wrought Metal (DVS) 5233 – Sheet Metal Work (DVS) 5195 – Welding and Fitting (DVS)	No program
Transportation	No program	410.A0 – Transportation Logistics
Health Services	5302 – Pharmacy Technical Assistance (DVS)	411.A0 – Medical Records Management 180.A0 – Nursing 140.A0 – Medical Electrophysiology 141.A0 – Respiratory and Anaesthesia Technology 140.B0 – Biomedical Laboratory Technology 142.B0 – Nuclear Medicine Technology 142.A0 – Diagnostic Imaging
Social, Educational and Legal Services	No program	No program

Source: www3.mels.gouv.qc.ca/fpt/, consulted in April 2007.

3.5 Adult Education

Continuing education has undergone major changes. One such change was the integration of vocational education for adults with vocational education for youth. Another was the enactment of legislation on workforce training that obliges companies to contribute one percent of their payroll to training their employees. A third was the creation of the *Commission des partenaires du marché du travail* ("Labour Market Partnership Commission") and sectoral committees to

articulate demand for training. Lastly, in the spring of 2002, the government formalized a continuing education policy organized around the following four themes:

- Top priority: all Quebeckers should have access to basic education (especially immigrants, unskilled youth and workers 45 years of age and older, for whom the challenge is even more difficult).
- Maintaining and increasing skill levels among adults (with work-based learning as a mainstay of continuing education).
- Recognition of prior learning to facilitate greater access to training.
- Increasing access and the retention rate.

3.6 Aspects of Evaluation

The educational system has a variety of instruments for analyzing the situation. In addition to analyzing changes in enrolment, the Ministry has carried out surveys on integrating graduates of the various educational levels into the labour market (Table 6). For example, between 2001 and 2005, the proportion of individuals with a DVS seeking work tended to decline, while those with a DVS who were working tended to increase. These trends were valid regardless of age, though there were more individuals with a DVS continuing their studies who were 19 years of age or less. Three paths were available: returning to school for a general education and obtaining an SSD; pursuing studies leading to an Attestation of Vocational Studies (AVS) or pursuing studies at the college level.

The *Relance* survey on college studies indicated a downward trend in the percentage of graduates who were working, and this trend went hand-in-hand with growth (stronger amongst youth) in the percentage that was pursuing their studies. From 2002 on, the percentage of individuals seeking work declined slightly. The fact that over a quarter of the graduates in technical education were still studying seemed to indicate a de-compartmentalization of technical education and the development of a new strategy among students for whom registration in technical education did not necessarily mean immediate entry into the labour market.

The *Relance* surveys on university education indicated that the percentage of graduates who were working had declined, whereas the percentage of graduates who were still studying had increased. There was a similar trend at the master's level. In sum, over several years there was a tendency to prolong education.

Another instrument implemented in recent years consisted of employers' surveys to find out their satisfaction with the graduates they had hired. The surveys investigated several aspects, including an evaluation of proficiency levels (Table 7) and the performance of new employees (Table 8). At the secondary school level, less than 10% of employers were dissatisfied with the proficiency levels of the graduates they hired, leading one to believe that most of the employers were satisfied with vocational training. The level of satisfaction was even higher at the college and university levels. As for the level of satisfaction with performance, it was very high regardless of the educational level at which the graduates had studied, and increased over time. It was lower when the new recruit's length of service was shorter, but increased over the first year and, for university graduates, even over the first two years.

Table 6. Situation of Respondents to the Relance Survey, Various Educational Levels, Québec, 2001-2005

		2001	2002	2003	2004	2005
Situation of individuals with a DVS						
Working	(%)	74. 3	76. 2	76. 7	75. 9	77. 1
Seeking work	(%)	10. 4	10. 4	10. 2	9. 9	9. 7
Studying	(%)	11. 1	9. 4	9. 2	10. 2	8. 9
Persons not in the labour force	(%)	4. 2	3. 9	3. 9	4. 0	4. 3
Situation of individuals with a DVS, 19 years of age and younger						
Working	(%)	72. 6	74. 9	76. 1	74. 3	75. 1
Seeking work	(%)	7. 5	7. 8	7. 0	6. 8	6. 4
Studying	(%)	17. 4	15. 0	14. 3	16. 8	15. 8
Persons not in the labour force	(%)	2. 5	2. 3	2. 5	2. 1	2. 7
Situation of individuals with an AVS						
Working	(%)	77. 2	76. 4	73. 7	76. 8	74. 1
Seeking work	(%)	9. 3	8. 7	10. 0	8. 8	8. 4
Studying	(%)	7. 5	9. 2	8. 3	7. 5	12. 1
Persons not in the labour force	(%)	6. 1	5. 7	8. 0	6. 9	5. 4
Situation of individuals with a AVS, 19 years of age and younger						
Working	(%)	79. 2	76. 0	72. 6	81. 0	67. 8
Situation of individuals with a DEC						
Working	(%)	71. 3	70. 3	69. 5	67. 6	65. 8
Seeking work	(%)	4. 1	4. 5	4. 1	4. 3	3. 8
Studying	(%)	22. 8	23. 1	24. 4	26. 1	27. 9
Persons not in the labour force	(%)	1. 8	2. 1	2	2. 1	2. 4
Situation of individuals with a DEC, 24 years of age and less						
Working	(%)	68. 8	67. 9	66. 1	63. 8	62. 6
Seeking work	(%)	3. 5	4	3. 9	4. 1	3. 5
Studying	(%)	26	26. 4	28. 2	30. 2	31. 8
Persons not in the labour force	(%)	1. 7	1. 7	1. 8	1. 8	2. 2
Situation of individuals with a bachelor's degree						
Working	(%)	74. 5		70. 4		68. 1
Seeking work	(%)	3. 1		3. 6		3. 8
Studying	(%)	19. 8		22. 9		25. 0
Persons not in the labour force	(%)	2. 6		3. 1		3. 1
Situation of individuals with a master's degree						
Working	(%)	79. 2		76. 2		73. 5
Seeking work	(%)	3. 1		3. 7		4. 5
Studying	(%)	15. 2		17. 3		18. 9
Persons not in the labour force	(%)	2. 5		2. 9		3. 1

Source: Baillargeon et al. (2006a, 2006b, 2006c).

Table 7. Evaluation (in %) of the Proficiency Levels of Employees Who Were Technical Education Graduates, Employers' Views as a Whole

Proficiency Level	Secondary Level in 2000	College Level in 2002	University Level in 2004
Higher Level	39.00	51.30	69.30
Medium Level	50.60	44.40	27.90
Low Level	9.70	3.70	1.20
Unknown	0.70	0.60	1.70

Source: Baillargeon G. et al. (2000, 2002); Ait-Said R. et al. (2005).

Table 8. Level of Satisfaction (in %) with Performance of Employees Who Were Graduates, According to Period Elapsed, Employers' Views as a Whole

	3 months	6 months	12 months	24 months
Secondary (Year: 2000)				
Very satisfied	8.40	14.10	36.90	
Somewhat satisfied	64.30	72.90	54.30	
Somewhat dissatisfied	21.20	10.60	6.30	
Very dissatisfied	3.40	0.80	0.90	
Not specified	2.70	1.70	1.60	
College (Year: 2002)				
Very satisfied	8.50	17.10	45.80	
Somewhat satisfied	69.60	73.90	48.50	
Somewhat dissatisfied	18.00	7.50	4.00	
Very dissatisfied	2.10	0.80	0.70	
Not specified	1.70	0.70	1.00	
University (Year: 2004)				
Very satisfied	10.10	18.50	43.40	62.00
Somewhat satisfied	69.20	72.20	51.60	32.70
Somewhat dissatisfied	16.10	7.40	3.20	1.70
Very dissatisfied	0.90	0.40	0.30	0.60
Not specified	3.70	1.60	1.50	2.90

Source: Baillargeon G. et al. (2000, 2002); Ait-Said R. et al. (2005).

4. Linking Education and the Economy: An Analysis of Efforts at Institutionalization

In the previous chapter, we showed how reform in the area of vocational and technical education has evolved over the last 20 years. At first, reform of vocational and technical education developed freely. Overall reform of the educational system did not begin until 1995, with the creation of the Estates General on Education, and has continued since 1997. However, though VTT was first modified in 1986, its institutionalization has varied according to the measures taken and has been slow in attracting large numbers of students.

The institutionalization varied, since the measures were not all implemented at the same pace. For example, the group working on program reform got underway quickly, employing a skills-based approach and making significant modifications in program-planning methods; at various stages, these methods made increasing use of economic actors and used new planning tools. On the other hand, other measures developed slowly – with fluctuations from one year to the next (Table 9). For example, in 1996-1997 the number of students enrolled in the technology-oriented path of secondary-level general education was 2,825. Since then enrolment has declined. Career exploration underwent a slow start, and then took off in 2001-2002. Concurrent education made progress until 2001-2002, but the number of students involved fell the following year. A real institutionalization of gateways between the DVS and the DEC had not yet begun, when we noticed that fewer than 60 students used this approach. Work-study programs (WSP) also experienced slow development, in terms of both the number of programs offered and the number of students enrolled.

There were several reasons for this slow institutionalization. First, the reforms were initiated at a time when governments were making deficit reduction a political priority and had reduced their budgets, including those for education. For example, when the federal government abandoned the work-study project funding program, the Government of Québec did not take it over immediately. The result was that school boards and CEGEPs found themselves without the resources needed to continue implementing the formula.

Another reason was that the steps taken to implement institutionalization were often experimental and voluntary. The initiative was often taken locally. Also, teachers in the field of vocational and technical education were working on several projects simultaneously.

Table 9. Institutionalization of Measures in Vocational and Technical Education to Reconcile Educational and Economic Goals, Québec

	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05
Technology-oriented path															
Number of schools	3	3	9	38	51	61	65	64	57	53	44	38			
Number of students					2,529	2,780	2,825	2,663	2,462	2,419	1,962	1,709	1,600		
Secondary III	n.d	107	363	1,475	1,932	2,063	2,031	1,838	1,817	1,801	1,476	1,250			
Secondary IV	99	n.d	82	233	597	717	794	825	645	618	486	459			
Retention rate	100	100	97.8	98.0	98.6	98.2	98.7	98.2	98.5	96.7	98.3	98.0			
Career exploration					-	732	1,432	1,534	1,797	1,472	1,491	4,311	10,535		
Concurrent education					-	-	76	148	158	122	488	708	612		
DVS-DEC Programs					-	-	-	50	60	57	ND	ND	ND		
Work-study programs, secondary level															
Number of institutions					29	31	41	35	41	52	51	52	58	58	55
Number of projects					73	64	80	91	128	194	208	216	244	241	247
Number of programs					37	33	42	45	60	75	84	92	99	80	75
Number of students enrolled					2,519	1,696	2,340	2,698	3,818	5,272	6,570	6,612	7,192	7,303	7,577
Work-study programs, college level															
Number of institutions[1]					34	29	25	32	32	47	49	51	49	52	53
Number of projects[1]					66	54	49	64	73	97	117	148	195	244	275
Number of programs[1]					39	32	34	34	30	55	51	80	85	95	105
Number of students enrolled[1]					1,800	1,700	2,000	2,300	2,500	2,895	2,521	2,985	3,400	4,035	3,961
Work-based learning (number of agreements)					236	255	724	769	528	783	1,191	2,039	2,046	**2,873**	**3,526**

1. Information for the years 1994-95 to 1998-99 concern only public CEGEPs.

Source: MELS (2006c; Fyfe, Mamane and Beaudoin, p. 11).

4.1 Continuity of Learning in Vocational and Technical Education

One of the reforms concerning vocational and technical education programs opened up vocational, technical and university education by creating training continuums that allowed students to continue their education at higher levels. The various eligibility requirements for the programs "introduced a relative flexibility that did not exist before, and thereby created learning gateways. These were both vertical (transition from the secondary to the college level and ultimately to the university level), and horizontal (transition from one program to another at the same or a higher level" (*Comité de gestion de la taxe scolaire de l'île de Montréal*, 2004, p.42).

The concept of learning continuums – at first called "inter-level harmonization", and later "learning gateways" – emerged in 1995 (Pagé, 1995). Gateways were introduced to make vocational and technical education more attractive and facilitate the transition of vocational education graduates to technical training, and of technical education to the bachelor's level (university). In *theory*, students could even begin this training continuum via a semi-skilled trade. Since the latter were essentially made up of certain skills that fell within the domain of skilled (or semi-skilled) trades, it was possible to pursue studies leading to a Diploma of Vocational Studies (DVS). These students could later obtain an Attestation of Specialized Studies (ASS) at the secondary level, or a Technical DEC by registering for CEGEP. Lastly, a student could enrol in academic studies by using gateways between the DEC and the bachelor's degree. All these paths were open, but access to them was still limited to only a few programs.

a) The DVS-DEC Gateways

By December 2000, the Minister of Education was convinced that the requirement of a secondary school diploma for admission to technical education constituted a significant barrier to rapid change in the number of students enrolled in harmonized programs. He therefore announced his intention to modify college admission rules for thirteen programs in vocational education. He decided to give graduates of 1,800-hour programs access to corresponding technical programs without having to complete their final year of secondary education, thus without having obtained their secondary school diploma. According to the *Direction générale de la formation professionnelle et technique* (DGFPT), inter-level harmonization consisted "in establishing similarities and continuity among curricula at the secondary and college levels (...) with a view to avoiding duplication in the supply of training, recognizing acquired skills and facilitating the training path" (*Ministère de l'Éducation du Québec*, 1998, p. 2). The desire for harmonization culminated in greater openness in technical education programs. Thus, graduates of vocational educational programs with a secondary school diploma had their college schooling shortened due to recognition of their prior learning in vocational training. In March 2006, there were 40 harmonized DVS-DEC programs, with eleven at the planning stage. However, the fact remained that there were very few students registering for vocational education who anticipated continuing at the CEGEP level (Ménard, 2005).

The *Conseil supérieur de l'éducation* (2001) had a lukewarm reaction to this announcement and invited the minister to try out this new form of harmonization in a few programs before changing the rules for switching from the vocational sector to the technical sector in the targeted programs. Several components of the plan were questioned, but the *Conseil* started by questioning the

ability of the college sector to attract a sufficiently large number of students to the technical programs. In 2001, the minister in charge announced that he was upholding his decision to modify CEGEP admission rules, but that its application would be limited to two technical programs offered in three CEGEPs, thereby reducing the scope of the measure.

In 2004, the *Conseil Supérieur de l'Éducation* (2004) observed that this type of gateway was still difficult to implement. In its annual report, the *Conseil* provided an account of the difficulties experienced in (a) recruiting students and motivating teachers, (b) recognizing prior learning, (c) the lack of flexibility in certain areas of instruction and (d) the rigidity of the curricula. There were limitations in resources and financing as well as in the design and structure of these options. In its conclusion, the *Conseil* asked: Are the difficulties due to a lack of interest on the part of students or to "the ability of the educational system to open up to new approaches" (ibid, p. 70).

A study carried out by Ménard and Semblat (2005, 2006) confirms that, in effect, gateways are difficult to implement. Thus, of the three participating CEGEPs that were supposed to begin the experiment following the minister's announcement in 2001, only one felt that it had a student clientele large enough to proceed. The effectiveness of the method used to disseminate information to eligible students on the existing harmonized programs proved to be decisive in this context. This is consistent with the viewpoint of De Saedeleer (2007), for whom the formula could be successful if there was adequate promotion and dissemination of the information amongst students. In spite of the experiment's limitations (a single program in a single CEGEP), the degree of success and persistence in school of the students led to the adoption of changes in the rules of admission to CEGEP for the thirteen vocational education programs selected.

Currently, three new gateways are being set up as pilot projects. These projects are intended to counter the decline in student enrolment and meet pressing workforce requirements in the four following regions: Centre-du-Québec, Lanaudière, Montérégie and Saguenay-Lac-Saint-Jean. By attracting youth to vocational training, the gateways are aiming, in these cases, to save programs in danger of being eliminated due to a lack of student enrolment.

In addition, similar initiatives have been set up to offset the decline of students in vocational and technical programs. Examples include networked CEGEPs, which have existed since January 2006. To reconcile vocational and technical education, the *Fédération des CEGEPs*, the *Centre francophone en informatisation des organisations* (CEFRIO) and the MELS have tried to stabilize the supply of technical education in programs with few students by combining students from different CEGEPs (into fewer classes). This initiative received a budget of 1.7 million dollars, apportioned over two years.

b) DEC-BA Gateways

When the CEGEPs were created, the Québec education system's plan was to make completion of pre-university college studies a pre-requisite for being accepted into a university program. Since then, a growing number of Technical DEC graduates have pursued studies at the Bachelor's level. An indicator of this growing interest was the rate of direct advancement from technical education to the university level. The percentages presented in Table 10 are conservative, since

they apply only to individuals who are 24 years old or less, who pursued full-time studies without interruption. However, some technical education graduates return to the labour market before going on to university studies, and thus have not been taken into account. Between 2001-2002 and 2004-2005, the rate of direct advancement increased by 5.4 percentage points, which may be viewed as a significant increase. Females accounted for most of this increase (6.7 points versus 4 points for males), which could be the result of opening up gateways in programs that recruit more females, such as laboratory procedure or practical nursing. This data confirms the growing importance of technical education as a gateway to university.

In Québec, the *École de technologie supérieure* (ÉTS) was the first university to offer Technical DEC-Bachelor programs. In fact, to be admitted to the vast majority of Bachelor-level programs given at the ÉTS, the candidate must be a technician. Awarding diplomas to nearly a quarter of the engineers trained in Québec, the ÉTS has now accepted nearly 5,000 students from 38 technical programs offered at 41 CEGEPs. Although traditionally it drew its student clientele from Physics Technology graduates, in the autumn of 2004 it opened its doors to individuals with a DEC in Business Administration. Every year, almost 12% of graduates of Physics Technology immediately continue their education at the ÉTS; this figure climbs to 20% if we include those who have been on the labour market for a few years. The ÉTS letters patent require 85% of its student population to have a Technical DEC obtained in Québec. Only a very low percentage has a pre-university college education.

Table 10. Proportion (in %) of College Graduates, 24 Years of Age or Less, Immediately Pursuing Full-Time Studies at the University-Level, by Type of Education and Sex

	1983-84	1993-94	2001-02	2002-03	2003-04	2004-05
Pre-University Education	86.0	79.9	76.4	77.7	78.1	77.7
Male	87.7	79.0	77.0	79.3	78.4	78.2
Female	84.3	80.5	76.0	76.7	77.9	77.4
Technical Education	17.4	18.6	19.7	20.8	22.2	25.1
Male	21.9	21.0	24.5	24.9	28.8	28.5
Female	14.4	17.1	16.2	17.3	17.8	22.9

Source: MELS (2006c, Table 2.10).

There are various types of gateways between technical education and university education. The first is a general gateway. The link between a DEC in Nursing and a Bachelor's degree in the same field is an example. When this program underwent reform, all the nursing faculties and CEGEPs agreed to link the two programs so as to allow students to obtain a bachelor's degree in two years, following their technical studies. The second type utilizes specific agreements. Indeed, certain CEGEPs and universities signed agreements to recognize certain courses completed in CEGEP. Programs were co-ordinated so that the CEGEP graduates involved could take advantage of modifications to university courses, thereby allowing them to terminate their university studies more rapidly. Two cases in point, among others, were those involving the

Institut de tourisme et d'hôtellerie du Québec and the bachelor's degree in *gestion hôtelière et de restauration* (hotel and restaurant management) given by the *Université du Québec à Montréal* (Ménard, Jolin, Lachance and Saint-Pierre, 2006), and the *CÉGEP de Rosemont*, which recently signed agreements in the area of computer science with *Université Laval* and the *Université du Québec à Montréal*.

Today, there are 219 DEC-BA gateways, of which about thirty are at the draft stage. There are many students taking advantage of gateways involving nursing and business administration programs.

4.2 Workplace Training

Training courses are considered a valuable activity for students since they constitute an educational activity in a "real" workplace. They have another advantage: they are useful in the school-to-work transition. In this regard, they may be viewed as high-quality tools for providing training and support in social and vocational integration. Developing this form of training was central to reform in several programs.

a) In Vocational Education

Approaches to vocational and technical education are very diverse. At the secondary level, all programs include workplace training. Since the vocational education reform of 1986, their objective has been to provide trainees with work experience that will familiarize them with trade or technical practices. They provide student-trainees with an opportunity to put into practice certain skills acquired in school. In vocational education (with the field of construction as the only exception), this kind of training is unpaid and lasts three weeks. There are different types of training courses:

- **Training courses for skills development.** These are given primarily in the area of vocational education and last between 3 and 5 weeks. The training designed for the program allows students to acquire one or several skills in their workplace. While it is the schools who propose the content for the training course, the schools and the enterprises hosting the trainees make the decision jointly and at a local level. Practical training is provided throughout the vocational education period and aims to meet the objectives of the curriculum. Individuals are considered apprentices during their training courses and have a tutor. In general, they are not paid. At the same time, a teacher provides the working students with follow-up to ensure they acquire the skills described in the training curriculum. While the company/enterprise participates in evaluating the trainee, the school has the primary responsibility for evaluating and certifying the student.
- **Training courses in transfer and integration.** Here, students are integrated into actual employment and put into practice the skills they have acquired at school. The enterprises propose the content for the training course, though the schools and the enterprises that host the trainees make the decision jointly and at a local level. Lasting 3 to 10 weeks, this training course – which is added on to the initial period of the program – sets objectives that exceed those of the curriculum. The training can be either paid or unpaid.

- **Work-study**. Here, students spend at least 25% of their study time in the work environment. "It is both a pedagogical strategy and a way of organizing the training. Employing a highly structured approach, it combines periods of training in an educational institution with periods of on-the-job training; the entire approach is linked to a program leading to a diploma" (MEQ, 1995, p.11).

Insert 4 describes various types of training courses that involve alternating work and study within either a DVS, an AVS or an AVE. Training courses that form part of work-study programs take the longest to complete (10 weeks), in contrast to regular training courses, which take only 3 to 4 weeks.

b) In Technical Education (in the Colleges)

With the exception of training given in a clinical setting (primarily in the health and social services sectors), workplace training courses are not a compulsory component of technical training programs. Despite not being compulsory, technical training often involves workplace experience. The objective of technical training is to allow students to acquire vocational skills or techniques they cannot acquire in a school setting. When this kind of training is made available, it can be provided in two ways:

- regular training courses provided at the end of a student's training program.
- training courses that form part of work-study programs; these include several courses given in the workplace during the student's training program. Training courses that form part of work-study programs can have several aims, though the one most frequently encountered in the technical sector is the transfer of learning to the workplace. This kind of training course is given within a co-operative system, which is a form utilized by work-study programs. (http://inforoutefpt.org/ate/alter2.htm).

In college education, just like at the university level, work-study programs are often associated with *co-operative education*. Students alternate between study sessions and training periods of 12 to 16 weeks in the workplace, and are hired as employees. Consequently, they are subject to the rules of the enterprise and receive remuneration. Although training course content is determined by the enterprise/business, it must be tied to the curriculum. The enterprise/business also evaluates the performance and abilities of the trainee to be integrated into the labour market. In the 2001-2002 school year, 51 institutions managed 149 work-study programs in 78 different curricula. In these projects as a whole, the duration of the training increased by 38.7%. The most recent data for 2004-2005 indicate that the number of students enrolled in co-operative education was about the same, while the number of projects and programs increased (see Table 9).

Insert 5 allows us to compare the definitions, objectives, characteristics and average length of training courses in clinical settings, regular training courses and training courses in work-study programs that come under a co-operative system.

Insert 4. Types of Training Courses in Vocational Education

	Regular Training Courses	Work-Study Program in DVS and AVS	Work-Study Program in AVE
Types of Training Courses	• Execution and integration • Skill acquisition	• Skill acquisition • Transfer and integration	• Social and occupational insertion
Definitions	• These training courses form part of the training given primarily in schools. • The school decides on the objectives, content, number, point in time and duration of the training courses. • Trainees are not necessarily integrated into the regular activities of the training place host. • The training courses are of short duration.	• An important part of the training takes place in the workplace and requires more than one training course. • The objectives, content, number, point in time and duration of the training courses are set by the school and the enterprise, locally and jointly. • Trainees must be integrated into the regular activities of the training place host. • These training courses are longer, and given more frequently, than regular training courses.	
Objectives	• Get to know the labour market • Get some work experience • Acquire the occupational skills of the trade	• Acquire occupational skills • Transfer the skills acquired and become part of the activities of the enterprise	• Promote labour-market integration by practising simple activities
Characteristics	• The training course is set by the curriculum • The training course is unpaid.	• The training course aims to meet the objectives of the curriculum • The training course can also aim to meet objectives that exceed those of the curriculum • The enterprise's personnel provide the training in the workplace • About 25% of the program occurs in the workplace • The training course is generally unpaid	• The training course is compulsory • About 50% of the program transpires in the workplace. • The training course is unpaid.
Average Duration	• Variable, but generally 3 to 4 weeks	• 3 to 10 weeks, but varies according to the total length of the curriculum	• Up to 10 weeks

Source: Ménard, Hardy and Gauthier (2003).

Insert 5. Description of Different Types of Training Courses in Technical Education

	Training Courses in a Clinical Setting	Regular Training Courses	Work-Study Programs: Co-Operative System
Types of Training Courses	• Skills acquisition	• Execution • Transfer (of skills) and integration	• Transfer (of skills) and integration
Definitions	• Objectives, content, number, period of time and duration of the training courses are determined by the school. • No compulsory integration of trainees into the regular activities of the training place host.	• These training courses form part of an educational program given primarily in a school setting. • The training courses are of short duration. • Objectives, content, number, period of time and duration of the training courses are determined by the school. • No compulsory integration of trainees into the regular activities of the training place host.	• A significant part of the program is given in the workplace and requires more than one training course. • The training courses are longer and more frequent than regular training courses. • Compulsory integration of trainees into the regular activities of the training place host. • Objectives, content, number, period of time and duration of the training courses are determined jointly by the school and the enterprise.
Objectives	• Acquire vocational skills in technical areas that cannot be acquired in school.	• To become familiar with technical practices. • Put into practice certain technical skills.	• Transfer learned skills and become integrated into the activities of the enterprise.
Characteristics	• Training course set according to the curriculum. • Training courses given primarily in the health and social services sectors. • Training courses non-remunerated.	• Training course set by the college. • Training course aims to meet the objectives of the curriculum. • Training courses non-remunerated.	• Training course set by the college. • 30% to 50% of the time spent in training takes place in the workplace. • Compulsory remuneration of workplace training.
Average Duration	• Workplace training accounts for up to 60% of the education provides.	• Training takes about three weeks.	• Every training course must last from 12 to 16 weeks.

Source: Adapted from the *Stagiagramme*, MEQ (1997).

4.3 Work-Study Programs

The Work-Study Program is a special form of training that evolved in a distinctive way, namely with help from special financing programs and the involvement of an association to promote the co-operative education system in universities and colleges. Several studies have examined this formula (Landry, 2002; Landry et Mazalon, 1997; Doray et Maroy, 2005; Doray and Maroy, 2001), including those that explored the theme of partnership and its institutionalization provincially and locally.

According to its promoters, work-study programs have at least two virtues: they facilitate (a) a reconciliation between education and employment through the use of training courses, and (b) the school-to-work transition through the vocational experience they provide students, or through a decision by an employer to keep the trainees. Thus, work-study programs become a method of recruitment through direct observation of trainees over a long period. Compared to pedagogical models considered successful in terms of their ability to integrate the client into the labour market and the quality of the labour trained, such as the German *dual system,* work-study programs introduce equivalent mechanisms into curricula while dispensing with major reforms in the area of technical and vocational education.

a) Forms of Work-Study Partnership

The research discerned three types of partnership. The first, the **service partnership,** occurs when the educational institution requests a training course in a local business/enterprise which presents an interest to the student and has good physical facilities, but does not offer employment opportunities. The objective here is to develop the student's social and vocational skills the involvement of the enterprise is limited to a joint effort to integrate youth into the labour market. Consequently, the school is dependent on the level of the enterprise's involvement in this relationship; that said, the experience is likely to be beneficial to the students, who obtain their first contact with the world of work.

A **negotiated partnership** exists when the enterprise itself contacts an educational institution in order to obtain trainees. An enterprise looking for qualified labour seeks to acquire students as part of its hiring strategy; here, the training course provides a unique opportunity for observing the trainee. This **partnership** allows students to be matched with a future employer and facilitates a more complete and specialized collaboration.

A **partnership of reciprocity** may emerge following collaboration between the educational institution and the enterprise. The school provides customized training to prepare students for integration into the enterprise, or even for continued training. The enterprise recognizes the skills acquired by the trainees, whom it supervises so that they can develop their practical and social abilities. Through this type of interaction, the students obtain a more complete training and have a better chance of securing employment once they have completed their studies.

b) The Special Characteristics of the Work-Study Program (Also known as Co-Operative Education) at the Secondary Level

This learning strategy is used mainly at the secondary school level (vocational) to link theory to practice, and to facilitate the acquisition of manual, technical, communication and social skills in a "real" workplace setting. Students who obtain workplace training keep their student status. The hours of training on the job replace regular course hours. The training courses must meet the objectives of the teaching program and are properly supervised. Most of the time the courses are given in local small- and medium-sized enterprises (SME) to facilitate student commuting and visits by the training course supervisor.

Another aspect of the strategy at the secondary school level is that students registered in Life Skills and Work Skills Education (LSWSE) have learning difficulties or behavioural disorders. For these students, training courses become a source of motivation – sometimes even a gateway to an occupation. Thanks to the knowledge acquired in class, and to the information acquired from their teachers, students are prepared for their first student shadow program. Most of them emerge from this experience motivated to continue their studies. This solution plays a positive role in reducing the dropout phenomenon, while increasing the status of youth with less interest in academic learning and a desire to transfer to training that is more practical.

c) The Special Characteristics of the Work-Study Program at the Post-Secondary Level

At the college and university levels, promoting work-study programs is often linked to school success and perseverance (Payeur, 2001). Work-study programs are also known as co-operative education; that is, there is an obligation to coordinate periods of classroom courses with periods (often lasting 15 weeks) of workplace training to assimilate knowledge acquired in class, while fulfilling the requirements of the jobs held. In contrast to work-study programs at the secondary level, here it is the enterprises that make the decisions concerning the content of the training course and its evaluation, though they must comply with the requirements of the training program. Students are considered employees, and are therefore paid.

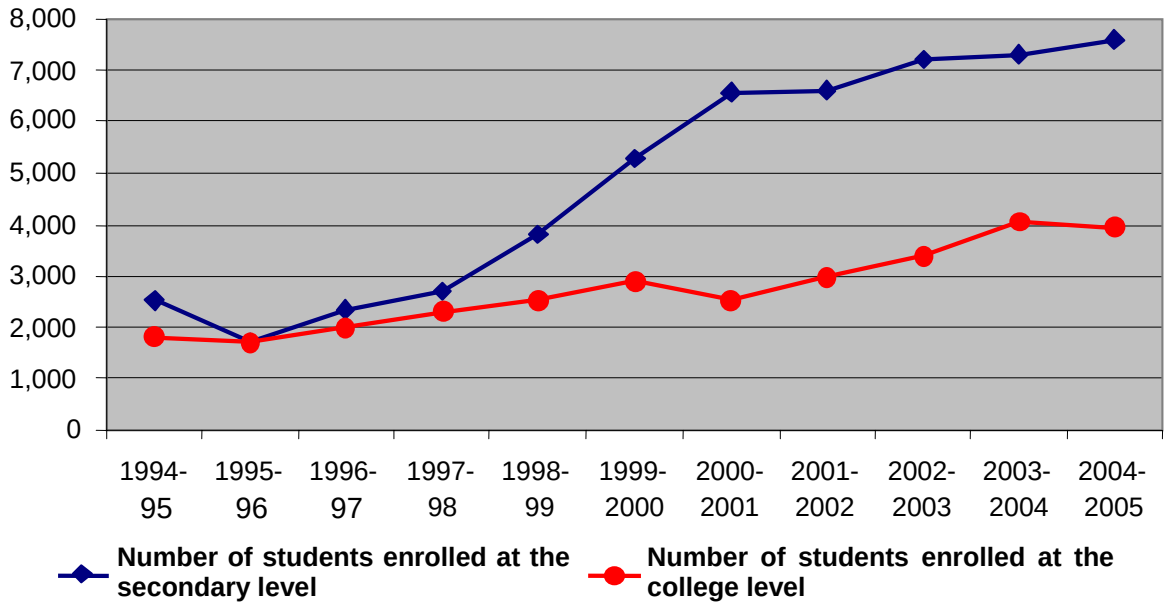
In the co-operative system, trainees must often submit their curriculum vitae and be interviewed if they wish to be selected for a position, just like in a real hiring situation. At the college level, not all students in a program offering a combination of work and study get into workplace training since a selection is carried out. In work-study programs, students receive training 12 months a year.

d) The Institutionalization of the Formula

Studies on combined work and study programs have dealt primarily with the institutionalization and implementation of work-study practices in various Québec institutions. According to the Organization for Economic Co-operation and Development (OCDE, 1994), educational policies in many countries favour the development of work-study programs because the socio-economic context of crisis lends itself to this approach. In Québec, as in several other industrialized countries, the struggle against youth unemployment, support for school-to-work transition programs and the struggle against student failure (dropping out) have enabled educational institutions to obtain financial support to develop work-study training programs.

The implementation of work-study programs was the most important element undertaken to reform vocational and technical training, even though it affected only a small number of students enrolled in VTT (Chart 1). At the secondary school level, an increase in this number was not recorded until 1997-1998. There have been increases since 2000-2001, though the rate of increase has slowed down. At the college level, the increases were very slow from 1994-1995 to 2000-2001. However, in 2003-2004 the number of students surpassed 4000; nonetheless, this represented only a minority of the total number of students in technical education.

Chart 1. Evolution in the Number of Students in Work-Study Programs at the Secondary and College Levels, Québec



Thus, it is understandable that research has focused primarily on the institutionalization of the formula. For example, Landry (2002) describes three levers influencing the development of work-study programs in Québec: financial and political levers, local conditions and vocational support levers.

The first development phase facilitating the expansion of work-study programs in vocational and technical training in Québec was its financing in the early 1990s through a Department of Employment and Immigration program that had been launched in 1986. Later, in 1993 and 1995, work-study programs were financed through two other approaches. The first was a tax credit (up to 40% of trainees' salary) and the second, which followed the enactment of Bill 90, was the compulsory contribution of one percent of a company's payroll to employee training. Even though these businesses were allowed to include expenditures on trainees in the employee training budget, "this reason would not be the first one invoked; rather, it would follow others,

including that of a genuine need for labour, to accept co-operative education trainees arriving from CEGEP" (Landry, 2002, p. 24). The second phase in the development of work-study programs began in 1998 when the *Ministère de l'Éducation* decided to subsidize work-study programs in vocational and technical training, sometimes even tripling the number of work-study programs at the secondary level.

The second factor was the local conditions, namely, the support of administrators in educational institutions and other educational actors. In both college and vocational education, program development was left to the initiative of the educational institutions or local actors, which explains why the support provided by administrators was important. From 1966 on, the *Université de Sherbrooke* set itself apart from other universities by offering programs with a co-operative form of instruction. Eight years later, the *CÉGEP de l'Outaouais* sought to distinguish itself from Ontario colleges located in Ottawa with whom it competed. In many CEGEPs, presenting programs or projects to the federal government was the decision of college administrators, who viewed them as a source of relevant funding in difficult budgetary circumstances. As for the educational actors (teachers or education consultants), they saw work-study programs as a way to motivate students with learning difficulties, or as an approach allowing students to acquire direct experience with the workplace and, frequently, new technologies.

Local proponents of work-study programs received professional support from associations conducting training activities, and from the *Ministère de l'Éducation du Québec* (*MEQ*, now named the *Ministère de l'Éducation des Loisirs et du Sport, MELS*), which produced implementation guides. Thus, non-profit associations were created to promote co-operative education in Canada's colleges and universities. These associations were made up of employer representatives, governments, students and institutional actors. In 1973, the first association of individuals working at the post-secondary level, the Canadian Association for Co-operative Education (CAFCE), was founded at the University of Waterloo. The Association for Co-operative Education (ACE) and the *Association canadienne de l'enseignement coopératif* (ACDEC), which is the Québec section of the CAFCE, followed in its footsteps. Those who worked in secondary-level programs created the *Association Québécoise d'Alternance Études-Travail* (AQAET), whose goal was to help institutions set up work-study programs (through training activities, seminars, etc.). In 1990, the Québec Employers' Council and the *Fédération des cégeps*, which sought to establish links between CEGEPs and the business sector, developed an interest in work-study programs. It therefore set up the *Centre de Liaison Entreprises-Cégeps* (CLEC). In 1997, this centre expanded and became the *Centre de Liaison Entreprises-Éducation* (CLEE). In 1999, the circle widened with the addition of the *Fédération des commissions scolaires du Québec* and the *Association des collèges privés du Québec*.

The supporters and various stakeholders in educational institutions and the business sector also had access to another form of professional support: administrative and pedagogical guides.

Doray and Fusulier (2002) have focused on the institutionalization of work-study programs by observing a paradox in the way it developed. On the one hand, work-study programs were emblematic of the revived interest in VTT; on the other hand, for a number of years the progress made was slow and unsteady. The authors conclude that the process is incomplete, and that any

progress achieved in harmonizing educational and economic goals can be undone. However, even the slow increase in enrolment fostered a belief among some that the process of introducing work-study programs was gaining ground. The authors remind their readers that it is important to examine the way the approach is implemented at the local level. To be sure, Doray and Maroy (2001 and 2005) have carried out precisely this type of analysis with reference to two Québec projects/programs.

The two projects they studied exemplify a system of exchange between actors in which the relationship with the enterprise takes the form of a market relationship, that is, a service is provided to a client enterprise. In combination with an industrial approach, such a market approach can be more *effective* or more *professional*. The nature of the relationship is evident in the nature of the work performed by the coordinators who promote the project among businesses and who have access to these businesses' networks. It can also be seen in the actions of schools who present themselves as source of labour for the businesses. Thus, on the level of symbolic reference, they act as a continuum with the business sector. They have a common language and similar assessment criteria, and each has predictable expectations. Thus, the market relationship reaches right into the educational framework; this relates to the fact that, in building bridges with employment, CEGEPs seek to improve their competitive position on the educational market.

e) Potential Impacts

The first impact influences the process of integration. Training courses at the secondary level aim to meet several criteria:

- having an initial professional contact in the adult world;
- observing a professional at work to get an idea of the tasks she/he performs;
- gaining experience in the profession to broaden one's choice of possible paths to follow;
- improving one's understanding of the importance of studying;
- encouraging school dropouts to choose a technical education and consider school-to-work transition; encouraging greater persistence in school;
- cultivating a measure of maturity among students and helping them to become more responsible;
- developing personal judgement.

Although a work-study program at the secondary level aims to develop skills linked to an educational program, the training courses may also lead to summer employment or even a permanent position. However, students are very limited in choosing the business in which they will take in the context of the training course, since it is the educational institution that is usually in charge of finding a suitable position. As the service partnership is the most widespread form of relationship at the secondary level, students do not always have the opportunity to be hired directly, though they acquire significant work experience that can be used in seeking employment.

At the college and university level, students must demonstrate their skills. This increases their self-confidence and reinforces their career choice. Given that the initial training course can be taken starting in the second semester, students may be prompted to reconsider their field of study

without waiting several years, and envisage taking a new direction. In addition, thanks to work-study programs, a student has the opportunity to continuously establish links between training and practice in real-life situations, and become aware of the significance of each (ACDEC, 1992).

The study by Doray and Maroy (2001) on the evolution of work-study programs in Québec and Belgium indicates that one of its effects is to transform a student's identity. They then have a deeper understanding of their choice of program, request areas of learning that were absent from their training or transform their student experience through a deeper commitment to their studies.

As the training courses for college and university students are paid and students are generally in training twelve months per year, students find it easier to concentrate on their school tasks while obtaining a job directly linked to their field of expertise. If their training course (workplace training) fails to lead to a job, students still have, in addition to their diploma, several other strings to their bow. Consequently, work-study programs make a significant contribution to the school-to-work transition.

Work-study programs are also of great interest to educational institutions. They allow them to establish and maintain close collaboration with a variety of enterprises, while acting as an influential player in the economic development of their region. Schools ensure, or at least try to ensure, that their training programs meet the needs of the occupational environment and that they evolve at the same pace.

By way of on-the-job training, educational institutions can also obtain for their students access to high-quality equipment and resources and thereby promote a more complete training. In addition to accelerating their school-to-work transition, these conditions increase student motivation and make them more success-oriented.

However, there are several constraints, especially at the secondary level. First, the educational institution must develop links with targeted businesses so that they can provide training course places for their students. However, in certain regions of Québec, there may not be a sufficiently large employment pool in a position to take in trainees and provide them with training. Second, there are the administrative aspects. An official must verify if the training is being carried out satisfactorily, and that the employer is not taking advantage of the trainee. On the other hand, the office approved for the training of students must ensure that trainees are conducting themselves in an appropriate manner.

In addition, there are documents to be completed and a training assessment carried out to provide students with feedback. To facilitate these formalities many educational institutions have computerized their administrative records, which are also available online.

The selection of trainees from an educational setting has several advantages for a company. First, it reduces their recruitment costs and the training period for the new employees. In general, trainees are highly motivated since they are not only gaining professional experience, but also help to complete their degree. The employer knows that this training period will result in reflective practice and an assessment, and that the students must carry out their tasks with care.

In such a reciprocal partnership, the enterprise ensures itself access to ready labour that will meet its needs. In addition, it can provide itself with a bank of potential applicants, and provide them with ongoing training. In developing a relationship of trust with the school, it can discover new, leading-edge technologies and alternative ways of doing things, thereby broadening its horizons (MEQ, 1999).

By contributing in this way to the school-to-work transition of young people, companies improve their image. At the same time, graduates hired after pursuing a training program in their companies are likely to be more effective and more productive.

f) In Sum

Whether we refer to it as the co-operative system or the work-study format, this teaching strategy involving a relationship of trust between an educational institution and an occupational environment seems to have established its merit and enriched the education of students. It motivates students by providing them with an opportunity to link theory and practice, gain experience working in a real-life situation and it helps them understand the importance of education. Schools can seize the opportunity to influence their region's economic development through their partnerships with companies (service partnership, negotiated agreement or relationship of reciprocity). These alliances also have advantages for companies, which obtain skilled and well-trained manpower, and participate in a joint effort to integrate youth into the labour market.

However, in spite of the formula's theoretical advantages, it is still relatively undeveloped. While it symbolizes the transformation of vocational and technical education, its impact has often been nominal. There are several reasons for this. First, there were numerous, successive reforms of program content in technical education; these mobilized teachers who did not have enough time to implement the approach. Second, there were reductions in funding resulting from government decisions to fight the deficit. These resulted in numerous budgetary cuts in several fields, including vocational and technical training. Third, there was the government's preference for voluntarism, which left decisions regarding work-study programs to local educational authorities. Lastly, companies were free to decide whether or not they wished to co-operate in such programs. Moreover, there were few incentives in place to encourage participation in this program. In general, work-study programs emerged not only as a more effective pedagogical tool for improving the training of students, but also as an instrument in strategies for differentiating colleges, which compete with each other.

4.4 The Technology-Oriented Path

The technology-oriented path does not involve vocational education directly. Rather, it provides dropouts (or those who exhibit the characteristics of dropouts) with a better understanding of the content found in general training (Miclot, 2000). "It is based on combining subjects and aligning knowledge with practice. It combines three basic subject areas, namely, primary language, general science and mathematics, into a technology course, and employs comprehensive activities involving the creation of a concrete object" (Fyfe, 2002, p. 8). The principal objectives

of the technology-oriented path are: “to increase students’ motivation and persistence in school, improve their performance and give them direction” (ibid, p. 7).

To understand the way the path was implemented, we must return to the late 1980s, during the period of reform in vocational education at the secondary level. To meet the requirements of the job market of the 1990s, the level of basic training for students wishing to register in vocational education was raised. Successful completion of Secondary IV (and preferably Secondary V) became a requirement for admission to the vocational education program.

Many students seeking a more practical education were unmotivated when dealing with academic pedagogical approaches, though they “they had no learning difficulties and their intellectual skills were sometimes above average” (Fyfe, 2002, p. 7).

Consequently, in 1990 the vocational education branch sought a way to increase the persistence in school of youth whose behaviour indicated they were potential dropouts (such as low motivation, poor performance, isolation and absenteeism) by testing a technology-oriented project among students in Secondary III and IV. “Both the experimental phase and the experience of the last ten years unequivocally confirm that when all implementation requirements are met the technology-oriented path is one of the most efficient measures to combat dropping out of school at the secondary level “ (Fyfe, 2002, p. 7).

Since the content emphasizes practice, it is different from that in the regular curriculum (24 of the program’s 36 hours consist of formal training). The main difference with ordinary programs resides in the integrated (combined) subjects (to which it devotes 12 hours; Miclot, 2000). The student joins a sub-group made up of 15 individuals (instead of the usual 30) and carries out various technological projects. “Of course, working in a sub-group promotes team spirit, a feeling of belonging and a sense of responsibility; it also facilitates supervision and optimal monitoring” (Miclot 2000, p. 43).

Lastly, there is an additional cost for the pedagogical approach favouring the technology-oriented path: $700 for a student in Secondary III, and $800 for student in Secondary IV. However, this is less than the social cost generated by dropping out of school.

By the late 1990s, the results for this path were conclusive: fewer than two percent dropped out. The average rate of persistence in school (youth) reached 98 percent. The results demonstrated that “all of the students liked the technology-oriented path, which also increased their motivation” (Fyfe, 2002, p. 11).

There was a strong increase in enrolment from the time the technology-oriented path was implemented until 1994-95; this was followed by a period of slow growth. The number of students enrolled in Secondary III reached a peak in 1995-1996, and then experienced continuous decline until 2002. As for enrolments in Secondary IV, the maximum was attained two years later, in 1997-98, and then it too experienced continuous decline (Table 9). There were several reasons for this slowdown. One reason was the “uncertainty that then prevailed on the school boards due to waiting period imposed by the *Ministère de l’Éducation* for informing school boards of the number of schools he intended to authorize for the following year” (Fyfe, Mamane

and Beaudoin, 2002, p.9). Moreover, there had been no *information tour* (or information visits) as in previous years.

Thus, according to the report on the technology-oriented path, the school boards did not dare invest in this path. Lastly, as of 1999-2000, the *Ministère de l'Éducation* decided to halt the implementation of the technology-oriented path in new schools and did not replace technology teachers taking their retirement. These measures have resulted in a decline in the number of schools offering this program in recent years.

4.5 Career Exploration

Career exploration forms part of the optional courses taken by students in the fourth or fifth year of the regular secondary level. Its goal is to get students to discover various occupations. It also allows them to acquire various technical or professional skills and try them out. "This option aims to increase the motivation of youth and takes into account some of their special needs, especially their need for training through practice" (*Conseil supérieur de l'éducation*, 2004, p.65).

Career exploration at the secondary level was introduced in 2001. Of all students in Secondary IV and V in 2002-2003, 10,000 (in 39 school boards) registered for career exploration, and 63 percent of these students took in excess of 50 hours of this training.

The proposal to introduce career exploration emerged in the context of the reform of regular secondary school. It comprised two possible paths starting in Secondary III: an on-the-job training path and a general education path. The first was intended for students whose progress was extremely slow. "It would replace the Life Skills and Work Skills Education (LSWSE) path, and programs leading to an Attestation of Vocational Education (AVE) offered at the secondary level (occupational)" (*Conseil supérieur de l'éducation*, 2004, p. 66). This path included general education and practical training in a work environment. It also allowed the student to choose from two levels of certification and skills: an unskilled trade or a semi-skilled trade. "Thus, the secondary level institution [vocational], would no longer be in charge of training youth in the area of semi-skilled trades (…) though the youth involved would still have access to workshops in vocational training centres" (*Conseil supérieur de l'éducation*, 2004, p. 66).

The second path, that of general education, led to a Secondary School Diploma (SSD) in one of two ways: either by the regular route (the current general secondary format, with added optional courses), or via the applied route. The latter allowed students to develop a more practical training profile related to the possibilities found in the work world. The technology-oriented path described above matched this profile.

The possibility of diversifying paths would not only make it possible to take into account students' interests and aspirations, but also to mitigate dropping out. However, according to the *Conseil supérieur de l'éducation*, the first path, that of on-the-job training, may be perceived as damaging to a student's sense of self-worth, since it "could become a path made for those lacking the abilities to do something else (*Conseil supérieur de l'éducation*, 2004, p. 66).

4.6 Concurrent Education

Concurrent education is not well documented. Still, students have had access to this approach since 1996-1997. Once students have completed Secondary IV, they can register in a program leading to a DVS. At the same time, they can register for general education at the Secondary V level. Thus, they can obtain an SSD as well as a DVS. However, students find these programs very demanding. In addition, vocational centres find these programs very difficult to organize since they "do not have the resources needed to provide the general education, and because it is difficult to coordinate secondary (regular) with secondary (vocational)" (*Conseil supérieur de l'éducation*, 2004, p. 67). In 2001-2002, there were only 708 students registered in concurrent education, and the following year this dropped to 612.

4.7 The Programme d'apprentissage en milieu de travail – PAMT ("Work-Based Learning Program")

At the Summit Conference on the Economy and Employment in 1996, the government announced that it was launching a program designed to "increase integration of youth into the labour market by allowing them to complete their vocational education through training in the workplace" (*Emploi-Québec*, 2005, p. 118). However, practical difficulties soon arose and the *Commission des partenaires du marché du travail* re-targeted the program toward salaried employees. The program became an approach for adults, who had the opportunity to enrol in as of 2002. The Commission hoped that by recognizing the educational role of work environments there would be greater diversity in training sites. The program was one of the strategies developed to this end.

As its name suggests, the program is based on work-based learning leading to a Certificate of Qualification and/or an Attestation of Skills (acquired on the job) issued by *Emploi-Québec*. Sectors that had sectoral workforce committees developed occupational norms to determine the training content of each trade listed in the PAMT.[6] The PAMT facilitated learning a trade by having the apprentice work with an experienced individual (known as a journeyperson) who passed on their knowledge. "This path, which draws its inspiration from common practices in Québec's construction trades and European practices, should be carefully monitored" (*Conseil supérieur de l'éducation*, 2004, p. 68).

At the moment, there are PAMT in 55 trades. In 2004, 3,526 qualification agreements were signed. *Emploi-Québec* (2006) has pointed out that since the adoption (in 2001-2002) of the *Cadre général de développement et de reconnaissance des competences* ("General Framework for Skills Development and Recognition"), which governs the development of the PAMT, the number of agreements has increased by 73 percent.

[6] The committee is also responsible for disseminating information to companies on occupational norms and informing them that the program exists.

5. Conclusion

We would like to return to several themes taken up by the Canadian Policy Research Networks (CPRN):

1) The supply of training/education (requirements for admission to the program including age, the level at which students can enter the program, institutions providing the programs);
2) The partnerships (scope, format, effectiveness and durability);
3) The characteristics of the student population;
4) The expected results and their evaluation.

5.1 The Supply of Training

The overall structure of vocational and technical training, that is, the supply of job-readiness training, dates back to the 1960s, at which time the Québec government created three levels of this training at three levels of education. Vocational education, which led to industrial employment, was developed in secondary schools; technical education, leading to work as a technician, was started at general and vocational colleges (CEGEPs). University education was devoted to the education of professionals, scientists and scholars in various fields of knowledge. In general, however, the way the latter developed was very different from that of the two other levels of education.

Over the last 20 years, vocational and technical education has undergone important changes. The impact of these changes has varied depending on which mechanisms were being changed or introduced into the educational structure. By the mid-1980s, the legitimacy of the training content with respect to work and employment were a common concern of vocational and technical training. A major revision of their programs was undertaken. At the same time, profound changes in program planning were implemented as a result of (a) reform of program planning methods and educational approaches, (b) systematic consultation with economic actors, and (c) using the competency-based approach in formulating teaching programs. Based on the opinions of employers identified in polls on training quality, and on the *Relance* surveys to find out the occupational status of the graduates, the results were positive.[7]

Another concern was the opinion of the students and their parents regarding the legitimacy of the training. In this matter, there was a significant difference between vocational education in secondary schools and technical education in the colleges. Starting in the 1970s, the former went through a period in which its status declined, which led to waning interest on the part of young people. School enrolment fell rapidly, so that the very survival of the vocational education structure was on the line. The objective of the 1986 reform was to reverse this trend and attract young people again. Raising scholastic standards, which was the first strategy to restore the prestige of vocational education, failed to meet its objectives since enrolment among young people continued to decline. The second strategy, developing a particular educational niche, was

[7] The results of Relance surveys must be interpreted carefully, since they also depend on labour market conditions. Thus, during a recession the weak employment rates for graduates do not necessarily depend on the quality of the education they have received; it may also be a function of the jobs available.

more successful; however, the gains made were tenuous since the number of students under 20 years of age (registered in vocational education) failed to increase steadily and continuously. To a large extent, the students were drawn from the adult population; consequently, coordination between liberal adult education and vocational education was required to ensure that students had the pre-requisites for vocational education. The vocational education orientation had all the appearances of a choice that had been made after the individuals involved had either (a) dropped out, (b) had an unsuccessful experience in college education, (c) had not been on the labour market for a very long time or (d) had experienced great difficulties. It seemed as if vocational education was rarely a first choice.

By comparison, technical education had a different dynamic. It did not lose students nor experience a decline in legitimacy. Its overall decline was linked to a demographic decline rather than waning interest on the part of students. This contrasted with the situation prevailing in vocational education, and largely explains why reform in technical education did not set its sights exclusively on program review. Technical education can lead to two certificates. A Diploma of Collegial Studies (DEC) is granted once the student has completed all courses in a program; an Attestation of College Studies (ACS) is granted after the student has completed a program equivalent to one year of schooling. While both youth and adults have access to programs leading to a DEC, only adults (employed or unemployed) are allowed to register for ACS programs. Many college employees fear that programs leading to an ACS will also become available to youth in continuous training, and that as a result it will compete with DEC programs, which incorporate an element of general education.

One device associated with educational specification in vocational and technical education is decompartmentalization of educational levels to facilitate continuous training. This has led to the creation of gateways (or bridging mechanisms) between vocational education and technical education, and between technical education and university education. Several years after their introduction, more students use the gateways between CEGEP and university than those between secondary-school and CEGEP; the latter gateways now exist only on paper. This reflects an increasingly popular strategy: students register for technical education with a view to getting into university. Universities are responding favourably to the creation of these gateways, since technical education graduates constitute an important recruitment pool. More and more students are using technical education as a way to get into university.

5.2 The Partnerships

The problem of partnerships was important throughout the period of change in vocational and technical training. Of necessity, approaches to program planning rely on labour market participants (sectoral committees, associations of economic actors, employers, wage-earners, etc.). Enterprises are solicited to take in trainees, and industry representatives are called upon to serve on boards of governors of vocational centres. Lastly, company representatives are playing a greater role on the boards of governors of various CEGEPs.

Opportunities for co-operation often turn into partnerships whose authority is largely formal. They do not necessarily eliminate all of the controversies surrounding the way program content or links with work environments are determined. Rather, they serve as a vehicle for the

expression of differing viewpoints and provide forums for debates. In fact, the role played by economic actors as part of the systematic co-operation deployed in planning the supply of training enables them to exercise a "regulation of control" over educational orientations.

There are also partnerships with workplaces at the local level. These emerge in the daily management of programs and education, making use of training courses, and in the development of work-study programs (and co-operative education in CEGEPs). Circumstances vary greatly among the programs offered in vocational and technical training: there is an unequal development. At the secondary level, on-the-job training is compulsory; important work has been carried out to define their objectives and methods. Training courses are also compulsory in the field of health (at the secondary school level and in CEGEPs); to a large extent, this is the legacy of previous forms of training.

On the other hand, several technical education programs either did not have workplace training courses or introduced them only recently – in the form of work-study programs, amongst others. In the case of work-study programs, their introduction was carried out, by and large, in the form of voluntary initiatives taken by teachers and enterprises. As a result, implementation was slow and the quality of the training suffered. There was also an impact on recruitment (which constantly requires renewed efforts), and the location of training courses, which often led to compromises in the quality of training course content, even when the impact of the training on student identity, and their commitment to their studies, were positive.

5.3 Characteristics of the Student Population

We have presented the characteristics of students enrolled in vocational and technical education. In vocational education, we have emphasized a distinction based on age, which also reveals the degree of continuity in educational trajectories. We have also pointed to differences between *youth* and *adults*. The main point is still access to vocational education; this stems from the fact that there are students who have gone through non-linear paths or have returned to school.

We could have presented many statistics according to gender, since the *Ministère de l'Éducation, du Loisir et du Sport* produces substantial data by gender on trajectories and orientations. Some of the information would have pointed to the persistence of occupational orientations that are mainly gender-based. However, there is far less documented information on student paths and orientations according to social origin. Consequently, it is difficult to understand the impact of social origin on vocational and technical education.

Examining the impact of factors such as gender and social origin on student paths is all the more important when we consider the fact that the formal structure of vocational and technical education has changed, introducing potentially new trajectories. The question is *who will take advantage* of these possibilities.

5.4 Results and Evaluaton

Result analysis and evaluation is an issue in vocational and technical education. We have reported on two of its aspects: (i) analysis of employers' opinions regarding their satisfaction with the graduates recruited and (ii) *Relance* surveys on the vocational status of these same graduates. Both were involved in implementing the request for regular monitoring of the reforms.

The creation in 1993 of the *Commission d'évaluation de l'enseignement collégial du Québec* (CEECQ) was a further indication of the concern with evaluation in the area of vocational and technical education. Its mandate was to evaluate the quality of implementation of college curricula, including technical education programs. In addition, the Commission is responsible for evaluating the institutional policies of colleges. In particular, two types of policies are targeted. The first is the institutional policies on the evaluation of student achievement; every college is obliged to produce this type of policy. The second is the institutional policies on program evaluation; these involve a statutory obligation that every college must fulfil. The Commission was also mandated to evaluate the success plan that each college must produce within the framework of government policy, whose ultimate objective is to improve student retention and academic success. These plans constitute *contracts* in which the institutions undertake to improve student success. Lastly, the Commission was also mandated to produce institutional evaluations whose primary objective is to help colleges "fulfil even more fully their educational mission. The institutional evaluation provides an opportunity for each of the institutions to reflect on its mission and on the main resulting institutional objectives" (CEECQ, www.ceec.gouv.qc.ca/fr/commission/mandat.htm). As such, the programs leading to an Attestation of College Studies (ACS) are evaluated in the same way as programs leading to a Diploma of Collegial Studies (DEC). In 1997-1999, twenty programs in twenty-three institutions were evaluated, and in 2001-2002, nineteen programs in the same number of institutions. Between 1995 and 2003, seventy-four evaluations dealt with ACS programs in subsidized institutions (20 private and 48 public).

There was also an analysis of the implementation of new measures related to the renewed interest in vocational and technical education. We must admit that the implementation was, to say the least, uneven, and often hesitant about various steps taken. As such, their impact remains largely symbolic. This slow institutionalization stems in part from strategic choices: reliance on the voluntary participation of educational actors and their economic partners – a similar observation stands out of the complementary CPRN report that looked at the situation of vocational preparation in other parts of the country (Taylor, 2007). It also stems from a lack of economic resources devoted to implementing the measures, which were developed at a time when reducing or eliminating public deficits was a government priority. Consequently, access to funding for the various measures was limited.

Bibliography

Ait-Said R. et al. (2005), *La formation universitaire, les employeurs s'expriment,* Québec: Government of Québec, Ministère de l'Éducation.

Association canadienne de l'enseignement coopératif (1992), *L'enseignement coopératif: un programme d'avenir*, St-Jérôme (Québec): Charles Vincent, Université de Sherbrooke.

Baillargeon, G. et al. (2006a), *La relance au collégial en formation technique-2005*, Québec: Government of Québec, Ministère de l'Éducation, du Loisir et du Sport.

Baillargeon, G. et al. (2006b), *La relance au secondaire en formation professionnelle-2005*, Québec: Government of Québec, Ministère de l'Éducation, du Loisir et du Sport.

Baillargeon, G. et al. (2006c), *La relance à l'université – 2005*, Québec: Ministère de l'Éducation, du Loisir et du Sport.

Baillargeon, G. et al. (2002), *La formation technique au collégial, les employeurs s'expriment*, Québec: Government of Québec, Ministère de l'Éducation.

Baillargeon, G. et al. (2000), *La formation professionnelle au secondaire, les employeurs s'expriment,* Québec: Government of Québec, Ministère de l'Éducation.

Beaudet, A. (2003), *La réforme de l'enseignement professionnel: bilan et perspectives*, Montréal: Association des cadres scolaires du Québec.

Bouchard, Y., D. Bouteiller, M. Hardy, L. Ménard and C. Parent (April 2000), *Organisation de la formation professionnelle et technique au Québec*, Collaboration éducation et travail (unpublished).

Comité de gestion de la taxe scolaire de l'île de Montréal (December 2004), *J'attends 18 ans, trajectoires scolaires du secondaire sur l'île de Montréal, au Québec et ailleurs: vers la formation professionnelle: une étude de cas,* Montréal: Université de Montréal.

Conseil supérieur de l'éducation (2004), *Rapport annuel sur les états et les besoins de l'éducation 2003-2004*, Québec: Government of Québec, Ministère de l'Éducation, du Loisir et du Sport.

Conseil supérieur de l'Éducation (2001), *Pour un passage réussi de la formation professionnelle à la formation technique*, Québec: Memorandum to the Minister of Education.

De Saedeleer, S. (2007), *L'arrimage des ordres d'enseignement professionnel et technique: le cas des DEP-DE CET des DEC-BAC dans les collèges (cégeps) québécois*, Sainte-Foy: Centre de recherche et d'intervention sur la réussite scolaire (CRIRES).

Direction des statistiques et des études quantitatives (1999), *La formation professionnelle au secondaire*, Québec: Government of Québec, Ministère de l'Éducation, www.mels.gouv.qc.ca/stat/Bulletin/index.htm#12.

Doray, P. and P. Bélanger (2006), **"**En deux temps et trois mouvements: Le développement récent de la formation continue au Québec et au Canada", D.-G. Tremblay (ed.), *Formation et performance socio-économique; perspectives internationales*. Québec: Téluq-Éditions Saint-Martin, pp. 259-292.

Doray, P. and P. Bélanger, (2005), "Vers une nouvelle régulation de la formation continue dans la société québécoise", in J.L. Guyot, C. Mainguet and B. Van Haeperen, *La formation professionnelle continue : enjeux sociétaux*, Brussels: De Boeck, pp. 89-116.

Doray, P. and B. Fusulier (2002), "Le développement paradoxal de l'alternance au Québec: un point de vue macrosocial", in C. Landry, *Formation en alternance: état des pratiques et des recherches*, Sainte-Foy: Presses de l'Université du Québec.

Doray, P. and C. Maroy, (2005), "L'analyse du rapprochement école-entreprise: les pratiques d'alternance dans l'enseignement technique"**,** *Cahier de recherche sociologique*, No. 40, pp. 199-225.

Doray, P. and C. Maroy (2001), "La construction des relations entre économie et éducation: L'exemple de la formation en alternance", *Éducation et Société*, No. 1, pp. 51-66.

Emploi-Québec (2006*) Loi favorisant le développement de la formation de la main-d'œuvre, rapport quiquennal 2000-2005*, Québec, Ministère de l'Emploi et de la Solidarité sociale, Government of Québec.

Emploi-Québec (2007), *Apprentissage en milieu de travail*, en ligne: http://emploiquebec.net/francais/individus/qualification/apprentissage/index.htm.

Fyfe, D., J. Lalande et al. (2000), *Rapport sur la voie technologique pour l'année scolaire 1999-2000*, Laval, Centre de développement pédagogique pour la formation générale à caractère technique.

Fyfe, D., J. Lalande et al. (2001), *Rapport sur la voie technologique pour l'année scolaire 2000-2001*, Centre de développement pédagogique pour la formation générale à caractère technique.

Fyfe, D., D. Mamane and D. Beaudoin (2002), *10 ans de voie technologique, Rapport sur la voie technologique pour l'année scolaire 2001-2002*, Laval: Centre de développement pédagogique pour la formation générale à caractère technique.

Fyfe, D., D. Mamane and D. Beaudoin (1999), *10 ans de voie technologique, Rapport sur la voie technologique pour l'année scolaire 1998-1999*, Laval, Centre de développement pédagogique pour la formation générale à caractère technique.

Fyfe, D., D. Mamane and D. Beaudoin (1998), *10 ans de voie technologique, Rapport sur la voie technologique pour l'année scolaire 1997-1998*, Laval, Centre de développement pédagogique pour la formation générale à caractère technique

Fyfe, D., D. Mamane and D. Beaudoin (1997), *10 ans de voie technologique, Rapport sur la voie technologique pour l'année scolaire 1996-1997*, Laval, Centre de développement pédagogique pour la formation générale à caractère technique.

L'Actualité (September 2006), *Révolution dans les cégeps,* Vol. 31, No, 14, on-line: www.biblio.eureka.cc/Biblio/Search

Landry, C. (2002), *La formation en alternance : État des pratiques et des recherches*, Québec: Presses de l'université du Québec.

Landry, C. (2002), *La formation en alternance,* Sainte-Foy: Presses de l'université du Québec.

Landry, C. and E. Mazalon (1997), "Les partenariats école-entreprise dans l'alternance au Québec: un état des recherches", *Education permanente*, No. 131, pp. 37-49.

Laporte, M. (1994), "L'enseignement coopératif au collégial au Québec: une évaluation globale de quelques expériences en cours", Hull-Gatineau: *Collège de l'Outaouais*.

Marois, P. (1997), *Prendre le virage de la réussite, Plan d'action ministériel pour la réforme de l'éducation*, Québec: Government of Québec, Ministère de l'Éducation.

Maroy, C. and P. Doray (2002), "La formation en alternance : une forme de rapprochement entre économie et education", in C. Landry, *Formation en alternance : état des pratiques et des recherches*, Sainte-Foy: Presses de l'Université du Québec.

Ménard, L., M. Hardy and R. Gauthier (2003), *Module 11 Formation professionnelle et technique, in Organisation de l'éducation au Québec*, Cédérom, Trois-Rivières: Université du Québec à Trois-Rivières.

Ménard, L., L. Jolin, Y. Lachance, C. Saint-Pierre, and C. Semblat (2006), *La persévérance des étudiants de formation technique qui poursuivent au premier cycle universitaire*, Proceedings of the colloquium: Innovation, formation et recherche en pédagogie universitaire of the Association internationale de pédagogie universitaire, Monastir (Tunisie).

Ménard, L. and C. Semblat (2006a), "La motivation des élèves de formation professionnelle à poursuivre leurs études dans un programme technique harmonise", *Revue des sciences de l'éducation*, Vol. 32, No. 2.

Ménard, L. and C. Semblat (2006), "La persévérance au collégial dans un contexte d'harmonisation des formations professionnelle et technique", *Pédagogie collégiale*, Vol.19, No. 4, pp. 30-35.

Ménard, L., C. Semblat, F. Fitoussi, and S. Noël (2005), *Analyse de deux modalités d'expérimentation de l'harmonisation des programmes de formation professionnelle et technique et de leurs effets sur la persévérance et la réussite scolaires des élèves,* Rapport de recherche FQRSC, Montréal: Université du Québec à Montréal.

Miclot, M. (2000), "La voie technologique : une solution au décrochage", *Vie pédagogique*, No. 115, pp. 42-43.

Ministère de l'Éducation, du Loisir et du Sport (2006a), *Programme de formation de l'école québécoise: éducation préscolaire, enseignement primaire, version approuvée*, Québec: Government of Québec, Ministère de l'Éducation.

Ministère de l'Éducation, du Loisir et du Sport (2006b), *Système d'information et de gestion des données sur l'effectif collégial*, Québec: Government of Québec, Ministère de l'Éducation. www.mels.gouv.qc.ca/stat/stat_edu/donnees_05/StatistiquesEdu2005_chap2_sect2_3.pdf.

Ministère de l'Éducation du Québec, du loisir et du sport (2006c), *Indicateurs de l'éducation Édition 2006,* Québec: Government of Québec, Ministère de l'Éducation, on-line: www.mels.gouv.qc.ca/stat/indic06/docum06/Indic06_472829.pdf.

Ministère de l'Éducation du Québec, du Loisir et du Sport (2006d), *Alternance Travail-Études en formation professionnelle et technique*, Québec: Government of Québec, Ministère de l'Éducation, on-line: URL www.inforoutefpt.org/ate.

Ministère de l'Éducation du Québec (2004), *Indicateurs de l'éducation, 2004,* Québec: Government of Québec, Ministère de l'Éducation.

Ministère de l'Éducation du Québec (2003-2004), *L'éducation à la vie professionnelle*: Rapport annuel sur l'état et les besoins de l'éducation, Québec: Government of Québec, Ministère de l'Éducation.

Ministère de l'Éducation du Québec (2003), *La formation professionnelle et technique au Québec: un aperçu.* Québec: Government of Québec, Ministère de l'Éducation.

Ministère de l'Éducation du Québec (2002a), *La formation professionnelle et technique au Québec*, Québec: Government of Québec, Ministère de l'Éducation.

Ministère de l'Éducation du Québec (2002b), *Politique gouvernementale d'éducation des adultes et de formation continue*, Québec: Government of Québec, Ministère de l'Éducation.

Ministère de l'Éducation du Québec (2002c), *Analyse comparative des modèles de formation professionnelle et technique au Québec et dans d'autres État.*, Québec: Government of Québec, Ministère de l'Éducation.

Ministère de l'Éducation du Québec (2002d), Cédérom *L'organisation de l'éducation au Québec*, Version 3.

Ministère de l'Éducation du Québec (2000a), *Commission d'évaluation de l'enseignement collégial*, Québec: Government of Québec, Ministère de l'Éducation, on-line : www.cecc.gouv.qc.ca.

Ministère de l'Éducation du Québec (2000b), *Direction générale de la formation professionnelle et technique*, Inforoute de la formation professionnelle et technique, Québec: Government of Québec, Ministère de l'Éducation, on-line: www.inforoutefpt.org.

Ministère de l'Éducation du Québec (2000c), *Indicateurs de l'Éducation*, Québec: Government of Québec, Ministère de l'Éducation.

Ministère de l'Éducation du Québec (1999). "Alternance travail études, formation professionnelle et technique. J'en rêve". Québec: Government of Québec, Ministère de l'Éducation.

Ministère de l'Éducation du Québec Direction générale de la formation professionnelle et technique, (1998), *Harmonisation des programmes d'études professionnelles et techniques*, Québec: Government of Québec, Ministère de l'Éducation.

Ministère de l'Enseignement supérieur et de la science (1991), *Élaboration des programmes de formation professionnelle et technique*, Québec: Les publications du Québec.

Organisation de Coopération et de Développement Économiques (1994), *Les formations en alternance : Quel avenir* ? Paris, Éditions OCDE.

Pagé C. and al. (1995), *La formation professionnelle chez les jeunes: un défi à relever*, Québec: Government of Québec, Ministère de l'Éducation.

Payeur, C. et al. (2001), "Toward a General Approach to Alternation Education and Training: The Case of Quebec", in *Principles and Practices of Alternation Education and Training*. McGill-Queen's University Press, 2003, pp. 44-65.

Proulx, J.-P (2004), "Les programmes techniques du collégial: bilan et orientation", *Pédagogie collégiale*, Vol. 17, No. 4.

Taylor, A. (2007), *Pathways for Youth to the Labour Market: An Overview of High School Initiatives*, Canadian Policy Research Networks.

Appendix 1

List of Trades Included in Workplace Training

(Translator's note: According to Emploi-Québec, this list has been updated. It is now referred to as the *Programme d'apprentissage en milieu de travail* [PAMT, "work-based learning program"], *Liste des programmes d'apprentissage*)

- Air jet spinning frame operator
- Aquatic product processing – quality control
- Assembler doors and windows
- Baking
- Binding and finishing equipment operation
- Cabinet making
- Die forging
- Equipment operator – complementary printing procedure
- Finishing binding operator
- Fish processing
- Flexographic press printing
- Hairdressing
- Heavy duty equipment mechanics
- Industrial butchering
- Industrial cleaning
- Industrial meat cutting
- Industrial mechanics
- Industrial sewing machine repair
- Industrial upholstering
- Lithographic press printing
- Lumber grading
- Machining
- Machining on numerical control machine-tool
- Manual tree felling
- Mining
- Motor and electrical equipment repair (winding)
- Offset press four colours operator
- Open end spinning frame operator
- Operating and setting up plastic moulding machines
- Painter – wood finishing
- Pastrymaking
- Precision sheet metal working
- Professional cooking
- Recreational vehicle maintenance
- Retail meat cutting

- Ring spinning frame operator
- Rotary offset press operator
- Rubber moulding machine operation
- Sawmill machinery operating
- Silviculture – brushing
- Technique in cable telecommunications servicing
- Tool sharpening
- Toolmaking
- Weaving trade operation
- Welding
- Welding/fitting

Canadian Policy Research Networks – Réseaux canadiens de recherche en politiques publiques
214 – 151 Slater, Ottawa, Ontario K1P 5H3
613-567-7500 www.cprn.org