

College Documentation Bulletin

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PROGRAM DEVELOPMENT AT THE COLLEGE

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Introduction

Curriculum is at the heart of learning at all educational levels. Elementary and secondary curricula are developed by the *Ministère de l'Éducation, du Loisir et du Sport*, whereas university programs are developed by Quebec universities. As for college study programs, they fall under various authorities: the institutional evaluation policies and the *Commission d'évaluation de l'enseignement collégial*, and they are implemented by each college. In addition, we should point out that since the Renewal, these programs have one distinctive feature: they are based on competencies and standards. Whether developing pre-university or technical programs, colleges establish learning pathways relatively independently. In that regard, they rely on various expertise (teachers, professionals and administration) and scientific researchers. This issue of the College Documentation Bulletin compiles helpful research references to provide support when developing study programs at the college-level. Specifically, it focuses on research work promoting a competency-based approach when developing college study programs.

Reflection on program development: historical context and background

In their first 25 years of existence (1967-1992)², cegeps developed study programs based on the *College Programme Catalogue*, the framework used for the 75 national programs offered right at their inception³. Back then, programs were categorized into two pathways: general or professional. General programs were *concentration* programs (e.g. *Sciences, Social Sciences* and *Fine Arts*), leading to *fields of future study* (e.g. in the same order, *Medicine, Law* and *Cinema*). As for professional programs, they were *vocational division* programs (e.g. *Electrical Technology, Health Technology* and *Metals Technology*) leading to specializations (e.g. in the same order, *Electricity, Radio-isotope Technology* and *Metallurgy-Foundry*). These programs were created in the form of grids listing the discipline courses which specified the titles, weighting and “organic” sequence. It should be noted that the *College Programme Catalogue* also included *Course Lists* to help define indications like *Related Course* which appeared frequently in the grids, and the *Summary* of each one. This catalogue was revised each year. In 1977, there were close to 200 programs catalogued with thousands of courses, learning objectives, detailed content and bibliographies. For the most part, these summaries were created for teachers attending discipline-based “provincial coordination” meetings. Consequently, during their first quarter of a century of existence, cegeps developed study programs using national grids to articulate learning and national summaries to formulate curricula. At this point in time, the areas of concentration for *general* studies mapped out their field of knowledge based on university research while the *professional* trainings were defined by the whole territory. Lastly, let's point out that in the *College Programme Catalogue*, pre-university programs were labeled *Disciplines* and technical programs, *Programs*.

² Please note that the bill establishing the cegeps was unanimously voted and sanctioned on June 29, 1967.

³ http://www.mesrst.gouv.qc.ca/fileadmin/contenu/documents_soutien/Ens_Sup/Collegial/Form_collegiale/Anciens_Prog_Etudes/1967-1968-1_Renseignements_generaux-Programmes.pdf

Since the report on the requirements for college-level teaching adopted by the colleges in 1992 and titled *L'enseignement collégial : des priorités pour un renouveau de la formation* (Available at the CDC ; class number: [701105](#)), and, *The Renewal of College Education* titled the following year *Des collèges pour le Québec du XXI^e siècle. L'enseignement collégial québécois. Orientations d'avenir et mesures de renouveau* ([Available online](#) at the CDC)⁴, the development of college study programs follows a new logic: cegeps must now “implement quality and autonomy requirements” [quotes are taken from the second document]. First, the distinction between pre-university disciplines and technical programs is discarded in favour of a “study program” concept for both pathways. These programs now must be *coherent, demanding and adapted to needs*. Subsequently, the pre-university programs are reviewed as a “two-pronged continuum⁵”. Finally, the technical programs become “more flexible” and “adapted to the needs of the workplace” and, moreover, they are now defined by each educational institution. The *Renewal* introduced the implementation of new measures (The *Uniform Ministerial French Test* and the *Comprehensive Assessment*) and the creation of government bodies (*Commission d'évaluation de l'enseignement collégial*). That being said, let's point out that the *Renewal of College Education* brought about a paradigm shift in education. Beyond the multiplicity of its provisions, its key issues center on the “competency-based approach”. Below, you will find the translation of an important quote taken from the second document which assesses the ends and results of this educational paradigm when it comes to study programs:

The new program structure leading to a DEC and the new content layout work in tandem with redefining the academic roles and responsibilities of the Ministry and of the colleges. Ministry actions are clearly focused on objectives and standards. Objectives state the competencies (skills, knowledge, etc.) to be mastered according to standards, that is, the levels or degrees to which competencies must be mastered at the college-level. Learning activities are courses (labs, practical exercises, seminars, internships or other educational activities) which ensure objectives are achieved according to the defined standards. The proposed framework increases the colleges' academic commitment for responsible and accountable management of study programs and, to a certain extent, without being compared to university practices, is now more compatible with the higher education establishment status. (p. 25)

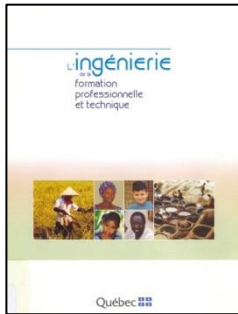
Essentially, for more than 20 years, the “increased academic responsibilities” of the cegeps and the “rigorous assessment methods” to which they have been subjected to, have led the study programs to be at its core, with the “competency-based approach” as its Gordian knot, and this for both structure training (two-step cegep-university continuum; one step curriculum leading to the job market) and for developing competencies (knowledge, skills and behaviours). Now, while there are many well-known resources available when it comes to the competency-based approach in general terms, there doesn't seem to be as many references when it comes to developing a competency-based study program, which acts singularly and prevails in the educational orientations defined by each college establishment. The present bulletin aims to document this reality.

Enjoy your reading!

⁴For more information on these two documents, please consult Robert HOWE, “[Succeeding in College](#)”, *College Documentation Bulletin*, # 9, February 2013, p. 3-4.

⁵ Some programs were revised in parallel: *Social Sciences* in 1991; *Arts and Literature* in 1999. Both saw their number of units increase (28) in order to come close to the number of units required in the *Natural Sciences* program (32).

Key references



CÔTÉ, Serge. [L'ingénierie de la formation professionnelle et technique](#), Government of Quebec, Ministère de l'éducation, 2002, 211 p.

The purpose of this work is to support a project of the *Agence intergouvernementale de la Francophonie*, whose objective is to reform the professional and technical training field. The author offers a conceptual framework in the form of four thematic notebooks. The third notebook (p. 113-145) outlines four phases when developing a study program: analyzing the training needs, designing the proposed training plan, developing the study program, producing the instructional support documents. The author reminds us that competencies are “multidimensional” (knowledge, skills, attitudes), “integrative” (ability to do something) as well as “observable and measurable” (evaluation conditions and performance criteria), and states that identifying competencies and translating them into training objectives are central issues in the engineering of vocational and technical training⁶. He adds that to structure a study program is “to establish relationships between the program objectives” that will ensure “the consistency of training and the integration of learning”. The author points out that instruments such as “grids of competencies” can establish this correspondence. He demonstrates the importance of the double-entry table⁷ which illustrates relationships, promotes coherence and the program-based approach as well as provides an overview. It also makes it possible to ascertain the importance of the competencies in terms of learning and to determine the order in the proposed training plan. The document also offers a grid as an example (p. 144) and a summary for developing a study program (p. 145).



CHEVRIER, Michel and Nicole RAYMOND. [Les prescriptions ministérielles et l'élaboration d'un programme défini en objectifs et standards](#), Government of Quebec, Ministère de l'éducation, 2000, 63 p.

The purpose of this work is to provide a tool to better understand the shared responsibilities between ministry and educational establishment in order to fulfill its responsibilities while respecting ministerial prescriptions. This document can be used as a basis to develop study programs at the college-level, particularly for pre-university programs. It is divided in three main sections with an interesting second section relating to the ministerial prescriptions which ought to be considered when a study program is institutionally implemented. The relationship between competency and course attracts our attention. On one hand, the authors point out that this relationship produces three well-known scenarios: (i) a competency = one course; (ii) a competency = a series of courses; (iii) multiple competencies = one course. On

⁶ The author defines *engineering* as “the body of policies, tools and methods required for the coordinated and rigorous design, organization, implementation and evaluation of educational activities” (p. 6-7) and points out that these activities are based on the acquisition of competencies. He defines a competency as “a grouping or integrated body of knowledge, skills and attitudes that allow an individual to successfully perform an action or set of actions [...]” (*Ibid.*).

⁷ In this document, it is suggested to place the general competencies on the horizontal axis and the specific competencies on the vertical axis. An alternative approach may be considered when institutional implementation occurs: the competencies or training objectives may be situated on the horizontal axis and the courses, on the vertical axis.

the other hand, they state that a competency may be (i) “completed” within one course, (ii) “partially” developed after a series of courses and (iii) that one course may help develop a multitude of competencies all at once. Furthermore, the authors add that, in the process, the educational team must define each course’s weighting and the resulting number of student-contact hours and units in view of the learning to be achieved and the number of units and teaching hours required by the program⁸. They also provide a formula to establish the number of personal work hours involved for a particular program according to its prescribed units (p. 18). Finally, the authors remind us that prescriptions establish the number of units or student-contact hours required and that these numbers must be respected when developing a study program.



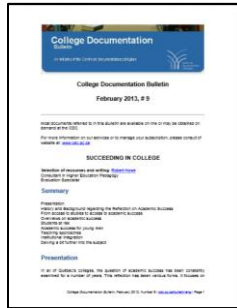
LAVOIE, Francyne. [Élaboration de programmes d'études professionnelles. Guide de conception et de production d'un programme](#), Gouvernement of Quebec, Ministère de l'éducation, 2004, 86 p.

This guide is the extension of Chevrier and Raymond’s work and offers definitions, indications and the tools needed to develop vocational training programs using the competency-based approach. The author differentiates between a proposed training plan and a study program and devotes a section to each. She states that the proposed training plan provides the structure of the program and establishes its goals and competencies. She acknowledges two types of competencies: specific and general. In a matter of speaking, specific competencies are related to a trade or profession and deal with performance of tasks and development in a work context. As for general competencies, they correspond to broader activities that extend beyond specific tasks; they are transferable and promote versatility. The author gives rules for formulating competencies (p. 12-13), reminds us of the importance of the grid of competencies as an instrument for analysis, synthesis and reflection, and how to develop it (p. 13-15). She provides analysis checklists for the proposed training plan (p. 17-18) and concludes this section devoted to the proposed training plan with the validation steps (p. 19-24).

The study program section is of special importance for four reasons. First, the author reminds us that a study program, besides being coherent, meaningful and a reference tool for objectives, instructional organization, evaluation and study certification, is a source of information for all key players in the field of education. In short, it lends relevance and credibility to any action. Next, she points out that vocational and technical training focuses on two types of competencies: behavioural, which develops attitudes, and situational. Situational competencies focus on the learning process which is divided into three phases: information, participation and synthesis; and provides instructional guidelines and the participation criteria required of students (p. 37-40). The latter type of competencies, without being an explicit corollary to pre-university studies, implicitly corresponds to competencies focused on knowledge developed in labs and represents a major breakthrough which we think would be beneficial when developing study programs. In addition, the author offers in this section “suggestions for instructional planning” whose purpose is to document the often unclear enumeration process of translating statements into elements, objectives into knowledge. (p. 41-43). Finally, the author provides an analysis checklist for proposed training plans. (p. 45-46).

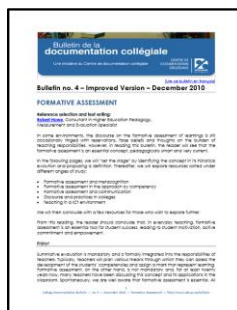
⁸ Weighting is used to calculate the number of student-contact hours and the number of units. This is the formula used: from the XX-YY-ZZ weighting pattern, XX represents the number of theoretical instruction hours, YY represents the number of hours of laboratory work in class and ZZ represents the number of personal work hours; the result of the first two numbers added together give the number of student-contact hours and the number of units is the result of the three numbers added together and then divided by 3.

Specialized references



HOWE, Robert. [“Succeeding in College”](#), *College Documentation Bulletin*, # 9, February 2013.

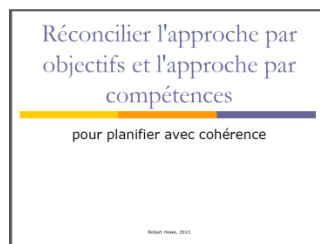
The author devotes a paragraph to the program-based approach (p. 6). Quoting from a 1993 research study, he states that teachers “[...] could no longer consider their profession in an individual or individualistic manner. They must now view it collectively.” In the process, he defines the program-based approach as a place for institutional coordination. It suggests that this approach is an educational collective agreement centered on the student.



HOWE, Robert. [“Formative Assessment”](#), *College Documentation Bulletin*, # 4, December 2010.

The author states (p. 2) that, in 1967, the concept of formative assessment originally focused on the study of program management using a process for collecting information to evaluate it. He notes that, in 1971, the concept then evolved under Benjamin Bloom. The focus became student learning rather than program management. In the process of extending the notion of formative assessment, we are reminded that a study program is subject to evaluation in order to enhance training and learning. Moving along, the

author informs us that cognitive sciences had the effect of “perceiving formative assessment as an invitation for the student to go through a metacognition exercise [...] during the learning process.” He confirms that the same is true for both and, in other words, that self-reflexivity is a mirror reflection without end.



HOWE, Robert. [« Réconcilier l'approche par objectifs et l'approche par compétences pour planifier avec cohérence »](#), Communication presented at the 33rd AQPC Annual Symposium, 2013.

In this presentation, the author states that the derivation process from which the study program framework evolves into a master plan or course outline must not lead to the layer of competency elements, or statements, but rather to its analysis. He adds that, since the Renewal, the sharing of responsibilities implies that the program's unique goals, objectives and standards lead to multiple orientations, sequences and learning situations, depending on the implementation activities carried out by the institutions, in order for them to be better adapted overall to the different training needs of the students, in space and time⁹.

⁹ This document tends to explain the following, which may be surprising, but integral to the Renewal: the study program's *course grids* may differ from one establishment to the next, even within the same establishment depending on the options, because training needs are different across a territory and overtime. He also indicates that a study program is based on the circumstances of the training needs and its evaluation must be assessed in a continuous fashion, leading to a renewal.

MAPES (Groupe de recherche en Modélisation de l'Approche-Programme en Enseignement Supérieur). [Guide de l'approche-programme en enseignement supérieur](#), Portail de soutien à la pédagogie universitaire du réseau de l'Université du Québec.

The research group MAPES is presently working on a **Guide for using the program-based approach in higher education** along with a directory of coaching resources to give information to key players on how to implement the program-based approach at the university-level. The research is ongoing but some of the results are available right now on the website. As long as we keep in mind that this resource targets Internet users for whom developing competency-based study programs is still a possibility, then these results may prove useful. The website provides a stimulating gateway with its key issue surrounding the often underestimated corollary to the competency-based approach: the program-based approach. Indeed, MAPES focuses its attention on the organic aspects of a study program: the competencies make sense when they fall within an instructional engineering process¹⁰. In other words, it is suggested that the program-based approach be deployed on a larger scale to include all the teachers of a program and what they do each day and consider their interventions as part of an organic whole. Likewise, it points out that, simultaneously, a program-based approach takes in consideration the “learning targets”, the pedagogical methods, the learning material and the infrastructures. In this respect, it recalls that a study program is not merely theoretical; it involves human, material and financial resources in light of the training orientations agreed upon. The Group indicates that the program-based approach is rather ambitious: it entails the creation of a *common vision* for the program, the development of its *architecture* and educational tools, the definition of human, material and financial needs, the implementation and its assessment. Video resources are available via the website in the form of broadcasting oral presentations of a few minutes from the members of MAPES, accessible on the YouTube portal.



PERRON, Jean. [Évaluation de programmes du renouvellement de l'enseignement collégial. Rapport synthèse](#), Gouvernement of Quebec, Commission d'évaluation de l'enseignement collégial, 2008, 64 p.

The summary report of the Commission d'évaluation de l'enseignement collégial (CEEC), conducted a little more than ten years after the Renewal implementation, evaluates study programs offered by public colleges and subsidized private colleges as of 2004 in terms of objectives and standards on a self-evaluation basis. Specifically, this evaluation targets 68 institutions (48 public colleges and 20 private colleges) and 66 programs (44 pre-university programs with 5 distinct ministerial programs, 20 technical programs and 2 AEC). The CEEC considers that “the local development of programs in terms of objectives and standards has been carried out well and few problems were encountered.” (p. 44). However, the Commission issued six recommendations indicating the three key components of a study program at the college level that would benefit from improvement: competency-based approach, program-based approach and the comprehensive assessment. Specifically, the CEEC recommended to the colleges that they:

¹⁰ MAPES defines *instructional engineering* as the process which aims to ensure coherence and harmony within and among the various study program components in order to promote integrated learning throughout a student's learning pathway.

"[...] change teaching methods to bring them into line with the competency-based approach." (p. 45)

"[...] ensure that the evaluation of achievements provides for attesting to individual student mastery of program competencies." (p. 45)

"[...] ensure the effectiveness of mechanisms for joint action that reflect the true spirit of the program-based approach." (p. 47)

"[...] develop [...] projects that will enable colleges to change their pre-university programs based on the needs of university education and university expectations." (p. 49)

"[...] establish recurrent liaison mechanisms with workplaces in the economic sectors related to their career programs so that education can be adapted to workplace needs and market changes." (p. 49)

"[...] ensure establishment of a liaison mechanism with their graduates that will enable the colleges to get feedback on the education delivered so that the local versions of programs can be improved and updated, as required." (p. 49)

Moving forward

AUDIGIER, François, Marcel CRAHAY and Joaquim DOLZ (directors). *Curriculum, enseignement et pilotage*, Bruxelles, De Boeck, 2006. (Available at the CDC, class number : [786982](#)).

JOANNERT, Philippe. *Compétences et socioconstructivisme. Un cadre théorique.* Bruxelles, De Boeck, 2009. (Available at the CDC, class number: [787568](#))

WOLF, Peter, and Julia CHRISTENSEN HUGHES. "Curriculum Development in Higher Education: Faculty-Driven Processes and Practices", *New Directions For Teaching and Learning*, # 112 (Winter 2007). (Available at the CDC, class number: [723587 v. 112](#))