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Integrating Critical Thinking and Assessment into Quebec's College Curriculum : The Implementation of the Social Science Programme at St. Lawrence Campus

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*Integrating Critical Thinking and Assessment into Quebec's College Curriculum:
The Implementation of the Social Science Programme at St. Lawrence Campus*
by: Jan Warnke, Champlain Regional College - St. Lawrence Campus

1.0 Introduction

This paper summarizes the strategy elaborated by the Social Science Department at St. Lawrence Campus¹ in order to integrate the logic of methodology as a central core into the curriculum of a new Social Science programme implemented in the fall of 1991. Several factors lead up to the decision to operationally define and integrate a central core for the revised Social Science programme at St. Lawrence. Although the new programme was built around a methodology component, there were no means for providing cohesion among the courses of the programme. In its initial form, the logic of the programme could not actively link the courses within the programme. In this sense the programme was severely handicapped in fulfilling its mission from the start. A programme that lacks a cohesive core of logic that links all the courses within it also has definite implications for student assessment within the curriculum, whether the assessment be formative or summative. In a sense there was a need to assess the programme and define its logic before defining any strategies for the assessment of student learning within any of the courses within the programme.

By the end of this paper you should understand how criteria for identifying a core of logic for the courses in the programme were derived and how these criteria were used by the Social Science department in a professional development project for redesigning programme curriculum to include critical thinking. Several self-help techniques are provided so that the reader can actively apply the thinking in order to assess the transparency of a college programme and to derive a common core for the courses in a programme.

2.0 Critical Thinking and Assessment

Over the past two years, I have been mandated by the Social Science Department at St. Lawrence to oversee the implementation of the revised Social Science programme. This responsibility brought me to question the basis of learning and assessment in our educational system and lead me to systematically explore the role of thinking in the learning process. My involvement with critical thinking and assessment is fairly recent and arose from a direct questioning of whether my teaching was really related to the student's needs as well as the more general needs of our society. Many factors contributed to this reflection,

- the current programme changes in the CEGEP Social Sciences Programme which reduced the number of courses, increased the amount of content and introduced methodology into the curriculum;
 - the assessment of my students learning which indicated that the energy that I was putting into teaching was not always resulting in more learning;
 - the assessment of student learning resulting from lab exercises which indicated that classroom lectures could be decreased in order that learning be increased;
 - the economic recession which, in conjunction with the changes in communication technology, put more emphasis on the adaptability of labour to changing economic constraints;
 - and not the least 1990 was my 40th year on the planet earth and contributed to my personal existential questioning.
- All these factors contributed to my decision to attend the Critical Thinking conference at Sonoma State University in August 1991. The Critical Thinking conference created a chaos of ideas out of which I created a synthesis adapted to the specific question of curriculum development in my own college. The following paper describes the general parameters of the college educational system in Quebec as well as the place where critical thinking competencies and abilities can be inserted into curriculum. Questioning the role of education and the learning process is especially appropriate at this point in time since the orientation of the entire college system in Quebec is currently being scrutinized by a special parliamentary commission. The college system in Quebec has been *avant garde* in creating programmes with specific goals and structuring course goals and contents by competencies as shown in Figure 1.

¹St. Lawrence Campus is a small (750 students) English-speaking college part of Champlain Regional College. It is located in Sainte-Foy, one of Quebec City's suburbs in the Province of Quebec. The majority of the students at the college follow a general two year program in science, languages or social sciences before entering university. The college also offers a three year professional program in business that prepares students for the job market.

Figure 1. GOALS AND OBJECTIVES FOR THE *PRACTICAL INITIATION TO METHODOLOGY* COURSE

Goals

The aim of this compulsory methodology course is to *develop* the Social Science student's intellectual rigor and spirit of scientific enquiry. These goals will be developed in the course by associating basic theoretical concepts of research with laboratory exercises during the course and with an empirical research project at the end of the course.

Objectives

By the end of this course the student will be able to:

1. *Explain* by using the appropriate terminology, the different stages and the fundamental concepts of the scientific method.
 2. *Explain* the principal methodological differences between the Natural Sciences and the Social Sciences.
 3. *Identify* the principal scientific research methods and techniques of the Social Sciences.
 4. *Explain* the logical procedures and practices specific to one of the Social Science research methods.
 5. *Interpret* the results of scientific research in the Social Sciences.
 6. *Carry out* a scientific research project by applying the basic procedures of one of the Social Science methods.
 7. *Write* a research report using the appropriate procedures.
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However, thinking abilities or the ability to think about the logic of the material being taught is not explicitly emphasized in any of the course descriptions in the entire college repertoire of courses in the Province of Quebec. It would appear very timely that critical thinking be emphasized as a course objective in future changes in college curriculum.

3.0 The Quebec Educational System and the Social Science Programme²

The system of colleges in Quebec is a relatively recent structure dating from 1967. Each college has the status of a public corporation and is consequently administered by a legal entity, the board of governors, which is responsible for managing its property and carrying out its educational mission. The educational mission of the colleges is "...to provide general and vocational college-level education"³. In the context of Quebec's educational system this means that a student will follow a two year pre-university study programme or a three year study programme that readies the student for the job market. All the study programmes have specific orientations leading to a Diploma of College Studies. The two year pre-university programme has five college-level orientations: science, social sciences, languages and literature, music, and creative arts. The initial Social Science programme was created in a flurry of activity to establish a system of colleges and was not specifically oriented to the development of competencies or abilities in the Social Sciences that corresponded with what Universities and society in general required. The new Social Science programme⁴, which attracts approximately 25% of all the college clientele, was initiated in the early 1970's shortly after the creation of the college system in Quebec. The programme has been recently revised to include two mandatory methodology courses. The range of courses being offered has also been reduced.

3.1 The Curriculum of the Social Science Programme

Although the need for a revised Social Science Programme had been clearly established, the entire programme development process was extremely long. As already mentioned, the impetus for a new programme came in the early 1970's shortly after the creation of a college (CEGEP) system in the province of Quebec. The decision-making process for the creation and revision of college programmes is highly structured in the Quebec educational system. The initiative for new programmes in the college system in Quebec generally comes from the upper administrative structures. A simplified diagram of the levels of administration and their function with respect to the development of academic programmes is presented in Figure 2.

²For a complete description of the CEGEP system see *Cegeps and College Education in Quebec*.

³Government of Quebec, Ministère de l'Enseignement supérieur et de la Science. *Cegeps and College Education in Quebec*. 1991.

⁴The Social Science program is composed of several disciplines from which five courses from a central core of five disciplines are mandatory for all students in the Social Sciences.

Figure 2. COLLEGE EDUCATION STRUCTURES AND PROGRAMME DEVELOPMENT IN QUEBEC

EDUCATIONAL STRUCTURE	PROGRAMME DEVELOPMENT
Ministry of Education	Programme Structure (Goals, Content)
CEGEP	Programme Administration
Department	Programme Management
Teacher	Programme Application:Curriculum Design
Student	Assessment/Feedback (Programme Beneficiary)

The diagram indicates that curriculum goals and content are dependent on the orientation of any given programme and are elaborated after the development of programme goals and content....". Figure 2 also indicates that decision-making for college programmes is hierarchically structured in Quebec. All of the courses in all the disciplines are centrally administered by the Provincial government. The goals and contents of specific *programmes* are elaborated by the government in consultation with teachers and other advisory bodies. The development of *courses* (curriculum) in any given discipline within a programme is determined by a college-wide coordinating committee of teachers in each discipline. These committees elaborate course goals and contents and then recommend them to the government body responsible for college programmes.

4.0 The Need for Clear Thinking as an Educational Objective

As a teaching professional with 17 years of experience, I look back on all the changes in education that I had witnessed in the last two decades and realized that perhaps I should reconsider the basis from where our society, in Quebec, is currently organizing education. I soon found out that I was not alone and that scores of researchers, educators, administrators at various levels and in many countries were also questioning what education ought to be. Some of the motivation for their questioning concerns the lack of basic logical skills of - reading, writing and speaking. Some people explain this lack of formal communication skills as a symptom of our present-day society, the video generation. I find it hard to believe that the video can in any way replace the thinking involved in reading, writing and speaking - some of the fundamentals of learning.

Somewhat teaching was not giving rise to learning. What is wrong and what can be done about it? What organizational changes may be necessary to contend with this problem? These were some of the questions which crossed my mind.

The principal question in my mind concerned the extent of the emphasis in our current CEGEP curriculum on what I consider to be central to the learning process: *thinking*. In the case of the Human Sciences Programme with an obligatory core of methodology there should be some form of explicit strategy to emphasize thinking skills. Ideally, thinking is the ability to process information, to analyze this information in depth, and come to an enlightened conclusion. This has been probably recognized well before the time of Socrates. Clear thinking does not require high technology, with the exception of the mind of course, and it is extremely cost effective. For myself and for numerous others it is the essence of learning. What is critical thinking? According to Richard Paul and Michael Scriven "Critical thinking is the *intellectually disciplined process* of actively and skillfully *conceptualizing, applying, synthesizing, and/or evaluating* information gathered from, or generated by, *observation, experience, reflection, reasoning, or communication, as a guide to belief and action*" ⁵. The interest in critical thinking has been actively growing in North America during the last decade since administrators, legislators and teachers alike have realized that students were not necessarily learning what teachers were teaching (need for assessment of student learning) and that teachers were not necessarily teaching what should be learned (need for critical thinking within curriculum and programme design).

What are the means whereby we can reorient our present educational system in order to assure that some of this clear thinking will be retained and effectively assessed? The onus in traditional teaching is for the teacher to teach and the student to learn. Is that the best situation for learning to occur? What is learning? To what extent are we following an organized strategy to give our students a set of directions to take in their learning process? How can basic learning skills be operationalized in a programme? The basic learning skills presented in Figure 3 present criteria for the learning process. Note that these criteria require clear thinking skills. These same criteria served as a guide for elaborating a strategy for the inclusion of critical thinking skills into the new Social Science programme.

⁵Taken from a handout at the Critical Thinking Conference at Sonoma State University, August, 1991.

Figure 3: BASIC LEARNING SKILLS⁶

1. - Recognition of needs and problem components
 2. - Evaluation of the means, tools, actions necessary to meet the recognized needs
 3. - Observation and description of the results of actions taken
 4. - Evaluation of the effect of the actions and their implications
 5. - Drawing Inferences about the problem solving process in general
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4.1 The Learning Process

The fundamental nature of the learning process has probably changed very little since the time of Socrates. Whatever happened to the learning that went on in a small class of students sitting outside under the old apple tree? Perhaps this image is an oversimplification of the learning process, a form of wishful thinking to which we often pay passive tribute. Whether myth or ideal, there is something innately attractive about the simplicity with which people can learn to think. What then, makes this image so attractive and appealing? What dramatic changes have occurred in the learning process as we know it today that differentiates us from the ancient Greek civilization? Maybe those were the good-old-times when motivated people would convene at liberty to discuss, question and learn without the need of a complex educational infrastructure, multi-leveled bureaucracies and multimedia classroom presentation technology. The focus then was on thinking whereas in modern pedagogy the focus appears to be predominantly on content. I believe that this is one of the distinctive differences that is especially pertinent to the development of criteria for revising curriculum. What we are beginning to realize is that facts cannot stand by themselves and that it is our thinking that gives meaning to facts.

I don't think that the ancients differ from us in wanting to enhance the learning process. They did, however, take great pains to put the responsibility for the learning process on the student. How can teachers put the learning back into education so that the thinking becomes an objective within the curriculum of a programme? The distinction between emphasizing thinking skills or emphasizing content is extremely relevant to contemporary programme and curriculum revision. The development of critical thinking skills is not emphasized in the content of college courses which creates problems at two levels. First the general lack of critical thinking skills does not emphasize learning through thinking about a subject. Secondly, the lack of emphasis on thinking skills is contextually problematical since the revision of programmes often reduces the number of courses which have been enriched in content rather than thinking skills. I don't believe that this is a worthwhile trade-off: increased content decreased emphasis on thinking skills. The new Social Science programme is a case in point. The previous disciplines of History, Geography, Psychology, Anthropology, Political Science, Economics, Sociology in the previous Social Science programme had between 12 and 20 different courses each..... In the new Social Science programme the total number of courses in any discipline is reduced to eight. This reduction in the number of courses lead to an inevitable increase in course content rather than increased emphasis on understanding the logic of the discipline as applied to specific topics. What is a student going to do with all these facts? How long will the student retain these facts and why should she/he retain them? How can teachers effectively assess student learning when what is being learned does not reflect the logic of a programme or a course?

Knowing the current attitudes towards the learning process in an educational structure permits us to evaluate the starting point for describing what should be learned and evaluated within a programme as well as within a course. Since teachers and administrators are responsible for programmes and course content what are their attitudes with respect to the learning process?

In order to evaluate your own attitudes to the learning process, take a few minutes to answer the following questions presented in Figure 4. What conclusions can you draw about the nature of student learning?

⁶ Adapted from Conger, Stuart D.; Mullen, Dana. *Life Skills*. International Journal Advisory Counsel 4: 305-319 Martinius Nihoff Publishers, The Hague, Netherlands.(1981).and from Smith, Paul. *A Taxonomy of the Life Skills Required to become a Balanced Self-Determined Person*. Toronto, Ontario: University of Toronto Guidance Centre in co-operation with Employment Support Services Branch, Canada Employment and Immigration Commission and the Canadian Government Publishing Centre, Supply and Services Canada. 1982. 120p. Bilingual.

Figure 4. SELF EVALUATION OF ATTITUDES TO THE LEARNING PROCESS⁷

Indicate "T" for true and "F" for false.

1. Students need to be taught more or less what to think, not how to think; they will learn the "how" if they learn the "what". _____
 2. Students who have no questions typically are learning well, while students with a lot of questions are experiencing difficulty in learning. _____
 3. The teacher should correct the student's ignorance by telling them what they do not know. _____
 4. The personal experience of the student has no essential role to play in education. _____
 5. Knowledge is independent of the thinking that generates, organizes and applies it. _____
 6. The teacher has the fundamental responsibility for student learning. Teachers and texts provide information, questions and drills. _____
 7. Students need to be taught "how" not "what" to think; they should learn significant content by considering live issues that stimulate them to gather, analyze and assess that content. _____
 8. Students who have no questions are typically not learning - while having pointed and specific questions is a significant sign of learning. Doubt and questioning, deepening understanding, strengthen belief by putting it on more solid ground. _____
 9. Progressively the student should be given increasing responsibility for his or her own learning. _____
 10. The personal experience of the student is essential to all schooling at all levels and in all subjects; it is a crucial part of the content to be processed. _____
 11. Students can often provide correct answers, repeat definitions and apply formulae while yet not understanding those questions, definitions or formulae. _____
 12. All knowledge of "content" is generated, organized, applied, analyzed, synthesized and assessed by thinking; one must think to truly gain knowledge. _____
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The purpose of the exercise was to bring out your attitudes towards traditional content oriented teaching. Consider today's students who are often spoon-fed myriads of bits of information with the hope that they will learn what is being taught. Their interior understanding of the material being presented is not emphasized. Since their cognitive skills are not being fully used their ability to transfer their understanding is subsequently limited. Student's are not being taught to learn how to learn. Consider the demands that today's society is putting on our youth. Consider the tremendous multiplication of information that everyone has to deal with. Then consider the evaluation of our student's fundamental communication skills. I have all too often discussed or in some instance commiserated with my colleagues on the need for the fundamental communication skills of reading, writing, speaking and listening. How can cognitive and metacognitive skills be emphasized in the learning process? Although several strategies may be used in order to integrate critical thinking into a programme and subsequently into curriculum, the method used at St. Lawrence focused on an analysis of programme goals and course objectives.

5.0 Identifying a Common Core

How then can critical thinking be integrated into the curriculum of an entire programme so that it would increase its cohesiveness? An exercise has been adapted to provide you with a working model in order to facilitate finding a solution to this problem. The exercise introduces the use of a heuristic⁸ device as used by Polya⁹ for problem solving. Polya's heuristic: If you cannot solve the problem on which you are working, see if you can transform it into a problem whose solution you know. In order to transform it you must effectively represent the problem and then devise a plan of attack in order to provide an explanation. Try to find an answer to the problem being presented by using a heuristic device. Follow the instructions given in the activity presented in Figure 5.

⁷ Adapted by Jan Warnke from Paul, Ricahrd; A.J.A Binker, D. Martin, K. Adamson. *Critical Thinking Handbook: High School*. Center for Critical Thinking and Moral Critique, Sonoma State University, Rohnert Park, Ca. 1989. pages 300-304.

⁸ Heuristic is word derived from the Greek word *heuriskin*, serving to discover.

⁹ Polya, G. *How to solve it*. (2nd ed.) Princeton, NJ: Princeton Univeristy Press; New York: Doubleday, 1957. as presented in R. Nickerson, D. Perkins, E. Smith. *The Teaching of Thinking*. Hillsdale, New Jersey: Laurence Erlbaum Associates, Publishers, 1985. pages 64 - 86.

Figure 4. REDESIGNING A CURRICULUM "PATH" IN A PROGRAMME BY USING DIAGRAMS

Viewing a problem as a diagram/model (in Nickerson, 1985 ; adapted from Adams, 1974)

One morning, exactly at sunrise, a monk began to climb a mountain. A narrow path, a foot or two wide, spiraled around the mountain to a temple at the summit. The monk ascended at varying rates, stopping many times along the way to rest. He reached the temple shortly before sunset. After several days at the temple he began his journey back along the same path, starting at sunrise and again walking at variable speeds with many pauses along the way. His average speed descending was, of course, greater than his average climbing speed. Prove that there exists a particular spot along the path that the monk will occupy on both trips at precisely the same time of day.

If you viewed the problem as two people, one ascending the mountain and the other descending the mountain, it is evident that their paths would meet at a certain point. If the ascent and descent characteristics were proportionally drawn then, even the point of intersection could be a fairly accurately represented. The point of the exercise was to show how a diagrammatic representation can explain the real nature of a problem. The same exercise can be transferred to curriculum design in order to describe the place where the "paths" of various courses in a programme intersect. In this case we are looking for the point of intersection of the logic of methodology in all the courses in the Social Science programme. The critical thinking abilities in methodology then provide the unity for the teaching of the new programme. The question was how to operationally define the logic of methodology in each of the disciplines and how to emphasize the logic common to all the courses in the programme. Figure 6 lists the educational objectives that will serve as a guideline in the teaching of thinking about methodology. With these objectives in mind a professional development project was submitted to the government and was subsequently accepted.

Figure 6. EDUCATIONAL OBJECTIVES FOR THE TEACHING OF THINKING¹⁰

1. ABILITIES, that underlie thinking;
 - classification
 - analysis
 - hypothesis formation
2. METHODS, that aid thinking;
 - problem solving heuristics (diagrams....)
 - self-management strategies
3. KNOWLEDGE,
 - about thought processes (basic thinking /cognitive skills)
 - cognitive abilities
 - individual strengths and weaknesses
4. ATTITUDES*,
 - sense of curiosity or wonder
 - the thrill of discovery
 - the excitement and satisfaction from productive intellectual activity

* The motivation to learn is a fundamental precondition to learning to think.¹¹

¹⁰ Nickerson, Raymond S.; David Perkins, Edward Smith. *The Teaching of Thinking*. Hillsdale, New Jersey: Laurence Erlbaum Associates, Publishers, 1985. pages 323-324.

¹¹ Talbot, Gilles. *Student Motivation and educational life-skills: fostering positive attitudes for learning through acquisition of feedback skills*. Sainte-Foy: Champlain Regional College, St. Lawrence Campus, 1987.

6.0 Developing a Professional Development Project
 Professional Development Project: *ADAPTING THE METHODOLOGY COMPONENTS AND INTEGRATING ACTIVITY TO THE SOCIAL SCIENCE PROGRAMME*¹²
 - Starting date: August 1992 - Finishing Date: July 1993

6.1 Goal and type of professional development activity:

The adaptation for teaching of a revised college programme and subsequent preparation and adaptation of teaching strategies.

6.2 Justification of the need for the project

The new Social Science programme has been implemented at St. Lawrence Campus according to schedule in the Fall of 1991. To this point in time, the implementation of the new Social Science programme in a small campus, such as St. Lawrence, was handled with the local resources available. The overall evaluation of the new programme by the department members indicated that, although the schedule of courses and disciplines has been balanced in order to meet the requirements of the new programme, the programme has not been fully integrated with respect to the methodology component. The teachers in the programme have recognized the need for the integration of the common theme and cornerstone of the new programme - the methodology component.

Consequently the Social Science Department has approved that a committee be struck to present a project to permit the adaptation of the methodology component to the "integrative activity" (section 2.6 in the new Human Sciences programme) as well to each of the disciplines. Specifically there is a recognized need to:

- create structures in order to harmonize all the courses within the Social Science programme.
- identify resources, develop techniques and training programmes for the teachers who will be teaching the methodology component in their courses in the Social Science programme.

6.3 General Objectives of the Project

The Social Science Department at St. Lawrence Campus is presently teaching the Quantitative Methods course and is in the process of initiating the Practical Initiation to Methodology course for the Fall 1992 semester according to the schedule proposed by DGEC¹³. The Social Science Department members have met and have identified the next major task in the process of the implementation of the new programme in the 1992-1993 year. The general goal of this project is derived from the need for the pedagogical adaptation of the methodological component of the programme to the "Integrative Activity", and then to each of the disciplines and courses in the Social Science programme at St. Lawrence.

The task will require the development of structures for the planning, monitoring and evaluation of the adaptation of the methodology component throughout the Social Science programme so that:

1. The place of the methodology component is clearly identified within the general and specific objectives of each discipline in order to assure a well balanced Social Science programme.
2. The pooling and processing of the teachers' identified expertise with the methodology component will permit the development of common criteria to ensure that the methodology component is well adapted to the "Integrative Activity".
3. The common criteria incorporated into the "Integrative Activity" can be generalized and adapted to each of the disciplines and each of the courses in the Social Science programme so as to ensure the harmonization of all the disciplines in the programme.
4. The teachers of all the courses in the Social Science programme at St. Lawrence will develop their expertise in the adaptation of the common criteria for the methodology component to the general and specific objectives of their courses.

6.4 Description of specific objectives. The activities have not been included in this paper. The duration and place of the activities, and the resource person for the activity are also noted.

¹²The students in the new Social Science program are supposed to produce a research project or Integrating Activity using more than two social science methods in their last semester of studies. The intention of the activity is to facilitate the transfer of knowledge "gained" during the previous three semesters to a topic of the student's choice.

¹³In the Social Science programme student study profile the first course in methodology (*Quantitative Methods in the Social Sciences*) is given in the second semester and is followed by a second course in methodology (*Practical Initiation to Methodology in the Social Sciences*) in the student's third semester.

6.4.1 In order to ensure the integration of the methodology component into the specific and general objectives of each discipline in the Social Science programme, the Department will create an interdisciplinary committee which will assume the responsibility for planning, monitoring and evaluating the adaptation process.

Place: Campus

Duration: 1992-1993

Resource person: Jan Warnke, interim Project Committee Coordinator.

6.4.2 Processing of the shared teacher's expertise concerning the methodology component within each of the disciplines and the development of common criteria so that the methodology component is clearly adapted to the "Integrative Activity".

Place: Campus

Duration: Fall 1992

Resource person: -----

6.4.3 The generalization of the common criteria for the methodology component identified for the "Integrative Activity" so that they can be adapted to each of the courses in the disciplines of the Social Science programme.

Place: Campus

Duration: December 1992 - March 1993.

Resource person: Jan Warnke/ Gilles Talbot

6.4.4. A series of training workshops be held for the teachers in the Social Science programme to develop critical thinking strategies for the application of the common criteria within each of the disciplines and courses and develop strategies for the teaching of the common criteria.

Place: Campus

Duration: March 1993.

Resource person: Jan Warnke/ Gilles Talbot

6.5 Evaluation of Human Resources Necessary for the Project

Resources are calculated in terms of teacher fulltime equivalence or FTE - a fulltime equivalence is the normal fulltime teaching load assumed by a teacher during the year.

A total release time of 1.27 FTE teachers was estimated as required for the project and was subsequently requested of the government. The government subsequently accorded 1.2 FTE release time for the project.

7.0 Implications of the project

The realization of the professional development project will have several spin-off benefits for St. Lawrence College as well as the entire college system. The adaptation of the methodology component will permit the teachers of the Social Science department to build-up a cohesive integrated programme in the Social Sciences at St. Lawrence. It will permit the teachers to *identify the methodology component, become familiar with it and develop the expertise to use it* in their own courses so as to guarantee continuity throughout the programme. Once this step is accomplished, the department will have the means to provide an "Integrative Activity" that is truly integrated into the Social Science programme.

This results of this project will also be diffused throughout the college system in Quebec in order to provide other colleges with an effective means of giving their Social Science programme the necessary cohesion so that student learning can be effectively assessed and the intentions of the programme fulfilled.

The specific results that would appear to be most useful for the entire collegial system are:

- the identification of the logic of the methodology component within the curriculum
- the familiarization of teachers with the methodology component
- the identification of the means whereby teachers can develop their pedagogical expertise in order to adapt the methodology component to their disciplines/courses.

These points will serve as criteria for evaluating the outcome of the project in the summer of 1993.