

TEACHING VALUES AT THE COLLEGE LEVEL

Values are by nature intangible, immaterial. It is difficult to define them. We can, however, state that they refer to deep beliefs in certain modes of action and that they reveal a society's essence (Gagnon et al., 2008). The orientations of college level programs underlie a set of values that reflect certain educational beliefs and intentions of our society, which we wish to transmit to its younger members. In developing programs, the Ministère de l'Éducation, du Loisir et du Sport (MELS) and the educational institutions, including CEGEPS, support the development of a set of values in students. For example, the Government of Quebec recently published its youth-action strategy for 2009–2014 (Secrétariat à la jeunesse, 2009), in which values such as independence, an entrepreneurial spirit, health, diversity, social inclusiveness, and the environment are put forward with the aim of promoting academic persistence. Moreover, on many CEGEPs' websites, various values are promoted on the pages dedicated to the colleges' education plans. These values include a sense of responsibility, independence, creativity, leadership, solidarity, self-confidence, self-fulfillment, initiative, organizational ability, perseverance, resourcefulness, effort, determination, team spirit, and motivation.

Various approaches may be considered in view of promoting the pursuit of an education and giving meaning to college students' education. The development of an entrepreneurial ethos among young people is one of the strategies adopted by Quebec society to achieve this goal, as asserted by the Secrétariat à la jeunesse (2004). In this context, the development of entrepreneurial values is viewed as an educational goal, whose outcome, far from relating exclusively to the creation of businesses, has to do rather with a willingness to undertake and fully engage oneself in a project (Pelletier, 2005). Thus the values associated with an enterprising spirit, known as entrepreneurial values, may be defined

as being favourable to the emergence of projects of all kinds, related as much to the personal sphere as to the professional one. It seems clear, then, that many of the values promoted by CEGEPs, including those listed above, can be considered entrepreneurial values.

Nowadays, while still pursuing their primary educational goals, teaching institutions have begun to incorporate issues related to sustainable development to varying degrees. Taking this perspective, in its *Plan d'action de développement durable 2008-2012*, the MELS (2009) set up a support program for the various educational systems in order to encourage educational initiatives that take into account the principles of sustainable development. We consider it important to incorporate the principles of sustainable development, which take account of social, environmental, and economic issues, into new practices related to education. In this context, and as part of the NovaScience program,¹ we undertook to carry out a project oriented towards teaching entrepreneurial values in accordance with the principles of sustainable development, within a CEGEP technical-training program.

PROJECT START-UP AND OBJECTIVES

The project presented in this article is part of the extension of a previous project, whose purpose was to train future teachers in career- and technical-training programs to teach entrepreneurial values within a sustainable-development perspective (Gagnon et al., 2008). The project this article discusses has adopted a similar process to train students in a technical program, Building Systems Engineering Technology (BSET), as taught at Cégep Limoilou. An analysis of the program's course outlines and the program as a whole allowed for an examination of the values the program conveys. Of course, these values are not exclusive to BSET. Many technical programs are likely to be underlain by the same values, as well as other, related ones. Similarly, some of the values specifically associated with the fields of entrepreneurship and sustainable development can also be found in BSET. Thus it is the values common to all three fields that concern us in the project (Gagnon and Gagnon, 2011) those that are sought among building systems engineering technologists, among people with an entrepreneurial spirit, and in the sphere of

¹ This program, under Quebec's Ministère du Développement économique, de l'Innovation et de l'Exportation (MDEIE), supports the promotion of scientific awareness and the training of the next generation in the fields of science and technology. Its objectives are to promote careers in science and technology and develop scientific and technological awareness. We thank the MDEIE for its financial support.



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sustainable development. For example, consider the value of “responsibility.” One of the specific goals of BSET is to “develop one’s sense of responsibility” (Ministère de l’Éducation, 2004: 54). We find this same value in numerous course outlines. These refer to the professional responsibility technicians must display in performing their work, for example, by always complying with the National Building Code. In the field of entrepreneurship, responsibility also refers to the guarantee an entrepreneur offers as to the quality and reliability of the services provided. Finally, the responsibility that we and our contemporaries have towards future generations is one of the guiding principles of sustainable development. Thus this value sits at the junction of the three spheres of technical and career training, entrepreneurship, and sustainable development.

This project’s general objective is to **provide career- and technical-training teachers with the means of promoting academic persistence in their students as the latter pursue training paths that link science and technology.** In this perspective, we have developed four novel learning activities that can be incorporated into existing courses and that give students formal opportunities for reflection on entrepreneurial values. These activities are intended to give meaning and concreteness to students’ studies.

Testing these activities within BSET at Cégep Limoilou enabled us to assess their relevance and effectiveness and the possibility of applying them to other programs.

In this article, we will present in detail one of these activities and the trial conducted for it. Next, we will briefly describe the three others.

► “ÇA ME TIENT À CŒUR!”

ACTIVITY GOALS

The activity called “*Ça me tient à cœur!*” (“It Really Matters to Me”) is designed to promote the identification and the explicit teaching of entrepreneurial values that accord with sustainable development objectives. It consists of a team workshop in which students are called upon to choose, negotiate, and, where possible, achieve consensus around shared values. The specific goals of this activity are:

- To enable students to determine and specify the values they consider important.
- To sensitize students to the value systems of others.
- To teach students to negotiate and achieve consensus around shared values.
- To teach students to put their own values in context.

MATERIALS AND ACTIVITY PROCEDURE

Materials

An analysis of documents related to career and technical teaching (in particular BSET course outlines), sustainable development, and entrepreneurship yielded a list of 30 values that could reflect some of the individual values of students enrolled in BSET (see [Table 1](#), “Value” column). Based on this list, we designed a deck of 30 cards, on each of which is written a statement related to one of the values in the list and associated with a technician’s work (see [Table 1](#), “Statement” column). We also drew up a teacher’s guide that identifies the goals, methods, tasks, and class-leadership scenario (Gagnon, Pouliot and Potvin, 2011).

Procedure

The game begins with participants, grouped in teams of four to six people, dividing up the 30 cards that bear the statements representing values. Participants then each hold five to seven cards in their hands, with all the cards held by one person being different from those held by teammates. As a first step, they must each choose the statements that matter to them the most in connection with how they will practice their professions. Next they break up into pairs and negotiate and strive for consensus around five statements that they will choose from among those they retained during the first stage. (The remaining statements will be rejected.) In order to complete this stage, each student must engage in discussion with the other member of the pair; they must reflect on what is most important to them in the context of their work. Next, they do this same exercise again, but this time with the whole team. It may be difficult to achieve consensus, since the statements in question have been chosen by participants as being particularly important to them. To conclude the activity, students are asked to imagine situations associated with the practice of their profession that call upon the values privileged by the team. These are termed “values scenarios”.



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For each of the values chosen by the team, they must write a short scenario in which they will call upon these values when they exercise their profession. Subsequently, they will present these values scenarios to the other teams.

TABLE 1	
ENTREPRENEURIAL VALUES ASSOCIATED WITH BSET AND CORRESPONDING STATEMENTS	
Statement	Values
It really matters to me as a technician to:	
1. Take pleasure in carrying out my work.	Well-being
2. Support my coworkers and enjoy their support in turn.	Solidarity
3. Respect others.	Respect
4. Comply with rules and requirements.	Professionalism
5. Help improve techniques.	Progress
6. Accept various ways of thinking and acting.	Tolerance
7. Manage on my own.	Autonomy
8. Be responsible for my own actions.	Responsibility
9. Work in a team.	Cooperation
10. Be creative.	Creativity
11. Have customers be satisfied with my work.	Customer satisfaction
12. Develop my full potential.	Self-fulfillment
13. Do quality work.	Quality and reliability
14. Exercise a critical spirit.	Judgment
15. Adapt well to change.	Adaptability
16. Go off the beaten path.	Freedom
17. Respect the environment.	Sustainable development
18. Perform my work with great competence.	Competence
19. Succeed in my career.	Taste for success
20. Be well paid.	Financial success
21. Believe in my abilities.	Self-confidence
22. Be fully engaged in my work.	Commitment
23. Reflect on the consequences of my actions.	Prevention
24. Become a team leader.	Leadership
25. Save energy and resources.	Resource management
26. Persevere.	Tenacity
27. Be passionate.	Enthusiasm
28. Be honest.	Honesty
29. Make decisions as part of my responsibilities.	Initiative
30. Be a good citizen.	Civic mindedness

We carried out this activity in the five class-groups of the BSET first-year cohort (n = 47). It was conducted in “Environment and Profession,” a required course taken during the first term of enrolment in the program. This course contributes to the development of two competencies: “Analysis of the job’s function” and “Assuming health- and safety-related responsibilities.” It aims specifically to inform the student about the multiple facets of the trade practiced by a building systems engineering technologist and allows students to develop their professional identity. One of the end objectives of this course is to make the student capable of developing his or her own professional conduct and evaluating it by adopting behaviours and attitudes appropriate to competent, safe, and responsible professional practice. Thus the values-choosing process performed by students in the “Ça me tient à cœur!” activity directly contributed to achieving this objective.

The activity’s last stage also allowed participants to form representations of the way the values chosen by their team could translate concretely to the workplace. This was the role played by the values scenarios. These can be fictional or they can represent professional situations encountered in the real-life workplace. This stage allows students to engage in exchanges about actual or anticipated work experiences, as well as about their own reactions in such situations.

These are some of the values scenarios presented within the groups that carried out the activity:

- Relating to the value of **solidarity**:
As a newcomer to the firm, Hugo is happy to receive advice from a senior co-worker and thus acquire tips and new knowledge.
- Relating to the value of **honesty**:
Faced with a situation for which I don’t have the competency, I must inform my boss that there may be somebody more competent than I am to do the job or I must say that I need help.
- Relating to the value of **initiative**:
A team from France has arrived to work in Quebec. I take the initiative of training the team members in the imperial system so that the work will be well done.

We evaluated this activity’s relevance and effectiveness using a questionnaire completed at the end of the course by the



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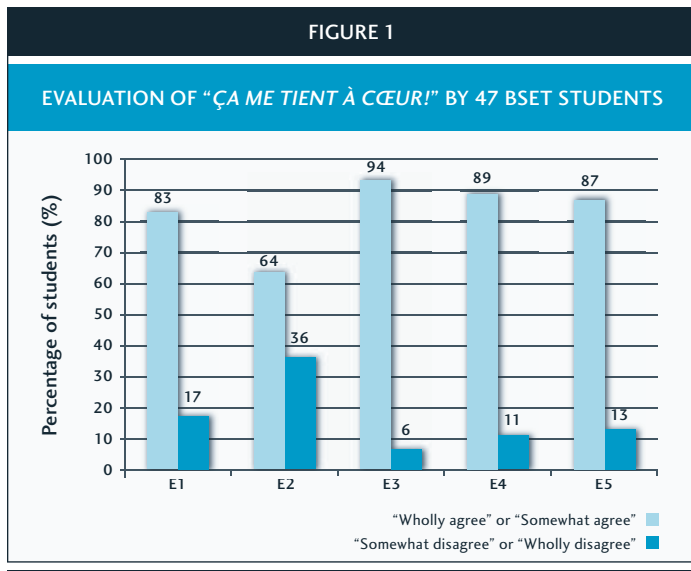


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47 students who had taken part. These are the statements that were put before them:

- S1: *This activity is relevant to the training of a building systems engineering technician.*
- S2: *This activity enabled me to become aware of my personal values.*
- S3: *The teaching approach used works for me.*
- S4: *The documents and materials supplied are appropriate.*
- S5: *I appreciated this activity.*

Figure 1 sets out the way each of the statements was evaluated (n = 47).



The answers to these statements are revealing of the activity's value. Thus 39 of the 47 participants considered the activity relevant to the training of a building systems engineering technician and 41 appreciated the activity. For the statement intended to verify whether the activity made students aware of their personal values, 30 answers were positive. The 17 negative answers were mostly accompanied by comments in which respondents explained they already knew their own values before the activity, which appeared to us to be normal at this stage of development of their professional identities.

This leads us to believe that the statement in question provides more information about students' level of development of this identity than it does about students becoming aware of personal values. All the more so as, in several cases, these same respondents added that the activity enabled them to discover their team members' values, which corresponds to one of the activity's specific aims. On this score, we read the following comments:

This activity leads us more to look for collective values, since it's a team job.

I had a pretty good idea of my own personal values. However, I discovered those of my classmates.

These values will very probably come to change between now and when I complete my studies and following my first job experiences.

OTHER ACTIVITIES; WAYS THE ACTIVITIES MAY BE ADAPTED TO OTHER PROGRAMS

The development of a system of values takes place gradually, over the course of a whole lifetime. This is why becoming aware of and implementing values associated with a trade or a profession has its own place in the technical training of CEGEP students. All the activities we developed target this objective and they were also designed to be integrated into courses that are found at different stages of the CEGEP curriculum.

We now present a brief description of the three other activities we designed. They are called: "*Une mise aux normes controversée*" ("A Controversial Compliance with Standards"), "*Coordonner dans un esprit de développement durable*" ("Coordination in the Spirit of Sustainable Development"), and "*Programme de formation et milieux de pratique*" ("Training Programs and Practice Settings"). Each of these activities targets, at some point or another, the teaching of entrepreneurial values in a college setting. The list of values presented earlier in this article served as the basis for the devising of these activities.



Activity 1

“Une mise aux normes controversée”

This activity consists of contemplating a specific problem, whether real or fictitious, that brings into play not only scientific considerations, but also **social, ethical, historical, economic, or environmental** ones. The idea is to adopt a multidisciplinary point of view in analyzing and contemplating a given problem, using the interdisciplinary “islets of rationality” model (Maingain and coll., 2002; Pouliot and Groleau, 2011). For example, bringing a heritage religious building up to specifications and changing its purpose or increasing the density of a city’s built environment entails dealing with issues linked to numerous disciplines. This activity aims to help students work towards becoming responsible professionals who are aware of certain social and ethical issues that are at play in society and acting accordingly. As the activity unfolds, participants are called upon to pinpoint the constraints and issues associated with the task of bringing the building in question up to specifications. They thus have to call on their values directly while being plunged into an entrepreneurial context.

Activity 2

“Programme de formation et milieux de pratique”

The purpose of this activity is to place students’ training into a relationship with future practice settings. It contributes specifically to students’ process of **defining and structuring their professional identities**. Students are first asked to search the Web for businesses whose products and services relate to various specialized areas of building systems engineering (plumbing, ventilation, air-conditioning, heating; fire safety; electrical wiring; refrigeration; energy efficiency; regulatory compliance, maintenance, and inspection; engineering and construction). They must then analyze these businesses’ websites and **determine what values the sites promote** (e.g., professionalism, progress, responsibility, customer satisfaction, quality and reliability). Finally, they are asked to establish links between the values conveyed by the businesses and their own values. To this end, each student creates an advertising display for their own virtual business whose contents reflect their values, aptitudes, and fields of professional interest.

Activity 3

“Coordonner dans un esprit de développement durable”

This activity unfolds in the context of the coordination of a building systems engineering project. Students are asked to plan the various stages of a building’s “fitting up” based on the plans for a real construction project being managed by a consulting engineering firm. It’s expected that they will carry out their work with the **principles of sustainable development** in mind. They will choose what systems to install while specifying any constraints associated with their choices. Finally, they will determine the value of their choices relating to sustainable development as **evidenced in the social, economic, and environmental** benefits and drawbacks associated with the systems chosen.

CONCLUSION

All these activities were designed to be adaptable without any special difficulty to other career and technical programs, in particular those dealing with science and technology. Thus when students imagine values scenarios in “*Ça me tient à cœur!*,” they must necessarily build a bridge between their own values and the professional attitudes sought for in their trade. The values scenarios described above illustrate this perfectly. This same activity could be adapted to pre-university CEGEP programs and be useful there too. For example, one of the general goals of the Science Program is to define

one’s value system (MELS, 2010: 3), which allows the student to come to recognize her or his own personal values and refer to them in making choices and decisions. The “*Ça me tient à cœur!*” activity would surely contribute to achieving this goal. The “*Programme de formation et milieux de pratique*” is especially well-suited to being adapted to other programs. After all, analyzing employer websites in a given field based on the values conveyed by the websites is something that can be done in any training context. The “*Une mise aux normes controversée*” activity could be of use in other technical fields,



for example, in Land Use and City Planning Technology, Mechanical Engineering Technology, and Architectural Technology, all of them fields of study in which reflection on the constraints and issues associated with a given building project is possible. Clearly, then, the teaching of values is suited to numerous training programs offered in Quebec's colleges and CEGEPs. ●

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Both the English- and French-language versions of this article have been published on the AQPC website with the financial support of the Quebec-Canada Entente for Minority Language Education.