



Summary Report

Support for Entrepreneurship within Canadian Higher Education Institutions

BACKGROUND

Entrepreneurship is an important contributor to new ventures and helps to create jobs, wealth and economic growth. Providing young potential entrepreneurs with the appropriate skills and support is key in this regard. Consequently, entrepreneurship education is an important element in building a global competitive advantage.

Over the years, the focus of entrepreneurship education has evolved beyond the original goal of venture creation to emphasize the development of entrepreneurial behaviours and skills. Attention has also been directed towards building both personable business skills and theoretical/strategic planning skills, along with the intent to deliver entrepreneurship education to various disciplines across campus.

OBJECTIVE

In 2009, Industry Canada conducted a survey of Canadian universities and colleges to identify the framework in which entrepreneurship education is delivered in Canada — an area where detailed aggregate information is largely absent — as well as to identify how the option to be entrepreneurial is promoted and encouraged amongst students.¹

FINDINGS

Findings from the survey identify two areas of concern:

- 1) Restricted Student Access to Entrepreneurship Education**
 - Close to 40 percent of surveyed institutions did not have an underlying strategy to deliver entrepreneurship education.
 - A limited number of students had access to entrepreneurship education, principally in business and engineering faculties.
- 2) Limited Support for Early-Stage Entrepreneurship on Campus**
 - More than 40 percent of institutions did not have external links to investors to offer some financing options to those interested in entrepreneurship.
 - Only 18 percent of institutions tracked the number and growth of ventures started by graduates to be able to provide possible support.
 - Only 34 percent of institutions supported entrepreneurship with dedicated funding.

The survey was divided into six dimensions: strategy, institutional infrastructure, resources, teaching and learning, development and outreach. Each dimension relates to some aspect of delivering entrepreneurship education within higher education institutions as described in Appendix B.

¹ See Appendix A for information on the survey, methodology and response rate.

Educational institutions will need to support entrepreneurship through the planning and implementation stages of business development as a complement to their critical role in driving technological progress, and thus leading to commercialization.

Dimension 1: Strategy

Close to 40 percent of institutions did not have an institution-wide strategy to deliver entrepreneurship education. Entrepreneurship education policies were predominantly found at the faculty level, which may limit student access to entrepreneurship education.

Table 1: Percentage of Institutions with Various Overarching Entrepreneurship Education Goals

	Total Institutions	University	Degree-Granting College	Technical Institute and Other
To foster entrepreneurial behaviours, skills and mindsets	51	61	40	33
To inspire students to seek an entrepreneurial career or life	39	47	30	27
To seek opportunities to commercially exploit knowledge	33	47	10	13
To provide access to entrepreneurship opportunities for all students	28	33	30	13
To increase the number of graduate start-up businesses	20	28	10	7
To maximize technology transfer revenue	15	22	-	7
That entrepreneurship education should generate income	3	3	10	-
My institution doesn't have entrepreneurship goals	39	31	40	60

“-” indicates no response.

Most institutions have general entrepreneurship goals; however, few have specific measurable goals (Table 1)

- Only 28 percent of institutions instilled an overarching goal to provide access to entrepreneurship education for all students.
- Moreover, while 51 percent aim to foster entrepreneurial behaviours, skills and mindsets amongst the students, close to 40 percent of institutions did not have any institution-wide entrepreneurship goals.

Strategic policies to deliver entrepreneurship education are sparse at the institution level and lie predominantly within specific faculties, such as business and engineering

- At the institution level, only 23 percent of institutions had written institution-wide policies / action plans for undertaking entrepreneurship education.
- At the faculty level, 44 percent of institutions had policies / action plans present across certain faculties.
- Limited exposure to entrepreneurship education across campus:
 - 75 percent of institutions had entrepreneurship polices rooted in business studies;

- 15 percent of institutions had entrepreneurship policies rooted in technical (engineering) disciplines; and
- 5 percent of institutions had entrepreneurship policies rooted in social sciences.

A dean was more likely to be accountable for entrepreneurship education

- Dean — 44 percent of institutions.
- Professor — 21 percent of institutions.
- No one — 18 percent of institutions.
- Entrepreneurship Champions: Individuals who act as a spokesperson/advocate at the management level to support entrepreneurship activities.
 - Most entrepreneurship champions were self-appointed; and
 - Primarily found in the business, technical, arts and natural science areas, which may reinforce the limited access to and delivery of entrepreneurship education on campus.

Dimension 2: Institutional Infrastructure

Institutional infrastructure supports entrepreneurship at differing stages of the business development cycle. To be effective, such infrastructure seems to require many different elements. However, given limited resources, institutions may be forced to focus on only a limited number of elements, thus possibly favouring licensing as an entrepreneurship choice over venture creation.

The most common types of institutional infrastructure — entrepreneurship centres and technology transfer offices — are present at less than half of the institutions surveyed

Entrepreneurship Centres: A central location to provide entrepreneurs with access to an array of educational programs, networking opportunities, technologies and resources on campus and/or within the community. These centres typically require a relatively larger budget and more administrative planning compared with technology transfer offices.

Technology Transfer Offices (TTOs): Geared more towards the licensing component of the business development cycle than venture creation as a whole.

Table 2: Comparing the Presence of Entrepreneurship Centres and TTOs

	Entrepreneurship Centre	TTO
At least one full-time employee	34%	46%
Less than one full-time employee	13%	3%
Institution does not have this facility	53%	51%

- Over half of the institutions did not have an entrepreneurship centre (53 percent) or a TTO (51 percent).
- There was a stronger preference towards TTOs (46 percent) compared with entrepreneurship centres (34 percent). This preference reflects findings from

a recent study suggesting that universities are more inclined to host TTOs due to the short-term benefits from the sale of licences.² The authors further illustrate that the TTO model provides no incentive for the university to pursue other, possibly more profitable, commercialization methods.³ Inevitably the innovation is sold prematurely, often resulting in the flow of long-term economic benefits to the location of the licensee rather than the region in which the innovation was funded / developed.

Technology Incubator: This type of facility predominantly focuses on the tail end of the business cycle, providing experienced business support, high-quality facilities and management services for business start-ups.

- Only 25 percent of institutions had incubator facilities. Of these institutions:
 - 60 percent assisted more than 10 graduate start-ups; and
 - 40 percent assisted less than 10 graduate start-ups.

Each type of institutional infrastructure facilitates a specific stage in the business development cycle from conception to start-up. Many institutions that hosted incubator facilities also hosted other types of facilities

Of the 25 percent of institutions that hosted incubator facilities:

- 80 percent had technology transfer offices — focus on licensing and patents.
- 87 percent had entrepreneurship centres — focus on preliminary business development stage.
- 87 percent offered cross-faculty entrepreneurship activities — focus on increased access to all students.
- 80 percent supported entrepreneurship education goals with dedicated funding.

These findings suggest that the majority of institutions that host incubator facilities also support other facilities, providing a framework to assist student entrepreneurship through each stage in the business development cycle. The financial commitment to establish such a network may motivate universities to consider alternative and cheaper modes of commercialization, such as licensing through TTOs.

To resolve the conflict on the part of universities of deciding between short-term gains from licence fees and the cost and risk of alternative modes of commercialization, Maxwell and Lévesque⁴ suggest a partnership between university incubators and regional economic development agencies. Such a partnership facilitates the flow of knowledge and funds between universities and local industry, creating future research opportunities and a flow of donations from successful entrepreneurs and alumni to universities, while supporting the local region through new ventures, graduates and co-op students.

² Maxwell, A. and M. Lévesque. "Technology Incubators: Facilitating Technology Transfer or Creating Regional Wealth." *International Journal of Entrepreneurship and Innovation Management*, Forthcoming

³ Ibid.

⁴ Ibid

Dimension 3: Resources

Resources are critical to the development of an entrepreneurship program. Most institutions did not allocate funding to entrepreneurship education goals. Similarly, most entrepreneurship activities (curricular and extracurricular) were supported by short-term funding, further illustrating a gap in providing the necessary support for long-term development of entrepreneurial capacity.

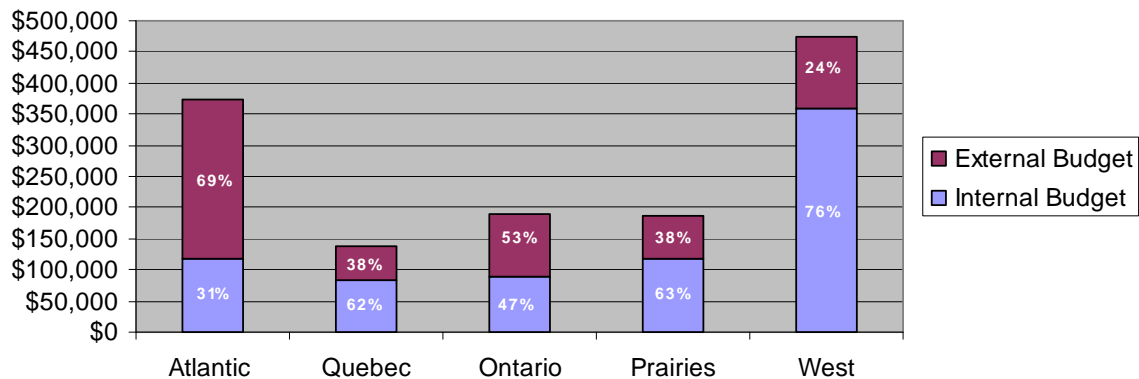
Entrepreneurship education budget varies by type of institution

- Only 34 percent of institutes supported established entrepreneurship education goals with dedicated funding.
- Average size of the entrepreneurship education budget (2007/2008):
 - Universities: \$430 000.
 - Degree-Granting Colleges: \$78 000.
 - Technical Institutes: \$44 000.

The average entrepreneurship education budget in the Western region was three times the average entrepreneurship education budget in Quebec (Figure 1)

- Western region (British Columbia, Alberta and Yukon) and the Atlantic region, on average, had the largest budget for entrepreneurship education.
- Quebec had the lowest average entrepreneurship education budget of approximately \$138 thousand.

Figure 1: Average Entrepreneurship Education Budget, and Breakdown between Internal and External Funding, by Region



Institutions were asked to determine what proportion of the total budget for entrepreneurship education came from internal funding and external funding

- Internal Funding: Financial commitment within the institution towards the development of entrepreneurship education in the short and long terms.
- External Funding: Funding from external stakeholders (government funding, donations and alumni donations) usually comes with restrictions and clauses. Generally not a steady source of income for long-term projects.

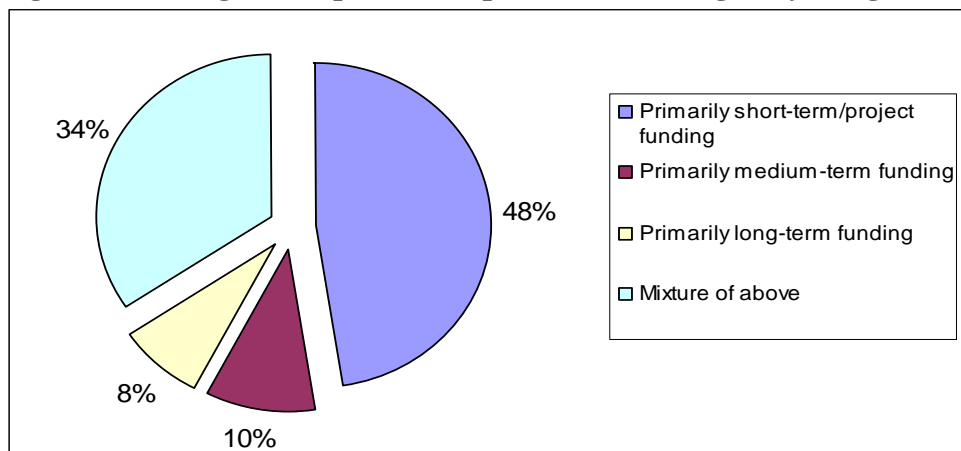
Internal funds made up the majority of entrepreneurship education budgets, except in the Atlantic region; in Ontario, internal and external funding were roughly equal (Figure 1)

- By institution, a split of approximately 50/50 between internal and external funding was common for the total entrepreneurship education budgets of most universities and colleges. However, amongst technical institutes and other colleges, 71 percent of funding for entrepreneurship education budgets came from internal sources, compared with 29 percent of funding from external sources.
- By province, internal funds made up more than 60 percent of entrepreneurship education budgets in the Western region (British Columbia, Alberta and Yukon), the Prairies (Manitoba and Saskatchewan) and Quebec. A roughly equal split was found in Ontario.
- Almost 70 percent of the entrepreneurship education budget in the Atlantic region came from external funding.

Close to half of the institutions surveyed support entrepreneurship education in the short term, suggesting a limited commitment to the development of entrepreneurship education within the institutions in the long run (Figure 2)

- 48 percent of institutions primarily funded entrepreneurship activities with short-term/project funding (commitment of 1–2 years).
- Slightly more than a third (34.4 percent) of institutions supported entrepreneurship activities with a mixture of short-term (1–2 years), medium-term (3–5 years) and long-term (5+ years) funding.

Figure 2: Average Entrepreneurship Education Budget, by Length of Funding



Approximately three quarters of institutions with a long-term financial commitment to entrepreneurship education established at least one institutional infrastructure

- Of the institutions that allocated medium-, long- or mixed-term funding to entrepreneurship activities (curricular or extracurricular), 72 percent hosted at least one type of entrepreneurship infrastructure (entrepreneurship department, entrepreneurship centre, TTO, incubator facilities).

- In comparison, of those institutions that allocated only short-term funding to entrepreneurship activities, 66 percent hosted at least one entrepreneurship infrastructure.

Dimension 4: Teaching and Learning

Entrepreneurship education can be delivered either through a curriculum of courses/programs (curricular activities) or through practical hands-on experiences via business competitions or case studies (extracurricular activities). Of the institutions surveyed, in the academic year 2007/2008, an equal number of students participated in entrepreneurship curricular (2.5 percent) and extracurricular (2.3 percent) activities, suggesting no preference for the way in which entrepreneurship education is delivered.

The majority of courses in entrepreneurship education are delivered within the business and engineering subject areas, limiting exposure to would-be entrepreneurs in areas of study such as medicine or environmental studies. Entrepreneurship education requires a non-traditional teaching approach and most institutions utilize a variety of such methods, including a hands-on practical approach.

Most entrepreneurship courses were found at the undergraduate level

- At the undergraduate, graduate and postgraduate levels, the majority of institutions offered 1–5 entrepreneurship courses (Table 3).
- The most entrepreneurship courses were offered at the undergraduate level. The content of these courses focuses primarily on the assessment of business development needs, opportunity recognition and problem solving.

Table 3: Percentage of Institutions Offering Entrepreneurship Education Courses, by Number of Courses and Education Level

	Undergraduate	Graduate	Postgraduate
0 courses / Study level not available	3	52	90
1–5 courses	48	31	10
6–10 courses	30	8	0
More than 10 courses	20	8	0

Guest lecturers were used to compensate for the limited degree of entrepreneurship experience amongst the academic faculty

- The most common in-class teaching methods involved the use of case studies, lecturing and project teams. Additionally, 59 percent of institutions surveyed often used in-class visits from entrepreneurs and practitioners.
- More than 66 percent of institutions had at least five academic staff involved in entrepreneurship activities. However, while more than 75 percent of institutions did not require staff to have actual entrepreneurship experience, 80 percent of institutions, to some extent, used guest lecturers or practitioners with practical entrepreneurship experience.

Student access to entrepreneurship courses restricted to specific areas of study

- The majority of institutions offered entrepreneurship courses through business studies (91.8 percent) and technical (engineering) studies (37.7 percent) (Table 4).
- Universities, in general, offered entrepreneurship courses in a greater number of subject areas than degree-granting colleges or technical institutes, and were more likely to permit students to enrol in courses outside their faculty.

Table 4: Percentage of Institutions Offering Entrepreneurship Education Courses, by Subject Area and Institution

Subject	Total Institutions	University	Degree-Granting College	Technical Institute and Other
Business Studies	91.8	88.9	100.0	93.3
Technical (Engineering)	37.7	36.2	50.0	33.4
Food Industry and Home Economics	21.3	16.7	30.0	26.7
Arts	19.6	22.2	20.0	13.4
Natural Science	13.1	19.5	0.0	6.7
Social Science (except Business Studies)	13.2	13.9	10.0	13.3
Health Care	13.1	8.3	30.0	13.4
Agriculture	11.4	13.9	10.0	6.7
Pedagogy/Education	4.9	5.6	10.0	0.0
Humanities and Theology	4.9	8.3	0.0	0.0
Public Security / Defence	3.2	0.0	20.0	0.0

Non-traditional teaching methods are commonly used as a form of hands-on technical training

In addition to curricular activities, the most common forms of extracurricular activities were seminars/workshops (66 percent), business plan / venture capital competitions (62 percent) and mentoring schemes / personal coaching (57 percent) (Table 5).

Table 5: Percentage of Institutions Offering Extracurricular Entrepreneurship Activities, by Type of Institution

Extracurricular Activity	Total Institutions	University	Degree-Granting College	Technical Institute and Other
Seminars/workshops	66	75	80	33
Business plan / venture capital competitions	62	81	60	20
Mentoring schemes / personal coaching	57	64	60	40
Company visits	46	50	60	27
Matchmaking events	43	56	30	20
None offered	16	8	0	47

Dimension 5: Development

While close to 95 percent of institutions indicated students showed an interest in entrepreneurship activities, most institutions did not have the necessary evaluation procedures to monitor the quality and effectiveness of these activities and to identify areas for improvement and development.

Evaluation procedures are not present in most institutions to track and identify the development of entrepreneurship education on campus

- Only 23 percent of institutions had formalized evaluation procedures to follow up on the progress of achieving entrepreneurship goals and implementing entrepreneurship strategies.
- 20 percent of institutions evaluated entrepreneurship courses by measuring how end-users (employers and investors) responded to the entrepreneurial skills and attitudes of students from their institution.
- Almost half of the institutions (48 percent) did not have any procedures in place for evaluating anticipated medium- and long-term effects of entrepreneurship courses.

Most institutions identified some degree of interest in entrepreneurship amongst students; however, few followed up to determine if graduates created businesses or evaluated the potential interest students have towards entrepreneurship

Table 6: Percentage of Students Graduating with Practical Entrepreneurship Experience,* 2007/2008

	Total Institutions	University	Degree-Granting College	Technical Institute and Other
None	5	3	0	13
Under 10%	48	47	60	40
10–50%	26	31	30	13
More than 50%	7	8	0	7
Cannot make an estimation	15	11	10	27

*Measured by participating in business plan competitions, incubators or internships in start-ups.

Graduates from close to 95 percent of institutions showed some interest in entrepreneurship education by participating in business plan competitions, incubators or internships in start-ups; however, few institutions followed up on the long-term effects of such activities.

- 48 percent of institutions did not have evaluation procedures to identify the medium- and long-term effects upon student mindsets and skills.
- 62 percent of institutions indicated that they kept in touch with alumni.
- 34 percent of institutions did not track alumni.
- Only 18 percent of institutions surveyed tracked the number and growth of ventures started by graduates.

Dimension 6: Outreach

While institutions establish links with entrepreneurs and private companies to provide access to practice-oriented activities, 41 percent of institutions did not have links to investors, limiting available finance options on campus to those that are ready to pursue entrepreneurship.

Common external stakeholders for promoting and supporting entrepreneurship were entrepreneurs and private companies (Table 7)

- The most common external stakeholders were entrepreneurs (84 percent) and private companies (84 percent).
- Other stakeholders with an interest in promoting entrepreneurship and providing networking opportunities were the government (77 percent), foundations (61 percent) and specialized bodies supporting entrepreneurs (60 percent).

Amongst external stakeholders that provide support to start-ups (commercialization):

- 41 percent of institutions surveyed did not have any links to investors, such as venture capitalists or banks.
- 51 percent of institutions did not have links with professional service providers to provide assistance to interested entrepreneurs in such areas as accounting, marketing and income taxes.
- 61 percent of institutions did not have science parks / incubators to offer facilities and management support to start-ups.

Table 7: Percentage of Institutions with Links (and No Links) to Select External Stakeholders

	Link	No Link
Private companies	84	16
Entrepreneurs	84	16
Government	77	23
Foundations	61	39
Specialized bodies supporting entrepreneurs	60	39
Investors (venture capitalists, banks, etc.)	59	41
Professional service providers*	49	51
Science parks / incubators**	39	61

* Provide consulting services (e.g., accounting, marketing, income taxes).

** Focus on support for start-ups and/or interactions between industry and start-ups.

Knowledge transfer to society is one output measure for entrepreneurship that can be presented in the form of venture creation as well as licensing, consulting and academic spinoffs

- In the academic year 2007/2008, an estimated 281 ventures were created, 167 by university graduates and 114 by college graduates.
- Of other forms of knowledge transfer:
 - Consultancy work was the most popular form.

- Approximately a third of institutions transferred knowledge via academic spinoffs (venture creations), intellectual property rights, licensing agreements and product/process design.
- 25 percent of the institutions did not transfer knowledge to society:
 - Based on a small sample, by institution, a greater proportion of technical institutes (53 percent) did not transfer any form of knowledge to society.

Table 8: Percentage of Institutions that Transferred Knowledge to Society

	Total Institutions	University	Degree-Granting College	Technical Institute and Other
Academic spinoffs (venture creations)	33	42	10	27
Licensing agreements	26	44	-	-
Patents / intellectual property rights	33	53	-	7
Product/process design	26	39	20	-
Consultancy work	64	81	60	27
Institution transferred knowledge in other ways	15	17	-	20
Institution did not transfer knowledge	25	11	30	53

“-” indicates no response.

CONCLUSION

Overall, the findings of this report show that Canadian higher education institutions are actively involved in offering entrepreneurship education not only at the theoretical level, but also by providing a network of practitioners and the necessary facilities to support students interested in entrepreneurship.

However, evidence from this report indicates that in many areas of support and development more could be done to further encourage and promote entrepreneurial activity amongst higher education institutions.

The first area of concern relates to student access to entrepreneurship education. Entrepreneurship is an activity that is applicable and relevant to students of all disciplines that are interested in starting a business. However, having an overall goal to deliver entrepreneurship education within an institution was reported absent by close to 40 percent of respondents. In most cases, entrepreneurship education was present in one or two faculties (principally business and engineering). While institutions do make efforts to motivate and support entrepreneurship opportunities on campus, only 28 percent of institutions have an objective to deliver entrepreneurship opportunities to students in all faculties.

The second area of concern refers to the mechanisms within the framework that generate economic benefits. More specifically, these concerns relate to the limited and sporadic support for early-stage business ventures and the availability (or lack thereof) of other methods of knowledge transfer to society.

Close to 300 ventures were created in 2007/2008 among the educational institutions surveyed and the study demonstrates the presence of support for these ventures. However, there are gaps and inconsistencies in this overall system of support. Fully 95 percent of institutions indicated that a significant number of graduates had shown an interest in entrepreneurship education by participating in business plan competitions, incubators or internships, yet 41 percent of institutions did not have external links to investors, 51 percent did not have links to professional service providers and 61 percent did not have any incubators to support the new ventures of interested entrepreneurs. In contrast, the most popular mechanisms used to transfer knowledge from institutions to the broader society, TTOs and consultancy work, may not be the most effective in deriving the full long-term benefit from entrepreneurial activities at Canadian educational institutions.

Overall, entrepreneurship education requires an adequate and cohesive framework that encompasses the various dimensions of entrepreneurship education. The survey results have highlighted a number of strong initiatives and practices that are present, but have also revealed that there are several gaps in the educational efforts around entrepreneurship. In the end, the development of a comprehensive framework to provide access to and support for entrepreneurship education will be a complex process and will depend on the desired outcomes of the entrepreneurship education system.

Appendix A: Survey, Methodology and Response Rate

The survey was developed and conducted across 31 European Union (EU) countries. The final Canadian report will include an EU versus Canada comparison; however, the current document describes Canadian results only.

Before administering the survey in Canada, representatives from one university, one college, the Canadian Federation of Business School Deans (CFBSD) and the Association of Canadian Community Colleges (ACCC) reviewed and commented on the survey to ensure it was conducive to the Canadian higher education system.

Methodology

The survey was split into two sections, a preliminary survey consisting of nine questions and the main survey consisting of 68 questions. The purpose of the preliminary survey was to determine if a particular institution provided an adequate level of entrepreneurship education to warrant continuing with the rest of the survey. To qualify for the main survey, the institution had to satisfy one of three criteria:

- The institution offers curricular or extracurricular activities focusing on the development of entrepreneurial behaviours, skills, knowledge, mindsets and experiences.
- The institution offers courses in which entrepreneurship accounts for more than 25 percent of the course curriculum.
- The institution has offered entrepreneurship education for some time (measured in years).

The target participants for this survey were business school deans and directors of entrepreneurship centres at each institution. The CFBSD and the ACCC were contacted to generate a comprehensive list of target participants.

The survey identified six dimensions of entrepreneurship education (Appendix B) and was conducted online. Each institution was given a unique link to enable participants to email the survey link to other individuals, within the institutions, who might be able to contribute to specific areas of the survey.

The institutions have been ranked within each dimension to provide a benchmarking measure. As an overall source of reference for readers, the three institutions that scored well in each dimension are listed in Appendix C.

To ensure a healthy response rate to the survey, three email reminders were sent two weeks apart before beginning a two-week telephone follow-up procedure.

Response Rate

A total of 36 universities and 32 colleges participated in the Canadian survey. Of these 68 institutions, seven did not qualify to continue on to the main survey. A complete list of participating institutions is presented in Appendix D.

The overall Canadian response rate was 33 percent, compared with the EU response rate of 17 percent. Furthermore, the Canadian sample represented more than 50 percent of the total undergraduate population in Canada between 2007 and 2008.

Appendix B: Dimensions of Entrepreneurship Education

Strategy: This dimension is represented by the presence of written entrepreneurship education goals, which illustrate a commitment to the advancement of entrepreneurship, embedded within the institution's overall strategy. This dimension can dictate the allocation of resources and the means of achieving the underlying objectives of entrepreneurship education.

Institutional Infrastructure: Institutional infrastructure demonstrates the degree of planning and commitment within the institution toward entrepreneurship education. Entrepreneurship centres are a central location to provide entrepreneurs with access to an array of educational programs, networking opportunities, technologies and resources on campus and/or within the community. Other examples of institutional infrastructure include entrepreneurship departments, incubator facilities and technology transfer offices (TTOs).

Resources: Resources dictate how entrepreneurship education is financially supported within institutions. The assumption is that entrepreneurship education will most likely increase if dedicated funding is allocated and especially if the funding is long term as opposed to short-term or project-based funding. The amount of funding will, of course, determine the scope of entrepreneurship education activities in institutions. Furthermore, making entrepreneurship education a permanent element in institutions is more likely to occur if entrepreneurship activities can generate income or attract external funding.

Teaching and Learning: Teaching and learning cover the activities taking place in the entrepreneurship education program at institutions, including the entrepreneurship courses and degrees offered and the range of extracurricular entrepreneurship activities provided. The quality of entrepreneurship taught also depends on the teaching material and teaching methods used. The curriculum part of this dimension investigates how institutions develop their entrepreneurship curriculum, focusing on collaboration across disciplines and institutions in the development of the curriculum.

Development: This dimension focuses on whether institutions strive to improve their entrepreneurship activities. It measures whether institutions evaluate their entrepreneurship education activities and whether institutions take into account the needs and wishes of present and past direct users (students and alumni) and indirect "end-users" (potential employers, venture capitalists, etc.) when developing/improving their entrepreneurship education program. Moreover, the quality of entrepreneurship education is very much dependent on the skills and competencies of the staff teaching entrepreneurship. Therefore, the development dimension also comprises the human resources utilized in entrepreneurship education; for example, focusing on whether entrepreneurs are used as guest lecturers or whether the academic staff teaching entrepreneurship have their own entrepreneurial experiences. Finally, the development dimension outlines how human resource efforts within institutions support and develop the entrepreneurship teaching endeavours of academic staff.

Outreach: This dimension focuses on the links institutions have with external stakeholders as these links illustrate entrepreneurship-related opportunities offered to students by the institution.

This dimension takes into account that developing an entrepreneurial mindset among students is not entirely a theoretical exercise. In most educational settings, students are isolated from the external environment. In order to develop an entrepreneurial mindset, as well as behaviours and skills, among students, however, institutions can offer students opportunities to gain practical experience through various outreach activities.

Appendix C: Three Well-Ranked Institutions that Support Entrepreneurship Education, by Dimension

Dimension	Institution		
Strategy	Université Laval	Nova Scotia Community College	Ryerson University
Institutional Infrastructure	Wilfrid Laurier University	Ryerson University	HEC Montréal
Resources	McGill University	University of Alberta	University of Waterloo
Teaching and Learning	University of New Brunswick – Fredericton	Cégep de Chicoutimi	Mount Royal University*
Development	McMaster University	Trinity Western University	Mount Royal University*
Outreach	University of Toronto	University of Alberta	University of Waterloo

* Previously known as Mount Royal College.

Appendix D: List of Participants

Universities (36)

- Acadia University
- Algoma University College
- Bishop's University
- Brock University
- Capilano University
- Concordia University
- Concordia University College of Alberta
- HEC Montréal
- McGill University
- McMaster University
- Memorial University of Newfoundland
- Queen's University
- Ryerson University
- Simon Fraser University
- St. Francis Xavier University
- The King's University College
- Thompson Rivers University
- Trinity Western University
- Université Laval
- University of Alberta
- University of British Columbia
- University of Guelph
- University of Lethbridge
- University of New Brunswick – Fredericton
- University of Ontario Institute of Technology
- University of Ottawa
- University of Prince Edward Island
- University of Regina
- University of Saskatchewan
- University of the Fraser Valley
- University of Toronto
- University of Victoria
- University of Waterloo
- University of Western Ontario
- Wilfrid Laurier University
- York University

Colleges (32)

- Algonquin College
- Cambrian College
- Cégep de Chicoutimi
- Cégep Limoilou*
- Centennial College
- Champlain Regional College
- College of New Caledonia
- College of the Rockies*
- Conestoga College Institute of Technology and Advanced Learning
- Fanshawe College
- George Brown College
- Georgian College
- Heritage College
- Holland College
- Kemptville College*
- La Cité collégiale*
- Loyalist College
- Medicine Hat College*
- Mount Royal University (previously known as Mount Royal College)
- Niagara College
- Northern College of Applied Arts and Technology
- Northern Lakes College
- Nova Scotia Community College
- Okanagan College
- Parkland College*
- Red River College
- Saskatchewan Institute of Applied Science and Technology
- Sault College
- Seneca College
- St. Clair College
- The Michener Institute for Applied Health Sciences*
- Yukon College

* These colleges did not qualify and as such are not included in the survey sample.