

## **Report by Table 3 Undergraduate Programs**

### **1. Responsibility and public accountability of the university**

Universities are entrusted with the minds of the younger generations and must be accountable for that responsibility. As such, a responsible university must identify its core values and goals, state them publicly and ensure that the message is communicated strongly to professors and staff who will eventually bring these values to life and ensure that the university achieves its stated goals. Such values must be strongly reflected in the branding of the university.

By the same token, every program must have clearly defined objectives and built-in measures to demonstrate how these objectives are achieved. These goals are in general achieved through a series of courses in the programs but also through the learning environment in which these courses are delivered.<sup>1</sup> The role of each course or out-of-class activity in achieving the goals of the program must be clearly defined. Measures of student success in each course or activity must reflect progress toward achieving these goals. Teaching evaluations can be used to measure the success of the professor in achieving these stated goals for the course or activity.

### **2. The role of a university education: labour market entry and fundamental education**

One objective of a university education is to foster individuals' intellectual development so that they can successfully enter a competitive labour market. To this end, our undergraduate programs must emphasize the acquisition of transferable skills such as analysis, synthesis, oral and written communication, teamwork, and research. That said, a university education cannot be limited to that objective but must also, among other things, distinguish itself from the training provided by the colleges of applied arts and technology. Since a number of our students will be leaders in our society, it is of the utmost importance that our programs highlight the development of skills that will make our graduates responsible citizens who are aware of political, societal and cultural issues in their community.

A university education should therefore make it possible for students to develop and to perfect the skills required for long-term personal and intellectual growth. It is helpful to divide the skills students should have acquired on completion of their university education into three categories.

#### **(A) Fundamental education**

Fundamental education goes beyond the acquisition of scattered knowledge fragments and specific technical skills. Fundamental education is aimed at making students into

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<sup>1</sup> Learning continues outside the classroom through seminar series, competitions, volunteer service, co-operative learning and many other initiatives.

responsible citizens. Thus it must allow them to gain greater self-knowledge, intellectual autonomy and maturity of thinking.

Fundamental education includes the following nine essential component skills.

### **(1) Learning to learn**

Learning is a life-long endeavour. Thus an undergraduate program must provide students not only with knowledge, but also with tools that will allow them to keep on learning after they leave the university. Graduates with a bachelor's degree should therefore want to continue their intellectual growth. Emphasis must be placed on the development of meta-cognitive skills: how to approach a complex problem; how to organize one's ideas; how to become creative; how to recognize one's strengths and weaknesses; and how to remedy any shortcomings.

### **(2) Critical thinking**

Students must learn that tolerance and open-mindedness do not mean that all opinions are of equal value. An undergraduate program must show students that opinions on controversial issues can and must be defended by rational arguments, and that it is important to distinguish between valid and invalid reasoning. Graduates should be able to identify the issues in a debate, to analyse and assess arguments in support of various views in the debate, and to articulate their own arguments.

### **(3) Oral and written communication**

Learning to write well takes practice, and the same is true for learning to communicate well orally. An undergraduate program must require students to write essays and make oral presentations. Graduates should be able to express their ideas in their own words, orally and in writing, in a clear, concise and coherent manner.

### **(4) Ethics**

The importance of ethics in individuals' public and personal lives can scarcely be overestimated. A university graduate should be able to understand, evaluate and put into practice basic moral principles. The purpose of a university education is not to indoctrinate students, but to introduce them to the main ethical perspectives and to give them the theoretical tools to assess and apply them to moral issues of concern in our society. The university is an ideal forum for awakening young adults to these issues in an open but critical manner.

### **(5) Life in society**

One of the university's main mandates is to train good citizens who will help build a better society. An undergraduate program should encourage social responsibility, tolerance, open-mindedness and dialogue with others.

## **(6) Citizenship**

The university must prepare its graduates to be active, responsible citizens in a democratic society. Undergraduate programs must therefore emphasize the development of skills and knowledge that will make our graduates into citizens who are aware of political, societal and cultural issues in their society, and who will not hesitate to be part of processes that will help improve conditions in these areas.

## **(7) Leadership**

Self-confidence and organizational skills are an integral part of intellectual maturity. An attitude of leadership contributes to both personal and professional success. An undergraduate program should include activities that allow students to develop their full leadership potential.

## **(8) Teamwork**

In nearly every professional field, teamwork is a stock in trade. Team members must work together toward the same objective. Teamwork requires not only that individuals be able to form a team, divide the work, and co-ordinate individual members' efforts, but also that they negotiate differences of opinion and resolve conflict.

## **(9) Development and mastery of one's second language**

(See section 4.)

Table 3 wishes to make the following recommendations concerning the component skills of fundamental education. First of all, persons in charge of programs must ensure that programs are explicitly designed to ensure that students have acquired each of the nine component skills by the time they graduate. Thus it must be determined which courses will make it possible to develop the various component skills to a satisfactory level. This approach will mean that some courses will be devoted in part to developing certain component skills. Course descriptions and curricula should reflect this fact. For example, a course requiring essay-writing could, in part, develop the required skill level in written communication, while a course requiring oral in-class presentations could, in part, develop the required skill level in oral communication. Personalized instructive evaluation should be used to respond to questions about the effectiveness of courses designed to promote the acquisition of particular component skills and thus to measure whether they have achieved this objective.

If a discipline does not easily lend itself to the development of certain skills or if a department does not have the resources required to teach certain skills, then the program should include a choice of optional courses outside the discipline that will allow students to acquire these skills. Use may be made of the co-op program and the new learning through service program if required.

The co-op program is an educational method based on alternating study terms and paid internships. The objective of a co-op program is to help students by giving them an opportunity to acquire practical experience that is relevant to their field of study and to develop the skills required for personal success. The education acquired in co-op programs prepares students by developing the skills they need to succeed on the labour market. See the appendix for more details.

The new learning through service program combines teaching theory and community work. Students make a commitment to a volunteer activity and relate it to the concepts they learn in class, using journal-keeping, discussion and report-writing. This program allows students to develop a number of the component skills listed above: citizenship, life in society, ethics, teamwork and leadership. See the appendix for more details.

### **(B) Discipline-specific education**

Acquiring discipline-specific education consists in learning one or more disciplines specific to a program. Discipline-specific education allows students to acquire the various skills of their main field of study. The main objective of discipline-specific education is to foster students' intellectual development so that they can successfully enter a competitive labour market. To this end, our undergraduate programs must emphasize not only the acquisition of technical skills in the relevant field of study, but also the acquisition of transferable skills. We know that, 10 or 15 years after graduation, a great many graduates work in fields that bear little resemblance to the disciplines they studied at university. Although discipline-specific education is crucial early in one's professional career, it is often of lesser importance in the long run.

If discipline-specific education is to have optimum effectiveness, it must take into account labour market requirements as well as research in program disciplines. It must also be sufficiently broad to allow for a variety of careers within a given discipline.

### **(C) General education**

The university has the resources to offer students an extraordinary range of learning possibilities. It is important to maximize the accessibility of individual disciplines' resources to students in other disciplines, so that they can take advantage of their time at the university to acquire a general education that includes knowledge in a number of fields such as the natural sciences, engineering, the humanities, the social sciences and administration.

Specifically, efforts must be made to ensure that each program includes at least some courses in fields outside that discipline. For example, science and engineering programs must include courses in the humanities and the social sciences, and *vice versa*. Given the technical difficulties usually associated with science courses, the creation of science and engineering courses adapted to students from other faculties must be considered.

It is important to continue periodic program evaluation (every seven years) to measure whether programs are achieving their objectives. Special attention should be paid to the nine component skills set out in section (A) entitled "Fundamental education" above.

In addition to periodic evaluation, surveys of alumni and alumnae would be very helpful. Care should be taken to ensure that these surveys include questions about each of the nine component skills of fundamental education. For example, how will oral communication skills be evaluated? The results of these surveys should be published and advertised so that programs can remedy any shortcomings.

Table 3 also suggests that surveys be conducted among first-year and fourth-year students, in order to measure their progress in acquiring the nine component skills of fundamental education. The initial survey would be conducted when students begin their program, for example in September of their first year; the final survey would be conducted at the end of their fourth year (since it is often difficult to contact alumni and alumnae, it would be preferable to distribute this survey before study programs end).

As well, Table 3 considers it important to promote individual student integrity. We must ensure that students clearly understand the importance of intellectual honesty and the penalties for plagiarism. Thus it would be advisable for all students to sign a code of ethics when they start their programs, certifying that they realize the importance of intellectual honesty as well as the seriousness of plagiarism and the penalties associated with it.

### **3. The learning experience**

It is important to recognize that the delivery of a program is a partnership of regular professor, part-time professors, teaching assistants and support staff. It is equally important to recognize that the first year is the foundation of every program and its delivery determines students' experience throughout their years at university. Without infringing on the mandate of other tables, it is recommended that:

- (1) first-year programs must ensure that students are aware of the university's core values and recognize the importance of the three aspects of their education as outlined earlier (see section 2: fundamental education, discipline-specific education and general education. Their buy-in of the relevance of these goals to their education is critical if the program is truly to achieve its objectives;
- (2) a system be put in place to encourage students to reflect on their progress in achieving their personal objectives within the overall educational goals identified by the program (other than their academic record). This can be through a personal portfolio prepared by the student and reviewed annually with a counselor. The recent initiative by the School of Management may be considered for pilot implementation in other programs;
- (3) the student-professor ratio be kept reasonably low to allow for interaction and mentorship of students. In particular, first year should have at least one course in every program where the class size is kept small to ensure proper interaction with professors;

- (4) professors teaching first year be carefully selected and well supported with teaching assistants;
- (5) part-time professors be provided with reasonable use of facilities to allow students access to them out of class. Quality of teaching must be a critical factor in selection of a part-time professor;
- (6) new professors, specially graduate students teaching lower-level courses, have access to a one-on-one mentorship system to help them build their teaching expertise and to ensure that they fully understand the role their teaching plays in the overall delivery of the program. Mentoring of graduate students may include occasional monitored teaching in a professor's course;
- (7) the balance of larger classes with smaller discussion groups or tutorials versus smaller classes with less teaching assistantship support should be carefully considered;
- (8) the quality of teaching assistants be recognized as critical in the delivery of programs. Quality must be a critical factor in selection of teaching assistants;
- (9) staff be aware of the critical role they play in the learning experience, and this role be recognized; and
- (10) the learning experience be complemented with relevant out-of-class activities.

#### **4. Interdisciplinarity**

While expertise in a given discipline continues to be a necessity, in more and more cases, expertise crossing several disciplines is critical for proper understanding of complex problems. As such, the university must ensure that the academic environment supports and promotes interdisciplinary studies alongside core discipline studies. It is recommended that:

- (1) justification be established for an interdisciplinary program, and care be taken to avoid interdisciplinarity for the sake of interdisciplinarity;
- (2) the university allow flexibility in its administrative structures to allow for expertise, and crossing administrative boundaries be mobilized for an interdisciplinary program.
- (3) since interdisciplinary programs by definition must maintain strong links with parent disciplines and cannot exist in vacuum, the program itself be "attached" to a parent department that would be responsible for it administratively while ensuring that all other departments are equal partners in cost as well as benefit. This home department becomes the "champion" department that co-ordinates the identity and delivery of the program with other parent departments;

(3) joint appointments be made across programs to ensure that these programs are real partnerships crossing disciplines. They will also ensure that the parent disciplines are not detached from the interdisciplinary program;

(4) interdisciplinary programs, like all programs, be subject to a rigorous seven-year university review. Along with the standard questions posed, the review must examine the need for a continued existence of the program as an interdisciplinary program, the need for it to “become” a core discipline or simply the need for it its existence in the first place;

(5) alongside interdisciplinary programs, there is a need for combinations of undergraduate programs covering different disciplines as in the proposed minor-and-major structure. More flexibility is needed to allow students to combine their own choice of programs together to graduate with two degrees in different humanities disciplines, in different science and engineering disciplines or in humanities as well as sciences and engineering;

(6) the long-proposed arts and science degree be seriously considered; and

(7) since the need for exposure to humanities in all programs has long been accepted, equal exposure be given to science and technology in humanities programs given the increasing dependence of our society on technology. This coverage should be customized to reach the audience appropriately rather than simply asking humanities students to take a science or technology course.

## **5. Bilingualism**

The undergraduate programs offered by the university must in some way reflect the bilingual nature of the university. However, the understanding of what bilingualism means varies over time and across campus. Without encroaching on the other tables' discussions of bilingualism, it is recommended that:

(1) students be encouraged to complete their programs as a mixture of both languages. Such “bilingual programs” must be acknowledged on the degree;

(2) the actual extent of bilingualism in a given program be publicly communicated to avoid false expectations. Efforts should be made to help faculties continue to offer courses in both languages for smaller groups to avoid a spiral action with the reduced number of courses leading to reduced interest and so on. Sheltered courses should be supported to encourage students to take courses in their second language;

(3) recruitment of francophone students be a priority to ensure that we maintain the critical mass needed to sustain French courses. This includes students from Quebec, from French immersion schools in English Canada as well as French-speaking international students;

(4) students be encouraged to improve their language skills starting with their first language but also moving on to their second language. A certificate of competency in the second language would be of significant value for graduates; and

(5) support be provided to encourage professors to teach in their second language. However, professors should never be forced to teach in their second language if their proficiency is not clearly at a sufficient level. This can only contribute negatively to the students' learning experience. Financial aid or teaching releases should be provided to professors who wish to improve their second language.

University graduates with advanced degrees tend to identify with the university of their undergraduate studies significantly more than they do with the university of graduate studies. If the University of Ottawa is to build its reputation for the future, we have to ensure that alumni from our undergraduate programs value the education and the learning experience they receive years after they graduate. Our success builds on their success, which in turn builds on the quality of the education they received. The university must pronounce its core values and goals and ensure that they are reflected in the programs we deliver. At the heart of these core values should be the recognition that, without undergraduate students and the programs they study, we would not be a *university*, irrespective of what adjectives we add to describe our university.