

# Co-operative Education at the School of Health Information Science: An Education Paradigm That Works

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## Introduction

For generations, to become a doctor, lawyer, or other professional, students have had to complete both academic instruction and supervised practical experience. Recently, similar hybrid education systems have gained popularity in other fields. Emergent disciplines with scientific and technological bases, such as health informatics, are particularly suited to this learning model.

## What is Co-operative Education?

Co-operative education is a learning system based upon cooperation between academic institutions and the employers of the graduates these institutions produce. In such co-operative education, the student alternates between terms of formal instruction and terms of work experience. Classroom learning and learning-on-the-job are thereby intertwined with the goal of improving both the education of the student and his or her ability to contribute to the work world (Gilmour, 1987).

Co-operative education began in North America as an initiative of Professor Herman Schnieder in 1906 (Porter). Since the 1970's, its popularity has soared, particularly in schools of engineering and business. Currently, in Canada alone over 50,000 students are enrolled in formal co-operative education programs (Branton, 1991). Similar programs also exist in Australia, the United Kingdom, and elsewhere around the world.

## What Makes a Good Co-op Program?

As co-op education has matured, various organizations have developed guidelines for identifying and creating effective programs. One set of criteria was recently published by CAFCE, The Canadian Association For Co-operative Education (see below). Adapted from the Canadian Association for Co-operative Education accreditation guide.

### Institutional Commitment

Institutional commitment to Co-operative Education as an integral component of the educational

program is demonstrated through approval by the highest academic body of the institution and by recognition of the physical, financial, and human resources required by the program. Institutions should also publish guides to identify their programs, graduation requirements, and other important information about their Co-operative Education Programs.

### Quality Program Delivery

Quality program delivery is achieved by the development and maintenance of standards for selecting students seeking admission to the program, for the preparation of students for the work experience, and for the selection of work experience positions to ensure a quality learning opportunity exists. For example, prior to their first work experience, students must receive orientation sessions to build job search and interview skills, to prepare for the work environment and to learn how to maintain employment.

Co-operative Education requires that students are engaged in productive work, not merely as observers, and are paid at competitive rates for their work.

### Monitoring and Evaluation

Formal feedback mechanisms are a critical part of assuring quality program delivery. They must be established between students, institutions, and employers in order that employer and student needs are reflected in the education programs and that the work term experience complement the curriculum content.

These mechanisms would normally include:

- the approval of positions as suitable learning experiences by the educational institution;
- the supervision and evaluation of student performance by employers; these evaluations are discussed with the university and the student;
- on site visits by the educational institution, normally once per work term, to review student performance and progress;
- the completion and formal evaluation of a written and/or oral report on each work term.

The participation of teaching faculty in these activities provides an opportunity for employer and student input into the design and revision of program curricula.

### **Program Structure**

The design and structure of the Co-operative Education program must facilitate student development and learning by the employer community and integration and balance between work experience and academic study.

This is achieved by:

- alternating full time work and study terms in a formalized sequence starting and ending with a study term.
- ensuring that work terms are at least fifty percent of the total length of the study periods and never less than thirty percent.
- ensuring that programs with more than one work term do not schedule all of the work terms in summer months.

### **Advantages and Disadvantages**

Why has CO-OP enjoyed such consistent growth in spite of reduced budgets for higher education and a world-wide recession? It has succeeded because it offers considerable benefits for all three of its major partners: employers, students, and educational institution.

According to recent research (Ellis), universities benefit by attracting more students of a higher quality and by enabling them to achieve stronger academic performances. This, in turn, allows the faculty to offer more intellectually demanding courses. In addition, the close contact with employers that co-operative education requires helps to make education and research more relevant to the needs of the community.

In health informatics, these benefits are particularly pronounced since research tends to require strong ties with the health care industry and health practitioners. In addition, at this early stage in the development of the field, student reports on work placements can be a valuable tool for documenting current practice and for identifying areas of best practice and questions for further research.

The burden of cost of co-operative education programs falls primarily on the educational institution. The early growth of CO-OP in Canada was at least partly a result of special government funding for such initiatives. Under the current experience of zero growth or shrinking education budgets, options for sharing the cost of co-operative education programs are being examined.

Employers also benefit from co-operative education. In terms of human resource management, work term students achieve greater productivity, cost less to employ, and have lower orientation and training expenses as compared to regular employees with similar levels of experience. In addition, participating in such programs allows an organization to better evaluate and recruit students as permanent employees, to effectively meet cyclical and short-term manpower needs, and to achieve a better relationship with colleges and universities (Krupar, 1987).

These benefits are particularly relevant for health informatics since there is a limited pool of qualified graduates and since short-term and project employment is very common in the field. Furthermore, employers can acquire and share information on state-of-the-art practices in their local area and around the world.

Students, however, are probably the biggest beneficiaries of co-operative education. They come to better understand the expectations and requirements of their professional field and the concepts taught in class since they are then directly applied to the workplace. Their employment also provides valuable work experience, helps to pay for their education, contributes to career development and advancement potential, and aids in the development of personal and interpersonal skills (Fletcher).

Health informatics students require "both formal knowledge... and practical skills... combined with a firm grounding in the social or life sciences and liberal arts" (Encarta). Co-operative education, because of the immediate application of concepts learned in the classroom, the wealth of experience that students bring to each course, and the opportunity to gain contacts for future employment, is an ideal format. The latter is especially important since there are, as yet, few well-defined career paths and hiring patterns in the field.

These advantages are, to some extent, offset by the poorer course selection in summer terms, the longer than normal program, the difficulties in finding housing for four-month periods, and the loss of opportunities to take part in sports and other extra-curricular activities at the university. Students with out-of-town placements may also incur significant moving costs (Ellis).

In addition, some people believe that co-op limits personal growth because of the strong focus on the job market and industry training needs. This view, however, is not supported by research results. In fact, studies consistently show that students experience significant personal development over the course of the co-op program (Fletcher).

## School of Health Information Science, University of Victoria: How One Program Works

In 1981, the University of Victoria (situated on Canada's west coast) established a program which would later become the School of Health Information Science.

The School's educational goal is "to prepare broadly-educated individuals with a thorough understanding of the principles of information resource management and of the complexity of the health care system, who:

- discover and implement innovative solutions to existing and emerging problems
- are concerned with change and the management of change, particularly as it pertains to the introduction and enhancement of information technology in organizations,
- understand the ethical and sociological implications of information technology on individuals and on organizations" (School of Health Information Science, 1993).

The School offers a Bachelor of Science degree in Health Information Science. To graduate, students must complete 40 subjects in areas such a health and the health care system, information technology, epidemiology, health informatics and communications.

They must also complete a minimum of four co-operative education work terms (four month periods of full-time employment related to informatics). Placements can be in government ministries, community health agencies, hospitals, informatics companies, consulting firms, non-profit agencies, and other organizations.

### Typical Student Degree Pattern

	Sep - Dec	Jan - Apr	May - Augt
Year 1	Foundation Courses		
Year 2	Study Term	Study Term	Work Term
Year 3	Study Term	Work Term	Study Term
Year 4	Work Term	Study Term	Work Term
Year 5	Study Term		

The fact that the School of Health Information Science is a mandatory co-operative education program is commonly cited as a major reason for

many students who make the School their primary educational choice. In surveys, Health Information Science graduates have consistently identified the Co-operative Education experience as the single most important component of their degree program.

## Conclusion

Health informatics requires professionals with a diverse range of knowledge and skills. Co-operative education provides a means to develop and reinforce the needed competencies and to promote collaboration between universities and the health care community. This learning model has demonstrated measurable educational benefits and should be considered by all educational institutions teaching in the field.

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