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## Discussion Paper

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# Postsecondary Cooperative Education in Canada

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Robert J. Ellis

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1987

Postsecondary cooperative education in  
Canada

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# POSTSECONDARY COOPERATIVE EDUCATION IN CANADA

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## FOREWORD

Closer relations between universities and business in Canada challenge a number of aspects of the university's educational function. One of these is the mode of instruction. Here, the challenge is to develop ways of bridging the gap between academic learning and the uses of that knowledge.

Cooperative education is a system of cooperation between institutes of learning and the employers of the graduates these institutes produce. In such cooperative 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.

This discussion paper, prepared for the Science Council, reports the results of a substantial research project on cooperative education in Canada. Given the paucity of information on the topic, the author, Robert J. Ellis, saw the need for gathering new data. Accordingly, with support from the Science Council and the valuable help of the Canadian Association for Co-operative Education, he carried out surveys of those involved in cooperation education -- the universities and colleges, the employers, and the coop students themselves. The following pages describe their perceptions and attitudes.

Dr Ellis makes it clear that in the economic renewal that must take place in Canada, cooperative education can fill a unique, perhaps even indispensable, role. It costs more than conventional education, yet it is more cost-effective. It has a social impact because it improves the ability of students to finance their education. And, perhaps above all, it places our universities and colleges firmly side-by-side with industry in grappling with the problems and opportunities of the knowledge-based, brave new world of the 21st century.

Postsecondary Cooperative Education in Canada is the sixth publication from the Science Council's "University Science and Technology and Canadian Economic Renewal" study. Each publication looks at different ways in which universities could participate more effectively in economic renewal. The overall study is being developed and guided by a committee of Science Council members and staff. The Council members who serve on the committee are professors Geraldine Kenney-Wallace (chair), James Cutt, Jean-Pierre Garant, and Dr Hugh Wynne-Edwards. Also, Dr Stuart Smith and Dr Vaira Vikis-Freibergs, chair and vice-chair of the Council respectively, are ex officio members of the committee. The Council staff who participate on the committee are Dr James Gilmour, director of research, and Dr Philip Enros, science adviser and project leader for the study. Dr Gerald W. McIntyre of the Council of Ministers of Education, Canada, participates as an observer.

Dr Ellis is an assistant professor of business in the School of Business and Economics, Wilfrid Laurier University. He specializes in human resource management and research methods.

James M. Gilmour  
Director of Research  
Science Council of Canada





## 1. INTRODUCTION

In cooperative education, students alternate academic studies with related work experience. This paper is directed at furthering our understanding of cooperative education at colleges and universities in Canada. To do so, the paper traces the development of cooperative education in Canada, examines its benefits and costs, and indicates the problems and opportunities facing the development of this form of education. The paper thus provides insight into what cooperative education in Canada is and, more important, into what it could become.

### Economic Renewal in Canada

This review should be seen in the context of concerns about how colleges and universities can contribute to economic growth and renewal in Canada. Indeed, these very concerns gave rise to this investigation.

Several recent studies have provided valuable information on how adequately university education prepares students for the world of work. Rush and Evers, in a research report for the Corporate-Higher Education Forum,<sup>1</sup> surveyed Canadian corporations on the match between their needs and university education. Responses were generally positive, but managers perceived university graduates to be deficient in administrative, leadership, decision-making, and communication skills. Mascolo, Wright, and Slemon evaluated engineering education in Canada, and a dismal picture emerged.<sup>2</sup> Chronic underfunding has led to unacceptably large classes and to laboratory facilities that are technologically out of date. Both these deficiencies impair the quality of engineering graduates and ultimately reduce our ability to participate in the technological innovations that could foster economic renewal.

David Vice, president of Northern Telecom, recently emphasized the relationship between technological innovation, economic growth, and higher education in a presentation to the Senate Committee on Finance:

A country's capacity for technological innovation permeates and strengthens its entire economy. Where Canadian society is concerned, technological innovation has become synonymous with hope, progress, and prosperity. To succeed in this era, Canada needs leading-edge technological innovation and a strong commitment to market-driven research and development. For these to thrive, we must create an economic and political climate that places a premium on scientific and technological excellence, curiosity, and innovation. We must also build a stronger system of higher education, particularly in the sciences.<sup>3</sup>

One of Vice's major recommendations was for universities to strengthen their ties with the business community in Canada. In a subsequent speech to the Association of Universities and Colleges of Canada, he focused on a particular mechanism to strengthen these university-business ties:

At a time when all post-secondary institutions are struggling to gain additional business support, there can be few better ways of improving ties with the corporate community than co-operative education. By its very nature, this approach closely involves firms in the university's life.<sup>4</sup>

Similar statements have been voiced by others who have examined higher education in this country. On the basis of their investigation of the relationship between university education and corporate needs, Rush and Evers proposed that:

...university education and subsequent corporate training are thought of not as separate entities but rather as parts of a single process. Rather than thinking of higher education as a four year process, we would rather see it thought of as a six or eight year process that can be co-managed by universities and employing organizations. The obvious example already in place is the co-operative system...<sup>5</sup>

#### Cooperative Education

Clearly, cooperative education is one of many mechanisms that could be used to strengthen the linkages between colleges, universities, and industry. Other means could include university offices for technology transfer, university spin-off firms, and university-industry research centres. The Science Council of Canada is currently engaged in research into these and other mechanisms of interaction between universities and industry.<sup>6</sup> The ultimate goal of this Science Council program is to discover ways in which the universities can contribute more effectively to economic renewal in Canada.

For several reasons, cooperative education is a particularly important mechanism of interaction to investigate. It is important, first, because of the large numbers of institutions, employers, and students in such programs. Second, it is experiencing very rapid growth in numbers of programs and students. Finally, it appears to be held in almost universal positive regard by those associated with it. In spite of the clear importance of cooperative education and the positive views held on it, almost no systematic information on it has been collected in Canada. Such information would enable us to make better decisions about how this system of education can best contribute to economic renewal.

#### Objectives

This paper seeks to clarify what cooperative education in this country is and what opportunities exist for developing this system of education. Specifically:

- ° What is the history of cooperative education in Canada?
- ° What are its benefits and costs to coop administrators, employers, and students?
- ° What are the problems and opportunities facing cooperative education in Canada?
- ° What conclusions can be drawn and recommendations made?

## 2. HISTORICAL DEVELOPMENT OF COOPERATIVE EDUCATION IN CANADA

### Origins

The origins of cooperative education in this country can be traced to the founders of the University of Waterloo.<sup>7</sup> It was their desire to develop a university that had a particularly strong focus on science and technology, and their vision included cooperative education as a central component. Thus, cooperative education in Canada began at the University of Waterloo in 1957 with the enrolment of the first 75 engineering students. The innovations introduced in the early years at Waterloo came to shape cooperative education in Canada. Cooperative education at the University of Waterloo evolved until the trimester system with alternating four-month periods of academic study and relevant work had become established.

Other early cooperative programs were introduced at l'Université de Sherbrooke in engineering and business administration (1966), at Memorial University in engineering (1968), at the University of Regina in engineering (1969), at the Technical University of Nova Scotia in architecture (1970), and at the Mohawk and Fanshawe Colleges of Applied Arts and Technology in Ontario (1969 and 1970 respectively).

### Canadian Association for Co-operative Education

In 1973, representatives from 15 educational institutions met in Hamilton and formed the Canadian Association for Co-operative Education to provide a forum for interested people and institutions. Specific objectives of the association are to strengthen cooperative education through interchange of ideas and experience among educators, employers, and students; to be a source of information to educators, institutions, and employers interested in learning more about cooperative education; and to broaden the interpretation and understanding of the significance and values of cooperative education and thus extend participation in it in Canada. The association has more than 400 members from educational institutions and employers across Canada. It holds an annual conference to exchange information and to conduct professional workshops on cooperative education for its members. The association also publishes a yearbook and directory with a wealth of information about programs in Canada.

### Co-operative Education Council of Canada

The Co-operative Education Council of Canada was created as an independent body in 1979 by the Canadian Association for Co-operative Education. The purpose of the council is to evaluate the quality of cooperative education programs in Canada and to accredit those that meet the criteria it has established and thus ensure standards of excellence in cooperative education. The evaluation process is extremely rigorous. Each program is closely examined to assess whether it operates according to the principles of cooperative education. For example, criteria that a program must meet include:

- ° work and study periods are each full time;
- ° academic and work terms are structured so that students are available for work year-round except when the work is obviously seasonal;
- ° each work situation is approved or specially developed by the institution as a suitable learning situation;
- ° work assignments are related to academic discipline;
- ° students are paid at competitive rates for work;
- ° the length of work periods is at least 12 weeks;
- ° the work experience is at least 30 per cent of the time spent in academic study.<sup>8</sup>

To date, the following nine universities have accredited programs: École de Technologie Supérieure, Memorial, Regina, Sherbrooke, Simon Fraser, Technical University of Nova Scotia, Victoria, Waterloo, and Wilfrid Laurier.

#### Examples of Programs

The programs described below are from very different disciplines; they are both accredited by the Co-operative Education Council of Canada, and they are both highly successful.

The University of Waterloo cooperative program in the faculty of engineering was, of course, the first in Canada.<sup>9</sup> Its main objective is the personal and professional development of engineering students. Another important objective is to produce graduates that meet the requirements of industry.

Under the program, engineering students complete eight four-month academic terms and six four-month work terms. After completing their first one or two academic terms on campus, students alternate work and academic terms until graduation. Over their six work terms, students experience progressively greater challenge. During their first and second work terms, students acquire a general knowledge of industry through direct experience and through interaction with supervisors and fellow employees. They also learn about union-management relationships and employee attitudes toward management and technical personnel. Finally, they develop an understanding of the nature and concerns of management and of the systems and procedures of the organization. During their third and fourth work terms, students learn more about design, production, plant engineering, and quality control. They analyse routine problems and make recommendations. During their last two work terms, students are given assignments, such as professional engineers would confront, that require judgement in problem-solving. At this level, emphasis is also placed on the development of excellent oral and written communication skills. Following the completion of each work term, students write a report detailing what they have learned about their professional field.

Wilfrid Laurier University in 1974 became the first university in Ontario to offer a cooperative option in an undergraduate business administration program. In 1978, the cooperative option was extended to economics.

The academic content for students in the cooperative option is the same as that for students not in this option. All students take their first academic year together in the honours business or economics program. In the fall of their second year, those wishing to enter the cooperative option apply to do so and are selected on the basis of grades and a personal interview. This program has proven highly popular; applications are double the number of available places.

Those selected for the cooperative option take their first work term during the spring term (May to August) after completing their second year in the business or economics program. These students return to campus for the fall term of their third year, then leave for their second work term during the winter term (January to April). They return to campus for the spring term to complete their third year in the program. Their third and final work term is taken during the fall term (September to December). They return to campus for the winter and spring terms to complete their fourth year in the program. Thus students in the cooperative option complete a four-year honours program and acquire 12 months of practical work experience (covering all seasons) in their field. During their three work terms, cooperative option students are given



greater responsibility and more challenging tasks as their skills and knowledge develop. For example, a coop student might work as a financial assistant ("audited a client's financial statements and provided advice on income tax and planning matters"), assistant marketing planning manager ("analysed and interpreted information about internal and external market conditions"), or student accountant ("involved in year-end financial closing, developed and implemented central accounting systems, and assisted in the implementation of a major accounting software system").

#### Government Support

The federal Ministry of Employment and Immigration supports those initiating cooperative education programs or expanding existing ones. Cooperative education is an option under the Job Entry Program, one of various programs that make up the Canadian Jobs Strategy. The cooperative education option is designed to encourage the growth and development of programs that integrate academic studies with periods of work as a means of preparing students for their entry into the labour market. School boards and postsecondary institutions that initiate cooperative education can receive support for four years, and preference is given to those who show a commitment to cooperative education thereafter. Since the program began in 1985, more than \$16 million has been granted. The federal government also contributes by employing large numbers of coop students and by making some funds available for business to employ coop students.

Provincial governments generally have shown approval of cooperative education, in that they allow educational institutions to use funds for coop that could be put to other uses. They have not, however, provided supplemental financial support for cooperative education at the postsecondary level.

#### Extent of Cooperative Education in Canada

As may be seen in Table 1, cooperative education is growing rapidly. In the eight-year period covered by the table, the number of students in coop has almost doubled and the number of participating institutions has more than doubled. According to Statistics Canada,<sup>10</sup> the growth in female coop enrolments among full-time university undergraduates during this period is spectacular: their enrolments grew by 114 per cent while male enrolments grew by 43 per cent. By comparison, total female full-time undergraduate enrolments grew by 32 per cent from 1978-79 to 1984-85, while male enrolments grew by just 14 per cent during this period.<sup>11</sup> The greatest numbers of coop students in colleges and universities during 1985-86 were in engineering (5540), computer science (3098), business and public administration (2011), accounting (1132), and architecture (1015). Coop is also strongly represented in mathematics and the sciences -- mathematics and statistics (186), biochemistry (131), biology (219), chemistry (521), and physics (344) -- but is weakly represented in the humanities and social sciences.<sup>12</sup>

Table 1. Numbers of Students Enrolled in Cooperative Education and Numbers of Institutions Offering Cooperative Education

Year	Enrolment		Institutions	
	College	University	College	University
1978-79	3 530	10 252	10	11
1979-80	4 151	11 409	12	14
1980-81	5 486	12 312	14	20
1981-82	6 503	13 805	15	21
1982-83	7 712	14 778	15	22
1983-84	8 629	15 268	18	23
1984-85	9 603	16 127	19	24
1985-86	9 014	17 154	25	25

Source: Canadian Association for Cooperative Education, Yearbook and Directory 1986, Ivan Blake, Ed. (Toronto: Canadian Association for Cooperative Education, 1986), 18. Reprinted by permission.

### 3. BENEFITS AND COSTS OF COOPERATIVE EDUCATION

A considerable amount of research has outlined the benefits and costs of cooperative education to institutions, employers, and students. Unfortunately, very little of this research has been conducted in Canada, and its applicability to understanding the nature of cooperative education in this country is uncertain.

#### Review of Past Research

Research examining the benefits and costs of cooperative education has focused primarily on industry.<sup>13</sup> Nielsen and Porter, in a recent review,<sup>14</sup> concluded that benefits to employers substantially outweigh the costs to them.

#### Productive Work

A large survey has shown that most employers find cooperative education students in general perform as well or better than regular employees on important job performance measures (quantity of work, quality of work).<sup>15</sup> Of course, the productivity of students during their first coop terms with an employer will be lower than that of regular employees in comparable jobs. Employers thought that these students learned more rapidly and increased their productivity more quickly than did regular employees.

#### Cost Effectiveness

It appears that the costs of employing coop students are substantially less than those of employing regular employees to do the same work. For the majority of employers, salary and benefit costs are considerably lower for coop students than for comparable regular employees.<sup>16</sup> However, employers have noted that initial training costs may be somewhat higher and that supervisors spend more time directing and counselling coop students.<sup>17</sup> According to calculations by Wilson and Brown,<sup>18</sup> one company saved approximately (U.S.)\$1100 per student work term whereas another saved approximately (U.S.)\$2400. A recent study at the University of Waterloo by Klawitter<sup>19</sup> applied Wilson and Brown's method to a much larger sample of coop employers. He concluded that savings of \$1000 to \$1600 per student work term could be expected as savings when coop students were hired rather than full-time employees.

#### Meeting Organizational Needs

Cooperative education appears to be an effective means of meeting various organizational needs. An intensive case study by Little<sup>20</sup> revealed that employers either use coop employees in certain positions year-round or use them on a series of short-term tasks. Indeed, a recent very large-scale survey of participating employers at the University of Waterloo<sup>21</sup> showed that meeting cyclical, project, or short-term needs of the organization was the most important objective they had in employing coop students. It appears that employers also use coop students to free professional staff from less demanding duties. Thus, higher paid professional staff can focus their skills and efforts on duties that are of greater value to the organization.<sup>22</sup>

#### Recruitment and Selection

A major benefit for employers in coop programs is that they are better able to evaluate and recruit high-quality college and university graduates as permanent employees.<sup>23</sup> Cooperative education programs allow employer and student to evaluate each other. The student acquires realistic expectations of what it would be like to work in that organization, and the employer is able to evaluate a student's actual job performance in addition to traditional sources of information such as grades, extracurricular activities, and reference checks. Thus, cooperative education contributes to the validity of

recruitment, selection, and placement by giving both parties more information upon which to base decisions. Little and Neilsen and Porter show that coop programs lead to lower costs and greater success in recruitment.<sup>24</sup> It is not surprising, then, that surveys of employers have shown recruitment to be a major objective in employing cooperative education students.<sup>25</sup>

#### **Contributions to Students' Professional Development**

It is also apparent that many employers participate in cooperative education to contribute to students' professional development.<sup>26</sup> It seems likely that a student will be especially receptive to offers of permanent employment from an employer who has made substantial efforts to develop that student's professional knowledge and skills.

#### **Enhanced Relationships with Colleges and Universities**

Cooperative education seems to strengthen the relationship between participating employers and educational institutions in general. It enables employers to communicate with institutions about their future requirements for human resources. As well, employers can provide information about the changing requirements for skill and knowledge in various occupations, and programs and courses may thus be modified to better reflect the new demands of the workplace.<sup>27</sup>

The benefits and costs discussed above have been documented through in-depth investigations and surveys of employers in cooperative education. Whether or not the benefits are achieved, however, is likely to depend on how well planned and managed an employer's program is. Thoughtful, carefully executed programs are likely to achieve many of these benefits; poorly managed programs are likely to achieve none of them.

#### **Employer's Overall Assessment**

Employers' overall judgements of the cooperative education programs in which they participate are extremely positive. In one survey, 93 per cent of employers felt that cooperative education was an overall benefit to them,<sup>28</sup> and in another, close to 97 per cent of employers planned to continue their cooperative education programs.<sup>29</sup>

#### **Impact on Full-time Employees**

It is commonly believed that the presence of eager, enthusiastic coop students has positive effects on the motivation and morale of other employees in a work unit.<sup>30</sup> Where coop students free regular employees from more routine activities, the latter can work on more interesting and challenging tasks. As well, coop students bring fresh ideas and perspectives and ask probing questions. This may stimulate other employees to acquire more job-related information. Provocative as these possibilities seem, they appear not to have been investigated.

#### **Coop Students as Permanent Employees**

Since coop programs enable an employer to recruit and select high-quality graduates as permanent employees, it is important to consider the benefits and costs of hiring graduates of coop programs compared to those of hiring non-coop graduates. Experience with the company during coop work terms should result in lower orientation and training costs, because the former coop student knows more about the job requirements and the organization.<sup>31</sup> Wilson and Brown<sup>32</sup> suggest that employees who are graduates of coop programs perform at higher levels than non-coop graduates for the first few years (after which performance is equal), but this notion, again, has not been adequately investigated.



### Benefits of Coop for Colleges and Universities

A recent survey at the University of Victoria outlined some of the benefits of coop programs for colleges and universities.<sup>33</sup> Respondents strongly agreed that coop contributed to the number and the quality of students attracted to the university. As well, they thought it contributed to stronger academic performance. Further, about half the respondents thought coop promoted improvements in faculty. In response to students who are more knowledgeable about the world of work, faculty may create more intellectually demanding courses. Coop programs also enable faculty to gain valuable information about employer requirements and thus to make courses and research more practical and responsive to the needs of employers. There is evidence that coop also increases the likelihood of students completing their studies.<sup>34</sup>

### Benefits of Coop for Students

Students seem to benefit from cooperative education in numerous ways.<sup>35</sup> Most important, they understand more about the expectations and requirements of their professional field. As well, they become more clear about their careers by learning about the various possibilities available to them. The work experience they acquire through coop is also of value in obtaining their first jobs. Learning concepts in the class that are then applied in the workplace helps students to understand their discipline. A survey of alumni from the University of Waterloo found evidence that cooperative education may be especially helpful for women because it enables them to pay for their education.<sup>36</sup>

### Survey Research Project

Most research on the benefits and costs of cooperative education has been conducted outside this country. We simply do not know whether the findings of this research have relevance to Canada. We also need to know what problems and opportunities face the development of cooperative education in Canada. The author accordingly carried out a research project, as described on the following pages, to obtain information from the three major groups involved in cooperative education in Canada: program administrators of colleges, universities, and technical institutes, participating employers, and the students enrolled in these programs. This research project was conducted in conjunction with the Canadian Association for Co-operative Education.

#### 4. SURVEY OF ADMINISTRATORS OF COOPERATIVE EDUCATION PROGRAMS

The first survey in this report was of administrators of cooperative education programs at colleges, universities, and technical institutes across Canada. Respondents were asked to indicate the benefits and costs to their institution of participation in cooperative education. They also evaluated their satisfaction with different aspects of their programs and identified the strengths and weaknesses of these programs. Finally, they were asked to suggest ways in which their programs could be improved. Thus, the last questions helped to define the problems and opportunities facing cooperative education in Canada.

##### Survey Method

###### **Sample**

This research was conducted in collaboration with the Canadian Association for Co-operative Education. Questionnaires were mailed to the 222 individuals in the association's 1985-86 membership directory with addresses from a college, university, or technical institute in Canada. Of these, 136 questionnaires (61.3 per cent) were returned and 132 were usable (a 59.5 per cent response rate).

###### **Questionnaire Development and Design**

The questionnaire was developed through an iterative process of testing and revision with administrators of cooperative education programs. With each revision, a small sample of administrators completed the questionnaire and was subsequently interviewed as to their perceptions of its content and coverage.

The letter that accompanied the questionnaire outlined the survey's purpose, its benefits, its sponsors, and its confidential nature. Three weeks after the first mailing, a new questionnaire was sent to the individuals who had not yet responded. These steps undoubtedly contributed to the high response rate. A copy of the questionnaire, the cover letter, and the follow-up letter will be found in Appendix A.

##### Survey Results

###### **Respondent Characteristics**

Respondents tended to be male, from a university, to have been with their institution a long time, and to have had considerable experience with cooperative education. Male respondents made up 73.1 per cent of the sample. Respondents from universities made up 62.1 per cent of the sample, those from colleges, 34.1 per cent, and those from technical institutes, 3.0 per cent. (Totals are less than 100 per cent because not all respondents answered all the questions.) A large proportion of respondents held senior administrative positions in cooperative education: 34.1 per cent were directors, managers, or administrators of programs, 56.1 per cent were coordinators, and 6.8 per cent were faculty members. On average, they had been with their institution for 9.0 years and had been associated with cooperative education for 6.8 years. Directors, managers, and administrators of programs are responsible for the planning, policy formulation, and overall management of cooperative education. Coordinators are responsible for marketing programs to employers and for counselling and monitoring students' progress during their work terms. Most of the faculty members served as advisers to coop programs.

### Benefits and Costs

The survey respondents perceived a number of very substantial benefits to their institutions from participation in cooperative education. Respondents evaluated the extent to which their institution achieved a number of possible benefits on scales ranging from 1 ("not at all") to 5 ("very much"). Respondents believed (Table 2) that cooperative education improved the quality of graduates, enhanced the image of their institution both in the business community and among potential students, led to a better learning process, made it easier to recruit students to the institution, and made the faculty and institution more aware of current practices in business.

Table 2. Benefits of Cooperative Education to Colleges and Universities

Potential Benefit	Mean Rating	Responses of 4 or 5 (%)
Improved quality of graduates	4.44	93.5
Enhanced image with business	4.17	81.6
Better learning process	4.06	80.0
Enhanced image with applicants	4.03	75.2
Easier to recruit students	3.85	69.1
Awareness of current practices	3.59	55.8
Improved use of facilities	3.22	42.2
Other forms of collaboration	2.93	31.2

Note: The response scale took the values of 1 ("not at all"), 2 ("a little"), 3 ("somewhat"), 4 ("quite a bit"), and 5 ("very much").

Respondents saw less benefit in improved use of the institutions' facilities or in development of other forms of collaboration between business and the institution. In response to a request for examples of the forms of collaboration that developed as a result of their cooperative education program, 22.5 per cent mentioned joint research and research grants, 20.5 per cent mentioned donations of scholarships for the institution, and 7.6 per cent mentioned consulting opportunities for faculty. In response to an open-ended question on other benefits, 17.4 per cent thought cooperative education made the institution more responsive to the needs of business, 16.7 per cent thought the image of the institution was enhanced in the eyes of government and the community, and 14.4 per cent thought that placement of graduates was easier.

Respondents associated with cooperative education for a long time, presumably with better insight into its nature, were much more positive about the benefits than were those with a shorter association. Respondents were divided into two groups on the basis of how many years they had worked in or been associated with cooperative education. Those more experienced with coop (more than five years) saw greater benefits of coop for their institution than those less experienced (less than five years). Thus, for the question on enhanced image with business, mean ratings were 4.37 for the more experienced group and 3.97 for the less experienced group. For the question on enhanced image with applicants, mean ratings were 4.34 and 3.72 respectively; for easier recruitment of students, mean ratings were 4.08 and 3.59, and on improved use of facilities they were 3.47 and 2.95. All these differences were found to be highly significant ( $p < .01$ ) using t-tests.

As for costs or disadvantages, 48.5 per cent of respondents mentioned that cooperative education is expensive, 24.2 per cent mentioned the strain on physical facilities, and 15.9 per cent mentioned the problems of mounting courses in spring and summer for coop students.

#### **Satisfaction with Cooperative Education Programs**

The survey respondents appeared satisfied with most aspects of their cooperative education programs, but they were much less satisfied with available funding. Respondents evaluated their satisfaction with various facets of their program on scales ranging from 1 ("very dissatisfied") to 7 ("very satisfied"). As can be seen in Table 3, they were quite satisfied with their jobs, their coop programs, and the support of employers. They were only somewhat satisfied with the support of administration and faculty. Surprisingly, they were neutral about funding from the federal government; responses to this were very mixed. Some responses were positive: "The Job Entry programme is a positive step and is appreciated," whereas others were negative: "Helpful at the start-up level but little support for mature programmes." The lowest ratings of satisfaction were for funding from the provincial government (there is none). On this, responses were uniformly negative: "The provincial government does not recognize the extra costs of operating coop programmes."

#### **Strengths and Weaknesses of Programs**

An open-ended question asked respondents to identify "the major strengths of your programme, the things that helped to promote its success." In response, 49.2 per cent mentioned high-quality students or the steps taken to ensure student quality (high standards, restricted enrolment), 28.8 per cent mentioned the high quality of the graduates, and 23.5 per cent mentioned student satisfaction. Employer satisfaction with coop students and graduates was mentioned by 28.8 per cent, and providing a service to employers and meeting their needs was mentioned by 18.9 per cent of respondents. A well-run, efficient program was mentioned by 37.1 per cent of respondents, program flexibility and adaptability by 20.5 per cent, and good coordination by 17.4 per cent. Finally, high-quality faculty and university reputation were mentioned by 20.5 per cent and 10.6 per cent respectively.

Another open-ended question asked respondents to identify "the major weaknesses or problems with your programme, the things that detract from its success." The lack of financial, physical, and human resources was mentioned by 45.5 per cent of the sample. No other problem approaches the importance of the resource issue. Program inefficiency or inflexibility are mentioned by 11.4 per cent of respondents, the difficulty of finding placements in business and industry by 9.8 per cent, the difficulty of finding placements in small businesses by 7.6 per cent, the dependence of placement



Table 3. Sources of Satisfaction and Dissatisfaction in Cooperative Education Programs for Administrators

Aspect of Program	Mean Rating	Responses of 6 or 7 (%)
Their jobs	5.80	75.2
Overall program	5.72	69.5
Support of employers	5.69	67.2
Support of senior administration	5.15	48.4
Support of faculty	4.92	43.8
Federal government funding	4.32	31.3
Provincial government funding	3.31	11.5

Note: The response scale took the values of 1 ("very dissatisfied"), 2 ("quite dissatisfied"), 3 ("somewhat dissatisfied"), 4 ("neutral"), 5 ("somewhat satisfied"), 6 ("quite satisfied"), and 7 ("very satisfied").

on the swings in the economy by 9.1 per cent, the limited number of course offerings in the spring and summer by 9.8 per cent, the lack of support of senior administration by 10.6 per cent, the unrealistic expectations of students by 9.1 per cent, and the lack of support by faculty by 8.3 per cent.

#### Changes to Promote the Success of Cooperative Education Programs

Respondents were asked to suggest changes that would promote the success of their programs. Again, one issue dominates the thoughts of respondents: 40.9 per cent identified greater financial, physical, or human resources as the means of promoting success. Better course offerings during the spring and summer were mentioned by 15.2 per cent of respondents, more support of senior administration by 11.4 per cent, more support of faculty by 11.4 per cent, greater program flexibility by 9.8 per cent, better rules, regulations and definitions of cooperative education by 6.8 per cent, and more employer placements and support by 5.3 per cent.

Respondents were also asked how to promote better collaboration between institutions and employers. Greater employer involvement in planning and developing cooperative education programs was mentioned by 34.1 per cent of respondents, more frequent contact and more human resources to make contact by 24.2 per cent, better marketing of cooperative education to employers to improve their understanding of it by 19.7 per cent, greater involvement of faculty by 15.9 per cent, greater involvement

of senior administration by 8.3 per cent, and greater support by institutions and government for continuing education for employers by 8.3 per cent.

Finally, respondents were asked to indicate also, beyond their concerns about their own programs, what changes would help to promote the success of cooperative education in Canada. The changes that respondents believed would promote its success include national publicity and marketing to increase awareness and understanding of cooperative education (23.5 per cent), closer links between institutions and business (20.5 per cent), greater financial support from government (15.9 per cent), better standards and guidelines for cooperative education (14.4 per cent), and better cooperation between institutions (9.1 per cent).

### Discussion

The survey revealed that institutions derive significant benefits from taking part in cooperative education. Respondents viewed it as improving the learning process for students, leading to higher quality graduates, enhancing the image of the institution in the eyes of the business community and potential applicants, and making it easier to recruit students to the institution. Factors that help to promote the success of coop programs and lead to these benefits include the high quality of coop students and graduates, employer satisfaction with the programs, and efficient, flexible, well-coordinated programs. Overall, respondents were quite satisfied with their programs and their jobs.

It is important to note that cooperative education is seen as having costs for the institution: it is expensive to run, it puts a strain on physical facilities, and it creates problems in mounting courses during the spring and summer. The factors that detract from the success of programs and limit the significant benefits that would be possible revolve around one major issue: the lack of the financial, physical, and human resources necessary to administer an effective program. This helps to explain why respondents were neutral over funding from the federal government (which does provide some support) and dissatisfied over funding from provincial governments (in most provinces there is none).

Several other factors limit the success of cooperative education: lack of support from senior administration and faculty, unrealistic expectations of students, the difficulty of finding placements with employers, the limited number of course offerings during the spring and summer, and inefficiencies in the programs themselves. The problems with administrators, faculty, students, and employers may all stem from a lack of understanding of cooperative education on the part of these groups.

The changes necessary to promote the success of cooperative education are also dominated by one theme: the need for more financial, physical, and human resources to maintain and develop programs. Other proposed changes reflect the secondary factors identified as limiting the success of cooperative education. Thus, more support of senior administration and faculty, more employer support and placements, better course offerings in the spring and summer, and greater program flexibility are ways that are suggested of promoting the success of cooperative education. At the national level, the success of cooperative education could be promoted by better publicity and marketing to increase awareness and understanding of coop, by developing closer links between business and the institutions of higher education, by greater financial support from government, and by better standards and guidelines for cooperative education.

## 5. SURVEY OF EMPLOYERS OF COOPERATIVE EDUCATION STUDENTS

In the survey of employers, respondents were asked to state the benefits and costs to their organizations of cooperative education. They also evaluated their satisfaction with various aspects of their involvement in cooperative education and identified the strengths and weaknesses of cooperative education in their organization. Finally, they were asked to propose changes that would help promote the success of cooperative education. Thus, these last questions were critical in defining the problems and opportunities confronting cooperative education in Canada from the perspective of employers.

### Survey Method

#### **Sample**

This research was also conducted in collaboration with the Canadian Association for Co-operative Education, and the sample was drawn from its 1986-87 membership directory. Unfortunately, the number of employers belonging to this association is rather small. Those that do belong tend to be some of the largest companies and government departments and are employers of significant numbers of cooperative education students. Questionnaires were mailed to 62 employers in Canada. A very good response rate was also achieved for this survey: 43 questionnaires (69.4 per cent) were returned of which 42 were usable (a 67.7 per cent response rate).

#### **Questionnaire Development and Design**

This questionnaire was also developed through an iterative process of testing and revision. The letter that accompanied the questionnaire described the survey's purpose, benefits, sponsors, and confidential nature. Three weeks after the first mailing, a new questionnaire was sent to those employers who had not yet responded. A copy of this questionnaire, the cover letter, and the follow-up letter is in Appendix B.

### Survey Results

#### **Respondent Characteristics**

The organizations that respondents represented had participated in cooperative education for 10.1 years on average. The respondents themselves had been associated with cooperative education in their organizations for an average of 4.8 years. As is apparent in Table 4, diverse sectors of the economy were represented in the sample.

#### **Benefits and Costs**

Respondents perceived a number of important benefits for their organizations from taking part in cooperative education. Again, respondents evaluated a number of possible benefits on five-point scales. As can be seen in Table 5, respondents believed that cooperative education allows them to select and recruit full-time employees and enhances the image of their organizations at the educational institutions. Further, coop students are able to handle more difficult job assignments and produce a high quantity and quality of work. The other benefits seem less significant to these respondents. A number of other benefits were mentioned by respondents in response to an open-ended question: 21.4 per cent thought cooperative education helped an organization deal with special projects and peak workloads, 16.7 per cent mentioned increased enthusiasm and motivation in other employees, 14.3 per cent mentioned the year-round availability of coop students, and 11.9 per cent mentioned the opportunity to evaluate potential

full-time employees. Citing costs or disadvantages of cooperative education, 16.7 per cent mentioned training costs, 14.3 per cent mentioned increased supervision costs, and 9.5 per cent mentioned travel costs.

Table 4. Sectors of the Economy Represented in the Sample

Sector of the economy <sup>a</sup>	Number of organizations represented
Food, beverage, and tobacco	1
Energy	6
Chemicals, chemical products and textiles	4
Metallic minerals and metal products	3
Transportation equipment	4
Electrical and electronic products	7
Transportation services	2
Communications	11
Finance and insurance	3
General services to business	2
Government services	2
Consumer goods and services	<u>1</u>
Total	46 <sup>b</sup>

Notes:

<sup>a</sup> Organizations were classified using the Standard Industrial Classification.<sup>37</sup>

<sup>b</sup> The total comes to more than 42 because four respondents indicated that their organizations were involved in two sectors of the economy.

Table 5. Benefits of Cooperative Education to Employers

Potential benefit	Mean rating	Responses of 4 or 5 (%)
Select and recruit employees	3.74	69.0
Enhanced image at college or university	3.70	70.0
Students' ability with difficult tasks	3.69	61.1
Students' quality of work	3.68	65.8
Students' quantity of work	3.58	52.7
Lower turnover rate	3.36	33.4
Lower absenteeism rate	3.25	22.2
Students' useful new ideas	2.88	22.0
Substitute for regular employees	2.79	21.4
Save money	2.74	21.2
Other forms of collaboration	2.33	18.0

Overall, employers saw the benefits of cooperative education as greatly outweighing its costs. The average response to the question of whether or not employing coop students was greater or less than its costs to their organizations was 4.03 on the five-point scale. Further, 86.1 per cent of employers responded with a 4 ("greater") or 5 ("much greater") and no-one replied that benefits were less than costs.

#### Satisfaction with Cooperative Education Programs

Employers appeared very positive about the cooperative education programs they were involved in and the cooperative institutions they work with (Table 6). They rated their satisfaction with various facets of the programs on scales ranging from 1 ("very dissatisfied") to 7 ("very satisfied"). "We have found the co-op programme to be a tremendous benefit with very few snags" was a typical comment. They were only somewhat satisfied with the support of their organizations for cooperative education and neutral about federal and provincial funding to employ coop students (many commented that they were unaware of any funding).

#### Strengths and Weaknesses of Programs

An open-ended question asked respondents to identify "the things that help to promote the success of cooperative education in your organization." In response to this question, 40.5 per cent mentioned the high quality of coop students (ability, enthusiasm, and



Table 6. Sources of Satisfaction and Dissatisfaction in Cooperative Education Programs for Employers

Aspect of program	Mean rating	Responses of 6 or 7 (%)
Overall programs	6.02	85.4
Support of coop institutions	5.87	75.7
Support of their organizations	5.13	67.5
Federal government funding	4.08	17.5
Provincial government funding	3.90	18.0

Note: The response scale took the values of 1 ("very dissatisfied"), 2 ("quite dissatisfied"), 3 ("somewhat dissatisfied"), 4 ("neutral"), 5 ("somewhat satisfied"), 6 ("quite satisfied"), and 7 ("very satisfied").

productivity), 26.2 per cent mentioned the ability to evaluate potential regular employees and recruit them, 23.8 per cent mentioned the valuable work students do, 14.3 per cent mentioned good administration of the coop programs in their organizations, and 9.5 per cent mentioned the year-round availability of coop students.

A question that asked respondents to identify "the things that detract from the success of co-operative education in your organization" brought forth a variety of responses, but there appeared to be little agreement as to which were most important. In response to the question, 19.0 per cent mentioned the lack of physical or financial resources, 11.9 per cent mentioned improper selection and placement of coop students, and 11.9 per cent mentioned uncertain work or personnel requirements.

#### Changes to Promote the Success of Cooperative Education

A question about promoting the success of cooperative education in respondents' organizations generated little consensus as to how to do so. In response, 14.3 per cent mentioned they would like to have more information on cooperative education, 11.9 per cent mentioned that coop should be better promoted or advertised so that senior management and the rest of the organization would understand it, and 9.5 per cent said more flexible work terms were desirable. On changes to promote better cooperation between the coop institution and the employer, 28.6 per cent suggested more contacts and exchanges, 19.0 per cent urged that employers become more involved in the Canadian Association for Co-operative Education, 9.5 per cent suggested more advertising and promotion of cooperative education, and 9.5 per cent mentioned greater flexibility in timing the employers' on-campus interviews of coop students.

### Discussion

Employers saw a number of benefits accruing to their organizations by taking part in cooperative education. In particular, they believed that employing coop students allows them to evaluate potential full-time employees and recruit them, while employing students who produce a high quantity and quality of work and can handle difficult job assignments. Further, participation in these programs improved the image of an organization at the coop institution. Most important, employers saw the benefits of cooperative education as being greater than its costs.

As a result, respondents expressed a very high level of satisfaction with the cooperative education programs they are involved in. They were also satisfied with the support of the coop institutions that they work with. They were somewhat less satisfied with the support for cooperation education of the rest of their organizations. This seems to mirror the responses of the cooperative education administrators at colleges and universities: they were satisfied with the employers they worked with and less satisfied with the support of senior administration and faculty members at their institution. The changes suggested by employers to promote the success of cooperative education seem to involve more information and greater promotion of coop, so that other employers and other members of their own organizations will increase their awareness and understanding.

## 6. SURVEY OF SENIOR STUDENTS IN COOPERATIVE EDUCATION PROGRAMS

In the survey of students, they were first asked about the benefits and costs to themselves of cooperative education. This is perhaps the most important information collected in the research project; indeed, it is the critical test of the value of cooperative education in Canada. Students were also asked about their satisfaction with various aspects of their programs. Finally, they were asked about the changes that would help to make cooperative education at their institutions more successful.

The clearest perspective on such issues is likely to come at the end of a student's program. For this reason, the survey was directed at students in the final year of their programs. Surveying only students in programs accredited by the Co-operative Education Council of Canada ensured that the views gathered were about programs that meet established criteria of excellence.

### Survey Method

#### **Sample**

Nine universities in Canada have programs accredited by the Co-operative Education Council of Canada (provincial regulations do not permit colleges to apply for accreditation). Six of these universities allowed their senior coop students to be surveyed. A total of 562 questionnaires was mailed out and 218 usable questionnaires were returned (a 38.8 per cent response rate).

#### **Questionnaire Development and Design**

This questionnaire was also tested and revised with coop students. Because students did not have the same motivation to complete a survey as did members of the Canadian Association for Co-operative Education, the final version of the questionnaire was made short and easy to complete. The cover letter and questionnaire are in Appendix C.

### Survey Results

#### **Respondent Characteristics**

The fields of study represented in the sample are shown in Table 7. Female respondents made up 30.7 per cent of the sample and male respondents, 69.3 per cent.

#### **Benefits and Costs**

Students were very positive about the professional, personal, and educational benefits of cooperative education. They evaluated the extent to which they experienced a number of possible benefits on scales ranging from 1 ("not at all") to 5 ("very much"). As shown in Table 8, students rated all the benefits very highly. Four of the five highest benefits directly relate to professional development: students believed they improved their understanding of their professional fields, improved their chances of obtaining jobs directly relevant to their fields of study, had career options clarified, and improved their understanding of themselves. A second group of highly rated benefits concerned the development of personal and interpersonal skills: students believed they improved their self-confidence and their ability to work independently and with others. Finally, students believed the coop programs made it easier to finance their education.

Table 7. Fields of Study of Cooperative Education Students

Field of study	Number	Percentage of respondents
Accounting	26	11.9
Architecture	25	11.5
Business administration	78	35.8
Computer science	19	8.7
Engineering	56	25.7
Science	11	5.0
Other	<u>3</u>	<u>1.4</u>
Total	218	100.0

In response to an open-ended question, students mentioned a number of other benefits of coop: 28 per cent mentioned their increased knowledge of organizations (systems, procedures, expectations) and management (its functions, its concerns), 17 per cent mentioned valuable business contacts, 17 per cent mentioned the opportunity to travel and work in different locations, 15.6 per cent mentioned social benefits (making friends at work or in their coop classes), 14.7 per cent mentioned learning how to manage stress or manage time, 9.6 per cent mentioned academic benefits (smaller classes, better quality classes), and 7.8 mentioned a particular aspect of understanding of themselves — "I learned what I don't want to do."

On the costs of their coop programs, 24.8 per cent mentioned poor course selection in the spring and summer, 21.1 per cent mentioned that the program is longer than regular university programs, 15.1 per cent mentioned the difficulty of finding housing for their four-month work terms, 11.5 per cent mentioned loss of the opportunity to take part in sports and other activities available to regular university students, 10.1 per cent mentioned the high moving costs associated with coop, and 6.4 per cent mentioned the fees associated with the coop programs.

On the question that is absolutely central to the relationship between benefits and costs, "Overall, are the benefits associated with your co-operative education programme greater or less than its costs for you?" the response of students is extremely positive. The mean rating on the five-point scale is 4.4, and an astounding 93.9 per cent of students responded to this question with a rating of 4 ("greater") or 5 ("much greater").

Table 8. Benefits of Cooperative Education to Students

Potential benefit	Mean rating	Responses of 4 or 5 (%)
Understanding of professional field	4.21	82.1
Obtaining a job in field of study	4.08	75.3
Improved self-confidence	3.98	76.1
Career options clarified	3.91	75.2
Understanding self	3.89	70.6
Ability to work independently	3.85	69.2
Ability to work with others	3.81	71.1
Ability to finance education	3.81	66.7
Commitment to career goals	3.65	58.7
Oral communication skills	3.62	58.3
Apply academic concepts	3.51	51.9
Written communication skills	3.48	51.4
Leadership skills	3.45	50.5

Note: The response scale took the values of 1 ("not at all"), 2 ("a little"), 3 ("somewhat"), 4 ("quite a bit"), and 5 ("very much").

#### Satisfaction with Cooperative Education Programs

The sources of satisfaction and dissatisfaction for coop students are shown in Table 9. Clearly, students evaluated their programs and their work-term employers very highly. Typical comments were: "I learned a great deal about employers, myself, and my profession" and "The employers I worked with were very patient, understanding, and concerned about my progress." They evaluated the office of cooperative education less highly. Responses to this question were highly varied: in most programs this office was seen as providing valuable services to the student, in other programs the value of some of these services was questioned (work-term reports, work-site visits by coordinators).



Table 9. Sources of Satisfaction and Dissatisfaction in Cooperative Education Programs for Students

Aspect of program	Mean rating	Responses of 6 or 7 (%)
Overall program	5.84	74.8
Work term employers	5.71	71.6
Office of cooperative education	4.84	40.8

Note: The response scale took the values of 1 ("very dissatisfied"), 2 ("quite dissatisfied"), 3 ("somewhat dissatisfied"), 4 ("neutral"), 5 ("somewhat satisfied"), 6 ("quite satisfied"), and 7 ("very satisfied").

#### Changes to Promote the Success of Cooperative Education

Students suggested a variety of changes to make their programs more successful, but there appeared to be relatively little consensus. Better course availability for the spring and summer was mentioned by 15.6 per cent of the students, better quality jobs by 12.4 per cent, better administration of programs by 11.5 per cent, flexible work terms by 7.8 per cent, and better information about coop and about employers by 7.8 per cent.

#### Discussion

Students were very positive about the benefits of coop programs. They saw substantial benefits directly related to their professional development -- improved understanding of their professional fields, increased knowledge of organizations and management, improved understanding of themselves, greater clarity of career options, and improved chances of obtaining jobs in their fields. Further, they developed useful personal and interpersonal skills -- greater self-confidence, the ability to work independently, and the ability to work well with others. These and other benefits described by students are extremely important for career success. This may explain why a remarkable 94 per cent of students rated the benefits of coop as being greater or much greater than its costs.

A particularly significant benefit perceived by the students was improved ability to finance their education. If it is true that students in cooperative education programs are better able than regular students to finance their college or university education (because of better access to equitably paid work), some interesting possibilities follow. It suggests that cooperative education is a more cost-effective system for government than is traditional education. Coop students may have less need for student loans than do students in traditional programs (and may, in fact, also pay more taxes). It is also possible that such a system, which allows a student to finance education through career-relevant work, provides another avenue to higher education for disadvantaged groups. Research at the University of Waterloo has suggested this possibility for women.<sup>38</sup> This may help to explain the spectacular increase in female enrolments in

coop programs. It is interesting to note that one of the large coop institutions participating in this survey is located in one of the poorest regions of the country; for these students, improved ability to finance education was the highest-rated benefit of cooperative education. This is clearly a question that merits further investigation.

## 7. CONCLUSIONS

Cooperative education has been seen by many as a mechanism to link more closely colleges, universities, and employers in Canada. Unfortunately, little systematic information has been available about this form of education. In this paper I have sought to provide this much-needed information by examining the history and extent of coop in Canada and, most important, by investigating the opinions of the three major participant groups with regard to its benefits, its costs, and the changes necessary to make it more effective.

The surveys generated high levels of enthusiasm among coop administrators, employers, and students. Response rates of 60 per cent for the administrators' and employers' surveys and 40 per cent for the students' survey are much higher than one might normally expect with these populations. Further, participants wrote extensive comments in response to the questions. Clearly, they were concerned about the issue of cooperative education in Canada.

What the surveys reveal is that cooperative education is viewed by the major participants as highly beneficial. For colleges and universities, it enables them to attract good students, enhance their image in the business community, and produce high-quality graduates. For employers, it contributes to more effective human resources management: they are able to evaluate potential full-time employees (and later recruit them) while obtaining highly productive work. For students, it leads to professional and personal development: they gain insight into their professions, their employers, and themselves. What these results attest to is that cooperative education is a remarkably productive means of collaboration for institutions of higher education and employers. The further development of cooperative education in Canada should be encouraged.

The costs of cooperative education in relation to its benefits did not seem significant for either employers or students. The view of both groups is that the benefits of coop greatly outweigh its costs. Although all the major participants derive important benefits from coop, it appears that the burden of costs falls on the colleges and universities. Cooperative education programs are expensive to administer, yet colleges and universities do not receive any financial support beyond that given for regular programs. To support coop at these institutions, resources must be diverted from other potential applications. In an era of financial restraint, this is not easily done. Administrators identify the lack of resources as the single most important weakness or problem that prevents their programs from being more successful.

This lack of support will undoubtedly limit the growth of cooperative education at these colleges and universities. As well, other institutions who recognize the strengths of cooperative education will be reluctant to initiate new programs. If the cooperative education system is to thrive in Canada, it must receive greater financial support.

A second impediment to the success of cooperative education at colleges and universities is the lack of involvement and support of senior administration and faculty. This may stem from several sources. The primary reason may be low levels of awareness and understanding of cooperative education. This lack of understanding would hardly be surprising: coop is relatively new in Canada, the concept has not been actively promoted here, and there is little systematic information about it. As the value of cooperative education has not been adequately recognized, the rewards

associated with it have also been small. At most institutions, involvement in coop would not be seen as an important activity for faculty because it is viewed as a placement function, not an academic one. In fact, many faculty believe that cooperative education inhibits the personal growth they want students to undergo at college or university because "it focusses them too much on the job market and getting a job." The survey results reported here suggest that this belief is erroneous. Coop students appear to be achieving the kinds of personal growth — understanding of self, self-confidence, and the ability to work independently and with others — that we hope will result from a college or university education. As the benefits of cooperative education become more apparent, it is likely that greater faculty involvement and more appropriate recognition of these activities will follow. To improve the understanding and raise the interest of faculty and administrators in coop, more information about it should be collected, and that information should be widely disseminated. As well, their participation in cooperative education and in the Canadian Association for Co-operative Education should be actively encouraged.

Increased involvement of faculty will also increase the academic benefits of cooperative education. Faculty will become more knowledgeable about the current requirements and expectations of professional bodies and employers, which may lead to more relevant courses. Some of the most important benefits of increased involvement of faculty and senior administrators in cooperative education may be the introduction of other forms of collaboration between colleges, universities, and employers (such as joint research, contract research, consulting, scholarships, and training workshops for employers). Surprisingly, this turned out to be the lowest-rated benefit for colleges and universities. It is likely that these institutions derive so few benefits in this area precisely because the people who make these things happen — faculty, and to a lesser extent, senior administrators — are not active in cooperative programs.

Similarly, greater understanding and involvement in cooperative education on the part of business will be required to make coop more successful. If coop continues to grow quickly (especially given adequate funding), many more positions will need to be created for coop students. Information about cooperative education needs to be more widely disseminated to employers to stimulate their interest in coop. Employers should also be strongly encouraged to participate in coop advisory boards at the colleges and universities and to become members of the Canadian Association for Co-operative Education.

Recently, that association received funding under the Job Entry Program to establish a national office to provide information on cooperative education and to launch a national marketing strategy to further understanding of this form of education among employers, educational institutions, and the public. The present study suggests that such an endeavour is vital in promoting cooperative education in Canada.

In summary, the cooperative education system in Canada was found to be a superb mechanism of collaboration between institutions of higher education and employers. I conclude this system should be expanded in Canada so that its benefits are available to greater numbers of educational institutions, employers, and students. There are two major issues that demand discussion and resolution. First, financial support for cooperative education is now inadequate, and this support must be increased. Second, the understanding and support of cooperative education among faculty, senior administrators, and employers is also less than adequate and will have to be developed if coop is to progress in Canada.

## NOTES

1. J.C. Rush and F.T. Evers, Making the Match: Canada's University Graduates and Corporate Employers (Montreal: Corporate-Higher Education Forum, 1986).
2. D. Mascolo, P.M. Wright, and G.R. Slemon, Engineering Education in Canada: Some Facts and Figures, Science Council of Canada, Discussion Paper (Ottawa, 1985).
3. David G. Vice, president, Northern Telecom Limited, Post-Secondary Education in Canada: A Capital Investment, speech to the Senate Committee on Finance, Ottawa, 30 January 1986 (Mississauga, Ontario: Northern Telecom Limited, 1986); see also, Canadian Manufacturer's Association, Keeping Canada Competitive: The Importance of Post-Secondary Education, report of the CMA task force on business-education relations in Canada (Toronto: Canadian Manufacturer's Association, 1987).
4. David G. Vice, president, Northern Telecom Limited, Education: A Call to Action, speech to the Association of Universities and Colleges of Canada, St. John's, Newfoundland, 1 October 1986, (Mississauga, Ontario: Northern Telecom Limited, 1986).
5. Rush and Evers, op. cit. (note 1), 51.
6. Philip C. Enros, Report on the Science Council's Study of University Science and Technology and the Canadian Economy, annual conference, Canadian Society for the Study of Higher Education, Winnipeg, 30 May-1 June 1986.
7. A.S. Barber, Cooperative Education in Canada, in Handbook of Co-operative Education, ed. A.S. Knowles (San Francisco: Josey-Bass, 1972); see also, B.A. McCallum and J.C. Wilson, They Said It Wouldn't Work: A History of Co-operative Education in Canada, manuscript in preparation.
8. Co-operative Education Council of Canada, Accreditation Information and Application (Toronto: Canadian Association for Co-operative Education, 1986). For more information about cooperative education in Canada, write to: Canadian Association for Co-operative Education, 1209 King Street West, Suite 203, Toronto, Ontario M6K 1G2.
9. University of Waterloo, Department of Co-ordination and Placement, Co-operative Programme in the Faculty of Engineering (Waterloo: University of Waterloo, n.d.).
10. Statistics Canada, information search requested by author.
11. Statistics Canada, Education in Canada: A Statistical Overview for 1984-85 (Ottawa: Ministry of Supply and Services, 1985), 84-87; see also, Statistics Canada, Education in Canada: A Statistical Review for 1981-82 (Ottawa: Ministry of Supply and Services, 1982), 59-60.
12. Canadian Association for Co-operative Education, Yearbook and Directory 1986, ed. Ivan Blake (Toronto: Canadian Association for Co-operative Education, 1986), 18-19.



13. J.W. Wilson and S.J. Brown, A Benefit-Cost Model for Employer Participation in Co-operative Education (Boston: Co-operative Education Research Center, Northeastern University, 1985).
14. R.P. Nielsen and R.C. Porter, Employer Benefits and Cost Effectiveness of Cooperative Education Programs: A Review, Journal of Cooperative Education 20(1983): 11-24.
15. R.T. Deane, S. Frankel, and A.J. Cohen, An Analysis of Co-op Students' Employment Costs and Benefits, Journal of Cooperative Education 14(1978): 5-53; see also, D. Weinstein and J.W. Wilson, An Employer Description of a Model Employer Cooperative Education Program, Journal of Cooperative Education 20(1983): 60-82.
16. Nielsen and Porter, op. cit. (note 14).
17. Weinstein and Wilson, op. cit. (note 15).
18. Wilson and Brown, op. cit. (note 13).
19. R.A. Klawitter, A Cost Benefit Model for Employer Participation in Co-operative Education, Paper presented at the annual conference of the Canadian Association for Co-operative Education, Vancouver, August 1986.
20. Arthur D. Little Inc., Documented Employer Benefits from Cooperative Education, Report of a Study for Northeastern University (Boston: Northeastern University, 1974).
21. Research Task Force, M. McMartin (Chairman), An Analysis of the Employer Profile Questionnaire: A Summary for Employers, Department of Co-operative Education and Career Services (Waterloo: University of Waterloo, 1986).
22. J.J. Phillips, An Employer Evaluation of a Cooperative Education Program, Journal of Cooperative Education 14(1978): 60-83.
23. Weinstein and Wilson, op. cit. (note 15); Deane, Frankel, and Cohen, op. cit. (note 15).
24. Little, op. cit. (note 20); Nielsen and Porter, op. cit. (note 14).
25. Research Task Force, op. cit. (note 21); Phillips, op. cit. (note 22).
26. Research Task Force, op. cit. (note 21); Weinstein and Wilson, op. cit. (note 15).
27. Little, op. cit. (note 20); Weinstein and Wilson, op. cit. (note 15); Deane, Frankel, and Cohen, op. cit. (note 15).
28. Research Task Force, op. cit. (note 21).
29. Nielsen and Porter, op. cit. (note 14).
30. R.L. Wiseman and N.R. Page, Predicting Employers' Benefits from Cooperative Education, Journal of Cooperative Education 20(1983): 44-59; Wilson and Brown, op. cit. (note 13).

31. Wiseman and Page, *ibid.*
32. Wilson and Brown, *op. cit.* (note 13).
33. M.K. Loken and James Cutt, The Academic Benefits of Co-operative Education -- The Neglected Question, Paper presented at the annual conference of the Canadian Association for Co-operative Education, Vancouver, August 1986.
34. G.M. Somers, How Cooperative Education Affects Recruitment and Selection, Journal of Cooperative Education 22(1986): 72-78.
35. G.J. Gore, Value of Coop Education as the Graduate Views It, Journal of Cooperative Education 9(1973): 53-59; see also, N.R. Page, R. Wiseman, and D.A. Crary, Predicting Students' Benefits from Cooperative Education, Journal of Cooperative Education 18(1982): 31-43.
36. P.M. Rowe, Cooperative Programmes: Especially Beneficial for Women?," Journal of Cooperative Education 16(1980): 50-58.
37. Statistics Canada, Standards Division, Canadian Standard Industrial Classification for Companies and Enterprises (Ottawa: Ministry of Supply and Services, 1986).
38. Rowe, *op. cit.* (note 36).



Dear Sir or Madam:

I am writing to request your participation in a survey which examines the state of co-operative education in Canada. This survey is supported and funded by the Science Council of Canada and is being undertaken with the full support of the Canadian Association for Co-Operative Education.

The purpose of this survey is to clarify what co-operative education in Canada is, and what it could be, in the context of a rapidly changing economy. In particular, the survey will investigate the nature of co-operative education programs at various institutions, the benefits and costs of co-operative education, and the problems and opportunities facing co-operative education now and in the future.

Three groups of participants have very different and valuable perspectives on co-operative education and each of these groups is being surveyed: those who administer co-operative education programs at colleges and universities; employers who participate in these programs; and the students enrolled in these programs. You will find enclosed a short survey that asks about your perceptions and opinions of co-operative education in Canada.

The information collected in this survey is strictly confidential: no one except the researcher will see the responses you make to the questions posed in the survey. The final report on the results of the survey will present information on group averages only, not individuals' responses. Therefore, we encourage you to be completely frank in your responses; it will greatly enhance the value of the information we are able to collect.

..... 2

Page 2

We encourage your participation in this valuable study. We believe the results of this research will be of great benefit to the administrators and employers involved in co-operative education programs, and ultimately, to the students who participate in these programs. A report on the results of this research will be sent to all those who participate.

We would greatly appreciate your help in this study. It would also be helpful if you could respond to this survey as soon as possible, so that we can have a report on the results ready for January. You will find a postage-paid return envelope enclosed. If you have any questions or concerns about this study, please call me.

Yours truly,

Robert J. Ellis  
Assistant Professor of Business  
School of Business and Economics  
Wilfrid Laurier University  
Waterloo, Ontario N2L 3C5

RJE:mdd  
Enclosure



## SURVEY ON CO-OPERATIVE EDUCATION

The following questions are directed at your perceptions and opinions of co-operative education. We are interested in what you personally believe based on your own experiences with co-op. No two questions are exactly alike, so consider each carefully.

### A. Background Information

The questions below are needed to help us classify respondents. This will allow us to group similar respondents and compare the opinions of these different groups. Please put a check-mark adjacent to the appropriate category.

1. What type of institution do you work for?

☐ College  
☐ Technical institute  
☐ University  
☐ Other (specify) \_\_\_\_\_

2. How large is this institution in terms of numbers of full-time students?

<input type="checkbox"/> 0-1,999	<input type="checkbox"/> 8,000- 9,999	<input type="checkbox"/> 16,000-17,999
<input type="checkbox"/> 2,000-3,999	<input type="checkbox"/> 10,000-11,999	<input type="checkbox"/> 18,000-19,999
<input type="checkbox"/> 4,000-5,999	<input type="checkbox"/> 12,000-13,999	<input type="checkbox"/> 20,000-21,999
<input type="checkbox"/> 6,000-7,999	<input type="checkbox"/> 14,000-15,999	<input type="checkbox"/> 22,000 or greater

3. What percent of these full-time students are in co-operative education programs?

☐ %

4. What is the position(s) you hold at your institution?

<input type="checkbox"/> Director	<input type="checkbox"/> Co-ordinator
<input type="checkbox"/> Assistant Director	<input type="checkbox"/> Placement Advisor or Specialist
<input type="checkbox"/> Manager	<input type="checkbox"/> Dean
<input type="checkbox"/> Program Administrator	<input type="checkbox"/> Associate Dean
<input type="checkbox"/> Other (specify): _____	

5. Are you directly involved in the administration of a co-op program(s) at your institution?

\_\_\_\_ Yes                      \_\_\_\_ No

6. If your response to question #5 was "No," what is the nature of your relationship to co-operative education at your institution?

\_\_\_\_\_

7. If your response to question #5 is "Yes," what specific fields of study (e.g., math, engineering) are covered by the co-op program(s) you are involved in administering?

\_\_\_\_\_

\_\_\_\_\_

8. How many years have you been in your current position?

\_\_\_\_ years

9. How many years have you been employed by your present institution?

\_\_\_\_ years

10. How many years have you worked in or been associated with co-operative education?

\_\_\_\_ years

11. What is your sex?

\_\_\_\_ female                      \_\_\_\_ male

12. To whom does the senior administrator of co-operative education programs at your institution report to?

\_\_\_\_ President

\_\_\_\_ Dean

\_\_\_\_ Vice-President: Academic

\_\_\_\_ Associate Dean

\_\_\_\_ Vice-President: Administration/University Services

\_\_\_\_ Other (specify): \_\_\_\_\_

13. Do you have an advisory board, council, or committee that examines and/or proposes changes for your co-operative education program(s)?

\_\_\_\_ Yes

\_\_\_\_ No

14. If your response to question #13 was "Yes", which of the following groups are represented on that committee?

<input type="checkbox"/> Employers	<input type="checkbox"/> Union
<input type="checkbox"/> Co-op administrators	<input type="checkbox"/> Students
<input type="checkbox"/> Faculty	<input type="checkbox"/> Provincial government
<input type="checkbox"/> Senior Administration	
<input type="checkbox"/> Other (specify): _____	

**B. Benefits and Costs**

The following questions concern your perceptions and opinions of the benefits and costs to your institution of the co-operative education program with which you are most closely associated. Please circle the number that most closely corresponds to your opinion.

1. To what extent is the image of your institution enhanced in the eyes of potential student applicants?

1	2	3	4	5
not at all	a little	somewhat	quite a bit	very much

2. To what extent is it easier to recruit students to the institution?

1	2	3	4	5
not at all	a little	somewhat	quite a bit	very much

3. To what extent is the learning process better for your co-op students (quicker and more thorough understanding of course material)?

1	2	3	4	5
not at all	a little	somewhat	quite a bit	very much

4. To what extent is the quality of your graduates improved?

1	2	3	4	5
not at all	a little	somewhat	quite a bit	very much

5. To what extent is the utilization of the institution's facilities improved?

1	2	3	4	5
not at all	a little	somewhat	quite a bit	very much

6. To what extent is the image of your institution enhanced in the eyes of the business community?

1	2	3	4	5
not at all	a little	somewhat	quite a bit	very much

7. To what extent are the faculty and the institution made aware of current practices in business and industry through contacts between the institution and co-op employers?

1	2	3	4	5
not at all	a little	somewhat	quite a bit	very much

8. To what extent are other forms of collaboration (e.g., joint research, donations by business) between business and the institution improved?

1	2	3	4	5
not at all	a little	somewhat	quite a bit	very much

Please give specific examples, if possible: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

9. Are there any other benefits for your institution of your co-operative education programs?

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

10. Are there any disadvantages for your institution of your co-operative education program?

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

### C. Evaluation of Program

The following questions concern your satisfaction with various aspects of your co-operative education program. Please circle the number that most closely corresponds to your opinion. Space is provided below each question if you wish to expand or explain your response more fully.

1. Overall, how satisfied or dissatisfied are you with your co-operative education program(s)?

1	2	3	4	5	6	7
Very Dissatis- fied	Quite Dissatis- fied	Somewhat Dissatis- fied	Neutral	Somewhat Satis- fied	Quite Satis- fied	Very Satis- fied

Comments: \_\_\_\_\_  
\_\_\_\_\_

2. Overall, how satisfied or dissatisfied are you with your job?

1	2	3	4	5	6	7
Very Dissatis- fied	Quite Dissatis- fied	Somewhat Dissatis- fied	Neutral	Somewhat Satis- fied	Quite Satis- fied	Very Satis- fied

Comments: \_\_\_\_\_  
\_\_\_\_\_

3. Overall, how satisfied or dissatisfied are you with the support of senior administration at your institution for your program?

1	2	3	4	5	6	7
Very Dissatis- fied	Quite Dissatis- fied	Somewhat Dissatis- fied	Neutral	Somewhat Satis- fied	Quite Satis- fied	Very Satis- fied

Comments: \_\_\_\_\_  
\_\_\_\_\_

4. Overall, how satisfied or dissatisfied are you with the support of faculty at your institution for your program?

1	2	3	4	5	6	7
Very Dissatis- fied	Quite Dissatis- fied	Somewhat Dissatis- fied	Neutral	Somewhat Satis- fied	Quite Satis- fied	Very Satis- fied

Comments: \_\_\_\_\_

\_\_\_\_\_

5. Overall, how satisfied or dissatisfied are you with the support of employers for your program?

1	2	3	4	5	6	7
Very Dissatis- fied	Quite Dissatis- fied	Somewhat Dissatis- fied	Neutral	Somewhat Satis- fied	Quite Satis- fied	Very Satis- fied

Comments: \_\_\_\_\_

\_\_\_\_\_

6. Overall, how satisfied or dissatisfied are you with the level of funding available from the provincial government for your program?

1	2	3	4	5	6	7
Very Dissatis- fied	Quite Dissatis- fied	Somewhat Dissatis- fied	Neutral	Somewhat Satis- fied	Quite Satis- fied	Very Satis- fied

Comments: \_\_\_\_\_

\_\_\_\_\_

7. Overall, how satisfied or dissatisfied are you with the level of funding available from the federal government for your program?

1	2	3	4	5	6	7
Very Dissatis- fied	Quite Dissatis- fied	Somewhat Dissatis- fied	Neutral	Somewhat Satis- fied	Quite Satis- fied	Very Satis- fied

Comments: \_\_\_\_\_

\_\_\_\_\_



8. What do you consider to be the major strengths of your program, the things that help to promote its success (please give specific examples)?

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9. What do you consider to be the major weaknesses or problems with your program, the things that detract from its success (please give specific examples)?

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10. If they were possible, what changes at your institution would help to overcome these problems and promote the success of your program (please give specific examples)?

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11. If they were possible, what changes would help to promote better collaboration between the institution and employers?

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D. The Future of Co-operative Education in Canada

The following questions refer to your perceptions and opinions of co-operative education in Canada (not just the particular program with which you are associated).

1. What do you consider to be the major strengths of co-operative education in Canada, the things that help to promote its success (please give specific examples)?

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2. What do you consider to be the major weaknesses or problems with co-operative education in Canada, the things that detract from its success (please give specific examples)?

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3. Is there any information or data which could be collected that would be helpful in resolving these problems?

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4. What changes or actions would help to overcome these problems and promote the success of co-operative education in Canada?

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5. If you would like to receive a report on the results of this study, please print your name and address below:

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Dear CAFCE Member:

About three weeks ago you should have received a "Survey on Co-operative Education" that was mailed to you. I am writing to encourage you to participate in this study of co-op if you have not already done so. Enclosed is a copy of the survey and a postage-paid return envelope. If you have completed and returned your survey in the mail, my thanks.

This survey is funded by the Science Council of Canada and is being undertaken with the Canadian Association for Co-Operative Education. The purpose of this survey is to help us clarify the benefits and costs of co-operative education, and the problems and opportunities facing co-operative education now and in the future. This is a great opportunity for us to share our ideas about co-op! The information collected in this survey is strictly confidential; individual responses will not be reported.

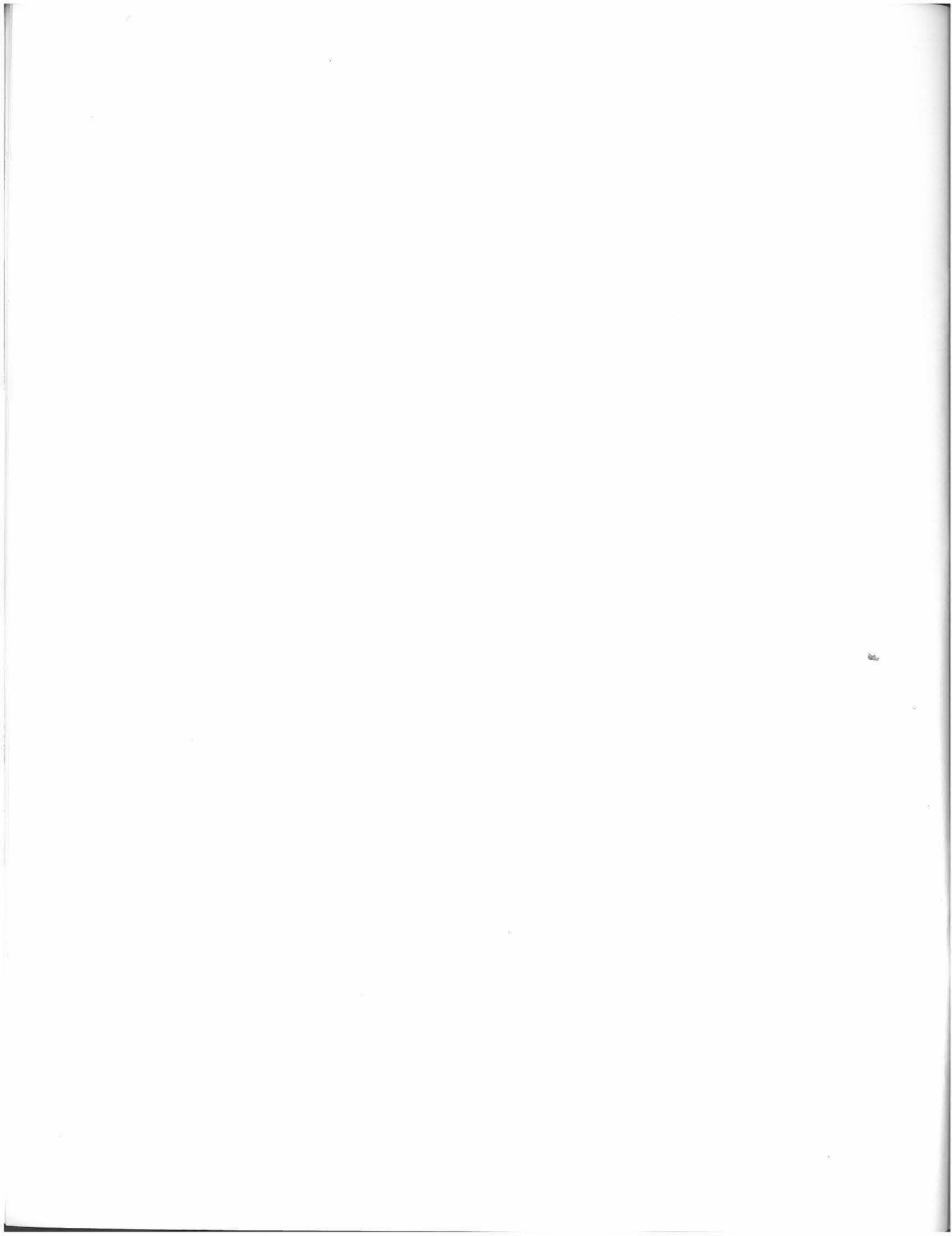
We encourage your participation in this valuable study. We believe this research will be of great benefit to the administrators and employers involved in co-operative education programs, and ultimately to the students who participate in these programs. A report on the results of this research will be sent to all those who participate.

We would greatly appreciate your help. If you have any questions about this study, please call me.

Yours sincerely,

Robert J. Ellis

RJE:mdd  
Enclosure



APPENDIX B:

Survey of Employers





Dear Sir or Madam:

I am writing to request your participation in a survey which examines co-operative education in Canada. This survey was initiated by the Canadian Association for Co-operative Education and is being conducted in full cooperation with them. As well, the survey is supported and funded by the Science Council of Canada.

The purpose of this survey is to clarify what co-operative education in Canada is, and what it could be, in the context of a rapidly changing economy. In particular, the survey will investigate the benefits and costs of co-operative education, and the problems and opportunities facing co-operative education now and in the future. This is a great opportunity for us to share our ideas about co-op!

Three groups of participants have valuable perspectives on co-operative education and each of these groups is being surveyed: those who administer co-operative education programs; employers who participate in these programs; and the students enrolled in these programs. You will find enclosed a short survey that asks about your opinions of co-operative education from the perspective of an employer. It should take no more than 15 minutes to complete.

The information collected in this survey is strictly confidential: no one except the researcher will see the responses you make to the questions posed in the survey. Therefore, we encourage you to be completely frank in your responses; it will greatly enhance the value of the information we are able to collect.

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Page 2

We encourage your participation in this valuable study. We believe the results of this research will be of great benefit to the administrators and employers involved in co-operative education programs, and ultimately, to the students who participate in these programs. A report on the results of this research will be sent to all those who participate.

We would greatly appreciate your help in this study. It would also be helpful if you could respond to this survey as soon as possible, so that a report on the results will be ready in the spring. You will find a postage-paid return envelope enclosed. If you have any questions about this study, please call me.

Yours truly,

Robert J. Ellis, Ph.D.  
Assistant Professor of Business  
School of Business and Economics  
Wilfrid Laurier University  
Waterloo, Ontario N2L 3C5

RJE:mdd  
Enclosure

## SURVEY ON CO-OPERATIVE EDUCATION

The following questions are directed at your perceptions and opinions of co-operative education at the post-secondary level (college, university or technical institute). We are interested in what you personally believe based on your own experiences with co-op. No two questions are exactly alike, so please consider each carefully.

### A. Background Information

The questions below are needed to help us classify respondents. This will allow us to group similar respondents and compare the opinions of different groups.

1. Approximately how many years has your organization participated in co-operative education programs?

\_\_\_ years

2. Approximately how many years have you been associated with co-operative education in your organization?

\_\_\_ years

3. What types of co-operative education programs does your organization participate in? With what types of institutions? Please put a check mark next to the appropriate category.

\_\_\_ Business

\_\_\_ College

\_\_\_ Computer Science

\_\_\_ University

\_\_\_ Engineering

\_\_\_ Technical Institute

\_\_\_ Other (please specify): \_\_\_\_\_

4. In which sector of the economy is the primary activity of your organization?

\_\_\_ Food, Beverage, Tobacco

\_\_\_ Energy

\_\_\_ Chemicals, Chemical Products and Textiles

\_\_\_ Metallic Minerals and Metal Products

\_\_\_ Machinery and Equipment (except electrical equipment)

\_\_\_ Transportation Equipment

\_\_\_ Electrical and Electronic Products

\_\_\_ Transportation Services

\_\_\_ Communications

\_\_\_ Finance and Insurance

\_\_\_ General Services to Business

\_\_\_ Government Services

\_\_\_ Consumer Goods and Services

\_\_\_ Other: \_\_\_\_\_

## B. Benefits and Costs of Employing Co-op Students

The following questions concern your perceptions and opinions of the benefits and costs to your organization of employing co-op students during their work terms. Please circle the number that most closely corresponds to your opinion.

Co-op Students Compared to Regular Students. Compare the benefits and costs associated with employing co-op students (during their work terms) to those associated with employing students from "regular" or "traditional" programs (during their non-school terms--normally the summer).

1. Is the quantity of work produced by co-op students greater or less than that of regular students?

1	2	3	4	5
much less	less	same	greater	much greater

2. Is the quality of work of co-op students better or worse than that of regular students?

1	2	3	4	5
much less	less	same	greater	much greater

3. Is the absenteeism rate of co-op students lower or higher than that of regular students?

1	2	3	4	5
much less	less	same	greater	much greater

4. Is the turnover rate of co-op students lower or higher than that of regular students?

1	2	3	4	5
much less	less	same	greater	much greater

5. Is the ability of co-op students to handle more difficult job assignments better or worse than that of regular students?

1	2	3	4	5
much less	less	same	greater	much greater

Co-op Students Compared to Full-Time Employees. For the next two questions, compare co-op students to full-time employees.

6. To what extent is your organization able to substitute co-op students for full-time employees?

1	2	3	4	5
not at all	a little	somewhat	quite a bit	very much

7. To what extent is your organization able to save money in salaries and benefits by employing co-op students rather than full-time employees?

1	2	3	4	5
not at all	a little	somewhat	quite a bit	very much

Other Benefits and Costs

8. To what extent does your organization employ co-op students as a vehicle to recruit and select potential full-time employees?

1	2	3	4	5
not at all	a little	somewhat	quite a bit	very much

9. To what extent is the image of your organization improved at the co-op college, university or technical institute as a result of employing co-op students?

1	2	3	4	5
not at all	a little	somewhat	quite a bit	very much

10. To what extent is your organization made aware of useful new ideas as a result of employing co-op students from the co-op college, university, or technical institute?

1	2	3	4	5
not at all	a little	somewhat	quite a bit	very much

11. To what extent are other forms of cooperation (e.g., joint research, educational workshops for your members) between your organization and the co-op college, university or technical institute improved as a result of employing co-op students?

1	2	3	4	5
not at all	a little	somewhat	quite a bit	very much

12. Are there any other benefits for your organization of employing co-op students?

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13. What, if any, are the costs or disadvantages for your organization of employing co-op students?

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14. Overall, are the benefits associated with employing co-op students greater or less than its costs for your organization?

1	2	3	4	5
much less	less	same	greater	much greater

C. Evaluation of Co-operative Education in Your Organization

The following questions concern your satisfaction with various aspects of your involvement in co-operative education. Space is provided below each question if you wish to explain your response more fully.

1. Overall, how satisfied or dissatisfied are you with the support of the co-op colleges, universities and technical institutions you are involved with?

1	2	3	4	5	6	7
Very	Quite	Somewhat	Neutral	Somewhat	Quite	Very
Dissatis-	Dissatis-	Dissatis-		Satis-	Satis-	Satis-
fied	fied	fied		fied	fied	fied

Comments: \_\_\_\_\_

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2. Overall, how satisfied or dissatisfied are you with the support of your organization for co-operative education?

1	2	3	4	5	6	7
Very Dissatis- fied	Quite Dissatis- fied	Somewhat Dissatis- fied	Neutral	Somewhat Satis- fied	Quite Satis- fied	Very Satis- fied

Comments: \_\_\_\_\_

---

3. Overall, how satisfied or dissatisfied are you with the level of funding available from the provincial government to employ co-op students?

1	2	3	4	5	6	7
Very Dissatis- fied	Quite Dissatis- fied	Somewhat Dissatis- fied	Neutral	Somewhat Satis- fied	Quite Satis- fied	Very Satis- fied

Comments: \_\_\_\_\_

---

4. Overall, how satisfied or dissatisfied are you with the level of funding available from the federal government to employ co-op students?

1	2	3	4	5	6	7
Very Dissatis- fied	Quite Dissatis- fied	Somewhat Dissatis- fied	Neutral	Somewhat Satis- fied	Quite Satis- fied	Very Satis- fied

Comments: \_\_\_\_\_

---

5. Overall, how satisfied or dissatisfied are you with the co-operative education programs you are involved with?

1	2	3	4	5	6	7
Very Dissatis- fied	Quite Dissatis- fied	Somewhat Dissatis- fied	Neutral	Somewhat Satis- fied	Quite Satis- fied	Very Satis- fied

Comments: \_\_\_\_\_

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6. What are the things that help to promote the success of co-operative education in your organization (please give specific examples)?

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7. What are the things that detract from the success of co-operative education in your organization (please give specific examples)?

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8. If they were possible, what changes would help to overcome these problems and promote the success of co-operative education (please give specific examples)?

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9. If they were possible, what changes would help to promote better cooperation between the co-op institutions and employers?

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10. If you would like to receive a report on the results of this study, please print your name and address below.

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Dear CAFCE Member:

About three weeks ago you should have received a "Survey on Co-operative Education" that was mailed to you. I am writing to encourage you to participate in this study of co-op if you have not already done so. Enclosed is a copy of the survey and a postage-paid return envelope. If you have completed and returned your survey in the mail, my thanks.

This survey is funded by the Science Council and is being undertaken with the Canadian Association for Co-Operative Education. The purpose of this survey is to help us clarify the benefits and costs of co-operative education, and the problems and opportunities facing co-operative education now and in the future. This is a great opportunity for us to share our ideas about co-op! The information collected in this survey is strictly confidential; individual responses will not be reported.

We encourage your participation in this valuable study. We believe this research will be of great benefit to the administrators and employers involved in co-operative education programs, and ultimately to the students who participate in these programs. A report on the results of this research will be sent to all those who participate.

We would greatly appreciate your help. If you have any questions about this study, please call me.

Yours sincerely,

Robert J. Ellis

RJE:mdd  
Enclosure



APPENDIX C:

Survey of Students





Dear Sir or Madam:

I am writing to request your participation in a survey which examines co-operative education in Canada. This survey is being conducted in cooperation with the Canadian Association for Co-operative Education and in support and funded by the Science Council of Canada.

The purpose of this survey is to investigate the benefits and costs of co-operative education, and the problems and opportunities facing this form of education now and in the future. This is a great opportunity for you to share your opinions about co-op! The enclosed survey should take you no more than 15 minutes to complete.

The information collected in this survey is strictly confidential: no one except the researcher will see the responses you make to the questions posed in the survey. Therefore, we encourage you to be completely frank in your responses; it will greatly enhance the value of the information we are able to collect.

We would greatly appreciate your help in this study. We believe the results of this study will be of great benefit to the students, employers and administrators involved in co-operative education programs. It would also be helpful if you could respond to this survey as soon as possible, so that a report on the results will be ready in the spring. You will find a postage-paid return envelope enclosed. A report on the results will be sent to you, if you wish to receive one. If you have any questions about this study, please call me.

Yours truly,

Robert J. Ellis, Ph.D.  
Assistant Professor of Business  
School of Business and Economics

RJE:mdd  
Enclosure

## SURVEY ON CO-OPERATIVE EDUCATION

The following questions are directed at your perceptions and opinions of co-operative education. We are interested in what you personally believe based on your own experiences with co-op. No two questions are exactly alike, so please consider each carefully.

### A. Background Information

The questions below are needed to help us classify respondents. This will allow us to group similar respondents and compare the opinions of these different groups. Please put a check-mark adjacent to the appropriate category.

1. What type of institution do you attend?

☐ College  
☐ Technical institute  
☐ University  
☐ Other (specify) \_\_\_\_\_

2. Approximately how large is this institution in terms of numbers of full-time students?

<input type="checkbox"/> 0-1,999	<input type="checkbox"/> 8,000- 9,999	<input type="checkbox"/> 16,000-17,999
<input type="checkbox"/> 2,000-3,999	<input type="checkbox"/> 10,000-11,999	<input type="checkbox"/> 18,000-19,999
<input type="checkbox"/> 4,000-5,999	<input type="checkbox"/> 12,000-13,999	<input type="checkbox"/> 20,000-21,999
<input type="checkbox"/> 6,000-7,999	<input type="checkbox"/> 14,000-15,999	<input type="checkbox"/> 22,000 or greater

3. What is your field of study?

<input type="checkbox"/> Accounting	<input type="checkbox"/> Business Administration
<input type="checkbox"/> Computer Science	<input type="checkbox"/> Engineering
<input type="checkbox"/> Mathematics	<input type="checkbox"/> Science
<input type="checkbox"/> Other: (please specify) _____	

4. What is the total number of academic terms required for a degree or diploma in your field of study? What is the total number of:

☐ Total academic terms  
☐ Total co-op work terms  
☐ Number of co-op work terms you have completed

5. What is your sex?

\_\_\_\_\_ Female

\_\_\_\_\_ Male

B. Benefits and Costs

The questions below concern your perceptions of the benefits and costs that you have experienced as a result of your co-op program. Please circle the number that most closely corresponds to your perception.

1. To what extent have your oral communication skills improved?

1	2	3	4	5
not at all	a little	somewhat	quite a bit	very much

2. To what extent have your written communication skills improved?

1	2	3	4	5
not at all	a little	somewhat	quite a bit	very much

3. To what extent has your self-confidence improved?

1	2	3	4	5
not at all	a little	somewhat	quite a bit	very much

4. To what extent has your ability to work independently improved?

1	2	3	4	5
not at all	a little	somewhat	quite a bit	very much

5. To what extent has your ability to work well with others improved?

1	2	3	4	5
not at all	a little	somewhat	quite a bit	very much

6. To what extent have your leadership skills improved?

1	2	3	4	5
not at all	a little	somewhat	quite a bit	very much

7. To what extent has your ability to apply concepts from your academic courses improved?

1	2	3	4	5
not at all	a little	somewhat	quite a bit	very much

8. To what extent has your understanding of yourself (your likes and dislikes, your capabilities) been improved?

1	2	3	4	5
not at all	a little	somewhat	quite a bit	very much

9. To what extent has your understanding of your professional field improved?

1	2	3	4	5
not at all	a little	somewhat	quite a bit	very much

10. To what extent have your career options been clarified?

1	2	3	4	5
not at all	a little	somewhat	quite a bit	very much

11. To what extent has your commitment to your career goals been strengthened?

1	2	3	4	5
not at all	a little	somewhat	quite a bit	very much

12. To what extent have your chances of obtaining a job directly relevant to your field of study improved?

1	2	3	4	5
not at all	a little	somewhat	quite a bit	very much

13. To what extent has your ability to finance your education been improved?

1	2	3	4	5
not at all	a little	somewhat	quite a bit	very much

14. Are there any other benefits you have experienced as a result of your co-operative education program?

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15. What, if any, are the costs or disadvantages of your co-operative education program?

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16. Overall, are the benefits associated with your co-operative education program greater or less than its costs for you?

1	2	3	4	5
much less	less	same	greater	much greater

C. Evaluation of Your Co-operative Education Program

The following questions concern your satisfaction with various aspects of your co-operative education program. Please circle the number that most closely corresponds to your opinion. Space is provided below each question if you wish to expand or explain your response more fully.

1. Overall, how satisfied or dissatisfied are you with your co-operative education program?

1	2	3	4	5	6	7
Very Dissatis- fied	Quite Dissatis- fied	Somewhat Dissatis- fied	Neutral	Somewhat Satis- fied	Quite Satis- fied	Very Satis- fied

Comments: \_\_\_\_\_

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2. Overall, how satisfied or dissatisfied are you with the office of co-operative education at your institution?

1	2	3	4	5	6	7
Very Dissatis- fied	Quite Dissatis- fied	Somewhat Dissatis- fied	Neutral	Somewhat Satis- fied	Quite Satis- fied	Very Satis- fied

Comments: \_\_\_\_\_

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3. Overall, how satisfied or dissatisfied are you with the employers you spent your co-op work terms with?

1	2	3	4	5	6	7
Very	Quite	Somewhat	Neutral	Somewhat	Quite	Very
Dissatis-	Dissatis-	Dissatis-		Satis-	Satis-	Satis-
fied	fied	fied		fied	fied	fied

Comments: \_\_\_\_\_

\_\_\_\_\_

4. If they were possible, what changes would help to make the co-operative education program at your institution more successful (please give specific examples)?

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

5. If you would like to receive a report on the results of this study, please print your name and address below.

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