

## CHAPTER 6

### OVERVIEW OF RESEARCH, SUMMARY OF FINDINGS AND RECOMMENDATIONS

*As many countries have come to realize before Canada, today an education system cannot exist isolated from a surrounding socioeconomic environment that keeps changing, more and more challenging intellectually its workforce. In a parallel way, the workplace cannot be the most productive and well organized without explicitly recognizing the characteristics of the existing and emerging workforce. Both the school and the workplace have to come to grips to understand each other, to influence each other, for the benefit of society.*

(De Brouker 1999:153)

#### 6.1 INTRODUCTION

The focus of this study was the role and function of cooperative education and apprenticeship training in BC as strategies designed to facilitate the transition from school to work (cf 1.4) with a view to making recommendations for practice. The aims of the study (cf 1.5) were to investigate the foundations of workplace learning with special reference to apprenticeship and cooperative education and to describe the organisation and functioning of both the latter in the school-to-work transition in Canada and in particular, BC. The development and current functioning of apprenticeship and cooperative education in BC were discussed and the main providers thereof were identified with special reference to the key role played by BCIT in this regard. In this way, the rational for and the political, economic and educational factors shaping the promotion of cooperative education as a possible alternative to apprenticeship training in BC were presented. Against this background, an empirical investigation explored the perceptions and experiences of the employers of learners with regard to the apprenticeship system and cooperative education training in BC.

This chapter concludes with a summary of the research and provides recommendations for improved practice with reference to apprenticeship and cooperative education in trade

programs in BC. Finally, the limitations of the study and areas for further research are identified.

## **6.2 OVERVIEW OF THE INVESTIGATION**

In this section, an overview of the foregoing study is presented in the light of the research problem set forth in 1.2. This study was undertaken by means of a literature research and an empirical investigation.

### **6.2.1 The literature study**

The purpose of the literature review was to provide the background for the study by reviewing current literature on workplace learning, apprenticeship and cooperation education in the education system of Canada and BC, in particular, by means of monographs, policy and legislation and research reports. Searches of the World Wide Web, libraries, telephone calls, and e-mail messages were used to obtain relevant policy documents from provincial and federal governments. Key sources were found in documentation from various provincial Ministries in Canada with a long history of involvement in apprenticeship training and cooperative education programs.

The foundations of workplace learning lie in the principles of experiential education and situated or contextual learning. The concern for graduates who are better prepared to enter the contemporary workforce has given rise to the need for well-structured and extended work experience integrated with theoretical learning not merely a brief exposure to the workplace (2.2). For centuries, the traditional strategy for combining work experience with the learning of content, procedures and skills in the trades has apprenticeship training in which part of the training occurs on the job and part in a classroom (2.2.4). This system is encountered in diverse forms and has proven benefits but it tends to be rigid system and changes have been called for in the light of the demands of a rapidly changing workplace and economy (1.1). Cooperative education is a strategy for workplace learning which provides alternatively paid supervised employment with related classroom study (2.2.5). Although both systems share commonalities, the focus in apprenticeship is on occupational training whereas in cooperative education

employment experiences are purposefully blended with educational objectives (1.1). The discussion of apprenticeship and cooperative education was presented against a comprehensive historical overview of apprenticeship and cooperative education internationally and in North America (2.3; 2.4).

Thereafter the development, organization and functioning of apprenticeship and cooperative education as strategies for school to work were described within the education system of Canada. The relationship between the provinces and territories (which are responsible for education and training) and the federal government (which is responsible for employment issues) was described with specific attention given to funding issues (2.5) as well as the role of the Canadian Association for Cooperative Education (2.5.1). The federal and provincial initiatives in support of school to work transition in the country are discussed and the key role of the Red Seal, which recognises trade qualifications across provinces, thus allowing for transferability of certifications was outlined and its limitations noted (2.6). Thereafter, the provision for apprenticeship and cooperative education by each province and territory is described in detail (2.8). Greater attention was given to the situation in BC and the work of important commissions; policy developments and legislation with regard to apprenticeship training were described (2.9.1; 2.9.2).

The developments surrounding the introduction of Bill 34 and the subsequent Industry Training Authority Act are discussed in full (2.9.3). The British Columbia Provincial Government passed Bill 34 in 2003, which announced a strategic shift in its way of dealing with apprenticeship training. This decision led to a lively political debate, generating two very distinct camps: one in favour and one not in favour of the new vision for industry training. Those in favour endorsed the promise of a more flexible, responsive and cost-effective training system. Bill 34 led to the replacement of ITAC and the establishment of the Industry Training Authority (ITA) with a nine board member appointed by the government to oversee this newly created authority and a CEO to run it. In view of the creation of ITA, it is safe to assume that its first task is to design and implement the 'new training model' for apprenticeship training (2.9.3).

Chapter three provided an overview of the provision of post-secondary education in BC (3.2). Access to apprenticeship training through three possible routes was described (3.3). An overview was given of the various public providers (3.3.1) and private providers (3.3.2) of apprenticeship training for trades in BC, thus demonstrating that BC institutions offer a diversity of apprenticeship training for trades. However, the curriculum followed by all is uniform (3.3.3). Similarly, an overview is given of public and private providers of cooperative education in BC and the structure and organisation of cooperative education (3.4). Although cooperative education forms an important part of the BC postsecondary system its provision in trades is infrequent (3.3). In this regard BCIT plays a unique role, thus the development, establishment and growth of BCIT was described in detail (3.5). The current provision of trades and apprenticeship training was described (3.6) also in light of the vision of Bill 34 for a new model of training (2.9.3). The provision of the option of cooperative education in trades offered by BCIT as well as the cooperative reporting structure was also discussed (3.7).

The literature review informed the empirical inquiry whereof an overview is given in the ensuing section.

### **6.2.2 The empirical investigation**

The design for the empirical investigation was a two-phase combination of quantitative and qualitative research approaches. The first phase involved a survey of employer's views of apprenticeship and cooperative education in BC by means of the self-administered mail out questionnaire (cf 4.4). During the development of the questionnaire a variety of questions and issues were discussed with certain employers and BCIT faculty. They were asked to provide feedback on the clarity, relevance and pertinence of the proposed questions (cf 4.4.4). Thereafter, questionnaire was piloted with 27 employers (cf 4.4.4). Once the results were examined, it was deemed necessary to make some minor changes to the final questionnaire. Changes included rearranging the sequence of some of the questions dealing with apprenticeship and the Lickert scale value assigned to questions numbers seven and thirteen were reassigned in order to

maintain consistency throughout. The questionnaire was mailed to 426 employers in British Columbia from the four cooperative apprenticeship programs selected for this study by means of cluster and systematic sampling (cf Table 4.4.2). The respondents of the questionnaire had sufficient up-to-date knowledge of both traditional and cooperative apprentices having been involved in the training of both kinds of learners during the past four years. The results were analyzed by means of Microsoft Excel, a software program that provided all the necessary tools and flexibility needed for accurate tabulation of the results (cf 4.4.6). A return rate of 30.6% has hired cooperative and apprentices and it was concluded and substantiated that this percentage was an acceptable return rate (cf 4.4.5). t

The second phase of the empirical investigation involved semi-structured interviews (4.5) conducted with a small sample of six employers selected according to stated criteria (cf 4.5.2): they had completed the questionnaire, were in senior positions and had recent experience of at least four years with employing learners from the cooperative education and the apprenticeship system. This phase of the research allowed for greater clarification of issues raised in the questionnaire as well as issues that were not or inadequately addressed by the survey. Data analysis was carried out according to the qualitative approach and the findings presented as rich data (4.5.5).

The survey showed that the majority of employers are satisfied with their experience with cooperative apprenticeship students (Table 5.10) and relatively satisfied with the conventional apprenticeship system in meeting their manpower needs (Table 5.5). The assumption is that these employers' main preoccupation is to meet their manpower needs and they are not to concerned about the type of training apprentices receive, but rather their concerns rest with level of skill knowledge, personal attitudes and work ethics displayed by the apprentices (Table 5.7).

Employers which had both placed students for work terms and hired graduates of cooperative programs had the highest average ratings of satisfaction for their relationship with BCIT (Table 5.14), performance of students and graduates on a number of skills and attitude attributes (Table 5.12). There are two possible explanations for this: employers who are satisfied with the performance of a cooperative student will retain his services

after the graduation, thus becoming both a cooperative employer and placement host (Table 5.9), while those which are dissatisfied with a student will not hire the student after graduation, will remain in the placement host sub-group, and possibly will hire from the conventional apprenticeship system pool of available apprentices (Table 5.13). Secondly, companies that have chosen to become very involved with a program have higher levels of commitment to it and will be bigger boosters for the program than those who are less involved.

Third, it can be deduced that the majority of employers became involved in cooperative education programs to meet general objectives such as short-term manpower needs, training students, hiring cost-effective employees, developing a pool of talents for future hiring, and bringing new knowledge and skills to their organization. Thus, participation in cooperative education allows employers to access a select pool of capable temporary employees for short-term and/or special projects, and for summer relief. Employers can hire highly motivated students for 16 to 22 weeks year round and assess students' suitability for future permanent employment, without a long-term commitment. In addition, cooperative gives employers the opportunity to help educate students. This means that when these students enter the world of work they are already trained and capable of accomplishing the necessary tasks. Therefore cooperative education employers, by training and teaching students create benefits for themselves in the future when these students are hired as regular employees (Table 5.9).

Fourth, employers of cooperative education students have indicated that their needs are being met on a variety of levels, although comments on the need for improved flexibility are offered in the survey results. In order to maintain employer satisfaction with cooperative education, service and flexibility must remain an integral part of cooperative practices. Student employability skills must continue to be emphasized in the educational component of cooperative education programs. The annual growth of cooperative education over the past several years has greatly increased the interaction between employers and BCIT (cf 2.3 & 2.5). This on-going interaction provides a continual forum for change resulting in increased accountability, affordability, accessibility and relevancy for employers and students.

Participants to the interview phase of the empirical research indicated that, although they were not familiar with the specific details of Bill 34, they indicated that Bill 34 would have a significant impact on apprenticeship training for years to come. They are expecting positive results from this legislation and looking forward to a new system that will allow flexibility in training methodologies and responsive enough to their needs for skilled journeypersons (cf. 5.3.1). They endorsed that it is difficult to find trades people and young motivated people to hire. They did not indicated that Bill 34 has aggravated this situation; rather their comments echoed the comments offered by the respondents in phase 1 of the survey. It is generally quite difficult to hire staff with ‘the right attitude’ (cf. 5.3.1).

They see cooperative education as strong and viable training as it produces more productive apprentices in a shorter period of time than the conventional system (cf. 5.3.3). They see cooperative as a component of the apprenticeship system rather than an end in itself. They wish to see graduates from cooperative apprenticeship programs receive higher standings when indentured into an apprenticeship agreement.

Participants indicated that they would be against a new system governed by a rigid legislative and regulatory framework with “one-size-fits-all” approach. They prefer a system with flexibility in order to meet current industry training needs or to allow the development of apprenticeship programs to fit new business and jobs. They look to have a system in place that will describe requirements based on learning outcomes or competencies rather than specific number of days in the trade (cf. 5.3.4).

### **6.3 RECOMMENDATIONS FOR PRACTICE**

In this section, attention is drawn to the range of recommendations for the provision of apprenticeship and cooperative education that suggested themselves on the basis of this study. It is proposed that these recommendations have the potential of contributing to more effective provision of training for trades in BC in future.

### **6.3.1 Modes of delivery**

Despite its strengths and recent advances, i.e. cooperative education in apprenticeable trades and youth apprenticeship in high schools, work-based training needs to continue to evolve to meet the ever-changing demands of a knowledge economy and its workforce in BC (cf.1.1.1). Even though several work-based training models and strategies have been developed and evaluated in recent years (cf 1.1.2), there is still room for even more creative and even more flexible approaches to various forms of work-based training. For example, on-line training which will bring quality training closer to home for people working outside the metropolitan areas of the province and internships which can combine institution-based and work-based training initiatives need to be tested.

### **6.3.2 Public awareness of training options**

Many young people and their parents, school counsellors and teachers, and other without first-hand experience with work-based training still tend to think of technical and trades work as socially inferior. Such views suggest values that are without merit, especially in a knowledge society, but that are still too prevalent. Enhancing public awareness of future-oriented technical and trades training opportunities and advantages needs to become a priority for sustained action rather than recruiting campaign that does not have lasting impact. There is a clear need for people to step forward to serve as champions for work-based training – to promote and increase the value accorded to technical and trade careers and other forms of work-based training. All indications are that work-based training in its various forms, has great potential for ensuring that BC will have the skilled workforce it requires to remain competitive in a global, knowledge-based world. More efficient marketing of the options available in terms of trades training, done by the providers (cf 3.2; 3.4) is critical to the long-term potential of work-based training in BC.

Indications are that there will be many employment opportunities in the trades and occupations in coming years, and it is essential that young people be aware of these opportunities for well-paying and satisfying careers. There must be improved access to trades at the high school level. The establishment of more work experience opportunities for high school students will result in the following:

- Student and public knowledge of the trades and occupations would be improved;
- The transition from school to work would improve for students pursuing a trade career; and
- Young people would graduate from high school with a head start toward a trade career.

### **6.3.3 Changes in apprenticeship training**

The literature research has indicated that apprenticeship-training system is a key component in the development of British Columbia's workforce. The empirical inquiry indicated that employers want a system that has significant industry input, focusing on training outcomes rather than processes and procedures; a system that recognizes competencies based on a combination of on-the-job training and work experience combined with formal, technical training. A re-engineering of apprenticeship training should be based on the challenge of creating an appropriate balance between two sets of goals. On the one hand, reform should lead to improved efficiency and flexibility and reduced regulation. On the other hand, it should ensure that skilled tradespersons meet high quality, appropriate standards; that access to programs and certification is improved; and that the range of programs to meet new needs is expanded. There is, in other words, a need to affirm/modify the vision for apprenticeship training in BC. That vision should focus on the creation of a dynamic training and certification system that enhances BC's economic development opportunities through quality apprenticeship training and certification opportunities.

#### **6.3.3.1 Role of ITA**

In implementing the new vision for training, ITA should also clearly define its mandate, which should be to facilitate access to institutional and on-the-job training opportunities resulting in careers as competent and qualified journeypersons who meet the labour market needs of the province (cf 2.9.3). In carrying out its mandate, ITA should develop

and administer standards and measures that assess the quality of the work experience component as well as institutional training programs leading to journey person status. ITA should maintain liaison with the public, private industry, organized labour, employer associations, training institutions, interprovincial and federal government agencies with respect to apprenticeship training issues.

ITA has committed itself to reduce government apprenticeship regulation wherever it is appropriate and safe to do so. It is recommended that ITA should work with industry (corroborated by the interview findings) in order to determine which regulations must be retained, which regulations must be removed, and which regulations require revisions. Currently, specific trade regulations govern such matters as entrance requirements to apprenticeship training, terms of apprenticeships, and compulsory and non-compulsory trades. A review of regulatory requirements could examine whether it is necessary for government to legislate in a particular area, or whether there would be less intrusive means of assuring quality training. ITA should work with industry to redevelop the criteria for designation as a compulsory trade. This should be followed by a review of trades and redesign where appropriate. The new criteria for designation as a compulsory certification trade could be centered on a risk analysis approach. This approach would gauge the probability and severity of adverse impacts on public safety, worker safety, and the environment associated with the materials, methods, or technology involved in the trade.

### **6.3.3.2 Role of industry**

The role of industry should be revisited in order to increase its involvement in the apprenticeship system, i.e., hiring more would-be apprentices, assisting in curriculum development, promoting trades careers, etc. Industry is the main partner in apprenticeship training. One of the key issues facing this partnership is the perception by industry of their role. Industry must play a leadership role in promoting the trades and occupations of British Columbians. Employers should be encouraged to participate in school career counseling to provide information on the types of work they do and the

skills and training needed to work in their trades or occupations, so that potential apprentices can make informed decisions about career possibilities.

Moreover, industry should make a greater contribution to advising ITA about curriculum design and credentialing. A number of concerns have been raised over the years regarding the effectiveness of Program Advisory Committees ranging from been too narrowly focused and too ‘parochial’ in their approach to curriculum development and credentialing (cf 2.9; interview findings 5.3.1; 5.3.2). A redesign and new role for Programme Advisory Committees may improve responsiveness to the changing industry environment and help keep training information current. This redesign should consider the establishment of a trade committee or ‘super committee’ to oversee the needs of specific industrial sectors, i.e. manufacturing. This committee could then present its recommendations to ITA who will only act in an advisory role. Thus the need of the sector rather than the need of a specific geographic area would be addressed.

Thus, a key concern of those responsible for managing British Columbia’s labour market is that the training system is responsive to labour demand developments and that it produces an adequate supply of well trained journeypersons in a cost-effective and timely manner. Much stronger and broader commitments from employers to active participation in apprenticeship training and cooperative education are necessary if work-based training and development is to achieve its potential. Employers need to be assured that the benefits of participation significantly outweigh the costs.

#### **6.3.4 Changes in cooperative education**

The literature and empirical investigation suggest that the cooperative model can be an effective vehicle for training apprentices within a newly structured apprenticeship system. However a series of conditions should be implemented to realise this goal. The following stakeholders should be involved in the endeavour: the Provincial Government, the ITA, Trade Advisory Committees, the employers and BCIT as well as other providers. The recommendations in this regard are as follows:

#### **6.3.4.1 Greater diversity in cooperative options**

The option of establishing cooperative programs should continue to be open to industry and, through industry, to providers. Much of the support expressed by the employers can be attributed to their desire for more options in training. It has been established that the traditional apprenticeship model is not necessarily the only approach that is most appropriate because of its rigidity and time-in-trade requirements in order to become a qualified tradesperson. Thus, if it can be demonstrated the cooperative model education in apprenticeable trades is meeting its goals, i.e., graduating highly capable technicians, it is possible that many employers would support forms of the cooperative model.

#### **6.3.4.2 Role of Program Advisory committees and providers**

Primary responsibility for the design of programs and applying to the ITA for accreditation should lie with Program Advisory Committees in consultation with BCIT and other training institutions as applicable. This will reduce the temptation that a cookie cutter approach is taken to apply the cooperative structure to other trades in order to maximize tuition fee revenues without taking into consideration the needs of industry and students. As such, the process would be product driven rather than industry and student driven. Such an approach would negate a primary advantage of the cooperative model; namely that it allows industry an opportunity to play a key role in the design of the program. For industry to have meaningful input, BCIT and other providers should not pre-determine the structure of the programs; rather BCIT and other providers must be open to a variety of options including versions of cooperative program of different length, content, and structure, or even no cooperative at all. When industry is given a major voice, they take ownership of the program and, therefore, are much more likely to host students, hire graduates, and strongly encourage other employers to do the same.

#### **6.3.4.3 Viability of programmes**

The fundamental pre-requisite for a successful program is that there is a need for the program. Cooperative model should not be used to rejuvenate programs that are characterized by old irrelevant curriculum and low enrolment figures. By the same

token, regardless of how well a program is structured, it cannot be successful if the availability of well-trained workers is not a concern in the industry. Employers are generally very supportive of training and expanding the pool of potential employees. However, as some programs have found out, there can be a big difference between an employer supporting development of a program versus committing to serve as a placement host or to hire graduates.

Therefore, cooperative programs must continue to evolve and develop in response to industry needs. Simply because a program has been successful to date does not mean that a given structure or approach will continue to be successful. Of particular concern is the demand for students. It is important to obtain regular input from industry on changes in the need for workers and to carefully track the employment outcomes of graduates. As demand changes over time, it is entirely possible that programs may, from time to time, need to reduce class sizes or run courses less frequently.

#### **6.3.4.4 Role of instructors**

Instructors of programs that are considered for the cooperative model should have a greater role in the needs assessment phase of the process. There are a number of advantages in this. In particular, this involvement enables the instructors to expand his or her own personal contacts in the industry and to develop a better understanding of industry needs.

#### **6.3.4.5 Recruitment of effective students**

The quality of students is a key determinant of the effectiveness of a program. It is important to have a formal selection process for students, as it is equally important to have industry's involvement in this process. The facts that students are selected, rather than simply enrolled on a first come, first served basis, foster greater commitment to the program. Perhaps more than any other aspect, the involvement of industry in the selection process encourages them to take ownership in the program and in the students.

## 6.4 RECOMMENDATIONS FOR FUTURE RESEARCH

The findings of the study on the role and function of apprenticeship and cooperative education in BC suggest the following priority areas in the search for further knowledge.

In order to address needs in the area of work based programmes from the perspective of learners, it would be useful to undertake a province-wide study in order to examine the employment and learning experiences and satisfaction of former cooperative apprentice students who were enrolled in trades programs. A study such as this should address the following questions:

- What types of goals may be realistically achieved by cooperative education (or by other forms of work-based training) and to what extent are these goals context-specific?
- What are the essential features of learning within experience that can be used to significantly enhance work-based learning during cooperative education and other work-based experiences provided by institutions, schools and industry?
- What features of work-based learning enhance the inclusion of and meet the learning needs of exceptional students?
- What features of work-based learning enhance the inclusion of and meet the learning needs of aboriginal students and students from under-represented groups?
- How can the objectives of work-based learning best be assessed, and how can apprenticeship and cooperative education trades programs be evaluated for their overall effectiveness
- What are the characteristics of former co-op students?
- Are minority groups under-represented among former cooperative students compared to former non-cooperative students?

- What are the employment outcomes of former cooperative students?
- What are the continuing education outcomes of former cooperative students?

## **6.5 LIMITATIONS OF THE STUDY**

The limitations of the empirical investigation were as follows. The study focused principally on four specific trade areas only where cooperative education models have been introduced and operate in contrast with the traditional apprenticeship system. The study was limited to a certain area in the province of British Columbia, i.e., the Greater Vancouver Regional District and Fraser Valley areas. Respondents were hosts of BCIT's cooperative programs and not that of other providers. The study was conducted during the period 2002-2004.

## **6.6 IN CONCLUSION**

During the past twenty years, educators, learners, industry and government have debated effective approaches for the transition from school to work and in this endeavour the role of work-based learning is valuable. Most training in vocational education offer some kind of internship or apprenticeship and work practice during which effective learning occurs as a result of authentic involvement in workplace activities. In this apprenticeship is a time-honoured strategy to combine full-time on the job training with a formal related academic and occupational education, also in the Canadian context. However, newer innovations such as cooperative education should also be considered as means whereby more effective forms of apprenticeship training can be realised. It is in the light of this that this study has been completed.