

## **CHAPTER 3**

### **PROVISION FOR SCHOOL TO WORK TRANSITION IN BRITISH COLUMBIA**

#### **3.1 INTRODUCTION**

This chapter begins with an overview of post-secondary education in BC. Thereafter, it will outline the main providers of apprenticeship training and coop in the province. It will then examine the origins and evolution of the key provider: the New BCIT. This institution had its origins in the British Columbia Vocational School (BCVS) and the British Columbia Institute of Technology (BCIT), which were amalgamated into one institution and eventually established as the New BCIT in 1986. It will highlight the academic and financial reasons behind the introduction of cooperative education at BCIT, and, after the merger, the introduction of cooperative education in some of the apprenticeable trades. BCIT is the main focus of this chapter for the following reasons: It is the only institute of technology in the province; it has a province wide mandate to recruit students into its programs; it provides the majority of trades training programs; it was the first institution in BC to introduce the cooperative component into apprenticeable trades; and it presently offers the highest number of cooperative apprenticeships in the province. The chapter concludes with an examination of the present cooperative education department at BCIT, its programs in both technology and trades subjects.

#### **3.2 POST-SECONDARY EDUCATION IN BRITISH COLUMBIA**

British Columbia's postsecondary education system has expanded significantly since its beginnings early in the 20th century. The University of British Columbia, officially incorporated in 1908, operated as the province's only public university until 1963. That year, the provincial legislature passed an act to establish Simon Fraser University, which opened in 1965. The University of Victoria was founded in 1903, as Victoria College, an affiliate of McGill University in Montreal. The University received degree-granting status and moved to its Gordon Head campus in 1963 (CICIC 2004:2).

During the past 40 years, the system has seen further developments to increase access to postsecondary education. The British Columbia Institute of Technology (BCIT) was founded in 1964. Later, community colleges were established throughout the province. In 1978, the Open Learning Institute, the Justice Institute, and the Emily Carr Institute of Art and Design (ECIAD) were established. In 1994, the Pacific Marine Training Institute became a campus of BCIT. To increase access to postsecondary education, the province established the University of Northern British Columbia in 1990 and, in 1995, passed legislation to establish Royal Roads University (RRU). Also in 1995, the government enabled university colleges, BCIT and ECIAD, to grant undergraduate degrees independently. Two Aboriginal education institutes — the Nicola Valley Institute of Technology and the Institute of Indigenous Government — were designated as public postsecondary institutions in 1995. RRU officially opened in 1996. In 2002, Simon Fraser University assumed responsibility for the students and facilities of the former Technical University of British Columbia (CICIC 2004:2).

Currently, British Columbia's public post-secondary education system is one of the most comprehensive and diversified in the world. According to the Canadian Information Centre for International Credentials (CICIC), postsecondary education in British Columbia is delivered by 27 differentiated, publicly funded institutions. These include four traditional universities, one specialized university, five university colleges, eleven colleges, three provincial institutes, two Aboriginal institutes, and the British Columbia Open University and Open College Canadian Information (CICIC, 2004:1).

The Ministry of Advanced Education (AVED) develops educational, professional and economic opportunities for British Columbia's learners by providing and supporting a wide range of postsecondary programs and encouraging relationships between educational institutions, business, and industry (CICIC 2004:2).

There are more than 250 accredited private postsecondary institutions in British Columbia providing a range of education choices available to students. These institutions offer a diverse range of career training options from information technology, business administration, and hospitality services to film production, flight training, and horticulture studies. The Private Post Secondary Education Commission of British

Columbia (PPSEC) currently oversees the compulsory registration and voluntary accreditation of private postsecondary institutions in the province. Currently, the private postsecondary education sector consists of three private academic degree-granting institutions, nine theological colleges, and a wide range of career training institutions (CICIC, 2004:1).

The Industry Training Authority Act was passed to establish a new authority to oversee implementation of British Columbia's new industry training system and to ensure that it is effective and efficient and that it meets the needs of employers and trainees. The nine-member Industry Training Authority Board has now been appointed to develop policy and regulations and to implement and govern the new industry-training model (cf 2.9.4).

### **3.3 APPRENTICESHIP TRAINING IN BC**

The BC public secondary and post-secondary systems offer many educational opportunities that support BC's apprenticeship programs. Access to apprenticeship can be happen in one of the following three ways (Education Planner, 2004):

- Access for secondary school student: Secondary School Apprenticeship (SSA) is a standard apprenticeship program that combines workplace-based training with specific technical training in an institutional setting. While in secondary school, students accumulate 480 hours of workplace-based training that applies towards the requirements for an apprenticeship;
- Access for young adults and mature learners: learners arrange to take a pre-apprenticeship program (sometimes called Entry Level Trades Training – ELTT) from one of BC post-secondary institutions. Pre-apprenticeship programs do not guarantee access to a formal apprenticeship, but they provide learners with the skills necessary for workplace-based training. In addition, pre-apprenticeship programs may provide credit towards the post-secondary portion of the apprenticeship.
- Access for apprentices: individual institutions offer post-secondary course work for apprenticeship.

### **3.3.1 Public providers of apprenticeship training in BC**

University College of the Cariboo was created in 1970 as a community college for the delivery of career-technical and two-year academic programs during the initial expansion of post-secondary education in British Columbia. In the spring of 1974, Cariboo College and Kamloops Vocational School melded in order to provide training for these occupations, which were essentials to a growing economy. The Trades and Technology Centre, completed in 1997, offers a wide variety of trades, career and technology programs designed to prepare people for entry into business and industry. Specifically, trades' training is offered in: carpentry, electrical, joinery/cabinet making, mechanical trades (automotive, heavy duty, etc), piping and welding (University College of the Cariboo 2004:1)

Camosun College is a dynamic and innovative community college serving the educational and training needs of the people of Victoria, southern Vancouver Island, the Gulf Islands and beyond. Camosun has two main campuses. The Lansdowne campus and the Interurban campus serve over 7,800 credit students, 10,000 non-credit students and 560 international students each year (Camosun College, 2004). Camosun College offers trades apprenticeship training in: automotive, auto body repairs/refinishing, carpentry, cook training, electric, piping, plumbing, sheet metal, and welding.

The College of New Caledonia, located in BC's Central Interior, has provided training in technology and trades programs since 1962. The College catchment area covers 12% of the province; thus it can actively recruit students from a population base of 145,000 residents. Presently the College offers a full range of career, technical, vocational, and university credit programming. Average annual enrollment is approximately 5,000 students (College of New Caledonia, 2004).

Okanagan University College (OUC) serves the needs of the Okanagan Region and the southern interior of British Columbia. The College offers technology, trades and university programs. Trades training focus on automotive, carpentry, culinary arts, electrician, and welding. No cooperative option is offered in these trades (OUC, 2004).

Vancouver Community College (VCC), established in 1965, currently offers more than 60 programs designed to train students for a career. VCC offers apprenticeship training in transportation trades programs, i.e. automotive and commercial transport, plus trades training in culinary arts, diesel engine and heavy duty mechanic. No cooperative is offered in the trades subjects (VCC 2004).

North Island College (NIC) opened its doors in 1975, and its facilities include four campuses and four centres serving a population of 160,000 and a geographic region of 80,000 square kilometers with a student enrollment of 4,800 students. NIC offers over 70 credit programs and 730 individual courses. Trades training is available in: aircraft maintenance, automotive, electrical, plumbing, welding and heavy duty & commercial transport mechanic (NIC, 2003). Cooperative education option is available only the business, tourism and computer science programs.

In the 1960s and 1970s, British Columbia was rapidly opening up the northern frontier. In 1966, the BC Vocational School (BCVS) opened in Dawson Creek and began to offer numerous vocational training programs. In 1970 we see the official opening of Northern Light College (NLC) born as result of the amalgamation of BCVS and the new community colleges opening up in the region. Presently, NLC offers trades training in aircraft maintenance, automotive technician, carpentry, commercial transport technician, electrical, heavy duty and commercial transport, millwright, piping, and welding (NLC, 2004).

Kwantlen, established in the late 1970s, became a university college with degree granting status in 1995 and now has 10 bachelor's degree programs, with a traditional university Bachelor of Arts degree starting in September 2005. Kwantlen offers apprenticeship programs in automotive repair, horticulture, bricklaying and cement masonry, millwright, outdoor power equipment and industrial warehousing. Cooperative education is available only in marketing, computer and information technologies and business administration (Kwantlen, 2004).

Malaspina is a comprehensive university-college, which has played an active role in the cultural and economic life of the Central Vancouver Island region since 1969. Vocational programs were added in 1971 when Malaspina melded with the BC Vocational School. The roots of vocational training in the community date back to 1936 when the first vocational training institution opened, offering programs in building construction and automotive mechanics (Malaspina, 2004). Today, trades training is offered in a variety of subjects ranging from auto service technician to heavy-duty commercial transport mechanics.

The College of the Rockies (COTR), established in 1975, is located in the East Kootney region of BC. The College offers a comprehensive mix of vocational, trades, career technical and academic programs and services. Its Trades Department offers apprenticeship training in automotive, carpentry, cooking, heavy-duty commercial transport, millwright, and welding (Education Planner, 2004).

University College of the Fraser Valley (UCFV) UCFV -- then Fraser Valley College -- was established in 1974. University-college status was granted in 1991, after another round of community support. After receiving university-college status in 1991, the first four-year bachelor's degree programs, in Arts, Business Administration, and Criminal Justice, started in September 1992. In all, UCFV now offers eleven degrees, and over 60 diploma and certificate programs. Trades training is limited to auto service technician, carpentry, electrical, and dairy production technician (UCFV, 2004).

Selkirk has been called one of the best-kept secrets in the province. Nestled in the Selkirk Mountains in the southeast corner of British Columbia, it teaches a student population of almost 200 every year – everything from university Arts & Science courses, trades, nursing, fibre arts and aviation to forestry, ski hill management and digital media. Apprenticeship training at the college includes electrical, fine woodworking, mechanics, millwright, process operator, and welding (Selkirk, 2004).

### **3.3.2 Private providers of apprenticeship training**

Apprenticeship education can be arranged through private institutions as well. There are also a number of private training institutions in BC offering programs that satisfy the technical training requirements of various apprenticeships. The following private trainers currently receive funding from the Industry Training Authority to provide technical training in the trades noted (ITA, 2004:1)

- Electrical Industry Training Institute - Powerline & Utility Arborist
- Funeral Service Association of BC - Embalmer & Funeral Director
- Graphic Arts Training Institute of BC - Various Graphic Arts Trades
- Joint Apprentice Refrigeration Trade School - Refrigeration
- Operating Engineers Training Site - Mobile Crane
- Pacific Vocational College - Plumbing & Sprinklerfitting
- D.C. 38 Joint Trade Society - Painting
- Quadrant Marine Institute - Marine Repair Technician
- RCABC Roofing Institute - Roofing
- Sheet Metal Workers Training Centre - Sheet Metal
- Trowel Trades Training Association - Tilessetting

There are currently 150 trades and industry career choices.

### **3.3.3 Conclusions on the provision of apprenticeship training**

The foregoing discussion indicates that British Columbia institutions offer a large variety of apprenticeship training programs to its residents and foreign students. The commonality amongst the programs is the fact that curricula are the same as the Ministry of Advanced Education and Training validated them all. Interestingly, with the exception of BCIT, cooperative option opportunities in trades programs are infrequent. Thus, BCIT has taken a leadership role in the introduction of cooperative education in apprenticeable trades. The establishment of BCIT, its role in apprenticeship training and cooperative education is covered later on in this chapter (cf. par 3.5).

### **3.4 COOPERATIVE EDUCATION TRAINING IN BRITISH COLUMBIA**

The evolution of cooperative education and its applications across Canada were presented in paragraph 2.4, Chapter 2. This section addresses the development and provision of coop education in BC.

#### **3.4.1 Providers of cooperative education**

In British Columbia cooperative education was initially developed in the university system and can now be found in one form or another in almost every type of university or college program offered in British Columbia. Cooperative has been proven to be a very powerful model for the delivery of a variety of educational programs. The BC Ministry of Advanced Education and Training (2001:2) reported that in 1992 there were 92 coop programs offered in BC post secondary institutions. There are currently 187 programs available to students in a variety of academic programs ranging from post-graduate degrees to two-year diploma programs and trades programs such as the auto collision repair and refinishing program. This has resulted in a spectacular growth with a total of 7200 placements in 95/96 (ACE 2003:1)

The two organizations that deal with issues of accreditation for cooperative education programs are Canadian Association for Cooperative Education (CAFCE) and the Association for Cooperative Education (ACE), a provincial organization that accepted Yukon College as well in 1992. Both organizations deal with standards for cooperative programs and accreditation issues that have a direct impact on the credibility of the programs, and also have implications for program funding by both federal and provincial bodies (CAFCE 2002:4).

In British Columbia and the Yukon a student can find a cooperative program in virtually every field except law, medicine, nursing and theology. Cooperative programs range in length from two to five years, and are available at four universities, five university colleges, two institutes of technology, and twelve colleges. Because most colleges and universities in BC have sixteen-week terms, with two or three such terms a year, there is



considerable uniformity in cooperative patterns across the province. Most are integrated thin sandwich courses, with students alternating a semester of classroom study with a semester of full-time paid work (ACE 2003:1).

The majority of existing university/college programs are at the undergraduate level, though Simon Fraser and the University of Victoria have two programs at the Master's level, and Capilano College offers a program that requires an undergraduate degree for admittance. Table 3.1 summarizes, by program areas, the cooperative programs presently available to students in BC

**Table 3.1  
Program areas**

Program Area	Colleges/Institutes	Universities
Administration/Business	13	5
Arts/Fine Arts	2	5
Computing	13	5
Engineering	5	3
Environmental and Natural Resources	11	4
Science	5	5
Technologies ( <i>Engineering, Electronics, Drafting and related programs</i> )	8	1
Trades	8	0
Graduate Programs	1	2

**Source: Association for Cooperative Education (ACE) - 2003  
Program statistics for 2002**

A cursory examination of the placement statistics provided annually by BC's post-secondary institutions indicates that only few colleges offer cooperative education in some of the apprenticeable trades. Table 3.2 offers a view of the trades cooperative programs available in BC

**Table 3.2  
Trades cooperative programs**

Program Areas	College/Institute
Automotive Service Technician	2
Autobody Repair/Refinishing	3
Commercial Transport Technician	1
Heating ventilation & Air Conditioning Technician	1
Heavy Duty Mechanic	1
Industrial Maintenance Mechanic Technician	1
Machinist	2
Tool & Die Technician	1

**Source: Association for Cooperative Education (ACE) - 2003  
Placement statistics for 2002**

Identifying all the factors that influenced the introduction of cooperative education into the trades in British Columbia is a very complex task. A more comprehensive examination of the factors will be offered in Chapter III (cf. 3.6) when dealing with the introduction of cooperative in trades programs at BCIT. However, it is clear that, in general lines, three of the main influences were the rapid increase in technological change starting in the early eighties, the fluctuations in provincial economy, and the need for colleges and BCIT to increase revenues.

### **3.4.2 Cooperative education structure and organization**

There are several ways of structuring a cooperative education program. A mandatory cooperative program is one in which all students accepted into a particular course of study have to participate. In the optional mode, both cooperative and regular programs are offered parallel to each other, and students have the choice of electing the type of education that best fits their needs. The selective cooperative program is a variation of the optional mode whereby students are admitted into cooperative based on a set of selection criteria (CAFCE 2002:12).

In British Columbia, a few of the programs are mandatory – students must successfully complete work terms in order to graduate. When a program is not mandatory, it is more expensive than traditional programs. By the same token, when a program is mandatory, the college/institute can have multiple intakes for the same program (multiple intake streams). Whether enrolled in a mandatory or selective cooperative program, students may gain credit for work experience, based on evaluations of the employer and cooperative coordinator, and a final written report submitted by the students. All students who successfully complete the cooperative program receive a cooperative designation on their certificate, diploma or degree (CAFCE 2002:13).

There are a number of organizational models and reporting relationships that are found in BC's post-secondary institutions for the administration of cooperative education. A centralized model situates all cooperative operations and personnel in a single location with staff reporting to a Cooperative Director who, in turn, may report to a Dean or to the Vice President level (Academic or Administrative). A decentralized model places cooperative offices in the relevant academic department. Cooperative staff reports to the head of the academic unit in which they are located. A centralized/decentralized model involves a centralized management to which the decentralized offices report (CAFCE 2002: Appendix 1). It must be pointed out that the culture and support within each institution determine, to a certain extent, the structure and reporting relationship.

Specific responsibility of cooperative staff may vary from institution to institution, and from program to program, with their main responsibility been with finding appropriate work assignments, counseling students with regard to assignment possibilities, making sure students have jobs, visiting students at the job sites, and other related tasks. A small percentage of coordinators have some academic duties assigned to them as well. These duties are related to workshops in resume writing and job search techniques and the marking of cooperative work term reports and credit award (CAFCE 2002: Appendix 3).

According to Wilson (1987:35), like many educational practices, the reasons for awarding cooperative credit preceded the rationale. The reasons are largely economic: an institution's operating income is directly tied to the total student count (tabulated from

course registrations and average daily attendance). Originally, students on cooperative were not being counted because they did not meet the operational definition of student. Thus in British Columbia institutions were not receiving provincial government tuition allocations for their cooperatives during their work periods. This, of course, upset the budget forecast and cash flow, even though in the long run there was no tuition deficiency. Nonetheless, it became a source of irritation and an issue that impacted adversely of senior management's support for cooperative. The solution was to ensure student status for cooperatives during their work terms. The most direct means was to award credit. According to the Ministry of Advance Education (AVED 2002:9), all BC's post secondary institutions charge a cooperative fee and grant credits. Table 3.3 captures the cooperative fee of each post-secondary institution in BC

**Table 3.3**  
**Cooperative fees for 2001-02**

Institution	Cooperative Fee	Institution	Cooperative Fee
BCIT	\$419.00	North Island	\$237.00
Camosun	\$276.95	Northern Lights	N/A
Capilano	\$127.50	Northwest	\$237.72
UC Cariboo	\$250.00	Okanagan UC	\$125.00
Douglas	\$477.83	Rockies	\$281.44
UC Fraser Valley	\$332 (average)	Selkirk	\$250.00
Kwantleen	\$405.00	Vancouver CC	-
Langara	\$298.55	SFU	\$310.00
Malaspina	\$194.00	UBC	\$226.75
New Caledonia	\$249.00	UNBC	\$301.00
Nicola Valley IT	N/A	Uvic	\$324.00

**Source: Ministry of Advanced Education - Cooperative Education Fund of British Columbia - 2002**

A changing trend is the rise of program fees for cooperative education programs. In 1996/97, two institutions charged \$50.00 application fees. In 1999/00, seven institutions

were charging program fees along with a fee per placement (AVED 2002:9). See Table 3.4 for details.

**Table 3.4  
Program fees for 2001-02**

Institution	Program Fee	Explanation
BCIT	\$301 (average)	Trades programs semester fee
Capilano	\$525.25	Program fee per program
UC Cariboo	\$50.	Application processing fee
UC Fraser Valley	\$50 (average)	Lower & upper level program fee
Nicola Valley IT	\$250	No explanation submitted
Okanagan UC	\$50	Application fee
UBC	\$75	Pre-employment workshop fee

**Source: Ministry of Advanced Education  
Cooperative Education Fund of British Columbia – 2002**

A particular significant outcome of giving credit has been the direct involvement of the teaching faculty in the cooperative process. During the first few years of cooperative in BC, it was not uncommon for the cooperative education staff to be empowered to give credit. This, however, raised considerable concern and discontent among faculty and hence for the most part was quickly abandoned in favor of involving faculty directly in the process (Ryder, 1987:10-11).

It should be pointed out that this realignment of responsibilities was not based only on senior management' desire to get faculty involvement in cooperative. It was also based on economic consideration: the moment cooperative education staff was not empowered with awarding credit, they were reclassified to the level of 'support staff' rather than faculty and consequently their salaries and benefits were reduced. This allowed the administration to offer the same level of placement services at a reduced cost. Informal conversations with various cooperative directors across the province seem to indicate that only few cooperative practitioners are still classified and enjoy the benefit of faculty-status (personal communications with cooperative colleagues).

In view of this realignment of responsibilities, it can be asked if the role of the coordinator is that of administrator or educator. Does the coordinator actively facilitate the educational development of the student by determining his/her degree of prior learning and, by having good information regarding the workplace, place the student in the best learning environment for each work term, or is it just a question of 'a job's, a job' and the endeavour to get as many students into work terms as possible? In BC, and across Canada, most programs fall into the latter category as management focuses on increasing the placements per year numbers at the expense of quality. Coop programs are slowly becoming very expensive versions of student employment centers.

To sum up the opinions of the writer, the role of the coordinator is determined by the institution. If it wishes the coordinator to be an administrative function, then that is what it becomes. If it wishes it to be an academic-professional function, then that is what it could be.

### **3.5 THE DEVELOPMENT OF BCIT**

#### **3.5.1 The British Columbia Vocational School – Burnaby (1960)**

The first provincial vocational school was created in 1936. (Vancouver School trustees established a technical school in the 1920s, but it was a local, rather than a provincial initiative). The 1936 British Columbia Vocational School (BCVS) – sometimes called the Dominion-Provincial Vocational School – was a depression-era strategy, funded in part by the federal government. Initially, the school consisted of two training centres – one, in an old livery stable in Nanaimo; another, in a garage in Burnaby (Selman 1976: 3). During World War Two, the facilities were shared by the federal government and in the case of Nanaimo, workshops and classrooms were relocated to an army camp in Harewood. After the war, the vocational schools were used for rehabilitation and civilian re-training schemes. Funding was provided by various jurisdictions, including federal government departments (Labour, Education) with municipal and local school boards sharing some of the operating costs (Selman 1976: 6).

In the mid-1950s, the provincial government acquired the facilities outright and the Technical Branch of the Department of Education managed them. By that time the two centres offered an extensive array of courses. The “Trades and Technical Institute, Burnaby” (as the Burnaby centre was styled) offered classes in welding, bricklaying, sheet metal, plumbing, steam-fitting, carpentry, air frame mechanics and boat building (BC Ministry of Education, Science and Technology 1977:8). So successful were the programs, that the federal government contracted BC vocational instructors to establish similar programs in other provinces.

Mechanics, welders, and bulldozer operators trained in these schools played a major role in building the highways, railways, hydro-electric projects, mines and resource towns in British Columbia during these prosperous years; draftsmen, carpenters, and plasterers from the two provincial vocational schools helped to construct new schools for the first wave of British Columbia’s baby boom generation.

In 1958, because of the urgent need for more vocational training, the “Burnaby Campus” was relocated temporarily at the Pacific National Exhibition grounds. Some of the first classes were held in the cow barns, which students and staff had to vacate during the exhibition, usually the last ten days in August. In the spring of 1959, the provincial government announced plans to establish a permanent vocational school at the present site in Burnaby. Eight prefabricated buildings, including four workshops and four classroom blocks, were erected later that year and the school was officially open on 29 June, 1960, it was named the British Columbia Vocational School (BCVS) (BC Ministry of Education, Science & Technology 1979:4)

By the spring of 1961, the school could boast a day school enrolment of 1,799 and an additional enrolment of 2,192 in the night school program. Program offering included carpentry, plumbing, sheet metal, electrical, iron working, boat building, plastering, electronics and aeronautics. However, with construction of the Peace River crude oil pipeline in full swing, the most popular course was welding. In fact the demand for welding instruction was so high, that a graveyard shift that ran from 11 p.m. to 7 a.m. had

to be put on in the early 1960's (BC Ministry of Education, Science & Technology 1979:4).

As new and additional space became available at the site, considerable program expansion took place. New pre-employment programs such as structural and mechanical drafting, secretarial commercial general, court reporting, and service attendant were added. In December of 1966 the sixteenth building on the site was completed and immediately occupied by the trowel trades, painting and decorating, and sign painting, along with a program entitled industrial instrumentation (BC Ministry of Education, Science & Technology 1979:4).

By the end of the seventies, the demand for trades training was out-stripping the supply. To keep up with the demand, BCVS began year-round operation, and plans for expansion were set in motion. During the 1970's, the physical plant grew steadily with the acquisition of the old Pacific Western Airlines maintenance hangar at Vancouver International Airport for aeronautic training and with the construction of the \$4.8 million J.W. Inglis Building in 1977. Eventually, due to a very large increase in student registrations, an additional site at Burnaby Lake (Pit Par) was acquired for the electrical, ironworkers, boilermakers, mechanical maintenance and repair, appliance servicing, and machinist programs (BC Ministry of Education, Science & Technology 1979:5).

Up to 1978, BCVS was administered directly by the provincial government. BCVS, established mainly as an outcome of the apprenticeship overflow classes at the Vancouver Vocational Institute, remained the institute that offered the greatest number of pre-apprenticeship training programs. The two campuses of the institute provided 44 percent of all pre-apprenticeship programs in the province in the fiscal year 1978-79. The sponsorship of these students was divided between Canada Employment Insurance Commission (CEIC) and the Ministry of Labour, 35.9 percent and 64.00 percent respectively (BC Ministry of Education, Science & Technology 1979:6). However, as the school grew, the arm's administration of the day-to-day operations became impractical for the provincial government to execute. Thus, on April 1 1978, BCVS and the Haney Educational Centre were amalgamated to form the Pacific Vocational Institute



(PVI) (Dunae 2001:4). As such, PVI became a crown corporation with authority to operate autonomously from the provincial government and the new institution continued with providing pre-apprenticeship and apprenticeship training until its merger into the New BCIT.

### **3.5.2 The need for an institute of technology in BC**

The Technical and Vocational Training Assistance Act of 1960 (Canada Parliament) provided funds for new technical and vocational schools across the country. In British Columbia the concept was eagerly embraced and even before official passage of the act, a task force began planning the new institute of technology. It was an innovative enactment of legislation, and when implemented across Canada, did involve the expenditure of more than one billion dollars and did provide 375,000 student places in new post-secondary technical institutes and vocational schools across the country. Under the terms of these agreements the federal government agreed to contribute 75% of the capital costs of building and equipment for these schools, and to pay 50% of the operating costs (Carey 1975:6). The objective of the federal government at all times was to get these schools built and the training underway. The BC government was quick to see the benefit of this legislation and desire to take advantage of this favorable act.

Before British Columbia could take full advantage of this new legislation, it was important to determine whether an institute of technology was indeed needed, and if so, what technologies this potential institute was going to offer. This task required a thorough investigation. In 1959, the Ministry of Education authorized a survey to be undertaken to determine the kinds and number of technicians required to meet the present and future needs of the province. Mr. J.S. White, who occupied the position of Director of Technical and Vocational Education for the province, conducted the survey (White 1969:1). It was evident that the need for specialized technical education was at hand. Thus, the survey concerned with the nature of the work-force in the province, the kinds of business, industry, medical, etc., research work which would have to be carried out by specially trained technicians to enable manpower development to keep pace with the economic development.

The results of the survey were handed to the Minister of Education who in turn turned these findings over to the Royal Commission on Education. They in turn acknowledged and supported the findings of the survey and recommended that an Institute of Technology be commenced at the earliest possible date. The survey further recommended advanced technological training in the major fields of engineering, applied science, mechanical, electrical/electronic, chemical, instrumentation and metallurgical fields. Again, advanced training in the field of business administration, accounting and merchandising was recommended. Further, the advanced training in medical laboratory, x-ray and radiological fields should be offered in cooperation with programs already in existence at major provincial hospitals. Lastly, that a programme for the training of all-round business administrators for one of the largest industry tourism be included (White 1969:2).

General enthusiasm greeted the publication of the report. Most important, approval came from the Chant Royal Commission on Education (1960) by recommending the establishment of an Institute of Advanced Technology. Furthermore, the Chant Commission, named after the chair Dr Chant, stated that such an institute must provide a high standard of education along with courses designed to train competence in an advanced technological field but not duplicate university courses (BC Ministry of Labour 1960:13). The need was to produce technicians who with additional practical experience could rapidly assume responsible, supervisory or managerial positions in business or industry and advance to the more responsible positions of graduate technologists, and would provide liaison between the professional and the craftsman.

The MacDonald report on higher education in BC also favored the establishment of an Institute of Technology in BC. The recommendation of the MacDonald Commission was set out in these words (White 1969:13):

The kind of programs needed to meet the varied demands for higher education are themselves numerous. They include the following:

- One to two years of purely technical training beyond Grade XII;

- Combination of technical training to arts and sciences over a two-year program; and,
  - The first of two years of a four-year college curriculum either as a terminal experience or as a preparation for advancement for able students
- all of these programs are needed in British Columbia.

Early in 1961, the provincial government announced the construction of an institute of technology. This would be built on a large block of land in Burnaby comprising of 159 acres; part of this was occupied by BCVS. The federal government approved the location and construction started with an initial building of 172,00 square feet at a cost of \$3,450,000 (Carey 1975:15). Construction was completed in 1964 and the first students started classes that fall. Tuition was \$150 for the year, and the school calendar advised that accommodations were available in the vicinity for approximately \$90 a month. Students were required to dress in "a manner in keeping with the dignity of the institute" which meant shirts and ties for men, and "appropriate attire" for the women (BCIT - Registrar 1964:5). Classes commenced at BCIT in September of 1964 to seventeen separate technologies with an enrollment of 644 students and a teaching staff of 81 teachers. Dr L.R. Peterson, then Minister of Labour and Education wrote the following comment re the B.C Institute of Technology in its first calendar (Carey 1975:3)

The aim of the British Columbia Institute of Technology will be to fit the latent skills and technical capabilities of our young people to the present and future technological needs of our growing province, and indeed of our nation. Given the sure direction of the kind we have thus far received, faith in the resources of our youth and the courage and determination to face the challenges of tomorrow, I foresee a serviceable and exciting future for this our latest venture.

BCIT's first decade was one of unconditional support by industry and business. During the initial years of operation it was not uncommon for entire classes of BCIT students to have jobs prior to graduation. By 1974, the day school enrollment was 3,079 and almost 6,000 students were attending night classes. Another 3,850 students were enrolled in the

Industry Services division, bringing the total 1974 student enrollment to 12,889 (BCIT 1986: 3).

### **3.5.3 The establishment and growth of the BCIT**

In 1986, PVI and BCIT, which had coexisted as neighbours on the same site for 22 years, were merged to form a new institution. The merger laid the foundation for the institute to expand its role as the leading provider of technology and trades training in the province. The mandate of the “new” BCIT included an important new responsibility: to be the province’s focal point for the transfer of applied technology (Dunae 2001:3). This new responsibility has shaped the course of BCIT for many years and allowed the Institute to gradually shift its focus from a diploma to a degree granting institution.

The Institute’s growth continued in 1994, when the Pacific Marine Training Institute amalgamated with BCIT under the School of Trades Training to become the Pacific Marine Training Campus. BCIT continued to grow and presently includes the following campuses (BCIT – IRP 2002:1-3):

- Burnaby Campus has instruction in Business, Computing and Academic Studies, Construction, Electrical/Electronic Technology, Health Sciences, Manufacturing and Industrial Mechanical, and Transportation;
- Downtown has instruction in Business and Computing;
- Pacific Marine Training Campus has instruction in Nautical Science and Marine; and
- Aerospace and Technology Campus has instruction in Aviation and Avionics.

Furthermore BCIT has 11 satellite campuses throughout the province and one international language training campus in Guadalajara, Mexico.

BCIT never looked back and has and still continues to improve its image, the quality and number of programs it can deliver. During the last seven years, it has moved from diplomas to bachelor to master degrees. It has evolved from an institute of technology to

a polytechnic institution. According to BCIT Institutional Research and Planning (IRP) the Institute has moved from a total enrollment (full-time and part-time combined) of 38,083 in 1992/93 to 49,855 in 2001/02 (BCIT – IRP 2002:1). The Institute’s new mission is “ provide British Columbian with world-class, job-ready skills for career success” and a message from the President states that (BCIT – Registrar 2003/04 –3):

BCIT delivers full-time and part-time courses of study leading to certificates, diplomas, and degrees in technologies and trades. As a polytechnic institute, we also conduct applied research, technology transfer activities (the taking of ideas to the marketplace), and corporate and industry training and upgrading  
We strive to provide you with both valuable knowledge and practical experience, a combination that is in great demand by employers provincially, nationally, and beyond.

The Institute is focusing its development over the next decade on three core businesses: job-ready graduate, skills to advance people’s careers, and working with businesses and industry to improve business performance through training and applied Research and Development. The coming years will continue to be exciting and challenging as BCIT evolves and continues to meet its mandate and goals.

Table 3.5 presents a historical overview of BVCS, PVI and BCIT from 1960 to present day.

**Table 3.5**

**BCIT historical overview**

<b>1960</b>	BC Vocational School opened on this campus
<b>1961</b>	Plans to establish BCIT announced
<b>1962</b>	First principal appointed
<b>1964</b>	First technology students on campus
<b>1966</b>	First graduates
<b>1975</b>	3,200 Full-time students
<b>1978</b>	Pacific Vocational Institute created. Made up of BC Vocational, Maple Ridge and Sea Island
<b>1986</b>	Merger of BCIT and PVI to form the NEW BCIT Satellite Campuses: Sea Island, Downtown Education Centre, Kaslo, Langley, Surrey, Burnaby and Vancouver
<b>1994</b>	Merger of BCIT and the Pacific Marine Training Institute
<b>1995</b>	Legislation passed giving BCIT degree granting status
<b>1996</b>	First graduates of a BCIT Bachelor of Technology
<b>1997</b>	Opening of the new Downtown Education Campus
<b>2001</b>	BCIT becomes a polytechnic institution

Source: BCIT Facts and Figures 2002

### **3.6 TRADES AND APPRENTICESHIP TRAINING AT BCIT**

In 1986, the Pacific Vocational Institute and the British Columbia Institute of technology merged to form the “New BCIT”. Trades and apprenticeship training were the responsibility of the newly created School of Trades Training. The School continued in its original organizational form until 1998 when the new president of BCIT, Dr. Tony Knowles, decided to reassign trades programs according to the industry sectors they were serving and as a consequence of his decision, the School of Trades ceased to exist and the remaining schools were reorganized as well. His decision was based not solely on economic and academic reasons. He felt that an integration of trades programs into schools with technology programs would gradually reduce the ‘us and them’ syndrome that had been lingering over the Institute since its merger. Presently, trades and apprenticeship training programs are found in the schools of Construction Technologies, Electrical and Electronics, Manufacturing and Industrial Mechanical, and Transportation. The schools of Business, Computing and Academic Studies, and Health Sciences have no trades or apprenticeship training programs (BCIT Registrar 2003: 381-385).

Trades training offers a variety of programs ranging from Aircraft Gas Turbine Technician, Machinist, to Welding and boast a total of 1619 graduated during the period 2001/02. Apprenticeship training decreased from 944 apprentices in 92/93 to 667 in 2001/02 (BCIT-IRP 2003:4-5). There are several reasons beyond this decrease in apprentices training ranging from a reduction of apprenticeship contracts due to a downturn in BC economy to the relocation of potential apprentices to the Province of Alberta with its booming industries and oil field explorations.

With the impending closure of the Industry Training and Apprenticeship Commission, 31 March 2003, significant changes are taking place at BCIT when dealing with apprenticeship training in general and registration in particular. These changes were announced to BCIT faculty and support staff during an information session scheduled by the President of BCIT that took place on 24 February 2003. It was announced that vocational training remains a cornerstone of the Institute’s role as a polytechnic institution and with the changes occurring in the Apprenticeship system in BCIT, it was

felt that BCIT had a real opportunity to prove itself as a leader in all aspects of vocational training. The presentation provided a brief description of the activities to date by stating that the Provincial Apprentice program is in a transition period, the remaining ITAC offices will be closed by March 31, and that a transitional ITAC office with approx 15 staff will be located in the Burnaby Metrotown office in order to handle the registration of new apprentices and the credentialing of apprentices completing their training. In the meantime, the BCIT Apprentice Services, established in the spring of 2002 with a mandate to assist apprentices assigned to BCIT for their apprenticeship training with their registration and tuition fee payments, is also tasked to actively recruit new apprentices in order to fill apprenticeship training scheduled courses. This new necessity to attract apprentices is based on the fact that students will be able to select the timing and institution of choice when completing their apprenticeship training requirements. The most significant change is the fact that apprentices are required to shoulder the 100% of tuition fee costs ( BCIT – Apprentice Services Office: 2003).

Table 3.6 shows apprentice fee schedule for 2002/2003.

**Table 3.6**  
**BCIT apprentice fee schedule for 2002/2003**

<b>Apprenticeship programs offered at BCIT</b>	<b>Training weeks</b>	<b>Fees</b>
Aerostructures	6	\$311.10
Automotive Mechanic	8	\$465.40
Benchperson	4	\$311.10
Benchwork & Joinery	6	\$465.40
Boilermaker	6	\$388.25
Carpentry	6	\$465.40
Commercial Transport Mechanic – Level 1,2,3	6	\$465.40
Commercial Transport Mechanic – Level 4	8	\$619.70
Drywall Finishing	4	\$311.10
Electrical	10	\$774.00
Heavy Duty Mechanic	6	\$465.40



Industrial Instrumentation	8	\$619.70
Machinist	5	\$388.25
Millwright	7	\$542.55
Motorcycle Mechanic	5	\$388.25
Plumbing – Level 1,2,3	6	\$465.40
<b>Apprenticeship programs offered at BCIT</b>	<b>Training weeks</b>	<b>Fees</b>
Plumbing – Level 4	8	\$619.70
Refrigeration – Level 1, 2	6	\$465.40
Refrigeration – Level 3, 4	8	\$619.70
Sheet Metal	6	\$465.40
Steel Fabrication	5	\$388.25
Welding	6	\$465.40

**Source: BCIT – Apprentice Services Office/ [www.bcit.ca/apprenticeship](http://www.bcit.ca/apprenticeship) (2003)**

The interesting observation is that, while much has been said in newspaper articles and government publications about the “new model” with its new flexibility and greater choices of learning/teaching methodologies, the new model has not been announced. In simplistic terms, the “life of an apprentice” can be divided in three periods: before apprenticeship, during, and after. The before apprenticeship phase deals with locating a job and registering as an apprentice. The second phase deals with training and the issues normally associated with quality control and apprenticeship contractual obligations between the employer and the apprentice. The last phase deals with interprovincial certification and upgrading courses. It is the opinion of the writer that BCIT’s new measures are designed to address apprenticeship training at the registration level only and the perception is that, at this time, the main concern is monetary rather than educational. If one looks at Steel Fabrication program for example (Table 3-6), based on 18 classes of 16 students each at \$ 388.25 per student, BCIT would stand to make a total of \$111,816 per fiscal year. If one multiplies this amount times the number of apprenticeship training classes scheduled during the 2003-04 fiscal year, BCIT stands to gain \$4,472,640 (BCIT: Registrar 2002:1-13). Naturally, BCIT will continue to receive provincial government funding for apprenticeship training based on Full Time Equivalence (FTE), which

represents all full-time and part-time enrollments converted to the number of students carrying a full-time course load (each FTE receives \$6,500).

### **3.7 COOPERATIVE EDUCATION AT BCIT**

It is the goal of the BCIT cooperative education program to make the work experience period as structures, relevant, safe and meaningful as possible. To this end, BCIT employs full-time cooperative officers to assist in locating meaningful learning opportunities, monitor student's progress and check health and safety on the training site (BCIT: Registrar 2003:21). Cooperative has been very successful since its beginnings in 1980. Why did BCIT incorporate this form of experiential learning and eventually applied it to trades training? It all started in with a report by the task force in cooperative education tabled in 1978.

During the 1976 and early 1977, the potential advantages of cooperative education were brought to the attention of BCIT's senior administration through the efforts of a number of concerned faculty members, who had been exposed to cooperative education during their university years. In response, the Principal's first Five Year Plan, delivered in the spring of 1977, contained a commitment to explore the matter further (BCIT – Task Force 1978:vii). A committee was formed in August of 1977 in order to investigate and report on the feasibility of introducing cooperative education at BCIT and assumed the name of the Task Force on Cooperative Education. The committee completed its preliminary investigations in January 1978 and tabled a report by March of the same year. While the primary focus of the Task Force was to assess the feasibility of implementing cooperative education, it also addressed secondary problems concerning the practicality of cooperative education by raising the following questions (BCIT –Task Force 1978:vi):

- What is the probability that cooperative ed will receive adequate support from students, employers and faculty;
- What changes will be necessary in course scheduling, and can these be made;
- What labour relations issues are likely to arise, and can they be resolved;

- Can BCIT recognition be given for the assignments completed by students while off campus;
- Can cooperative education be administered effectively within the existing organizational structure of BCIT;
- If cooperative education is feasible, how large a programme should be attempted in the initial stages, and when should it be implemented; and,
- What financial, staffing, and physical resources are necessary to launch the programme.

The committee's responses to the foregoing questions occupied the bulk of the report.

The Task Force's method of inquiry followed a traditional pattern, in the sense that they derived the information to be included in the report from consulting with other institutions in order to assess the problems that these institutions encountered when introducing cooperative education. Whatever the experiences of other institutions, the Task Force insisted upon examining cooperative education in the light of the uniqueness of BCIT and it also felt obliged to test the reactions of students, faculty and management through public meetings, informal individual discussions, and questionnaires. In its deliberations, the Task Force adopted an adversary tactic, with members alternately seeking and answering objections to cooperative education. The committee found that the introduction of cooperative education would require achievable changes in programme scheduling, faculty working conditions, organizational structure, and resource allocations. On the basis of its findings, the committee concluded that several patterns of cooperative education, and in particular one in which periods of work experience would alternate with terms of classroom instruction would be practical for BCIT. The committee's major recommendation was to support cooperative education and suggested suitable dates and enrolment figures for implementation. Secondary recommendations made by the committee offered guidelines for dealing with the implication of the programme such as (BCIT – Task Force 1978: 39-43)

- Administrative and financial considerations;
- Department control over educational matters;

- Department input in evolving their own time and course sequence plans;
- Faculty cooperative ed work load (sixty students initially); and,
- Student evaluation and credit.

The first cooperative education pilot project was officially launched September, 1984 in Electronics Technology. The program followed the traditional model alternating academic terms with two work terms. The program is still offered and still follows its original delivery model.

Shortly after the BCIT /PVI merger the Cooperative Education Department Director, Dr. Martin Hendy, was tasked by the Institute's senior administration, with the expansion of cooperative in both the technologies and trades programs. He actively pursued possibilities of expanding cooperative education in both technology and trades programs. He focused his attention on two programs: Computer Systems Technologist, a two-year diploma program, and a six-month trade pre-employment program in Horticulture. This program was suffering from low enrollment and outdated curriculum. A preliminary work designed to assess the feasibility of adopting the cooperative model was conducted which followed the standard CAFCE guidelines designed to assist educational institutions when introducing cooperative education in a new discipline. Some of these guidelines are (CAFCE 2002:11-12):

- Gain the approval of the institution's senior administration to proceed;
- Analyze employer interest, job market potential and student interest
- Gain faculty support
- Determine cooperative program structure best suited for academic area (e.g. academic requirements, academic/work schedule, projected enrollment);
- Determine cooperative office and staff requirements; and
- Undertake budget and cost analysis.

The recommendation was to introduce cooperative in Horticulture in 1987, with an intake of 16 students per year and with two academic terms and one cooperative term of four months sandwiched in between. The choice of a single work term was based on the

strong recommendations from employers and based on the growing cycle of nature. It was evident that students were mostly need in the early spring and summer months. The program continued to operate well until it was transferred in the early nineties to Kwantleen College as part of the Ministry of Advanced Education's major trades programs realignment. Based on the successes of the Horticulture program, several other programs came forward for consideration and during the early nineties, six more trades cooperative programs were added.

At the same time, the Cooperative Education Department was decentralized, with the technology program coordinator reporting to the Dean of the School of Electronics and the trades programs coordinator reporting to the Dean of the School of Trades Training. It should be pointed out that the Institute's senior management was fully supportive of cooperative education. Their support was not totally based on the believes that this mode of education was academically sound, but rather it was based on the opportunities that an alternating system would offer as far as multiple intakes and the generation of extra revenues. In simplistic terms, when one group of students would be out on a work term, another group would be attending the academic portions of the programs, thus doubling revenues generated by both FTEs and tuition fees.

### **3.7.1 BCIT cooperative education programs**

BCIT currently offers cooperative education in the following disciplines (BCIT Registrar 2003-04):

- Electronic Engineering Technology – optional
- Biotechnology – mandatory
- Fish Wildlife and Recreation, Forestry, and Renewable Resource Management – optional
- Auto Service Technician – mandatory
- Auto Collision Repair/Refinishing – mandatory
- Industrial Maintenance Mechanic – mandatory
- Tool & Die technician – mandatory

- Machinist – Computer Numerical Control – mandatory
- Heating, Ventilation, Air Conditioning and Refrigeration Technician – mandatory

With optional programs, students are encouraged (but are not required) to participate in cooperative education. Those who wish to apply and be admitted into the co-op portion of the program must meet the following admittance criteria (BCIT - Board of Governors 1994)

- Students must successfully complete all the requirements of the program 1<sup>st</sup> year before starting a cooperative job placement
- Students must complete Term 1 and are currently enrolled in term 2 courses
- Must maintain a GPA of 65% or better at all times with no withdrawals or failures (one withdrawal or failure is acceptable if GPA is 70% or better)

With mandatory cooperative programs, students are automatically admitted into the cooperative components, based on the statement that cooperative education is an integral part of these programs and that acceptance into these trades training programs includes entrance into the cooperative work experience component. Successful completion of the minimum coop work placement hours is required for graduation. BCIT Coop Policy # 5409 (BCIT – Board of Governors 1994:3) states:

In the Trades Programs students must complete at least seventy-five (75) percent of the work placement time to receive the “Cooperative Education” designation on their certificate/diploma. In exceptional cases (such as the on-set of a period of economic recession), upon written request and with the approval of the Dean, a student may be allowed to complete the missing work placement time after the completion of the training program. This extension would be only valid for a period of one year after the completion of the in-school portion of the training program.

However, to be admitted and remain in good standing a student must (BCIT – Centre for Workplace Education 2003)

- Show good attitude and attendance
- Maintain minimum of 70% in all courses and 70% grade point average

- Not be:
  - Absent for 3 or more days
  - Absent for more than 10% of total program duration
  - Late for any cause, on an average of more than once per month
  
- Submit to the Cooperative Office a satisfactory resume by the due date.

Regardless whether cooperative is mandatory or optional, all students are interviewed before final admission is confirmed. During this interview, student’s application, academic standing, interests and commitment to the cooperative program will be reviewed. If a student fails to meet the academic requirements and his/her interest and motivation are found by the coordinator to be lacking, the students may not be admitted into the program (optional cooperative) or asked to withdraw from the program all together (mandatory cooperative).

All technology programs follow the alternating mode, and, as the name suggests, in this mode students alternate periods of full-time school with periods of full-time work of approximately equal duration. Employment is paid and students often will return to a cooperative employer on successive terms. Students must successfully complete two work terms in order to graduate with a “Cooperative Education” designation on their diploma. A typical technology cooperative program follows the following pattern as outlined in Table 3.7.

**Table 3.7**  
**Work term patterns**  
**Technology programs**  
**Four academic semester program**

<b>Year 1</b>			<b>Year 2</b>		
<b>F</b>	<b>W</b>	<b>S</b>	<b>F</b>	<b>W</b>	<b>S</b>
AT1	AT2	WT1	AT3	AT3	WT4

AT = Academic term  
 WT = Work term

Trades programs also follow the alternating pattern, but they have multiple student intakes. A typical sequence of events is represented in Table 3.8.

**Table 3.8**  
**Work term patterns**  
**Trades programs - Multiple intakes**

<b>Intake 1</b>	<b>AT1</b>	<b>WT1</b>	<b>AT2</b>	<b>WT2</b>	<b>AT3</b>		
<b>Intake 2</b>		<b>AT1</b>	<b>WT1</b>	<b>AT2</b>	<b>WT2</b>	<b>AT3</b>	
<b>Intake 3</b>			<b>AT1</b>	<b>WT1</b>	<b>AT2</b>	<b>WT2</b>	<b>AT3</b>

AT = Academic Term; WT = Work Term

BCIT is considering expansion of its cooperative operations by assessing the feasibility of introducing the cooperative option in two more programs: Computer System Technician and Heavy Duty/Commercial Transport Technician two-year diploma programs. To date, employer, faculty and student surveys have been distributed and the results are trickling in with a final report to be drafted no later than 31 May 2003. Based on results and recommendations, the senior leadership is expected to make a decision by September 2003 with a target date for the possible introduction of cooperative in these programs for the January 2004 intake.

### **3.7.2 Cooperative education reporting structure**

There are a number of reporting relationships and organizational models that can be used for the administration and operation of cooperative education. The culture and support within any particular institution determines, to a certain extent, the type of reporting relationship best suited. Usually there are two options for a reporting relationship; one is to report to the academic side the other is to report to the academic support and services side. The advantages of academic/education reporting relationship are (CAFCE 2002:10)

- Cooperative is recognized as an educational model;
- The integration of a work and learning model is seen as an institution priority;
- Cooperative personnel are more likely to be viewed as educators than service providers;
- Greater opportunity for faculty to recognize the educational value of cooperative.

The disadvantages of this reporting structure are

- Cooperative can be more costly due to professional staff salaries and benefits;



- Cooperative may compete against other academic units for resources.

According to CAFCE (2002:10) an administrative reporting structure has advantages in such as less competition for resources from other service areas and the possibility of combining or sharing resources with other employment service providers such as a Career and Employment Services. The main disadvantage rest with the perception that cooperative is just another placement service than an educational model.

There are three organizational models commonly found in cooperative education across Canada: centralized, decentralized and centralized/decentralized. A centralized model situates all cooperative operations and personnel in a single location with staff normally reporting to a manager or director. CAFCE (2002:10) identifies some of the considerations associated with this particular models range from easier administration, better control of quality of cooperative delivery to a single cooperative budget easier to administer and identification of expense items. However this model will have tendencies for less interaction between cooperative staff and faculty, as the office may be located away from faculty offices.

A decentralized model situates cooperative operations and personnel in the relevant academic/program unit. Cooperative staff normally reports to the head of the academic unit in which they are located. Some considerations associated with this model are (CAFCE 2002:10)

- Interaction between faculty and cooperative staff can be enhanced by proximity;
- Cooperative coordinators are more accessible to their students;
- More costly because it allows for little or no sharing of human and physical resources;
- Consistent standards, policies, and procedures may be more difficult to ensure;
- No coordinated approach or central body to lobby or speak for the overall program;
- Can result in increased competition across the cooperative program areas.

BCIT has taken advantage of all three reporting models starting with the centralized model under the guidance of a Cooperative Director until 1990. When the director position was eliminated because of budget cuts, the coordinators reported to the various schools and reported to the appropriate dean. Since 1 April 2002, cooperative education is a part of the Centre for Workplace Education, with a program head reporting directly to the Dean of Lifelong Learning. This is a centralized/decentralized model. Under this model the management of the department is centralized to which the decentralized academically based personnel report.

This model incorporates all the advantages of the centralized and decentralized models and can build support for cooperative across the institution in a coordinated manner by providing centralized leadership at a senior level with decentralized office locations. The perceived disadvantages of this model are associated with the difficulty of maintaining effective communication between cooperative offices and with gaining consensus and a perceived common vision (CAFCE 2002:9).

### **3.8 CONCLUSIONS**

This chapter has provided a broad overview of the development of trades and apprenticeship training through the establishment of vocational schools across the province, BCVS in particular, and technology training through the establishment of BCIT in 1964. It further provided a rationale for the introduction of cooperative education at BCIT and its introduction into trades training after PVI and BCIT merged in 1986.

Government has been a very active and visible participant in establishing BCVS, PVI and BCIT. Many of the federal and provincial initiatives had economic motives to enhance labour force skills and address skill labour shortages. Thus federal and provincial legislations made available large amounts of money to expand existing educational institutions and to create new ones.

BCVS was set up to address the urgent need for vocational training and started to operate in 1958 as a temporary school at a site shared with the Pacific National Exhibition. The school grew considerably through the years and was eventually transferred to a site in

Burnaby in 1960 and eventually the provincial government, unable to efficiently administer its operations from the provincial capital – Victoria - amalgamated BCVS with the Haney Educational centre and renamed both institutions the Pacific Vocational Institute. PVI was set up as crown-corporation with authority to operate autonomously from the provincial government, and continued to operate in that role until the merging of PVI and BCIT in 1986.

BC's new industries and new industrial processes were being rapidly developed in both old and new industries and as a result of these developments, it became more and more evident that more jobs of complexity beyond that for which the province's vocational schools were able to prepare and beyond the technological knowledge that the average trades service or business person would acquire in such vocational schools. It was evident that the need for specialized technical education was at hand.

BCIT was the fulfillment of an idea whose time had come. It fitted the public mood of the day when concern for a growing economy and population emphasized the establishment of more training opportunities. The public mood of the time included the influence of Sputnik, the computer, the shortage of engineers and technicians, and technological changes in industry. An institute of technology appealed to many as the answer to many of the problems in the increasingly industrialized province in which they were living. It offered another alternative to the traditional university education path in the education system and this offered greater opportunities for further education of those who did not choose the university way.

In August of 1977, a Task Force was struck to examine the feasibility of introducing a programme of cooperative education at BCIT. After a detailed and comprehensive inquiry, the Task Force's major recommendation was to support cooperative education, and suggested suitable dates and enrolment figures for implementation. Thus BCIT began offering cooperative education in Electronics Technology in 1984, and after the PVI BCIT merger in 1986, began to offer cooperative programs in the trades in 1987. To date, BCIT offers cooperative education in six technology and 8 trades programs, with several programs on the drawing board.

To date, there are strong indications that the cooperative model has been an effective educational model and has been particularly effective in training apprentices within the traditional apprenticeship system. However, this claim cannot be fully justified because of the lack of supporting data. A more rigorous evaluation of the cooperative model in apprenticeable trades is required to assess the level of satisfaction of employers, students and to assess if cooperative education is indeed positioned itself as a valid methodology to train apprentices in within the context of the new apprenticeship training model in British Columbia.

Chapter 4 presents an overview of the research design and methodology of this study.