

CHAPTER 5

FINDINGS OF EMPIRICAL INVESTIGATION

5.1 INTRODUCTION

This chapter presents the findings of Phase 1 (the quantitative phase) and Phase 2 (the qualitative phase) of the empirical investigation. The statistical information gathered during the survey undertaken in Phase 1 was derived from the self-administered questionnaire distributed to a sample of employers in British Columbia who had hired cooperative students during the last four years. The rich data was derived from the semi-structured interviews conducted as a follow-up with a small sample of selected employers who had hired cooperative students during the last four years (Phase II).

Phase I respondents were chosen from four industry sectors groups (cf 4.4.1). 117 employers participated in the survey with a return rate of 30.6% (cf 4.4.5). Participants in Phase II were chosen using the purposive sampling method (cf 4.5.2). The analysis of data gathered during the interviews yielded four key categories: impact of Bill 34 on the recruiting, training and retention of apprentices, cooperative education in apprenticeable trades and lastly, the shape of the future apprenticeship training model (4.5.5).

5.2 FINDINGS OF PHASE I: THE SURVEY

5.2.1 Industry sector

Question # 1: Indicate the industry sector where your company provides its services.

The survey participants were selected from four different sample groups (cf 4.4.1; Table 4.1). Of the sample of 426, 117 respondents or 30.6% returned the questionnaires. The response rate is discussed in 4.4.5. However, it was felt that the respondents who did return the questionnaires were knowledgeable of the cooperative apprenticeship programs and the conventional apprenticeship system. Table 5.1, shows the percentage of respondents by the four programme groups.

Table 5.1
Percentage of respondents

Program	# Contacts	# Respondents	%
Auto Service Technician	201	47	40.2%
Machinist/Tool & Die	92	34	29.1%
Industrial Maintenance Mechanic	43	17	14.5%
HVAC & Refrigeration	46	19	16.2%
Total	382	117	100%

Generally, the owner/manager of small shops and the service manager of large shops or dealerships were asked to respond. While the questionnaire did not solicit any kind of respondent identification with the exception of the company name, the covering letter was addressed to either the owner or the manager.

5.2.2 Company size

Question # 2: Indicate the size of your company.

Most companies surveyed are small and employ few qualified tradespeople. Respondents were asked the number of employees they have in order to judge the size of the organizations participating the survey. The average size reported by the respondents in the first two groups is nine employees; however the respondents with large organizations (22) influenced the average business size, bringing the overall average to twenty employees. As seen in Table 5.2, over 37.7% of the companies have less than ten employees. The range reported was from two to over 50 employees for the companies surveyed.

Table 5.2
Size of business surveyed

Size	Responses	Percent
Less than 10 employees	44	37.7%
11 – 20 employees	31	26.5%
21 – 30 employees	20	17.0%
31 – 50 employees	11	9.4%
Over 50 employees	11	9.4%
Total	117	100%

5.2.3 Qualified tradespeople

Question # 3: Indicate the number of qualified tradespeople presently employed by your company.

In addition to asking the respondents about the overall size of their business, each respondent was asked to identify the number of certified tradespeople employed by the company. For large companies that have different types of tradespeople in different sectors of the business, responses were limited to tradespeople and apprentices in the trade related to the relevant cooperative apprenticeship programs. Table 5.3 indicates the number of qualified tradespeople employed by program group.

Table 5.3
Number of qualified tradespeople

Program	Qualified tradespeople	Percent
HVAC	133	21.2%
Machinist	180	28.6%
Tool & Die	45	7.2%
Millwright	109	17.3%
Auto Service Tech	162	25.7%
Total	629	100%

The average number of certified tradespeople is five. The most journey people employed, reported by one company, are 21 and the least number of journey people employed, reported by 29 respondents, is one. 73 of the 117 respondents indicated that they employ five or fewer certified tradespeople.

5.2.4 Experience of recruitment

Question # 4: How would you rate your experience finding qualified trades personnel?

The survey respondents were asked to indicate the nature of the experience (level of difficulty) in finding qualified trades personnel and to provide comments to indicate some of the factors that contribute to any difficulties experienced in finding them. Respondents surveyed indicated that it is generally quite difficult to find qualified tradespeople. As seen in Table 5.4, although some employers were neutral about finding qualified trades staff for their companies, 91 respondents, or 76.9%, indicated that hiring qualified people is difficult.

Table 5.4
Experience of finding qualified trades personnel

Options	Responses	Percent
1. Easy	1	0.9%
2. Neither easy nor difficult	25	21.3%
3. Difficult	91	76.9%
4. Do not know	0	0%
No Response	1	0.9%
Total	117	100%

Several of the survey respondents who indicated that it is difficult to hire skilled people commented that the main factors contributing to such difficulties in hiring is the lack of sufficiently skilled or experienced tradespeople and the attitudes and general employability of potential employees. Some respondents from the Auto Service

Technician and HVAC & Refrigeration programs indicated that they belong to a specialized part of their trade, such as tire, transmissions repair shops and refrigeration specialists respectively, therefore finding people qualified in their specialization was particularly difficult. Other factors contributing to hiring difficulties were a local shortage of tradespeople due the size and location of the shop and low wage rates in the industry that make the trade unattractive to potential employees. Two employers suggested that the provincial government should provide financial incentives in support of apprentice hiring and training.

Some of the respondents commented that while is neither difficult nor easy to find persons holding a “trade qualification ticket”, it is generally quite difficult to hire staff with the “right attitude”. More specifically, few respondents in this group mentioned the poor attitudes, reliability, lack of commitment to the trade or to employers, and similar factors as being characteristics of the available labour pool. These comments were further endorsed by the interview participants (5.3.2).

5.2.5 Satisfaction with apprenticeship system

Question # 5: How would you rate your satisfaction with the conventional apprenticeship system meeting the manpower needs of your company?

Survey respondents were asked to indicate their level of satisfaction or dissatisfaction with the conventional apprenticeship system. As indicated in Table 5.5, 34.2% of the respondents indicated that they are not satisfied with the system offering comments to explain their response focusing on the lack of flexibility of the system and the time required to achieve journeyman status.

Table 5.5
Satisfaction with apprenticeship system

Options	Responses	Percent
4. Satisfied	30	25.6%
3. Neither Satisfied or Dissatisfied	44	37.6%
2. Dissatisfied	40	34.2%
1. Do not know	2	1.7%
No Response	1	0.9%
Total	117	100

A quarter or 25.6% of the respondents that they are satisfied with the apprenticeship system. An examination of the additional comments offered indicate that the apprenticeship system has advantages such as the amount of practical training available, a structure that ensures the apprentice is available to the employer most of the time, increased involvement of the apprentice's employer in providing training and guiding the development of the apprentice. These advantages are corroborated by the literature (2.2.4).

Interestingly, 37.6% indicated that they are “neither satisfied or dissatisfied” with the conventional apprenticeship system. This suggests that the training model for trades personnel would not be an important decision factor but that factors, such as personality, attitude and the type of specialized training received are more important. It is the opinion of the writer that this group of respondents is willing to tap both sources of graduates in order to satisfy their manpower demands. This observation seems to be confirmed by the respondents’ responses when asked about their hiring preference, that is hiring of an apprentice versus a cooperative learner, 41% of the respondents indicated that would hire “either/or” (cf 5.2.13).

5.2.6 Numbers of indentured apprentices

Question # 6: How many apprentices are presently indentured with your company?

As seen in Table 5.6, three-quarters of the respondents indicated that they have at least one registered apprentice or more in their employ.

In the “Comments” section of this question, a few respondents indicated that had hired the apprentices less than one year ago and therefore after the introduction of Bill 34 (cf. 1.1.2; 2.9.3). Therefore, the companies’ activities as employers of apprentices may be under reported to some extent as some of the apprentices have yet to be registered with the provincial government (cf 1.1.1).

Table 5.6
Number of registered apprentices employed

Programme	Apprentices	Percent
HVAC & R	26	15.9%
Machinist *	35	21.5%
Millwright	24	14.7%
Auto Service Tech	69	42.4%
Other	9	5.5%
Total	163	100%

* This entry includes Tool & Die graduates, as there is no Tool & Die apprenticeship in BC. These graduates are indentured as machinist apprentices.

5.2.7 Rating of apprentices

Question # 7: From your experience rate a typical 3rd or 4th year apprentice on the following attributes.

Table 5.7 presents the employers’ ratings of apprentices. Employers were asked to rate their satisfaction with the performance of 3rd and 4th apprentices for each of the twelve

attributes. This could have been difficult for some employers who had several learners who varied greatly in terms of their skill development and performance. Other employers noted that they did not answer this question as they had just been promoted to their present position, thus they felt they had not had enough supervisory time in the job to be able to effectively evaluate the apprentices' performance and attitudes. These respondents have been tabulated under the "No Response" column.

Table 5.7
Employer rating of apprentices

Attribute	Very Good		Good		Average		Poor		Very Poor		No Response	
	#	%	#	%	#	%	#	%	#	%	#	%
1. Trade Knowledge	5	4.3	41	35.0	61	52.1	1	0.9	1	0.9	8	6.8
2. Quality of work	7	6.0	34	29.0	58	49.5	8	6.8	2	1.8	8	6.8
3. Ability to solve problems	1	0.9	24	20.5	58	49.5	19	16.2	7	6.0	8	6.8
4. Ability to learn	10	8.5	40	34.1	4	37.6	10	8.5	5	4.3	8	6.8
5. Speed of work	2	1.8	11	9.4	81	69.2	14	11.9	1	0.9	8	6.8
6. Accuracy	1	0.9	22	18.8	72	61.5	7	6.0	7	6.0	8	6.8
7. Judgment	1	0.9	25	21.3	60	51.2	21	17.9	2	1.7	8	6.8
8. Dependability	11	9.4	45	38.4	45	38.4	7	6.0	1	0.9	8	6.8
9. Initiative	11	9.4	38	32.4	39	33.3	16	13.6	5	4.3	8	6.8
10. Sense of responsibility	10	8.5	40	34.1	46	39.3	12	10.3	1	0.9	8	6.8
11. Organizational skills	0	0	23	19.6	64	54.7	16	13.6	6	5.1	8	6.8
12. Communication skills	5	4.3	27	23.0	50	42.7	19	16.2	8	6.8	8	6.8

Indicates number of responses

For the most part, respondents rated apprentices as “average” in all the attributes with an average rating of 48.25% in this group. Apprentices scored well in the dependability, ability to learn, and sense of responsibility attributes. The highest negative score is 6.8% or eight responses, in the “Very Poor” for communication skills.

Of particular interest are the ratings given by respondents in four categories: trade knowledge, quality of work, speed of work, and accuracy. The responses are heavily placed in the “average” rating of the scale with 52.1% for trade knowledge, 49.5% for quality of work, 69.2% for speed of work, and 61.5% for accuracy. It can be deduced that employers value a solid trade knowledge as the pre-requisite for the quality, speed of work and accuracy; in turn these factors will determine the level of customer satisfaction about the services received.

5.2.8 Awareness of BCIT cooperative programs

Question # 8: How did you find out about BCIT cooperative apprenticeship program(s)?

Survey participants were asked a series of questions regarding their experience with cooperative students and graduates from these programs. Advertising is the main source of awareness for the cooperative apprenticeship programs at BCIT (cf 3.6; 3.7.1). Table 5.8 indicates that 35.9% of the respondents became placement hosts in response to a request from BCIT Cooperative Office. While students also approached many employers to find their own work placements, few employers took the initiative to become a placement host.

Table 5.8
Source of awareness of cooperative programs

Source	Responses	Percent
From BCIT advertising	42	35.9%
From a cooperative student seeking employment	27	23.1%
From another employee	14	11.9%
From word of mouth	21	17.9%
Other	13	11.2%
Total	117	100%

Other reasons given for becoming involved in the programs as a placement host included:

- Involved in the program, on the industry steering committee (5 responses)
- Took initiative by contacting BCIT when looking for an apprentice (5 responses);
- Acted as placement host for friend or a relative (3 responses).

5.2.9 Numbers and levels of employment of cooperative students

Question # 9: Please indicate the number of cooperative students your company has employed during the last four years.

Question # 10: Please indicate the number of cooperative graduates hired over the last four years, by your company from the following programs.

Table 5.9 shows the total number of cooperative students placed and cooperative graduates hired by the respondents during the last four years.

Table 5.9

Number of students hired/cooperative graduates placed during last four years

Number of Placements	Number of Students Hired		Number of Cooperative Graduates Hired	
	Responses	Percent	Responses	Percent
1	44	34.1	61	66.4
2	35	27.1	22	24.0
3	26	20.1	8	8.6
4	9	7.0	1	1.0
5	10	7.8	0	0
6	4	3.1	0	0
11	1	0.8	0	0
Average Response	2.8		1.2	

Respondents have experience with at least one cooperative student. The average company has served as a placement host for 2.8 students. On the other hand, respondents have hired far fewer program graduates; the average company has hired 1.2 graduates of the five cooperative apprenticeship programs. This is to be expected as hiring a graduate of a program is a far greater commitment than is placing a student for three to six months.

5.2.10 Satisfaction with cooperative students

Question # 11: How satisfied have you been with the performance of the cooperative students?

Companies surveyed were asked to rate the level of satisfaction and skill development of the cooperative students they had interacted with.

Table 5.10
Satisfaction with cooperative students

Options	Responses	Percent
Satisfied	86	73.5%
Neither Satisfied or Dissatisfied	25	21.3%
Dissatisfied	4	3.4%
Do not know	1	0.9%
No Response	1	0.9%
Average Response		1.2

Employers indicated that they are satisfied with the performance of the cooperative students with an average rating of 1.2 where a rating of 1 is an indication of been satisfied. As seen in Table 5.10, approximately 73.5% of the cooperative students were rated satisfactory and only 3.4% were not satisfied with the performance of cooperative students (no comments offered).

5.2.11 Apprenticeship standing of cooperative students

Question #12: On average what level of apprenticeship standing were the cooperative graduates granted when indentured?

Table 5.11 shows the apprenticeship standing given to graduates from the five programs for a grand total of 99 students (84.6%) have been indentured. It should be noted that some employers have granted the same standing when they have hired more than one cooperative graduates.

Table 5.11
Apprenticeship standing

Program	Apprenticeship Standing			
	1 st Year	2 nd Year	3 rd Year	4 th Year
HVAC & R	11	7	0	0
Machinist	12	5	1	0
Tool & Die *	8	2	0	0
Industrial Maint Mec	16	1	0	0
Auto Service Tech	6	19	11	0
Total	53	34	12	0
Grand Total	99			

* Graduates from Tool & Die program are indentured as machinist

The high majority of employers (53.5%) have indentured graduates as a 1st year apprentice. 34.3% have given credit for first year and second year while only 11.1% have hired grads as 3rd year apprentices.

The majority of grads from the HVAC, Machinist, Tool & Die and Industrial Maintenance Mechanic programs have landed positions as 1st year apprentices. Graduates from the Auto Service Technician fared better by landing in positions as 3^d and 2nd year apprentices more often than their counterparts in the other programs.

It is interesting to note that grads from HVAC, Machinist, Tool & Die, and Industrial Maintenance programs find employment opportunities in sectors of industries that are tightly regulated by collective agreements, which for the most part are bound to the traditional apprenticeship system. It is also possible that another reason for the low standing granted to these graduates could be the time of their hiring. That is to say that

they might have been hired prior to the legislative enactment of Bill 34 that abolished the conventional apprenticeship system without replacing it with a new model (cf 1.1.1; 2.9.3). It would be interesting to assess the impact that Bill 34 has had on hiring and on apprenticeship standing since its enactment. This was further explored in the interviews (cf 5.3.2).

5.2.12 Rating of cooperative apprentices

Question # 13: From your experience, rate a typical BCIT cooperative apprentice graduate on the following attributes.

Table 5.12
Employer rating of cooperative graduates

Attribute	Very Good		Good		Average		Poor		Very Poor		No Response	
	#	%	#	%	#	%	#	%	#	%	#	%
1. Trade knowledge	5	4.2	40	34.1	61	52.2	2	1.8			9	7.7
2. Quality of work	5	4.2	36	30.7	66	56.5	2	1.8			9	7.7
3. Ability to solve problems	3	2.5	31	26.5	68	58.2	6	5.1			9	7.7
4. Ability to learn	8	6.8	46	39.3	52	44.4	2	1.8			9	7.7
5. Speed of work	1	0.9	21	17.9	81	69.2	5	4.3			9	7.7
6. Accuracy	1	0.9	40	34.2	64	54.7	3	2.5			9	7.7
7. Judgment	2	1.8	37	31.6	63	53.8	6	5.1			9	7.7
8. Dependability	11	9.4	65	55.5	30	25.6	2	1.8			9	7.7
9. Initiative	10	8.5	44	37.6	50	42.8	4	3.4			9	7.7
10. Sense of responsibility	17	14.5	42	35.9	45	38.5	4	3.4			9	7.7
11. Organizational skills	3	2.5	36	30.7	63	53.9	6	5.4			9	7.7
12. Communication skills	5	4.2	56	47.8	42	35.8	7	3.4			9	7.7

Table 5.12 presents the employers' ratings of the cooperative students. Employers were asked to rate their satisfaction with the performance of cooperative students for each of twelve attributes. This exercise might have been difficult for some employers who had several students who varied greatly in terms of their attributes, development and performance as well as employers who have taken one student only.

Generally, employers indicated that they were satisfied with cooperative students' performance in respect to technical and general employability attributes. Students were rated most highly for their dependability and sense of responsibility (attributes no.8 and no.10), and were somewhat considered less proficient in terms of their ability to solve problems (no.3), judgment (no.7), and organizational skills (no.11).

Interestingly enough, overall cooperative graduate scores were almost similar to those of the apprentices in trade knowledge (no.1), quality of work (no.2), and speed and accuracy (no.5 and no.6). This seems to suggest that employers still attach importance to trade experience that can only be gained through time in the trade and, for the most part are not willing to differentiate between the two groups.

5.2.13 Hiring preferences

Question # 14: If you had a choice between hiring an apprentice who had completed three to four years of apprenticeship training or a graduate from a cooperative apprenticeship program, who would you hire?

**. Table 5.13
Employers' hiring preferences**

Group	Responses	Percent
Apprentice	19	16.3%
Cooperative Graduate	42	35.8%
Both	48	41.0%
Neither	6	5.2%
No answer	2	1.7%
Total	117	100%

Table 5.13 presents the survey group's hiring preferences

With respect to their own hiring preferences, 48 employers or 41.0%, indicated that the training model would not be an important decision factor, but other factors such as personality, attitude, willingness to learn, dependability are more important factor.

However, it is interesting to note that, with respects to their own hiring preferences, one third of respondents, or 35.8%, indicated a preference for hiring apprentices from a cooperative program to hiring apprentices who had trained to a third or fourth level of apprenticeship training.

The respondents, 16.3%, who indicated a preference for hiring an apprentice who had completed training with another employer stated that these apprentices would have more practical experience, and would be more productive and better trained.

Other comments, which were offered in this section, can be summarized as follows:

- Cooperative graduates have better attitude and willingness to work;
- Cooperative students are better prepared than apprentices hired from another employer;
- Cooperative students have both practical experience and technical knowledge (29 responses)

5.2.14 Satisfaction with BCIT services

Question # 15: How satisfied have you been with the services provided by BCIT Cooperative Education Office?

Respondents were asked to rate their relationship with BCIT's cooperative office (cf 3.6; 3.7.1). As seen in Table 5.14, respondents gave a high rating of satisfaction.

In general, cooperative office staffs were viewed as helpful and supportive in responding to employer requests. Comments were made in appreciation for the cooperative office administrative help, for processing the short and simple requests for carrying out

evaluation procedures. Some typical comments: “*Staff very helpful – a pleasure to deal with*”, “*Overall excellent support*”, and “*They are doing a very good job assisting employers*”.

Table 5.14
Level of Satisfaction with BCIT’s Cooperative Office

Category	Responses	Percent
Satisfied	74	63.2%
Neither Satisfied or Dissatisfied	34	29.0%
Dissatisfied	4	3.5%
Don’t know	5	4.3%
Total	117	100%

5.3 FINDINGS OF PHASE 2: THE INTERVIEWS

Phase 2 of this empirical study comprises of follow-up semi-structured interviews with a small sample of employers in BC (cf 4.5.1) aimed at investigating areas insufficiently covered in the survey and allowing for further clarification of issues.

The self-administered questionnaire did not specifically address the impact that the new legislation - Bill 34 (cf 1.1.1; 2.9.3), might have had on apprenticeship recruiting, training, and retention. In effect, aside from few comments offered by some of the respondents on this subject, statistical findings, which could have been derived from the responses/comments, were deemed to be insufficient.

Thus, semi-structured interviews were conducted face-to-face with selected participants, with a flexible interview schedule to ensure that key topics identified in the literature (c.f. 4.5.3) as well as findings in relation to the topics dealt with in the quantitative phase were covered (5.2).

Data for the follow-up interviews was collected during the period of early November 2004 and interviews were conducted in the participants’ offices (par. 4.5.3).

Significant patterns emerging from the analysis of the participants' responses were synthesised and brought into relation with prior research and theory as viewed in the literature. The data presented consist of theme content analysis based on responses (4.5.5).

5.3.1 Knowledge of Bill 34

All participants were in a supervisory/managerial position with their companies and were intimately involved in the hiring and training of apprentices and in the selection of trades cooperative education students. They all have a good working knowledge of apprenticeship training (3.2.1) and cooperative education (3.4) in BC and expressed a further interest in participating in Phase 2 of the research. Participants mentioned that this gave them the opportunity to raise further issues and concerns.

Three participants had collective agreements (Canadian Autoworkers International Association, International Association of Machinists and Aerospace Workers, and Refrigeration, Air Conditioning and Installation Workers United Association), which, regulated the hiring and training of apprentices as well as the hiring of 'temporary help'. This term means the hiring of project related qualified and semi-skilled workers to see the project through to completion on budget and on time. The hiring of summer and trades cooperative students, as far as these collective agreements, is covered in the 'temporary help' category.

As mentioned in Chapter 1 (c.f. 1.1.1) and Chapter 2 (c.f. 2.9.3), Bill 34 comprises decisive legislation regarding the development, monitoring, fund training and apprenticeship programs in British Columbia. Participants indicated that they were not familiar with the details of the Bill 34, although they felt that they clearly understood its broad significance with reference to apprenticeship training.

Therefore, when they were questioned about specific sections of Bill 34, i.e. role, goals and objectives of ITA (2.9.3), credentialing and training development and modularization discussed in 2.9.3 (BC Ministry of Advanced Education – Bill 34, 2003), they openly

admitted their lack of knowledge. Their opinions are best captured by one of the participants who commented:

The government has begun a closed-door, by invitation only consultation process. Many in the industry training community are being denied an opportunity to engage in a dialogue on the sweeping proposals and are referred to a government website, which does not say much – a very limited option.

The preceding comment expressed some resentment and strong dissatisfaction of the process of policy making with regard to Bill 34 (1.1.1). This dissatisfaction is chiefly based on the lack of opportunities to voice their opinions and present their ideas about the shape of the future apprenticeship training system. In the last few years, some of the respondents have participated in their respective trades Program Advisory Committees (cf. 2.7). The purpose of these committees was to provide a forum for employers to present and discuss issues related to curriculum content, development and delivery. They should provide meaningful opportunities for them to present their views through their representatives.

Chiefly based on anecdotal facts, they expressed concerns about the government's intent to reduce the influence of the trades advisory committees, and, at the time of writing, they do not see similar opportunities been presented to them for meaningful participation.

Participants indicated they understood the intent of Bill 34 by saying that this legislation was introduced to create an industry-led training and apprenticeship system that would offer apprentices more flexibility to meet their training needs and industry with an opportunity to provide a stronger input into what and when to teach the curriculum (cf vision of Bill 34 discussed in 2.9.3). They further stated that the conventional apprenticeship system was not producing enough workers with the skills needed presently, let alone 'tomorrow' in order to satisfy their manpower needs (Wright et al, 1996:20; 1.1.1; 2.2.3 and 2.3.1).

They attributed this failure to a number of reasons such as failure to attract enough young people into the trades, failure to provide meaningful and challenging training in order to address technological changes and the rigid regulations such as 'time in the trade', (the

requirement to work, for at least four years under the supervision of a qualified journeyperson in order to acquire trades qualifications in BC) that have prevented, to date, innovative approaches to training that will recognize faster learners (cf.5.3.1; 2.2.3 and Smits & Stromback 2001:20-31).

Participants expressed some concerns about the lack of definite directions with reference to the ‘new apprenticeship system’. They felt that the Liberal government ending of the Industry Training and Apprenticeship Commission - ITAC (2002) was hastily done (cf 2.9.3). As stated in 1.1.1 and 2.9.3, the role of ITAC was to maintain, develop, monitor and fund training and apprenticeship programs for British Columbia. However it would appear that although ITAC had come under severe criticism, this criticism was not necessarily focussed on the role and function of ITAC but rather of the interpretation and application of the ‘rules’, i.e. the award of credentialing, indenture contracts and scheduling of apprentice training. Participants stated that they would have preferred a gradual dismantling of ITAC by been phased into the ‘new system’. They also felt that little has been accomplished since; the only exception has been the establishment of the Industry Training Authority (ITA) through Bill 34. They are anxiously awaiting new policy and regulations to guide the new system.

Three participants, who are managers in unionized shops, noted another reason beyond their dissatisfaction with the conventional apprenticeship system: union involvement in the hiring and training of apprentices. They felt that unions were not entirely interested in the well being of apprentices. In the words of one, unions were “using apprentices as a bargaining tool” during negotiations. Thus, they welcomed Bill 34 more readily than the remaining participants as they saw a shift from a labour to an industry driven apprenticeship system.

Participants were asked to comment on the importance of ITA’s powers of authority with reference to training programs, accreditation and credentials. The importance of ITA’s powers of authority respecting training programs was tabled for discussion as one the specific points addressed in Bill 34 (2.9.3). However, participants indicated their lack of familiarity with this point of the legislative act. It was explained by the researcher that

this authority allows ITA to designate and validate training programs, recognize programs designated for accreditation award or authorize training institutions to award credentials to trainees who complete industry training programs, and establish process for program review to ensure that prescribed standards and standards set by the authority are met.

All participants indicated that their understanding of these terms was not significantly different of the understanding of the previous terms as contained in the now defunct Industry Training and Apprenticeship Commission (ITAC) (cf.2.9.3). They were familiar with the role of ITAC with one employer commenting:

ITAC was a four-cornered partnership of business, labour, government and education with a mandate to oversee and enhance apprenticeship and industry training. Was it really necessary to form a new body when perhaps what was needed was a re-engineering of the existing one?

5.3.2 Bill 34 and apprentice training and recruiting

All participants indicated that it is difficult to find both qualified tradespeople and young and motivated apprentices. Their comments echo the responses given by participants in Phase I (cf 5.3.1). They did not attribute this difficulty to the passage of legislation (Bill 34) or to the lack of clear directions with reference to apprenticeship training, but rather to the lack of sufficiently skilled or experienced tradespeople and the attitudes and general employability of potential employees. Corroborating comments made in the questionnaire the participants maintained that it is generally quite challenging to find and hire staff with the ‘right attitude’. They felt that a weak attitude, a lack of commitment and lack of perseverance were predominant traits of the available labour pool.

Moreover, participants expressed some concerns about the intent of Bill 34 to transfer the organization of education and training to students and apprentices (cf 2.9.3). They indicated that the closure of ITAC offices (2.9.3) has placed more responsibility on apprentices to identify employers. In future, apprentices will be required to register training agreements on an internet-based self-registration system (i.e., ITA Webpage). Once registered, apprentices are expected to access, review and update their employment

records, including information about technical training the apprentice has taken. Apprentices are also expected to undertake to schedule their training after discussion with employers about timing and work priorities and register themselves for training programs – a function that ITAC had previously fulfilled (2.9.3). They felt that apprentices should not be burdened with these tasks as their main focus should be ‘learning the trade’ and that the self-registration and self-update process may lead to “incorrect entries”. This will mean more administrative work for employers who will have to verify a future employee qualifications and standards obtained. Thus participants felt strongly that these functions should remain ITA’s responsibility.

With regard to private providers of apprenticeship in BC (cf 3.3.2), participants accepted with reservations the intent of the government to transfer more training to this sector. One employer quoted his less than satisfactory experiences with a union-run and operated school for apprentices, such as the Joint Apprentice Refrigeration Trade School – JARTS (cf. 3.3.2). He had received little feedback on curriculum changes and content and even less about hiring apprentices and scheduling of training from the school. He stated that he did not wish to repeat these experiences by recruiting from this school in future. This view concerning private providers is supported by the literature review (Meredith, 2003:3) as, in most cases, credit for private training in BC is granted by the training institution. Private training courses may or may not be articulated with public institutions, or be accredited by professional associations or standard setting bodies (Meredith, 2003:3).

Furthermore, participants were questioned about the views of competency-based modular training for apprentices (3.2.1; 3.6). Opinions on this issue were divided. Two participants welcomed a move to a competency-based assessment model. As one employer expressed it:

If my company, as an employer, does not require all the tasks and competencies to be mastered by my employees, I should be able to suggest what tasks and skill competencies are required and work directly with the training institute of my choice and develop a training program that best suit my needs.

The remainder of the participants did not wish to have a tailored-made “based on the needs-of-the-moment training program”. They expressed concerns that such programs will lead to piecemeal credentials for each component of a trade. This is, in one participant’s view, a shortsighted approach to the lack of skilled trades people. Participants see modularization of apprenticeship training leading to “deskilling”, that is, a reduction of skill levels and wage cost to the minimum necessary. In effect, modularization frees employers from the job-design constraints that are built into apprenticeship. Their views are supported by the literature reviewed in this study (Meredith, 2003:9):

The likely result of modularization will not be greater overall investment in training, but rather low skill equilibrium of permanent skills shortages and low wages. While it may be tempting to use the modular program format may not produce a high skilled labour force, and will make trades careers even less attractive to those with a choice

Another participant suggested that the government should not use a “one-size fits all” approach to training. Modular training that is working in one trade may not necessarily be the best training method for another trade. He cited another set of reforms, known as the Trades Access or TRAC program implemented in the early 1980s, which was another time of fiscal restraint and which, in his view, had failed to fulfill its aims.

Government spent a significant amount of money and had to abandon the failed experiment in the end. TRAC was competency-based, trades training based on modularized delivery and it did not work

While participants all welcomed flexibility in training delivery and a shorter time-in-the-trade requirement for achieving journeyperson status, they would not readily support apprenticeship completion based on lower skill levels certification. They see that earlier receipt of partial credentials will only benefit employers whose short-term interests are best served by hiring semi-skilled workers at lower rates than fully qualified ones. This would be a “myopic” solution to the chronic lack of apprentices and thus of qualified people in the near future. One employer commented:

Flexibility in training with well-crafted and achievable standards in trades training would be an important step for the automotive after market industry. As our present qualified people will reach retirement age, we – like many other industries- are facing a huge skills shortage. We need changes in the delivery of training now, to help our industry meet that challenge. More accessible, relevant and flexible training will attract the auto mechanical repair technicians, auto-body repair technicians BC needs in the coming years. However, strict certification standards are still in the best interest of my sector and all other sectors for that matter.

Participants viewed restructuring of the curriculum in their respective trades, credentials, assessment and delivery of training for trade qualification to be of particular concern. They fear that the end result may fall short of the inter-provincial Red Seal Certification (c.f. 2.7). New partial credentials may not be recognized in other provinces and will limit the mobility, of BC workers to other Canadian provinces. This point was particularly important to two of the participants who have branches across the country and require employees' mobility to other branches located in different provinces

My company has branches in Alberta and Ontario. Up to now, it has not been difficult to ask our trades people to relocate, especially to in Alberta where the cost of living is less than here, in order to meet our production demands. The same salary and benefits are carried over during the transfer. It may be problematic to insert BC qualified people with qualifications that may not be recognized by other provinces through the Red Seal initiative. You know may have two machinists, one with a Red Seal and one without, being paid at the same level. This may lead to dissatisfaction amongst employees.

5.3.3 The role of cooperative education in apprenticeship training

Participants also discussed the role that cooperative education should play in the training of apprentices. The interview findings support the research carried out by Schuetze (2003), Furco (1996) and Grosjean (2003) who all found that work-based education prepares students to make a smooth and intentional transition from school to the workplace by providing them with opportunities to explore the world beyond the classroom. Reflecting on their experiences, participants also confirmed the views expressed in the survey that there is a need for cooperative programs in their industry sectors (5.2.10, 5.2.12, 5.2.13). During the interviews, they identified a wide range of

reasons for the cooperative program. In summary, their views identified the main advantages of the cooperative model as:

- Cooperative students develop a broader knowledge base, as a result of more and better technical training;
- Cooperative apprentices are more productive, having already developed skills prior to beginning work;
- Cooperative students can investigate the trade and employers can test out students before making a commitment;
- The structure of the program is beneficial, in terms of the front loaded training and the alternating balance between school and work terms;
- It provides an up-to-date curriculum which reflects current industry needs; and
- Increased communication between the school and employers.

A participant remarked how the cooperative model screens potential apprentices for employers. He also emphasised the cost-effectiveness of cooperative training, stating:

Apprentices are less costly to me as a company as they are better trained and more productive and are in a better position to make money for my company almost from the start of employment

However, disadvantages of the cooperative model, also mentioned in the literature were not ignored (cf 2.2.4). A participant noted, “Students are not necessarily available when I need them, i.e. during peak production periods or for special projects”. To this end, participants saw the conventional apprenticeship system, as having a better structure, albeit less flexible, because it ensures the apprentice is available to the employer most of the time. Based on their own personal experiences with cooperative students, they identified another disadvantage of the cooperative model being that, occasionally, graduates tend to think that they know more than they actually do because of the large amount of theory they receive prior to graduation and thus ”are less willing to do menial tasks in the shop when needed”.

One participant suggested that there is a need for a refresher course because “there is at least at two-year separation between when I hired some of the cooperative graduates and when they wrote the trade completion exam”. He also suggested that this refresher course could be a pre-requisite to writing the qualification exam.

5.3.4 The new apprenticeship model

As experienced employers, participants provided some vision of what they required in a new apprenticeship training system in BC. They stressed that they want appropriately trained people to do the work at hand, and need ways to develop and recognize the specific skill sets which are needed for successful operation of their business (Packert, 1996). They want a truly industry-driven training system where the needs of apprentices and employers are of paramount importance. A participant summed this up succinctly saying that this means:

We need a system of training in which employers access flexible training and recruit and retain workers with appropriate skills when they are needed. In other words, I, as an employer, want to have a say in the training needs, in the development of occupational standards and credentials of my sector.

These employers also noted that to employ apprentices under the present system is a costly proposition (cf. 3.6). They cited two principal reasons: firstly, apprentices, in particular when they first commence work with an employer, are not very productive nor they are expected to be since they are still novices in the field. In other words, employers, in most cases, are willing to absorb the cost of training, even though the investment is higher than the returns, providing apprentices stay with them after reaching journey person status. It is at this point that the returns (speed and quality of work) are higher than the investments (salary and benefits). Secondly, production requirements continue to exist while the apprentice is in school, and in some cases, employers must hire a replacement in order to maintain production quotas and work orders. Thus, they wish to have a system in place that will reduce the cost of training apprentices (Sharpe, 2003).

Questions were asked about employers' plans for dealing with peak production periods and periods when apprentices are away on courses. They stated that they have enough resources to be able to shift the required people accordingly. This is because these participants represented larger companies with several qualified people and were able to reassign work, and therefore cover production requirements with little or no disruption. Thus, these participants felt that the length of the training periods would not necessarily cause a significant disruption in their production needs. The opposite holds true with respondents with a limited number of qualified journeypersons and apprentices. Because of their manpower limitations, it is more difficult for them to reassigned work priorities when an apprentice is in school "Hiring of temporary workers would add to the cost of doing business".

Participants envision a model that is similar to other types of training. They wish to hire individuals who have the necessary qualifications at the time of hiring. These qualifications are generally attained at high school, university, and another post-secondary institution. For example, engineers, accountants, software developers (professionals employed by some of the participants) and workers in many other occupations are generally hired based on the skills they have at the time of hire (Merle, 1994). Employers do not typically hire these individuals and then spend years training them up to their expected entrance levels. Participants, who wish to hire particular trades, would welcome a model where most, if not all, classroom training is completed before the individual is hired. They would then give an apprentice on-the-job training at their worksites with appropriate measures in place to assess the apprentice's abilities.

Three participants noted in particular that, for example, a high school student could take two years of training under a secondary school apprenticeship program and that upon graduation; the student could then attend a post-secondary training institution to finish the theoretical component of his or her training. Upon successful completion of this classroom component, the individual would complete the practical part of their training at the workplace (OECD, 2000). The employer would be hiring someone who knows the theory, could put that theory to work right away, and be more productive from the start (Guile & Griffiths, 1999). One respondent commented:

I have sons in high school who want to learn my trade. I learnt my trade in my own country as a young apprentice at the age of sixteen while I was in school and working summers with my future employer. I completed my training in less time, at less cost to both the employer and myself and, in the end, the public education system. Why don't we have a similar initiative here in BC?

While it will not certainly work for every trade or occupation, something along the lines of this suggestion may be worthy of consideration in a number of trades.

Apart from problems with apprenticeship per se, participants also voiced complaints about the former ITAC, particularly from the viewpoint of business organizations. In a discussion paper the Coalition of BC Business (2002) cited the following problems with ITAC:

- Consistent complaints by employers re: inconvenience of system;
- Public costs versus benefits;
- Inability of apprenticeship system to expand beyond traditional fields;
- Interprovincial differences and disparities; and
- Inflexible, time-based training format out of step with workplace needs

The findings of the interviews supported the literature cited since the participants strongly suggested that that ITA's role (2.9.3) should narrow to a focus on maintaining provincial standards and credentials with industry receiving a stronger mandate to identify training needs and the autonomy to work with training institutions to develop programs to meet their needs (cf. 2.3.2; .2.9.3 and 3.6). Participants noted that they want effective governance and clear roles for all those involved. They feel the best option for a governance model is one where there is an "arms length" agency (such as ITA) that oversees the system and allows for the various customers and sectors to make their own decisions and yet will ensure cross-sectoral and cross-industry coordination and transition.

These employers also want to see the elimination of the costly overlap and duplication among programs, as they are sometime confused as to which programs lead to what

qualifications. Too often courses are provided where the demand does not exist and/or the curriculum is outdated and not relevant. There is little integration of training among different trades. For example, what is learnt in one trade – the common core of knowledge and skills pertinent to that trade – is not transferable to another. The rigidity of in some programs now leads to training that is either not necessary or irrelevant to the tasks necessary to perform in the workplace. A participant reiterated, “Training should be designed around apprentices and employers’ needs. It is they who should drive the system.”

Three participants expressed some concerns about other Canadian provinces failing to recognize trades qualifications held in BC (2.7). Their fear that other provinces in Canada will not recognize qualifications obtained in BC (c.f. 2.7). That is to say that apprentices who will complete their training in BC and certified journeypersons may not be able to obtain a ‘Red Seal’ endorsement on their Certificate of Completion as they lack the necessary prerequisites to challenge the Interprovincial Standards Examination (Canada-Human Resources Skills Development, 2003). It is interesting to note these three participants have more than fifty employees in general an average of fifteen qualified tradespeople working for them with multi branches across the country, and have already expressed concerns about the possible impact that lack of recognition of credential will have on employee transferability to other provinces (c.f. 5.3.2).

The same three participants indicated a lack of support for credentials given for lower skill levels as this will only benefit employers whose short-term interest is best served by hiring semi-skilled workers at lower rates than fully qualified ones. They would not support a “task training approach” as they prefer a more traditional “full scope training” approach. However, they would support a flexible training system that would recognize faster learners as they equated “faster learners” with “sooner-than” qualified tradespeople.

By the same token, the other three participants, who employ an average of four to five qualified tradespeople, expressed a greater willingness to endorse a training system, which promises greater flexibility and faster accreditation. They expressed their beliefs

that such a system would better address their manpower requirements. In concluding, these respondents wish to see a streamlined, results-based administration of the system. Industry sets the standards and the administration and ITA should only be concerned with the outcomes of the training offered. ITA should ensure that what is promised is what is being delivered and what is needed.

In addition, participants gave their views about compulsory certification. Trade qualification requirements can be broadly classified as either compulsory or voluntary. Compulsory trades require that any and all work performed must be done by a properly certified journey person or an indentured apprentice. A relatively small number of trades carry this requirement in British Columbia (Johncox, 2001:i). The majority of trades in BC are voluntary, meaning that individual workers, employers, and consumers typically determine the level of training for specific assignments (Johncox, 2001:i).

Four participants were proponents of compulsory certification and they believe that the practice results in increased product and service quality, improved public and worker safety, more fulfilling career opportunities and enhanced business reputations. Opponents of compulsory certification, the remainders, argued that requiring all work to be performed by certified journeypersons is inefficient to their operations (only 6-7 qualified tradespeople presently employed), raises aggregate labour costs, and exclude other forms of “workers”. Since compulsory designation sets rigid boundary between trades, these employers felt hampered in their ability to pursue more flexible work practices, to be more cost-effective and thus more competitive in the tight labour market climate of today.

Thus, it can be concluded that a blanket requirement that all work should fall under uniform compulsory trade designation is unduly restrictive and is likely to be an inefficient means of allocating labour

5.4 DISCUSSION OF PHASES 1 AND 2

Phase I indicated that companies which hire cooperative students or hire grads from the cooperative apprenticeship programs are relatively small. Most companies have less than

ten employees, including an average of five certified tradespeople and one or two registered apprentices (Tables 5.2 & 5.3).

Employers believe that it is generally quite difficult to find good tradespeople, Table 5.4. Comments indicate that the main factor contributing to a difficulty in hiring is the lack of skilled and experienced tradespeople. The attitudes and general employability of potential employees were also commented upon and, in some cases, seen to be poor, generating an employer's reluctance to hire from the available labour pool.

Phase I participants were asked to indicate their level of satisfaction with the conventional apprenticeship system, Table 5.5, and to rate apprentices on several attributes. A good cross-section of the employers indicated that they are neither satisfied nor dissatisfied. A possible explanation for this ambivalent position is the employers' main concern is to be able to hire skilled and motivated graduates regardless of the training model. Employers also indicated an average level of satisfaction with the performance of the apprentices presently employed by them. They rated apprentices' technical knowledge and skills lower than the ratings for attitude and skills (Table 5.7).

For the most part, respondents rated apprentices as average in all the attributes with the exception of attributes such as dependability, ability to learn and sense of responsibility where the scores were higher than average (Table 5.7).

Advertising is the main source of awareness for the cooperative apprenticeship program at BCIT. While some students also approached employers to find their own work placement, few employers took the initiative to become a placement host, Table 5.8.

Phase I respondents to the second part of the questionnaire, which was to assess the success of cooperative programs in meeting employer needs, are satisfied with the performance of cooperative students, Table 5.10, cooperative staff and BCIT in general, Table 5.14. Employers rated the importance of critical workforce skills to their satisfaction with cooperative students in performing these skills. Overall, capacity to learn, adaptability, initiative, teamwork, interpersonal skills and oral communications were rated important, Table 5.12. Employers were satisfied with cooperative students in

performing these skills in the workplace and confirm their satisfaction with these students by indicating a higher preference to hiring cooperative graduates over apprentices, Table 5.13.

A cross-tabulation of the questionnaire results was executed in order to determine if there were significant differences among the various sub-groups in terms of their attitudes or level of involvement and commitment to the cooperative program in their trade. As would be expected, the companies which have both placed students for work terms and hired graduates of cooperative programs are, on average, employers with more than ten employees regardless of program group. For all measure of levels of satisfaction, the group with the most level of involvement expressed a greater level of satisfaction than other groups. This support was also seen in the opinions regarding the rating of apprentices and cooperative graduate attributes. Those who were most involved with the cooperative model were most supportive of it. It is apparent that the majority of employers are very satisfied with their experience with cooperative apprenticeship students and relatively satisfied with the conventional apprenticeship system in meeting their manpower needs.

Phase II of the survey comprised of interviews. The results indicated that participants are not familiar with the specific details of Bill 34 (2.9.3); however they are very cognisant of the implications that this legislative act will have on the way apprentices will be trained (c.f.5.3.1). When asked by the interviewer about the specifics of Bill 34, they openly admitted their relative knowledge of this legislative act. In doing so, they expressed resentments and dissatisfaction with the consultative process in process as it does not provide opportunities for them to share their opinions and desires about apprenticeship training (c.f. 5.3.1)

Participants in Phase II indicated that they would be against a new system governed by a rigid legislative and regulatory framework with “one-size-fits-all” approach (c.f. 5.3.4). 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 wish to have a system that will describe requirements based on learning outcomes or

competencies rather than specific number of hours (time locked). They would be willing to accept a combination of the two, providing their own respective sectors will have something meaningful to say. One participant stating “If the specifications require four years of training, so be it. If one or two years are sufficient, that to should be possible” (c.f.5.3.2).

Phase II respondents want to have a properly trained people to do the work at hand. They want a truly industry-driven training system where the needs of industry and apprentices are of paramount importance (c.f. 5.3.4). They would also like to see the costs of training apprentices reduced and they see the introduction of apprenticeship programs at the high school level as a way to have qualified people faster and a lesser cost to employers (c.f. 5.3.4).

The support for modular training, partial certification and faster accreditation was split. While the all welcomed flexibility in training delivery and shorter time in the trade requirements where feasible, they would not readily support apprenticeship completion based on lower skill levels certification (c.f. 5.3.2). They see that earlier receipt of partial credentials will only benefit employers whose short term interests are best served by hiring semi-skilled workers at lower rates than fully qualified ones (c.f. 5.3.2).

All will support a system that will assess readiness to be certified not necessarily because of time spent in the trade, but rather because a core of competencies have been mastered (c.f. 5.3.2).

The interviews’ results indicated that respondents have divided views about compulsory trades certification. Four respondents were in favour of compulsory certification. Interestingly enough, the two respondents who are against compulsory certification only employed six-seven qualified people and based their opposition on the fact that compulsory certification, meaning the hiring of qualified persons only, will hamper their ability to pursue ‘more flexible’ work practices in order to remain more competitive.

The support for cooperative education was strong with Phase II participants identifying a number of benefits associated with this method of apprenticeship training (c.f. 5.3.3). In

concluding, the results of the interviews suggest that the cooperative model has been an effective vehicle for training apprentices; however, participants see the cooperative model as a component of the ‘traditional apprenticeship system’ rather than an end in itself. While this opinion may seem contradictory in nature, it should be viewed in the context of these employers’ desire for more options for hiring apprentices. They wish to be more involved in course content validation and student availability (c.f. 5.3.3). They stated that it is important to obtain regular input from industry on changes in the need for qualified trades people as demand changes over time, it is entirely possible that programs may, from time to time, need to reduce class size or run courses less frequently to balance industry demands.

5.5 SUMMARY

In this chapter the findings of Phase I (the quantitative phase) and the findings of Phase II (the qualitative phase) of the empirical research have synthesized and presented. The statistical information gathered during the survey undertaken in Phase 1 was derived from the self-administered questionnaire distributed to a sample of employers in British Columbia who had hired cooperative students during the last four years. The rich data was derived from the semi-structured interviews conducted as a follow-up with a small sample of selected employers who had hired cooperative students during the last four years (Phase II).

Chapter 6 presents conclusions within the framework of the aims of the study and offers recommendations for practice and future research.