Occupational Training in Nova Scotia

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ABSTRACT

The current system of occupational training in Nova Scotia has been subject to critical review over the past few years. In 1985, the Royal Commission on Post-Secondary Education identified a number of problems with the occupational system in Nova Scotia. Subsequent to the recommendations put forth by the Royal Commission, the Provincial government became concerned over developing a new improved occupational training system for Nova Scotia. This new approach to occupational training is to be a community college system. The purpose of this thesis is to determine whether the community college system will solve the deficiencies existing in the current system. This process will be carried out by first describing and evaluating the current system to identify the problems. The community college system proposals will then be put forth and evaluated in the context of solving the problems identified with the existing system of occupational training in Nova Scotia.

Chapter I

Introduction

This thesis is directed at the current system of occupational training in Nova Scotia. The system is described and evaluated and proposals for its improvement are assessed. Occupational training may be defined as any non-university post-secondary education which involves learning a particular skill or trade. Occupational training provides an economy with the skilled labour force that is required for the economy to function and grow. As opposed to university education, occupational education is more specialized and a focus is put on teaching over research.[1] Producing the individuals that are capable of performing specialized tasks provides the foundation for the economy to build upon. For example, in any industry, skilled labour is necessary before production can take place. Only after the skilled labour is provided is there a need for management and executives to coordinate the efforts at each level within the firm. As such, skilled labour is a vital ingredient in the economy. The development of an efficient occupational training system in Nova Scotia should be a top priority of the Provincial government.

In 1985, the Nova Scotia Royal Commission on Post-Secondary Education identified a number of problem areas in the current system.[2] The Commission's recommendations can be summarized in four main areas : 1) a need for improved awareness of occupational

training; 2) a need for improved coordination; 3) a need for more responsiveness to individuals; and 4) a need for responsiveness to industry.

The importance of occupational education is frequently underrated. There is the perception of occupational education as an inferior form of education best suited to those with low aptitudes. However, many of the trades involve a high level of aptitude and achievement before they can be mastered. The lack of prestige associated with occupational training stems from a lack of proper counselling in the secondary schools as well as parental and peer pressure. The Royal Commission recommended that an effort be made to improve the awareness of the importance of occupational training.

Many of the issues identified by the Royal Commission can be traced back to a problem of coordination. This is particularly the case in co-ordinating policies and the provision of education. The inability to coordinate policies leads to a lack of responsiveness to labour market needs. Also, coordination problems between institutions in the system leads to problems of standardization and rationalization of courses and programs throughout the Province. Furthermore, poor communication between the occupational education system and the high schools with regard to admission standards and the programs offered make it difficult for students to plan their high school courses in accordance with the requirements of the occupational education system.

The Royal Commission on Post-Secondary Education identified a general lack of responsiveness from the system to individuals. The courses offered in the occupational education system did not seem to provide any degree of flexibility so that the students were trained in the basics of a variety of skills. The counselling service was doing little to guide students into the proper programs or doing little to encourage females into non-traditional occupations. Little information was available on the job experience of graduates from which students could form an assessment of future employment prospects. The Commission found that the system was not making adequate provisions for the handicapped. Finally, the occupational training system was not operating at capacity and this makes it seem unjustifiable to limit vocational schools to the young given the increasing need to update and upgrade the older population group.

Finally, the Commission indicated that the current occupational system was failing to respond adequately to industrial requirements. The equipment used in schools was often obsolete and inconsistent with that of industry. The instructors often relied on traditional methods and were not adapting to technology and this led to the students being unable to respond to the modern techniques used by firms. Furthermore, the programs were in need of a periodic review and updating to take into account changes in employer requirements.

The identification of these general problems gave rise to a review of occupational training in Nova Scotia with the objective of developing a new and improved occupational training system for Nova Scotia. As well, the government realized the Province could no longer rely on skilled immigrants from European countries to satisfy the Province's labour requirements. Coupled with a high Provincial unemployment rate, especially among young people, the government has adopted the position that more emphasis should be placed on occupational training in Nova Scotia. Indeed, the provision of a skilled labour force appropriate to the needs of industry has become the cornerstone of the government's new economic development strategy.[3] The end result is the proposal for a community college system for the Province. It is felt that the new system will remedy the problems in the current system and enable Nova Scotia to compete domestically and internationally by providing world-class training in trades and skills.

This thesis is arranged in a sequence that will begin with a descriptive analysis of the current occupational training system in Nova Scotia and end with an assessment of the proposals for reform. Chapter two will describe the different types of occupational training currently available in the Province. The structure of the current system will be described indicating the responsibilities of both the Federal and Provincial governments and the various departments involved. The various sources of funding will be described. The chapter will conclude with a brief description of

the approach to occupational training in other countries. This will provide a useful reference point throughout the rest of the thesis.

The apprenticeship program is central to occupational training in Nova Scotia. For this reason, chapter three will focus entirely on the apprenticeship program. In this Chapter, the apprenticeable trades will be identified and the Provincial regulations regarding apprenticeship will be described. The various methods of entry into the program and the costs involved in each will be looked at. The chapter will conclude with an outline of the problems encountered and a general assessment of the program.

Chapter four will describe the Canadian Occupational Projection System (COPS). This is an occupational projection model being developed by Canada Employment and Immigration Commission (CEIC) that is designed to reduce the emergence of labour market imbalances in the economy. The chapter will outline COPS and describe the basic methodology used in making projections as well as explaining the role of these projections and outlining and explaining the problems that exist with the model. The model is thus adapted to provide projections for those occupations that are relevant to the designated trades in Nova Scotia. Finally, these results are used to identify actual and potential surpluses and shortages in the skilled trades in Nova Scotia.

An evaluation of the current occupational training system will be undertaken in Chapter five. First, the criteria used in the evaluation will be given and then the evaluation will be made based

on these criteria and the information presented in the previous chapters. The evaluation will provide a useful basis for assessing the proposed Community College system for the Province.

Chapter six will describe and analyze the proposed Community College system. This new system will be described in terms of its basic organization, the students that will be served, the programs that will be offered and the resources and funding involved. The basic emphasis of this chapter will be on assessing the extent to which the Community College system will provide an adequate solution to the problems outlined earlier. The chapter will conclude with an overall assessment of the Community College system, summarizing both the advantages and deficiencies with the new system.

Finally, Chapter seven will summarize the information presented in the previous chapters and make a recommendation on the future direction of occupational training in Nova Scotia.

Chapter II

Occupational Training in Nova Scotia

This chapter will identify the various types of occupational training available in Nova Scotia and the schools and institutions that are responsible for the delivery of the training. Funding arrangements between different levels of government will be examined with a special focus on the evolution from federal/provincial cost sharing on post-secondary education to the current tax and transfer arrangement. Following this, the reasons for both provincial and federal involvement in occupational training will be discussed. Finally, a brief overview will be given on the occupational training systems in other countries.

Structure

Prior to 1985, vocational and technical training was originally under the cooperative supervision of The Department of Education and The Department of Labour and Manpower. Each of these departments formed a subdepartment to concentrate on training and labour needs. The Department of Education formed a subdepartment for vocational and technical training while the Department of Labour and Manpower formed a Manpower subdepartment. In 1985, the Royal Commission on Post-Secondary Education identified a problem in this arrangement in that there was a dispersal of effort.[4] Each

subdepartment had to report to its main Department and go through different Ministers and offices before they could communicate with the other subdepartment. This resulted in a lack of matching occupational needs with training needs. To avoid this, The Royal Commission recommended that these two subdepartments be combined to form one department. Subsequent to the recommendations of the Provincial Conference on the Economy in October 1985, a new department combined the subdepartments headed by the Deputy Minister of Vocational and Technical Training and the Deputy Minister of Manpower. First known as Human Resources Development and Training, the Department was renamed in February, 1986 the Department of Vocational and Technical Training.

Recently, the structure has been reorganized with the new department being named the Department of Advanced Education and Job Training. This is one step taken toward the implementation of the proposed community college system which will put more emphasis on co-ordinating universities with vocational and technical training. As the title implies, the Department will be responsible for all the post-secondary education in the Province.[5] The broader mandate should enable more coordination between the universities and the occupational training institutes.

Occupational Training Institutions

Secondary Schools

The introductory level of occupational training can start at the high school level. Occupational training is provided in the Industrial Arts and Business Education courses. These course prepare students for further training in a particular trade as well as introduce them to certain occupational skills that they may have a general interest in.[6]

Vocational Training

Vocational education is non-university education that focuses on training individuals in occupational needs.[7] In Nova Scotia there are fourteen vocational schools. These are located in : Annapolis, Burridge, Canso, Cape Breton, Colchester, Cumberland, Dartmouth, Halifax, Hants, Kings, Lunenburg, Memorial, Pictou, and Shelburne. Of these, eleven are regional vocational schools operated by the Department of Advanced Education and Job Training and the three district vocational schools operated by the amalgamated school boards in Kings, Colchester-East Hants, and Northside-Victoria. For these three vocational schools, the school board appoints the vocational board. The fourteen vocational schools operate independently by determining their own curriculums

and standards. They are, however, required to submit course outlines to the Department. The admission qualifications and course length varies by course and by school.

The schools operate from September to June with the length of the school day lasting from about 8:30 am to 4:00 pm, depending on the school. Transportation is usually provided to and from school with some financial allowances made for lodging for those who have to relocate.

Technical Schools

Technical education can be considered as post-secondary education. It combines theoretical knowledge and the mastery of complicated techniques and processes. It is higher level training than vocational or apprenticeship training. It involves mastering high technology skills.[8] Entrance to technical schools in Nova Scotia requires completion of grade eleven or twelve. Technical schools usually require more high school courses in math and sciences than universities do and entrance qualifications are generally higher than for universities.[9] The three technical schools that operate in Nova Scotia are the Institute of Technology, Land Survey Institute, and the Nautical Institute. As well, technical programs are offered at the University College of Cape Breton (UCCB) and the Nova Scotia Agricultural College (NSAC).

These schools run from late August or early September until June making the school year longer than the university year.

Apprenticeship Program

The apprenticeship program is a combination of on-the-job training coupled with institutional training. Apprenticeable trade courses are mostly at the vocational level.[10] There are four different methods of entry into the apprenticeship program. The facilities and instruction (for the institutional part of the training) are provided by the Nova Scotia Institute of Technology, the University College of Cape Breton, the Adult Vocational Training Centers, and the vocational schools.

Universities

Some university programs in certain subjects leading to a certificate are considered technical education. The principal programs of this nature are the Technician and Technology programs at the Agricultural College and the Technology program at the University College of Cape Breton. Programs in other universities leading to a one or two year certificate are Child Study, Costume Studies, Secretarial Arts, Gerontology, Community Animation, Dental Hygiene, Meteorology, Jazz Studies, Commerce, Public Administration, and other Education programs.[11]

Private Sector Institutional and Workplace Training

There are private trade schools in the province that teach a variety of vocational and technical subjects. Some of the courses include business practices, secretarial studies, foreign languages, computer programming, animal care, diving, hairstyling, survival methods, and safety on the job.

Nova Scotia firms consider industrial training more of a liability than an investment and, therefore, rely mostly on the government to provide its skilled labour supply.[12] The reasons that give rise to this will be examined later. For the most part, industrial training strategies in Nova Scotia are underdeveloped.

Institutional Adult Training

Adult training is mostly at the vocational level. As well as taking new courses, it gives adults the opportunity to upgrade their skills. It is provided by the Department of Advanced Education and Job Training through one of the Adult Vocational Training Centers (AVTCs) at Cape Breton or Dartmouth. Course modules are usually delivered at regional vocational schools after the closing of the school day. The range of courses offered is broader than those offered by the vocational schools.[13]

Enrollment

Table 1 provides the enrollment figures in the various occupational training institutions from 1977 through 1985. The table indicates a steady increase in the enrollment in the technological institutes. Enrollment in the Adult Vocational Training Centers has generally been declining from 1977 onward. Enrollment in the vocational schools has remained steady with the exception of the decline in 1984-85. In total, the enrollment in occupational training has been declining.

Funding

Funding for occupational training is complex for a variety of reasons. Courses which are considered by the Department of Education to be below the grade twelve level are deemed secondary, while those at the grade twelve and above are post secondary. Secondary education is funded jointly between the province and the municipalities. Post secondary education funding is provided by the province and the federal government. Funding is available through CEIC for manpower training. CEIC finances adult training by buying training blocks from the Province for adult trainees.

Table 1

Enrollments in Occupational Training Institutions

Institution	1977-78	1978-79	1979-80	1980-81	1981-82	1982-83	1983-84	1984-85
High Schools								
- Commercial	524	539	383	367	406	222	271	256
Vocational Schools								
-DVS	1443	1436	1512	1417	1448	1450	1462	1378
-RVS	4825	4645	4854	4893	4918	5102	4762	4448
Subtotal :	6268	6081	6366	6310	6366	6558	6224	5826
AVTCs and								
Modules	5708	4722	4235	4197	4344	3812	3511	N/A
Technological Institutes								
NSAC	255	257	265	262	246	255	218	223
NSIT	307	302	290	306	336	370	355	N/A
NSLSI	116	126	99	127	140	127	113	105
NSNI	164	115	264	257	371	306	354	N/A
UCCB	440	501	505	529	520	593	650	598
Subtotal :	1282	1301	1423	1481	1613	1651	1690	N/A
Total :	13,782	12,643	12,407	12,355	12,729	12,243	11,696	N/A

Source : MacLennan, Rod J. (chairman) (1985) Report of the Nova Scotia Royal Commission on Post-Secondary Education 1985 (Halifax)

Federal Government Funding

The British North America Act of 1867 gave the provinces exclusive control over their respective primary and secondary education system. Yet, over the years, there has been significant federal involvement in the funding of post-secondary education.

Up to 1977, the federal government's financial contribution was in the form of conditional cost sharing arrangements with the provinces. The evolution from cost sharing to block funding arose gradually over time. The first conditional grant by the federal government was for education. The Agricultural Instruction Act operated from 1913 to 1923 and allocated federal funds to the agricultural colleges for teaching purposes. Originally federal involvement was centered on vocational training, adult training, and university education.

The Technical Education Act was established in 1919. This Act covered all types of occupational training. The federal government made matching grants with the provinces up to a maximum of 10 million dollars. After this Act, the federal government focused more on unemployed adults which was reflected in its passage of the Unemployment and Agricultural Assistance Act in 1937. Under this Act, the federal government supported the training of unemployed persons between the ages of 18 and 30.

This was followed by the Youth Training Act in 1939 and later the Vocational Training Co-ordination Act in 1942. Both of these

were cost sharing agreements. The latter having a broader mandate and more conditions attached with regard to the distribution of funds among the different programs.

The Technical and Vocational Assistance Act was passed in 1960. This Act called for further expansion of the apprenticeship program under the Apprenticeship Training Agreement. Also, the Act included a Technical and Vocational Training Agreement in which the federal government contributed 50 percent of the capital and operating expenditures.

In 1967, the Adult Occupational Training Act (AOTA) replaced TVTA. Except in Alberta, the federal government took over complete responsibility for the financing of adult education. The distinguishing feature of this Act was that it was an attempt by the federal government to gain more control over adult education. The federal government was not successful in gaining complete control because even though Canada Manpower Centers were responsible for selecting the individuals for training and specifying the nature of the training required, the provinces could define the programs that individuals could be sent to because they regulated the occupational education institutions.[14]

Up to this point, federal government funding was solely a cost sharing arrangement with the provincial governments. The federal government introduced the EPF (Interim Arrangement) Act in 1965 which gave provinces the alternative of opting-out of cost sharing

in favour of tax transfers. Quebec was the only province to opt-out of the cost sharing arrangement in favour of this.

In 1972 the federal government imposed a constraint of 15 percent as the maximum annual growth rate in federal grants for post-secondary education. This was the initial step by the federal government's towards phasing out the various cost sharing arrangements. In 1976, the federal government argued that the increasing cost of post-secondary education made it uncertain that it could continue to honour its commitments and that the benefits of the program are biased towards the richer provinces.

As an alternative to the cost sharing arrangement, the Federal-Provincial Fiscal Arrangements and Established Programs Act of 1977 provided for a block funding approach to hospital insurance, medical insurance, and post-secondary education.[15]

There are two components of EPF : 1) tax point transfers; and 2) cash grants. The initial agreement provided for a transfer of 13.5 personal income tax points and one corporate income tax point to each of the provinces from the federal government. Also, cash grants were awarded to the provinces that were to be approximately equal to the tax points in value. The cash grant is basically a per capita grant that is to increase over time according to the formula based on the growth rate in nominal GNP per capita. The federal government paid transitional cash payments equal to the difference between the basic cash payment and the total value of the tax transfer.

Because the per capita cost of the shared programs varied widely, a levelling mechanism was used to solve this. For example, the per capita cost of a new technical institution in Nova Scotia would be higher than one in Ontario (assuming constant cost) because Ontario has more people to spread the costs over. Per capita transfers that were less than the national average were levelled upward while those that were more than the national average were levelled downward.

Some changes were made in 1982. Financial transfers were determined by taking the total per capita contribution in 1975-76, not 50 percent as was done between 1977 and 1982, and increasing it by an escalator. The levelling and transitional payments were eliminated because cash payments were now determined by subtracting the values of the transferred tax points, including associated equalization, from the fiscal transfers.

This block funding approach gave the provinces the discretion to distribute the funds among health insurance, medical insurance, and post-secondary education according to their own formulas. Furthermore, it reduced the uncertainty the federal government had to contend with, as far as fulfilling commitments under the cost sharing arrangement.[16]

Besides EPF, another development occurred in 1977. The Canada Employment and Immigration Commission was created under the Employment and Immigration Reorganization Act of 1977. It was made responsible for the development and utilization of labour market

resources in Canada, for employment services, for unemployment services, and immigration. Also, it was to provide assistance to employers such as help in recruiting job candidates.[17]

The National Training Act, 1982 replaced the Adult Occupational Training Act of 1967. The Act is an attempt for more federal-provincial cooperation regarding training which is reflected in the establishment of joint federal-provincial committees. Under the terms of the Act, the federal government pays all the costs associated with adult training as well as providing income support to trainees during their training. Course content, training methods, and the delivery of training is left in the control of the province.[18]

Table 2 gives the federal government transfers for 1986-87. The EPF funds are distributed among insured health services, post-secondary education, and extended health care. Insured health services account for the majority of the funds with 64 percent of the total going for this. Post-secondary education accounted for approximately 28 percent of the EPF funds in 1986-87. Table 3 shows the EPF funds distributed to post-secondary education from 1979 through to 1984. The table also shows the per capita values of these transfers. As shown in the table, cash transfers are considerably more valuable than tax transfers.

Table 4 gives the expenditures on occupational training by levels of government from 1979 through to 1984. The table indicates that federal funds have been declining from 1981 while the

provincial contribution has been increasing. The municipal government started to contribute a small percentage of the funding in 1982. This could be an indication that more students are entering the occupational institutes and taking courses that are classified under secondary education.

Reasons for Government Involvement

There are many benefits that come with having a skilled and educated workforce. First, educated workers have lower unemployment rates than do less-educated workers. The more skills and knowledge an individual possesses, the more ability he/she will have to perform different tasks. Training should increase a worker's productivity which will improve overall efficiency in the economy.

If education helps an individual find work, then it will also help reduce other adverse effects of unemployment. An individual may resort to crime to supplement his/her income if unable to find employment. This will increase the cost of crime prevention to society. Also, unemployment may lead to poor health and possibly suicide due to poor morale. Thus training could possibly indirectly lead to reduced medical expenses.

Table 2

Federal Government Transfers to Nova Scotia 1986-87

Established Programs Financing (EPF)

Cash Transfers	millions of dollars	percentage
Insured Health Services	220.4	62.2
Post-Secondary Education	94.6	26.7
Extended Health Care	39.4	11.1
Total EPF Cash Transfers	354.3	100.00
Tax Transfers		
Insured Health Services	111.6	67.9
Post-Secondary Education	52.8	32.1
Total Tax Transfers	164.3	100.00
Cash and Tax Transfers		
Insured Health Services	332.0	64.0
Post-Secondary Education	147.4	28.4
Extended Health Care	39.4	7.6
Total	518.8	100.0

Source : Canadian Tax Foundation (1987) The National Finances 1986-87 (Toronto : The Canadian Tax Foundation)

Table 3

EPF Funds for Post-Secondary Education in Nova Scotia

1979-84

(millions of dollars)	1979-80	1980-81	1981-82	1982-83	1983-84
Federal Cash					
Transfers	58,461	63,134	69,631	74,072	81,487
Value of Tax					
Point Transfers	40,140	46,479	52,458	54,427	56,279
Total	98,601	109,613	122,089	128,489	137,766
(per capita)					
Cash Transfers	69.41	74.71	82.17	86.96	94.59
Value of Tax Points	47.67	54.99	61.90	63.90	65.33

Source : Statistics Canada (1987) Financial Statistics of Education 1983-84 (Ottawa : Supply and Services Canada)

Table 4

Expenditures on Occupational Training

	1979-80	1980-81	1981-82	1982-83	1983-84
			(Thousands of Dollars)		
Federal	33,534	38,931	42,034	39,875	40,298
Provincial	23,394	23,724	24,531	29,010	45,958
Municipal	-	-	-	110	120
Fees	940	1001	1073	1177	1310
Other	735	800	738	33	210
Total	58,603	64,456	68,376	70,205	87,896
			(Percentage)		
Federal	57.22	60.40	61.47	56.80	45.85
Provincial	39.92	36.81	35.88	41.32	52.29
Municipal	-	-	-	.16	.14
Fees	1.60	1.55	1.57	1.68	1.49
Other	1.25	1.24	1.08	.05	.24
Total	100.00	100.00	100.00	100.00	100.00

Source : Statistics Canada (1987) Financial Statistics of Education 1983-84 (Ottawa : Supply and Services)

Because of the risk involved, firms tend to underinvest in training. A risk arises when a firm invests in general training for a worker and, upon completion, the worker leaves the firm for an opportunity elsewhere. In this circumstance, the firm loses its training investment and it acts as a disincentive for that firm to train again. The risk is reduced when a firm invests in custom training whereby the trainees options for other opportunities outside the firm are reduced. Government must become involved to prevent underinvestment in training.[19]

Government involvement ensures that all individuals have the opportunity to an education. If individuals were responsible for the financing of their own education, some may be restricted because they lack the financial resources.

Investing in education is also a development strategy of the government. A skilled human resource base is vital for future economic growth and providing the human resource base will serve to attract industry to an area. The reason for this is that when an industry looks to locate in an area, it will be concerned with the available supply of labour. If an industry finds that the labour resource base is already provided, it will save it that much time and money from having to train. In Germany, for example, the industrial structure was built upon having a trained labour force.[20] Moreover, one industry locating in an area can spill over into other industries locating and this could have a multiplier

effect on the economy in that area by stimulating demand and overall income.

Migration is a reason for federal involvement. Because of the migration of skilled labour to other Canadian provinces, it adds a national dimension to training. A single province should not be responsible for the entire cost of training if an individual has the opportunity to practice Canada-wide. If this was the case, it could lead to a problem of other provinces becoming "free riders". For example, if a worker trained in Nova Scotia migrates to Alberta, then Nova Scotia would lose its training investment and this would act as a disincentive for the Province to finance any further training. For this reason, federal government involvement in the financing of training is justified.

The Canadian Job Strategy

The Canadian Job Strategy is a program designed to assist various groups in the Canadian economy. The purpose is to induce economic growth so as to create more employment opportunities within the Canadian economy. The CJS provides assistance for both organizations and individuals. Assistance is in the form of shared costs for training and the wage bill. The CJS has programs for job development, skills investment, job entry/re-entry, innovations, summer employment, work sharing, and industrial adjustment service.

The job development programs are designed to induce employers to expand their businesses, creating more employment opportunities in the process. To do this, the federal government will share the cost of the increased wagebill with the employer. The program is targeted at individuals who have difficulty finding employment on their own. The programs last to a maximum of one year.

The purpose of the skills investment programs is to provide training assistance to employees and employers so that they can keep up with the pace of technological change. The assistance is in the form of financial allowances for training. The federal government subsidizes the employees salary while the individual is on educational leave. The program acts as an incentive to train employees so that efficiency can be increased. The program will provide assistance up to a maximum of three years. This type of program is very prominent in France.

The skills shortages program focuses on training individuals in skills that are in short supply. The federal government provides financial assistance for on and off the job training. The focus is on training individuals with skills that are in immediate demand.

The purpose of the job entry/re-entry program is to assist persons having difficulty in making the transition from home or school into the workforce. It provides financial assistance for employers to hire these people. Once the opportunity exists so that these individuals can enter the work force, it allows them a chance

to develop work experience and credibility that will assist them in future employment.

The CJS provides funding for organizations to develop new solutions to Canada's labour market problems. Funding to the private sector should be a good motivator for developing new ideas.

Summer employment programs are available to employers and to secondary and post-secondary students for four months of the year. Assistance is in the form of wage sharing with the employers in return for creating summer jobs for students in their related fields. The program helps solve the cyclical employment problem that exists with the influx of students into the workforce for four months of the year.

Unemployment job creation projects are available to assist businesses in completing a project and for unemployed individuals who may wish to utilize their skills and experience while they are unemployed. The federal government provides enhanced UIC payments to the employee as well as providing financial assistance to the employer to help cover other costs. The program lasts up to a maximum of one year.

The work sharing program is designed to assist businesses in maintaining their workforce during a temporary slowdown caused by short term adverse economic conditions. The program helps stabilize the unemployment rate by keeping individuals with the same organization thereby reducing frictional unemployment. It saves the employer from the cost incurred with having to train a new

workforce once business picks up. During recessional times, employees share the work and the federal government compensates them for their lost hours.

The purpose of the industrial adjustment service is to provide a forum for employees to get together to discuss imminent changes and to formulate adjustment measures. It allows the employer and employees to get together and discuss the implementation of new employment measures. The federal government will share up to 50 percent of the committee costs. The funding will encourage interaction between employer and employees to help the organization adjust to technological change.

In summary, the CJS is a cohesive approach to the needs of the labour market. The CJS puts an emphasis on providing incentives to develop jobs and to undertake training to increase efficiency and responsiveness to industrial needs.[21] However, the CJS programs may possibly conflict with provincial manpower policies and cause further labour market imbalances.

A Description of Occupational Training in Other Countries

Countries that have a very well developed occupational training system are Northern Ireland, Scotland, Germany, France and Holland. The following is a summary of the system in each country.

Northern Ireland

The layout and responsiveness of the Northern Ireland occupational training system is very impressive. The Northern Ireland Youth Training Program (YTP) was established in September, 1982. The program focuses on 16/17 year olds. The two main objectives of YTP are to provide a skilled flexible workforce that can adapt to changing technology. Secondly, to help the transition of 16/17 year olds from school to work. The YTP is organized by the Department of Economic Development and the Department of Education for Northern Ireland. The training is a balanced blend of off-the-job training, further education, and work experience.

A guaranteed year will offer a well rounded experience, incorporating the widest possible range of personal development opportunities. It provides a flexible approach in recognition of the wide variety of needs in the age group as well as the future manpower requirements of the economy. It offers continuous guidance and counselling to help the individual decide on the appropriate career path. Career Officers help choose the appropriate mix of programs for the individuals. The focus is on broad training, delivered through modules, to enable each young person to sample a variety of possible occupational experiences. Prior participation in the program is mandatory before any youth can claim unemployment benefits. The guaranteed year training is provided by the

Government Training Centers (GTCs), Further Education Colleges (FECs), and Community Workshops.

Government Training Centers have been major providers of off-the-job training in Northern Ireland. The location of the Centers is such that no one lives more than 25 miles from one of these modern training facilities. They provide a foundation for young people intending to enter apprenticeships or alternatively to train them to semi skilled level for employment in the construction or engineering industries. The three main elements of the programs offered at GTCs are Basic Vocational Training, Advanced Vocational Training, and Apprenticeship Training. The Basic Vocational Training program is designed to give the students an introduction to the different trades. This is provided through a series of five week modules. The program lasts for six months and upon completion, the student can apply for apprenticeship training.

Apprenticeship Training lasts from 26 to 39 weeks. A modular approach is used for delivery. the program is responsive both to the individual and the employer, which is reflected in the extremely high placement rate. One reason for this is that the openings for apprenticeship are in accordance with the projected demand for journeymen. The close cooperation between industry and GTC administration allows for accurate demand projections. Efficiency in the program is maintained by making entrance competitive. Evaluation criteria for entrance is based upon the

student's performance in Basic Vocational Training with the instructor's assessment carrying weight also.

For those who are not successful in gaining acceptance into the apprenticeship program, Advanced Vocational Training is provided which is designed to keep the student's options open should an apprenticeship opening arise. Courses are at the semi skilled level and correspond to those offered through Apprenticeship Training. Again, the modular approach is used.

The second year of YTP offers the individual a choice of combined training and education under the YTP Workscheme or full-time training through Community Workshops, Youth Community Projects, Young Help, and National Trust.

With the introduction of the YTP Workscheme, the number of students continuing into second year has increased. The Workscheme is organized by the Department of Economic Development. It encourages employers to train 17 year old employees according to an approved training plan which provides the equivalent of at least one day per week of off-the-job training or further education. It offer the employer assistance in the form of a grant and free further education at FECs, GTCs, and Community Workshops. Employers who wish to participate in the scheme must agree to abide by certain terms and conditions which are laid down by the Department. The Department considers these conditions to be the minimum required to protect public funds and to ensure that the training provided is of a high standard.

Second year full time training focuses on training in a specific area where more advanced training and development is undertaken. It is also concerned with providing a stimulating and challenging work environment. The projects are effective because the students can see the immediate results of their employment.

Adults have the opportunity for training through the Skills Training Scheme. The government provides grants up to 6000 dollars to registered employers for training adults in specific skilled trades. Province-wide standards are maintained by requiring registered trainees to pass standardized tests.

The occupational training system in Northern Ireland is successful to the extent that it is placing students with training related employment and it is responsive to industrial needs. Basically. the effectiveness of the program stems from the cooperation between industry and education. The cooperation allows for training modules to be developed quickly in response to changing industrial requirements and for accurate occupational employment demand projections where the supply is limited in accordance to demand. Besides its responsiveness to industry, one of the reasons why YTP has been so successful is because of its extensive marketing to youth and employers. This is done through employer meetings, television, radio, conventions, and even a travelling road show. This gives all interested parties the opportunity to learn about the options open to them through the program.[22]

Scotland

The Scottish system of occupational education is very well developed.[23] Through the provision of comprehensive higher level technical, vocational, and occupational training in colleges of further and higher education, it has limited the scope of the university programs. This appears to be more practical since it is the occupational skills that are in demand by industry. Students of high calibre have been attracted into vocational and technical training. In Scotland, occupational training is regarded as more of an equal with the universities. Scotland has no jurisdiction over the universities which may have induced it to concentrate more on occupational training.

In Scotland, the Scottish Business Education Council and the Scottish Technical Education Council have been amalgamated together to form the Scottish Vocational Education Council (SCOTVEC). The two councils were made up of representatives from all interests. Membership in SCOTVEC is a mix of appointees named by the Secretary of State for Scotland. It includes members from the professional and technical bodies, the teaching profession, industry and trade unions. The object of SCOTVEC is to develop and encourage the advancement of vocational education and training in the context of national education policy. The cooperation of the providers and users of vocational education is crucial to the success of SCOTVEC.

SCOTVEC fulfills a bridging function between the "providers" and "needers" of training.

While administration has been assigned by the Secretary of State to SCOTVEC, the Scottish Education Department remains the ultimate authority in vocational and technical education. Financing for the system is through state grants and local authority taxes.

Occupational training in Scotland is in the form of modular training. It is a system of training for the 16+ year old school leavers of varying school background entering technical and vocational colleges. It provides a flexible range of opportunities for school leavers as well as to prepare for entry or re-entry into the workplace. There is no percentage grading with the modular training, it is based on a pass/fail approach. The training is broken up into several modules. The student needs no previous background experience in the subject. Each module is independent so that they can be taken in any order. Each phase in the module is so simplified that no percentage grading is necessary; the student needs only to demonstrate the task to the satisfaction of the instructor. Each module is 40 hours in length which allows the student some flexibility to experiment with other trades so as to choose the trade that appeals to him/her the most. The main advantage of modular training is its responsiveness to industry and the flexibility it gives the student.

Training in technical and vocational subjects is provided by 66 Central Institutions and Colleges of Further and Continuing

Education. These cover all occupational training courses. The modular courses are taught at the College of Further Education while the more advanced courses are taught at the Central Institutions. As well as attracting the less inclined students, the Colleges of Further Education have been successful at attracting the higher calibre students.

The modular training method has generally been successful. Industries appear to be satisfied with the skills being produced. The program has performed well, educating those lacking secondary schooling as well as educating the secondary school graduates. The pass/fail grading approach is not flawless. This approach seems to be inadequate for making evaluations on the students ability to make decisions and for evaluating a student's cooperation among a group. On-the-job training has been found to be the most practical and effective method of training. The administrators and instructors have eventually all come to support the modular training method in Scotland.

Germany

In Germany, the apprenticeship program is available for a wide range of occupations. The "dual apprenticeship" consists of vocational training at the workplace, usually extending over three years, combined with some off-the-job training or education. This is compulsory for those who are not attending full time education.

The cost of on-the-job training is borne by the firm while off-the-job training is provided free by the government. The placement rate for apprentices in Germany is extremely high. To prevent inconsistent quality of training across industry or poaching of trained labour, the federal government has intervened by laying down regulations to prevent this. Qualified instructors and training content are supervised federally. The federal government also encourages the development of cooperative training among the individual firms so as to reduce the cost to the small firm and to maintain standards.

For the young individuals that are in unskilled occupations or unemployed, courses are available in general vocational training at the vocational schools.[24]

France

There are two distinguishing characteristics of France's vocational education system. First, legislation has required that all employers make a contribution to the financing of vocational education. Secondly, it is a right for all citizens to take leave from work for training purposes.

The current rate of the vocational levy is 1.1 percent of the wagebill. Of this levy, the employers are obligated to remit 0.2 percent of the wagebill to the government for the training of women and young people seeking work. Of the remainder, employees can

either finance training measures directly or pay the levy to the treasury for training. Employers can be exempt from training if they undertake training on their own.

Workers have the right to take a leave of absence from work for training purposes. However, there are conditions attached to this so as not to hinder the production of the firm. This right to absenteeism does not effect the employee's right to continued employment, holiday periods, or seniority in any manner. The employee may not always take advantage of this benefit. For example, the allowances paid to the employee for certain courses may not make it worthwhile for the employee to give up his/her current income.[25]

Holland

The education system in Holland is diverse and offers a variety of options to students. From the age of 12 students have four education paths open to them for secondary education. There is the Lower Vocational Education (4 year course); Intermediate General Secondary Education (4 year course); Higher General Secondary Education (5 year course); and Academic Secondary Education (6 year course).

The apprenticeship system is one option for those not in full time education after age 16. Admission into the program requires completion of a Lower Vocational or Intermediate General Secondary

course. It combines on-the-job training with institutional training and lasts two years with the option of spending another year for an advanced standard. Intermediate Vocational Education is open for those who have completed an Intermediate General Secondary course. It should be noted that students must first take some basic training before being admitted into the apprenticeship program.

The Dutch system is attempting to open more of the system up for adults. The high unemployment rate has induced this effort to increase the level of access to the training and education that already exists and developing those areas where the present system is weak.[26]

Summary

This chapter began by giving an overview of the structure of occupational training in the Province indicating the problems separate control of manpower and education functions created. This problem should be somewhat resolved with the recent creation of the Department of Advanced Education and Job Training. The different types of occupational training programs offered by the Province were identified and briefly described as well as federal programs within the CJS. The funding arrangement between the Provincial and federal governments was described with an emphasis on the evolution from cost sharing for post-secondary education to block funding.

Furthermore, the reasons that give rise to government involvement in occupational training were explained.

The occupational training systems in other countries provide a useful comparison with the Nova Scotia system. Many elements of the programs in these countries could be adapted to improve the Nova Scotia system. The important elements of the occupational training systems in these countries that should be noticed are the importance they place on skills training, the coordination between all the involved parties, the emphasis they place on labour market planning, and the methods they use for delivery of the different programs. Chapter three will examine the Nova Scotia apprenticeship program which is the chief approach to on-the-job training in the Province. The above material should provide a useful background for assessing the Nova Scotia occupational education programs.

Chapter III

The Nova Scotia Apprenticeship Program

On-the-job training is one of the most effective means of training. It gives the trainee the opportunity to apply his/her theoretical knowledge to actually performing the specific trade or skill. The trainee can then be evaluated on how effective and suited he/she is in performing the task. For these reasons this chapter is devoted to describing the apprenticeship program in Nova Scotia which is the chief method for on-the-job training. The apprenticeable trades and those designated as certified will be listed. The regulations governing the apprenticeship program in Nova Scotia will be described and the process through which a trade becomes designated as apprenticeable will be looked at. The different methods for entry will be explained and the cost involved will be examined. Finally, the problems with the program in the Province will be identified and elaborated on.

Definition of Apprenticeship Training

Apprenticeship training can be defined as all training which is undertaken in a trade that has been "designated" for training purposes under the Apprenticeship and Tradesman's Qualification Act.[27] In Nova Scotia, there are 30 designated trades of which 8

are certified trades. Under the Act compulsory certification refers to those designated trades where a worker must possess a current certificate of qualification, or be a registered apprentice. According to the legislation, all workers in a compulsory certified trade must be certified journeymen before being able to work independently at that trade. All work by apprentices in certified trades must be supervised by a journeyman. Compulsory certified trades are usually designated as such for reasons of public safety. The apprenticeable trades and the certified apprenticeable trades are listed in Table 5.

Apprenticeship is concerned with crafts that require skill and a diversified knowledge of the particulars of a craft. Apprenticeship differs from most training because it requires much more comprehensive knowledge and experience in a trade.[28] Upon successful completion of his/her apprenticeship program, the apprentice obtains a certificate of qualification (journeyman) and is considered fully competent to practice the trade anywhere in Nova Scotia. A journeyman is defined as a person who has learned a trade and who is considered to be self-sufficient in matters related to the trade pursuant to the Apprenticeship and Tradesman's Qualification Act.

Table 5

The Apprenticeable Trades in Nova Scotia, 1987

Trade
Boilermaker
Bricklaying *
Carpentry
Cooking
Electrical Construction *
Gasfitter *
Heavy Duty Repair (tractors and earthmovers)
Industrial Electrical
Industrial Instrumentation
Industrial Mechanic (millwright)
Lineman - Electrical Power Utility
Machinist
Marine Fitter
Metal Fabricator
Mine Electrician
Mine Mechanic
Motor Vehicle Repair (body)
Motor Vehicle Repair (bus and transport) *
Motor Vehicle Repair (mechanical) *
Painting and Decorating
Plumbing
Refrigeration and Air Conditioning *
Residential Oil Burner and Service *
Service Station Mechanic *
Sheet Metal
Sprinkler Fitting
Stationary Engineer (engine operator)
Steamfitting-Pipefitting
Restoration Stone Mason
Welding

* indicates certified trade

Source : Kilmorack Consultants (1987) Canada/Nova Scotia Apprenticeship Study (Unpublished paper)

The Interprovincial Standards Examination Program was established in 1958 as so to maintain standard levels of qualification across Canada.[29] The Red Seal certificate gives a journeyman the authority to practice his/her trade anywhere in Canada.

The Interprovincial Standards Program Coordinating Committee is made up of representatives from the provincial governments. In 1984, of the 24 designated trades that are Red Seal trades, 21 are designated in Nova Scotia. To obtain a Red Seal certificate, the journeyman must receive a minimum of 70 percent on an examination set by the Interprovincial Standards Program Committee. An apprentice may receive a provincial journeyman certificate if he/she obtains a minimum of 60 percent on this exam.

The Red Seal certificate serves to increase skilled labour mobility in Canada.[30] A Red Seal journeyman is not restricted to finding employment in any one province, hence he can migrate to another province to find work. Once interprovincial standards are established for all designated and certified trades, skilled labour mobility will be greatly enhanced.

If an apprentice has difficulty finding employment in his/her local jurisdiction, he/she can obtain a "visitors card" which permits the apprentice to accept work outside his/her local jurisdiction. The "visitors card" only permits that person to work if there is no resident member tradesman seeking employment in the host jurisdiction.

Regulations

The statutory authority for apprenticeship in Nova Scotia is The Apprenticeship and Tradesman's Qualification Act: Chapter 11, Revised Statues of Nova Scotia 1967. Under the legislation the Governor-in-Council is to appoint a Provincial Apprenticeship Board. The Governor-in-Council, under the statute, has the responsibility to make regulations pertaining to apprenticeship in Nova Scotia including registration of apprentices, qualifications for admission to the program, matters relating to the nature of training, hours and the minimum wage rate for apprentices, tests and examination, and the issuance of journeyman certificates.[31]

The statute further calls for the establishment of Trades Advisory Committees, a Director of Apprenticeship and Tradesman's Qualifications, a registry of apprentices, the duty of employers, the designation of trades, and the registration of trades.

The role of the apprenticeship Board is to make recommendations to the Department of Advanced Education and Job Training on the following:[32]

- designation of a trade
- the terms of apprenticeship
- the enforcement of trade qualifications
- prevention of unqualified parties from participating in designated and certified trades

- future role of apprenticeship programs
- the role of various parties in providing and assessing the need for training programs in the province of Nova Scotia
- any other matters generally relating to the apprenticeship program

The role of the Trades Advisory Committees is to advise on matters relating to a trade either on a provincial level or for a local area of the province. By getting the recommendations of employers, employees, and the general public, they provide input for the development of training programs that will adequately meet the needs of industry and the people of Nova Scotia. There are 16 Trade Advisory Committees in the Province that report to the Provincial Apprenticeship Board. They hold no administrative or legislative authority.[33]

Designation of Trade

One of the responsibilities of the Provincial Apprenticeship Board is to make recommendations to the Department of Advanced Education and Job Training on the designation of a new apprenticeable trade.[34] Although it is a responsibility of the apprenticeship Board, the initiative may be taken by industry, private individuals, or government. The concerned party will present the Board with the relevant information. This information

is then referred to the Department for verification. A study of the cost and content of the proposed apprenticeable trade is undertaken by comparing with other jurisdictions where the trade is currently apprenticeable. If recommended by the Board, the proposal is sent to the Department for final examination. If accepted by the Minister, the trade becomes designated once it is published in The Royal Gazette.

After the trade becomes designated, a Trade Advisory Committee is established to develop the regulations and advise on the program content. The curriculum and the institutional (block release) training program is then established. After all the details and regulations are in place, the trade becomes a designated apprenticeable trade upon announcement by the Governor-in-Council.

Methods for Entry

Apprenticeship training is approximately 85 percent on-the-job training and 15 percent institutional training.[35] The formal and regulated delivery process ensures that skills are taught to apprentices and the experience and practicality of on-the-job training allows them to practice their skills enabling them to be more responsive. The apprentice and employer will have a close working relationship. While training on-the-job, the apprentice follows the instructions of his/her journeyman employer with

standards being set by the Department of Advanced Education and Job Training. The apprentice is paid a percentage of the rate for a journeyman in the same trade. The apprentice is released from on-the-job training periodically to take institutional training. It is the responsibility of the individual to secure employment that will accept him/her as an apprentice.

The four methods of entry into the apprenticeship program are as follows :

One year vocational training in the apprenticeable trades is available to students in certain schools who have a high academic standard upon entering vocational school. This one year program requires the completion of grade XI or XII of high school. The student will take a course consisting exclusively of trade subjects. The student will receive credits towards apprenticeship for his/her first year theory and one half of the first year practical (1,000 hours) and second year theory if he/she pass the second block exam. Upon completion of this training, a certificate is awarded.[36]

The second method is to enter vocational school from Grade X and take two years of academic and trade courses. Students receive credit towards apprenticeship for their first year of practical (2,000 hours) and theory. Credit towards apprenticeship is granted for theory if successful at passing the second block apprentice exam. A certificate is awarded upon completion.[37]

The third method of entry into the program is through CEIC. The intending apprentice takes a pre-employment course at one of the 10 Adult Vocational Training Centers (AVTCs) operated in the Province. Training is given to select individuals to provide sufficient skills of the trade for them to produce immediately for their employer, thereby reducing the length of the initial period during which a beginning apprentice is non-productive. The length of the course varies from 14 to 40 weeks depending upon the trade. While the participant is attending the pre-employment course, he/she is under the responsibility of the federal government (through CEIC). The intending apprentice receives 1,600 hours credit for their training towards completion of a certificate of qualification. Upon completion of a pre-employment course, graduates must find employment in a trade to become registered as an apprentice. At this stage, the responsibility of the program reverts back to the Province.[38]

Finally, individuals can enter the apprenticeship program through the block release method. Essentially, this involves the federal government paying the costs for employees to take leave from their trade-related employment and take block release training at one of the occupational training institutions throughout the Province. The training usually lasts for five to eight weeks a year for four years. The federal government pays the training costs as well as unemployment insurance benefits to the trainee.[39] Block release trainees may receive credit for previous on-the-job

experience and may be allowed to write the test for the first block when they enter apprenticeship.

Apprenticeship training begins when a worker is indentured by an employer and serves a probationary period to determine his/her suitability for the trade. When an apprentice enters the formal apprenticeship system their work experience and any previous institutional training is taken into account to determine the length of the apprenticeship and the number of theory blocks required.

The average expected time for completion for block release entrants is from 3.5 to 4 years depending on the trade. Because of the education background, the expected time to completion for vocational graduates is 2.5 to 3 years depending on the trade. Pre-employment graduates have an average expected completion time of 3 to 3.5 years, depending on the trade, based on average credits of one year theory and one year practical.

The actual time for completion is usually longer than expected because of labour market factors. The high unemployment rate and the seasonal variations in some trades make it difficult to obtain the required hours of employment in one calender year. Vocational schools have a marginally better completion rate for training starts than the other methods. This may be partly due to the length of time reduced as well as the number of blocks being fewer. Also, vocational school graduates already have invested in their training which would give them more desire to complete.[40]

The Costs Involved

In 1987, total enrollment for Nova Scotia in the apprenticeship program composed apprentices from the RVS, pre-employment, and block release was 4300 students. The cost was approximately $4,069,000. Of the total cost, the Provincial Government provided $904,000 of the funding with the federal government contributing the remaining $3,165,000.[41]

The Province assumes all the administrative costs of the Directorate of Apprenticeship training, the salaries of counsellors, total capital costs of the institutions where block release training takes place, the costs associated with the Advisory Board, the Trade Advisory Committees, and the costs of examinations.

Under the institutional Training Program, the federal governments pays the costs of the teachers involved in the pre-employment and block release programs. As well it will pay the cost of upgrading capital equipment, UIC benefits, and transportation and living allowances. Migration is one reason for federal involvement in the Nova Scotia apprenticeship program. The Red Seal certificate is an indicator that inter-provincial migration is encouraged. Because journeymen holding Red Seal certificates are not confined to any single province and have the authority to practice their trade anywhere in Canada, it adds a national

dimension to the apprenticeship program. Therefore, the federal government's financial share is justified on the grounds that the individual's productivity contribution is national in scope.

Table 6 gives a break-down of the costs involved in each method of entry into the apprenticeship program for 1984/85. As the table indicates, all apprenticeship training that takes place through the vocational school approach falls under Provincial expenditure. Most entrants into the apprenticeship program go through this method. The other two methods, block release and pre-employment, are funded by the federal government. As indicated by the figures from the table, the Provincial government assumes a large majority of the total apprenticeship expenditure. Table 7 shows the average cost for each approach to apprenticeship training. It should be noted that the vocational school apprentices cost more than twice that of the other two methods to train.

Problems with the Program

The main problem with the Nova Scotia apprenticeship program is the low completion rate from the program. The non-completion rate is approximately 50 percent.[42] Table 8 gives the completion rate per trade in 1984. The table gives a listing of the 25 apprenticeable trades in Nova Scotia from 1945 to 1984.

Table 6

Annual Costs Associated with Training New Supply of Workers in the Apprenticeable Trades in Nova Scotia, 1984-85

Vocational Schools (Provincial Expenditure)	
1984/85 Enrollment in Apprenticeable Trades	2,049
Cost of Training	$13,137,366
Pre-Employment Courses (Federal Expenditure)	
1984/85 Enrollment in the Apprenticeable Trades	418
Cost of Training	$1,067,314
New Block Release Entrants (Federal Expenditure)	
1984/85 Apprenticeship Enrollment by Workers with no Institutional Training	711
Cost of training* (Assuming 67% complete one block during their first year of training)	$498,556

Total Cost of training =$14,703,236

* Does not include Unemployment Insurance Benefits.
Source : Department of Vocational and Technical Training (1986) Training in the Apprenticeable Trades in Nova Scotia (Unpublished paper)

Table 7

Cost to Journeyman Status 1984-87

Block Release	
four theory blocks ($1045 X 4)	$4180
Vocational Graduates	
two years in vocational school	$10,850
and attend two theory blocks	$ 2,090
total	$12,940
Pre-Employment Graduates	
average cost of pre-employment course	$ 2,553
and on average attend three theory blocks	$ 3,135
total	$ 5,688

Source: Department of Vocational and Technical Training (1987) Training in the Apprenticeable Trades in Nova Scotia (Unpublished paper)

The completion rate ranges from a low of 37.7 percent for cooks to a high of 74.3 percent for industrial electricians. Overall, the table reflects a definite problem in the program with regard to completions. There are a variety of reasons put forth for the poor record of completions.

Many individuals are motivated to enter the program for the wrong reasons.[43] Some enter the program to solve unemployment problems for themselves. Employers have an incentive to hire apprentices, especially for less skilled aspects of the trade, because the wages are lower than for a journeyman. Apprentices take advantage of this and solve their unemployment problem. Once he/she has collected 20 weeks of employment from on-the-job training, the apprentice can then draw UIC. For some, their main motivation for entering the program is to provide themselves with an income and once this is accomplished, they do not have the motivation to complete the program and end up withdrawing from it.

Some are not fully aware of all the details on the trade and once they enter the program they realize that it is not what they expected. Without the interest, it makes it that much more difficult to succeed in completing the program. The student is not entirely to blame for this, it is a reflection back on the poor counselling service that is provided. It should be a responsibility of the Province to provide proper counselling so that the student is fully aware of all the details of the trade.

Table 8

Total Apprenticeship Registrations, Cancellations and Completions, 1945-1984, Nova Scotia

Trade	Registrations to 1981	Cancel-lations	Compl-tions to 1984	Compl-tion Rate % of reg.
Boilermakers	81	27	52	64.1
Bricklayers	821	487	310	37.7
Carpenters	3073	1415	1525	49.6
Cooks	628	344	278	44.2
Construction Electrical	3803	1449	2330	61.2
Bus and Transport	239	103	148	61.9
Heavy Duty Repair	692	315	383	55.3
Industrial Electrical	928	211	690	74.3
Industrial Instrumentation	40	14	19	47.5
Lineman	636	219	433	68.0
Machinist	1227	444	767	62.5
Marine Fitter				
Millwright	834	257	508	60.9
Mine Electrician*		-	-	
Mine Mechanic*		-	-	
Motor Vehicle Repair(Body)	992	597	444	44.7
Motor Vehicle Repair(Mech)	3951	1961	2128	53.8
Oil Burner Servicing	402	219	183	45.5
Plumbing	1960	829	1107	56.4
Refrigeration and Air Conditioning	349	176	179	51.2
Sheet Metal	743	317	403	54.2
Sprinkler Fitter	60	18	33	55.0
Stationary Engineer	477	174	266	55.7
Steamfitter/Pipefitter	912	422	460	50.4
Welding**				

* These programs began in 1982
** Welding was not designated until May,1985

Source : Department of Vocational and Technical Training (1986) Training in the Apprenticeable Trades in Nova Scotia (Unpublished paper)

With an unemployment rate above the national average, Nova Scotia has the problem of trying to accommodate apprentices with employment that will last the duration of their on-the-job training.[44] Frequent lay-offs hinder the apprentice from obtaining the required hours of on-the-job training to complete his/her program.

Some apprentices lack the aptitude to cope with the institutional part of the program. Individuals may do well in performing their required tasks for the on-the-job training, but institutionalized learning adds a new dimension to the program and some may not be able to cope with reading, studying texts, etc. Learning the institutional training is necessary for passing the examinations, and a problem with this part of the program will prevent an apprentice from obtaining a certificate of qualification.

Poor supervision is another reason for not completing the program. Journeymen are masters at their trade, but that does not mean that they can communicate their skills with others. There may be a problem with the journeyman not being able to effectively teach his trade to the apprentice. Unless the apprentice is able to learn from the journeyman and grasp the concepts of the trade, he/she will not be able to perform the task adequately to satisfy the requirements for qualification.

Another problem with the on-the-job training is that an apprentice may be placed in a situation where he/she is surrounded by specialists.[45] A journeyman is required to be equipped in all aspects of the trade, however some specialize in certain areas of a trade. A journeyman that specialized will not be able to teach the apprentice all the general skills that go with the trade. An apprentice may be able to develop skills in a certain area of a trade, but this will do him/her no good if he/she does not have skills in all aspects of the trade since the exams require a complete knowledge of the trade and not just specialized areas.

The log book carried by employer that is supposed to record the progress of the apprentice is not always an accurate indicator of the progress of the apprentice.[46] Sometimes the log books are falsified so as to indicate the the apprentice has learned more than he/she actually has. This hurts the apprentice in the end because the log book may indicate that the apprentice has learned the required skills, but the final exam will be the judge if he/she actually has learned all the skills. Falsified log books hinder the apprentice from completion of the program because they take the easy route out instead of the journeyman spending more time to make sure the apprentice has actually learned the skill.

Importance of Projections

The time and costs involved with apprenticeship training makes accurate demand and supply projections essential for efficient allocation of resources as well as the prevention of labour market imbalances. Accurate projections can improve the allocation of resources if appropriate measures are taken to accommodate these projections. Demand projections will give an indication of the labour required for each trade. The demand projections are only of use if labour supply is adjusted in accordance with the demand forecasts. Demand and supply projections have to have a relatively high degree of accuracy because of the time it takes for adjustment in the labour market. The slightest error in the projections could take four years and onward to correct. The following chapter will give a more extensive description of the methodology used for projections as well as indicating the future labour market situation for the apprenticeable trades.

Summary

This chapter gave a description of the various aspects of the Nova Scotia apprenticeship program. Apprenticeship training is only one approach to occupational training, however it may very well be the most important program in the occupational training system which gives justification for this lengthy description on the

program. The basic approach to apprenticeship training makes it an ideal program for those who are more concerned with demonstrating their ability to perform a specific trade or skill rather than being trained solely in an institutional or theoretical manner. Furthermore, apprenticeship graduates are appealing to employers because the individuals are equipped with a well rounded blend of practical training upon completion of their apprenticeship training which enables the individuals to be productive and responsive to industrial demands. However, as indicated, this program is not flawless and it will be indicated in the next chapter how problems in this program can lead to serious labour market imbalances and cost inefficiencies to the Nova Scotian and federal governments.

Chapter IV

An Analysis of the Canadian Occupational Projection System

An integral part of occupational training is the existence of some mechanism for making projections or net requirements by occupation. Projections must be made on what skills are in short supply and what ones are in surplus. Labour market imbalances can depress growth and lead to chronic unemployment as well as representing an overall inefficient allocation of resources. Therefore, the projection of future labour demands and supply is vital for evaluating and improving the occupational training system in Nova Scotia. The basis for such projections in Nova Scotia is the Canadian Occupational Projection System (COPS), developed by CEIC.

The purpose of this chapter is to outline the basic COPS methodology. Specifically, the chapter will identify the factors to consider when making projections; outline the importance of occupational planning; identify the problems associated with the model; present the current situation in the labour market concerning the apprenticeable trades; and assess the situation.

The Canadian Occupational Projection System (COPS) has been developed by Employment and Immigration Canada. The purpose of COPS is not to make forecasts, but to identify potential labour market problems and correct them before any imbalances occur so that the

Canadian economy can continue on its current path of economic growth.[47] As such, COPS has the potential to play an important role of influencing the behavior of governments, employers, and individuals to help prevent medium to long term labour imbalances. Information is made available on the supply and demand for workers by region and occupation in Canada. On the demand side, government and industry cooperate with one another to provide information on the future growth of industry, taking into account industrial composition of output and employment. The information is then analyzed to determine if there will be any problems in the future given the current trends in the available labour supply. For example, an increase in labour productivity over time will result in employment growing at a slower rate than output. On the supply side, information is collected on the working age, population, inter provincial labour flows, labour force participation rates by age and sex, and the turnover in the education sector. This information is needed so that the size of the labour force can be determined for the medium to long term.

Methodology of the COPS Model

The basic COPS methodology involves converting industrial output projections to employment projections by industry. It is a sequence of steps from projecting industry output, to projecting total employment by industry, to projecting the occupational

distribution by industry of that employment. In cooperation with the Provincial Department of Advanced Education and Job Training, a macroeconomic scenario is developed for the Province. Based on assumptions of the scenario and the growth rates of 62 industries, occupational forecasts are derived for each of 496 occupational types, specified at the four digit Canadian Classification of Occupations (CCDO) level.[48]

The initial output projection is broken down for more than 50 industrial sectors. The approximation is then circulated to the industry branches of DRIE and to various federal departments with specific industrial responsibility, such as Agriculture, Energy, or Fisheries. A consultation between the private sector and the provincial agencies over the accuracy of the projection is held. After using the feedback from the consultation, amended industrial projections are produced on a regional basis and these are used to derive the implied projections for labour requirements.

These output projections are then translated into employment and skill projections. Translation is done mechanically using the industry/occupation relationships contained in the Canadian Occupational Forecasting (COFOR) Model of Employment and Immigration Canada. Based on 1981 census, the labour market trends are determined and this is used to calculate the share of each occupation in total employment by each industry.

Once projected output growth and labour needs are calculated, the ideal model would not only take into consideration the existing

supply but, also, make a forecast on the future supply of labour in each trade. It is intended that COPS include a projection of the number of graduates the training and education system is capable of producing, given the existing institutional capacity and union/government/industry practices in which training is related to employment. The number of post-secondary graduates is based on the capacity of the system and enrollment figures. Statistics Canada provides this data and estimates are then made on the proportion likely to enter the Canadian labour market.

Other less formal means of education include the apprenticeship program and private training. Capacity for apprenticeship training can be calculated by using an average of the journeyman/apprentice ratio. Apprenticeship regulations require that no more than one apprentice can be under supervision of a journeyman at any one time. Taking into consideration the current number of practicing journeymen in the Province and the length of the apprenticeship program, a rough estimate of the number of apprentices that will graduate to journeyman status and flow into the labour force can be determined. This can then be used as a base for finding the expected turnover of the program. Numbers from private training must be obtained through consultation with the Province, unions, and employers.

Information on the existing supply of unemployed labour can be obtained from the number of Unemployment Insurance claimants which is available from CEIC. This information will indicate the existing

surplus of labour in each trade. Once an UIC claim is filed, the name and occupation of the claimant will be put on file. All the claims are filed and the number of claims for each occupation can be summed to give an indicator of the surplus in each trade. This information is somewhat overstated because not everyone that files a claim receives UIC payments. Because of the waiting period involved, the individual could become employed after he/she has filed a claim and still be listed by CEIC as unemployed.

Once all the information is collected on the projections for output, demand, and supply, it can be integrated together to identify labour market problems. The annual Occupational Outlook Conference brings all the information and various departments together for discussion of future imbalances. The discussion focuses on correcting labour market imbalances and formulating better training strategies.[49]

Factors to Consider in the Forecasts

Making the projections is a complicated task. Not only do projections depend on the current and past structure of industries, but also on technical change, environmental factors, and occupational concentration in industries.[50]

Technology

Technological advancement can result in an increase in output of an industry while also accounting for a declining share of labour in an occupation. The use of modular construction will reduce the need for carpenters just as the refinement and wider use of robots in the automotive industry will eventually lead to proportionally less spot welders,spray painters, and assemblers. Office clerks will be displaced by the more efficient data processing of computers. Radio and T.V. repairing occupations will be reduced due to the lower maintenance and repairing required which is a result of the silicon chip.

Some occupations will benefit from technology. The increasing complexity of new types of equipment in industry will cause the share of mechanics and servicers to rise. Another example is the increasing sophistication of sound and video recording which has created a new demand for sales and service occupations in this field.

Environment Sensitivity

Projections must also take into account environmental sensitivity. Business cycles in the economy will effect the output of industry and, therefore occupations. Low inflation and low interest rates will increase consumer confidence and purchasing

power. This would benefit such industries as the construction industry and therefore increase demand for carpenters and other trades associated with construction. An industry requiring rapid increases in production on account of a shift in demand for that industry's product will pull concentrated industries its way. Therefore, a boom in the construction trade would spill over into the forestry industry and other input industries.

Not only must COPS be concerned with the domestic environment, but also the international environment. For example, an increase in the world price of oil could restrict the output of the industries that are heavily reliant on oil. A rise in the Canadian dollar would make Canadian exports more expensive to purchase and the fall in demand could lead to reduced output of the Canadian industries. Staple industries will be very volatile because they are dependent on the demand and supply conditions in the international market. An example of this is the volatility in the fishing industry. Industries that provide the main inputs for other industries will be volatile as well because their success hinges on the success of other industries. For example, the steel industry is dependent on the manufacturing sector.

Occupational Concentration

The occupational concentration in industries is also important in occupational projections and prevention of labour imbalances.

Narrowly skilled workers are dependent on a single industry. Their success will depend on the success of the industry they are associated with. Occupations concentrated in specific sectors of the economy are therefore particularly vulnerable to industrial adjustment. This creates problems in the labour market for two reasons. First, when the sector is doing well, the employer may experience difficulty in finding workers because of the specific nature of the trade. Secondly, when times are bad, the worker may face difficulty finding other employment because of the limitations of his/her skills. Skilled workers appear to be, on the whole, more flexible and more adaptable to changing circumstances because they are more widely distributed across industries. Therefore, such occupations are less likely to be affected by events in any one particular sector.

Attrition

Attrition represents the number of people who will leave an occupation during a given year. Attrition may result from mortality, retirement, emigration, inter-occupational mobility or other specific reasons. The attrition coefficient can be roughly approximated by analyzing the age/sex profile of the current stock of people in particular occupations and examining data on emigration. The estimated attrition coefficient can then be applied

to the number of people in the occupation to find the number of new vacancies that will occur.

Importance of COPS

Coordinating the information obtained from governments, industry, and the private sector should allow for better planning of government policies, industrial strategies, and individual careers. By having an idea of potential labour market imbalances, government can direct its policies to prevent this. Education programs can be directed at those occupations that will be demand oriented. the government will have an idea of the growth rate of the economy so that it can implement the appropriate macro policies that will control the expansion and contraction of industry. Government will have a better idea of which sectors to distribute its funds for economic development.

Industry can identify its own labour needs in the future and compare them to the supply of labour that will be available in the future for various occupations. This will allow for correcting labour market imbalances before they occur by communicating with the labour supply sources. Also, industry can better plan its training strategy. The industry may be better able to determine its own growth path and forecast its profits if it has an idea of the labour market situation.

COPS should facilitate better career planning for individuals. Having access to projected demand and supply data should enable individuals to plan their careers better. A surplus of labour and depressed wages in one sector should induce individuals to enter those education programs that teach the shills that are in demand. The simple supply and demand analysis should push the labour market into equilibrium, however it should be emphasized that training takes time and today's imbalances may not be the same as those in the future and this is why COPS is concerned with the medium to long term. COPS gives individuals the opportunity to plan their careers earlier in their lives by giving them an idea of what the labour market situation will be in the medium to long term.

Problems with Projections

COPS is still in a development stage. The model can be used to project annual growth in employment by occupation, but projections on openings and imbalances are not totally reliable. Trying to determine job openings is complicated by technological change, cyclical variations, and exogenous factors. It is difficult to determine the productivity changes that arise from technological progress. Not only does domestic information and technological progress have to be taken into account, but also the technological progress that may develop in another country. Moreover, it is difficult to obtain an accurate attrition coefficient. The ideal

model would make forecasts on the future labour supply per occupation, as mentioned earlier. However, COPS has not yet developed to the stage where it can give an accurate picture of the future labour supply in each trade. To improve on the model and make it more effective, data on the future supply of labour will have to be incorporated into the model.

Adaption of COPS to the Apprenticeable Trades

There is a problem in that there is not always a unique match between a specific trade and a CCDO classification code. Table 9 lists the apprenticeable trades and their corresponding CCDO codes. As the table indicates, some of the CCDO codes have more than one trade attached to them. This creates a problem because COPS relies on the CCDO classification when it makes an employment demand projection. For example, the CCDO code that applies to plumbing also applies to pipefitting-steamfitting, sprinkler fitting, and gasfitting. This will give an inaccurate picture in the labour market; the number of plumbers will be overstated because other tradesmen are included in the CCDO classification. The solution to the problem would be to break the CCDO classification down into a 7-digit classification.

Table 9

Provincial Trade Name	CCDO Title	Related CCDO Title	CCDO Code
Boilermaker	Boilermakers, platers and structural metal workers		8337
Bricklaying	Brick and stone masons and tile setters		8782
Carpentry	Carpenters and related occupations		8781
Cooking	Chefs and cooks		6121
		Supervisors, food and beverage preparation and related service occupations	6120
Electrical Construction	Construction electricians and repair workers		8733
		Foremen/women, electrical . . . occupations.	8730
		Inspecting and testing occupations	8736
Gasfitter	Pipefitting, plumbing and related occupations		8791
Heavy Duty Repair	Industrial, farm and construction machinery mechanics and repairers		8584
		Foremen/women	8580
		Inspecting and testing occupations, equipment repair, N.E.C.	8586

Provincial Trade Name	CCDO Title	Related CCDO Title	CCDO Code
Industrial Electrical	Construction electricians and repair workers		8733
		Foremen/women, electrical occupations	8730
	Electrical and related equipment installing and repairing operations, N.E.C.		8533
		Foremen/women, electronic and related equipment	8530
Industrial Instrumentation	Precision-instrument mechanics and repairers		8588
		Mechanics and repairers except electrical, N.E.C.	8589
		Inspecting and testing. . . Equipment repair	8586
		Foremen/women, mechanics and repairers, except electrical	8580
Industrial Mechanic (millwright)	Industrial, farm and construction machinery mechanics and repairers.		8584
		Foremen/women	8580
Lineman-Electrical Power Utility	Electrical power lineworkers and related occupations		8731
		Foremen/women	8730

Provincial Trade Name	CCDO Title	Related CCDO Title	CCDO Code
Machinist	Machinist and machine-tool setting up occupations		8313
		Foremen/women	8310
		Tool and die making	8311
		Inspecting and testing	8316
Marine Fitter	Marine craft fabricating, assembling and repairing		8592
Metal Faricator	Boilermakers, platers and structural-metal workers		8337
		Foremen/women	8300
		Inspecting and testing	8336
Mine Electrician	Construction electricians and repair workers		8733
Mine Mechanic	Industrial, farm and construction machinery mechanics and repairers		8584
		Mechanics and repairers except electrical, N.E.C.	8589
		Inspecting and testing	8586
		Foremen/women	8580
Motor-vehicle Repair (body) Motor-vehicle Repair (bus and transport) Motor-vehicle Repair (Mechanical)	Motor-Vehicle mechanics and repairers		8581
		Foremen/women	8580

Provincial Trade Name	CCDO Title	Related CCDO Title	CCDO Code
Plumbing	Pipefitting, plumbing and related occupations, N.E.C.		8791
Refrigeration and Air Conditioning	Electrical and related equipment installing and repairing, N.E.C.		8533
Residential Oil Burner Installation and Service	Other construction trades occupations, N.E.C.		8799
Sheet Metal	Sheet-metal workers		8333
		Foremen/women	8330
		Inspecting and testing	8336
Sprinkler Fitting	Pipefitting, plumbing and related occupations, N.E.C.		8791
Stationary Engineer (Engine Operator)	Stationary engine and utilities equipment operating and related occupations, N.E.C.		9539
Steamfitting-Pipefitting	Pipefitting, plumbing and related occupations N.E.C.		8791
Stone Mason	Brick and stone masons and tile setters		8782
Welding	Welding and flame cutting occupations		8335

Source: Kilmorack Consultants (1987) Canada/Nova Scotia Apprenticeship Study (Unpublished paper)

Table 10 lists those trades that have no unique CCDO classification. This grouping of more than one trade into the same 4-digit CCDO code complicates the task of projecting imbalances. It will cause problems in the labour market, unless the trades can be further classified into 7-digit codes, because it will affect planning. For example, what this means is that it may be decided by planners to cap the apprenticeable trades falling under the 8782 classification, which includes bricklaying and stone masonry, because of a surplus. It may turn out that the surplus was due solely to bricklaying and that there was a shortage of stone masons. By capping both programs, the shortage imbalance in stone masonry would become worse.

Another problem with the CCDO coding is that it does not question the qualifications for the occupation. To be listed as a particular tradesperson, the individual does not have to hold a certificate of qualification. This could overstate the job experience problem for journeymen. For example, the stock of unemployed carpenters could be comprised entirely of non-journeyman carpenters while journeyman carpenters could all be employed. Capping this trade could result in serious supply shortages for journeymen carpenters in the future.

Table 10

Category	Trades Included	CCDO Codes	Related CCDO Codes
Cooking	Cooking	6121	
			6120
Machining	Machinist	8313	
			8310
			8311
			8316
Metal Working	Boilermaker	8337	
	Metal Fabricator	8337	
Sheet Metal	Sheet Metal	8333	
			8330
			8336
Welding	Welding	8335	
Electrical	Industrial Electrical	8533	
		8733	
	Electrical Construction	8733	
			8730
			8736
	Mine Electrician	8733	
	Refrig. and Air Cond.	8533	
Motor Vehicle Repair	M.V.R. (body)	8581	
	M.V.R. (bus & transport)	8581	
	M.V.R. (mechanical)	8581	

Related Category	Trades Included	CCDO Codes	Related CCDO Codes
Mechanical	Heavy duty repair	8584	
	Industrial mechanical	8584	
	Mine Mechanic	8584	8580
			8586
			8589
Precision Instruments	Industrial instrumentation	8588	
Marine Fitter	Marine Fitter	8592	
Lineman	Lineman	8731	
Carpenter	Carpenter	8781	
Mason	Bricklayer	8782	
	Stone Mason	8782	
Pipefitter/ plumber	Plumber	8791	
	Pipefitter-steamfitter	8791	
	Sprinkler Fitter	8791	
	Gasfitter	8791	
Res. Oil Burner	Res. Oil Burner	8799	
Stationary Engineer	Stationary Engineer	9539	

Source : Kilmorack Consultants (1987) Canada/Nova Scotia Apprenticeship Study (Unpublished paper)

This problem does not apply to the certified trades because tradesmen are required by law to be certified before practicing a certified trade. All tradesmen in certified trades hold their certificate of qualification. Table 11 lists the number of the number of journeymen in each of the compulsory certified trades as of September, 1986.

Data Problems

Currently, COPS has no supply data. This creates a problem because without supply data, there can be no medium to long term planning on matching people with jobs.

Another problem with COPS data is that workers in most of the designated trades are often in a good position to take on "unofficial" employment. Many journeymen are self-employed which makes it easy for them not to report some of their employment earnings. They have an incentive to be registered as unemployed to avoid taxation. This results in an over estimate of the unemployment rate.

Table 11

Number of Journeymen in Each of the Compulsory Certified Trades as of September, 1986

Bricklaying	404
Construction Electrician	2765
Special	59
MVRT Mechanical	3406
Service Station	171
Special	75
MVRT - Bus and Transport	278
Oil Burner Mechanic	783
Plumbing	1401
Special	17
Refrigeration and Air Conditioning	403

Source : Kilmorack Consultants (1987) Canada/Nova Scotia Apprenticeship Study (Unpublished paper)

The Current and Future Situation

Table 12 gives the projected employment requirements for Nova Scotia from 1986 through 1992 based on the provincial growth scenario, taking into consideration the factors mentioned before that influence growth. From the table it can be seen that most of the provincial employment stocks are concentrated in the auto mechanics, carpentry, and chefs and cooking trades.

Table 13 shows the net change in employment requirements for Nova Scotia based on the provincial growth scenario. The table indicates a noticeable decline in labour requirements for the following trades : welding, carpenters, masons, pipefitting and plumbing, other construction, and construction electricians. Trades where employment requirements will increase include : food and beverage preparation (supervisory), chefs and cooks, foremen - mechanics, and auto mechanics. Combining all the trades together, there will be a decline in requirements in 1987 through 1990. This table shows the environment sensitivity of the various trades. Carpenters, masons, plumbers, and electrician trades are all associated with the construction industry. A decline in one of these trades sets in motion a decline in the other related trades.

Table 12

Projected Employment Stocks for Nova Scotia
Based on the Provincial Growth Scenario

	Occupations	1986	1987	1988	1989	1990	1991	1992
6120	Super-Food+Bev Prep	1710	1732	1749	1774	1786	1832	1886
6121	Chefs + Cooks	4502	4573	4620	4684	4718	4836	4971
8310	Foremen-Metal Mach	116	114	113	110	111	112	113
8311	Tool + Die Making	39	39	39	39	38	37	37
8313	Machinist	736	725	733	733	742	751	764
8330	Foremen-Metal Shape	214	210	206	201	198	195	195
8333	Sheet-Metal Workers	341	340	343	341	339	340	343
8335	Welding	2056	2026	2022	1990	1975	1965	1977
8336	Inspecting-Met Wks.	19	17	17	17	17	17	17
8337	Boilermakers	229	226	221	218	216	214	214
8533	Elec Equip Repair	1257	1259	1256	1247	1236	1231	1237
8580	Foremen-Mechanics	1209	1224	1241	1252	1251	1263	1273
8581	Auto Mechanics	5259	5344	5422	5475	5465	5530	5570
8584	Industrial Mechan.	2760	2792	2806	2771	2734	2709	2709
8586	Inspecting-EQ Rep.	38	36	37	36	37	37	38
8588	Precision Inst Rep	162	162	162	162	162	163	163
8589	Other Mechanics	825	845	854	852	840	834	833
8592	Marine Craft Fab	1353	1285	1274	1279	1287	1296	1316
8730	Foremen-Elec Power	740	748	751	738	720	712	712
8731	Power Linemen	479	495	523	522	524	528	533
8733	Constr Elec.	1724	1700	1661	1622	1554	1505	1483
8736	Inspect-Elec Pow.	75	75	76	75	74	74	75
8781	Carpenters	5281	5202	5060	4872	4586	4391	4310
8782	Masons	511	501	476	454	421	399	389
8791	Pipefitting+Plumb.	1418	1405	1371	1330	1268	1226	1208
8799	Other Constr-Nec	1409	1405	1375	1335	1267	1232	1216
9539	Utilities Eq Op-Ne.	1293	1305	1318	1315	1310	1311	1316
	Totals	35752	35785	35728	35445	34875	34740	34901

Source: Kilmorack Consultants (1987) Canada/Nova Scotia Apprenticeship Study (Unpublished paper)

Table 13

Projected Net Change in Requirements for Nova Scotia
Based on the Provincial Growth Scenario

	Occupation	1987	1988	1989	1990	1991	1992
6120	Super-Food+Bev Prep	23	16	26	12	46	54
6121	Chefs + Cooks	71	47	64	34	118	135
8310	Foremen-Metal Mach	-1	-1	-3	0	1	1
8311	Tool + Die Making	0	0	-1	-1	-1	0
8313	Machinist	-11	8	0	9	9	13
8330	Foremen-Metal Shape	-4	-4	-5	-3	-3	0
8333	Sheet-Metal Workers	-1	3	-2	-2	1	6
8335	Welding	-30	-4	-32	-15	-10	12
8336	Inspecting-Met Workers	-2	0	0	0	0	0
8337	Boilermakers	-3	-4	-3	-2	-2	0
8533	Elec Equip Repair	1	-2	-9	-12	-5	6
8580	Foremen-Mechanics	15	17	11	-1	12	10
8581	Auto Mechanics	85	78	53	-10	65	40
8584	Industrial Mechanics	32	15	-35	-37	-25	0
8586	Inspecting-EQ Repair	-2	1	0	0	1	1
8588	Precision Inst Rep	-1	1	0	0	0	1
8589	Other Mechanics -Nec	20	9	-2	-12	-5	-2
8592	Marine Craft Fab	-67	-11	4	8	9	21
8730	Foremen-Elec Power	8	3	-13	-19	-8	0
8731	Power Linemen	15	28	-1	2	4	5
8733	Constr Electricians	-23	-39	-40	-67	-49	-21
8736	Inspect-Elec Power	1	1	-1	-1	0	1
8781	Carpenters	-79	-142	-188	-285	-195	-80
8782	Masons	-10	-25	-22	-33	-22	-10
8791	Pipefitting+Plumbing	-13	-34	-40	-62	-43	-18
8799	Other Constr-Nec	-4	-30	-40	-68	-35	-17
9539	Utilities EQ OP-NEC	13	13	-3	-5	2	5
	Totals	33	-57	-283	-570	-135	161

Source: Kilmorack Consultants (1987) Canada/Nova Scotia Apprenticeship Study (Unpublished paper)

Similarly, the food and beverage industry and the chefs and cooks occupation are related. The growth in these occupations could be a reflection of the increased older population where more services will be needed to serve the elderly. Also, there is a trend for people to do more dining outside the home.

Table 14 shows the corresponding growth rates of the various occupation classification. Those trades where there will be a decline in the employment requirements will experience negative growth while those that show an increase in the projected labour requirements will experience positive growth. The trades that show the steadiest growth over the six year period are food and beverage preparation (supervisory), chefs and cooks, and foremen - mechanics trades. Masons, carpenters, and construction electricians will see a substantial decline in their growth rates.

Table 15 gives the COPS and the Province's estimates of the attrition coefficients. The highest of the COPS attrition coefficients is the foremen - metal machining trade followed by chefs and cooks, utilities equipment operators, and boilermakers. Among the lowest are inspector - electrical power, masons, and tool and die making. The attrition coefficients for the compulsory trades should be somewhat lower than the rate for non-certified trades because of the fact that only journeymen can practice those trades. Since all tradesmen in the certified trades are journeymen, it would be expected that there would be less inter occupational

mobility given the time invested in learning the trade. Not all of those in the other designated trades are journeymen, and the non-journeyman would be more likely to drift to other occupations because they have not necessarily invested the time in learning the trade that a journeyman has. There is some indicator of this in the auto-mechanic and the construction electrician trades which are both certified.

Using COPS attrition coefficients, Table 16 gives the actual attrition for each occupation based on the Provincial growth scenario. Attrition numbers are highest in the carpentry and chefs and cooks trades. Tool and die making and inspecting - metal shaping show no projected attrition over the entire seven year span. Using the Province's attrition coefficients, projected attrition figures are the highest in chefs and cooks, auto mechanics, and carpentry trades. Projected attrition numbers are lowest in inspecting- metal shaping, tool and die making, and inspecting - equipment repair trades. One reason for the higher attrition coefficients in these trades is that they are more life-long trades. It takes longer to master the trade and the tradesman may be more in demand as he/she gets older and this is an incentive to stay with the trade. Carpentry probably has a higher attrition coefficient because of the instability in the construction industry.

Table 14

Average Annual Compound Growth Rate
Projected Stocks for Nova Scotia
Based on the Provincial Growth Scenario

	Occupation	1987	1988	1989	1990	1991	1992
6120	Super-Food+Bev Prep	1.287	0.982	1.429	0.676	2.576	2.948
6121	Chefs + Cooks	1.577	1.028	1.385	0.726	2.501	2.792
8310	Foremen-Metal Mach	-1.724	-0.877	-2.655	0.909	0.901	0.893
8311	Tool + Die Making	0.000	0.000	0.000	-2.564	-2.632	0.000
8313	Machinist	-1.495	1.103	0.000	1.228	1.213	1.731
8330	Foremen-Metal Sha.	-1.896	-1.905	-2.427	-1.493	-1.515	0.000
8333	Sheet-Metal Work.	-0.293	0.882	-0.583	-0.587	0.295	1.471
8335	Welding	-1.459	-0.197	-1.583	-0.754	-0.506	0.611
8336	Inspecting-Met Sha.	-10.526	0.000	0.000	0.000	0.000	0.000
8337	Boilermakers	-1.310	-2.212	-1.357	0.917	-0.926	0.000
8533	Elec Equip Repair	0.159	-0.238	-0.717	-0.882	-0.405	0.487
8580	Foremen-Mechanics	1.241	1.389	0.886	-0.080	0.959	0.792
8581	Auto Mechanics	1.616	1.460	0.977	-0.183	1.189	0.723
8584	Industrial Mech.	1.159	0.537	-1.283	-1.335	-0.914	0.000
8586	Inspecting-EQ Rep.	-5.263	2.778	-2.703	2.778	0.000	2.703
8588	Precision Inst Rep	0.000	0.000	0.000	0.000	0.613	0.000
8589	Other Mech.-Nec.	2.424	1.065	-0.234	-1.408	-0.714	-0.120
8592	Marine Craft Fab	-5.026	-0.856	0.392	0.625	0.699	1.543
8730	Foremen-Elec Power	1.081	0.401	-1.731	-2.439	-1.111	0.000
8731	Power Linemen	3.340	5.657	-0.191	0.383	0.763	0.947
8733	Constr Elec.	-1.392	-2.294	-2.348	-4.192	-3.153	-1.462
8736	Inspect-Elec	0.000	1.333	-1.316	-1.333	0.000	1.351
8781	Carpenters	-1.496	-2.730	-3.715	-5.870	-4.252	-1.845
8782	Masons	-1.957	-4.990	-4.622	-7.269	-5.226	-2.506
8791	Pipefitting+Plumb.	-0.917	-2.420	-2.991	-4.662	-3.312	-1.468
8799	Other Constr-Nec	-0.284	-2.135	-2.909	-5.094	-2.762	-1.299
9539	Utilities. Eq Op-Nec	0.928	0.996	-0.228	-0.380	0.076	0.381

Source: Kilmorack Consultants (1987) Canada/Nova Scotia Apprenticeship Study (Unpublished paper)

Table 15

Attrition Coefficients

	Occupation	COPS	Province
6120	Superv-Food+Bev Prep	2.3485	10.0000
6121	Chefs + Cooks	2.7493	10.0000
8310	Foremen-Metal Mach	4.0779	5.0000
8311	Tool + Die Making	1.1203	5.0000
8313	Machinist	2.5434	5.0000
8330	Foremen-Metal Shape	2.1298	10.0000
8333	Sheet-Metal Workers	2.4912	10.0000
8335	Welding	1.4738	5.0000
8336	Inspecting-Met. Shape	1.4356	5.0000
8337	Boilermakers	2.5832	10.0000
8533	Elec Equip Repair	2.5437	5.0000
8580	Foremen-Mechanics	2.4032	5.0000
8581	Auto Mechanics	1.2766	5.0000
8584	Industrial Mechanics	1.6603	5.0000
8586	Inspecting-Eq Repair	1.5338	5.0000
8588	Precision Inst. Rep	1.4413	5.0000
8589	Other Mechanics-Nec	2.4892	10.0000
8592	Marine Craft Fab	1.8648	10.0000
8730	Foremen-Elec Power	2.2750	5.0000
8731	power Linemen	1.9255	5.0000
8733	Constr Electricians	1.5979	5.0000
8736	Inspect-Elec Power	0.4754	5.0000
8781	Carpenters	2.2975	5.0000
8782	Masons	1.0361	5.0000
8791	Pipefitters + Plumbing	2.0463	5.0000
8799	Other Constr-Nec	2.0732	10.0000
9539	Utilities Eq Op-Nec	2.5878	5.0000

Source : Kilmorack Consultants (1987) Canada/Nova Scotia Apprenticeship Study (Unpublished paper)

Table 16

Projected Attrition for Nova Scotia
Based on the Provincial Growth Scenario
Using COPS Attrition Coefficients

	Occupations	1986	1987	1988	1989	1990	1991	1992
6120	Super-Food+Bev Prep	40	41	41	42	42	43	44
6121	Chefs + Cooks	124	126	127	129	130	133	137
8310	Foremen-Metal Mach	5	5	5	4	5	5	5
8311	Tool + Die Making	0	0	0	0	0	0	0
8313	Machinist	19	18	19	19	19	19	19
8330	Foremen-Metal Shape	5	4	4	4	4	4	4
8333	Sheet-Metal Workers	8	8	9	8	8	8	9
8335	Welding	30	30	30	29	29	29	29
8336	Inspecting-Met Workers	0	0	0	0	0	0	0
8337	Boilermakers	6	6	6	6	6	6	6
8533	Elec Equip Repair	32	32	32	32	31	31	31
8580	Foremen-Mechanics	29	29	30	30	30	30	31
8581	Auto Mechanics	67	68	69	70	70	71	75
8584	Industrial Mechanics	46	46	47	46	45	45	45
8586	Inspecting-EQ Repair	1	1	1	1	1	1	1
8588	Precision Inst Rep	2	2	2	2	2	2	2
8589	Other Mechanics -Nec	21	21	21	21	21	21	21
8592	Marine Craft Fab	25	24	24	24	24	24	25
8730	Foremen-Elec Power	17	17	17	17	16	16	16
8731	Power Linemen	9	10	10	10	10	10	10
8733	Constr Electricians	28	27	27	26	25	24	24
8736	Inspect-Elec Power	0	0	0	0	0	0	0
8781	Carpenters	121	120	116	112	105	101	99
8782	Masons	5	5	5	5	4	4	4
8791	Pipefitting+Plumbing	29	29	28	27	26	25	25
8799	Other Constr-Nec	29	29	29	28	26	26	25
9539	Utilities EQ OP-NEC	33	34	34	34	34	34	34
	Totals	732	733	732	726	715	713	717

Source : Kilmorack Consultants (1987) Canada/Nova Scotia Apprenticeship Study (Unpublished paper)

Table 17 reports projected gross changes in requirements by occupation for each year from 1987 to 1992 based on the COPS attrition rates.These projections follow from the simple addition of annual employment growth (Table 13) and attrition (Table 16). Those occupations that experience positive growth will have positive changes in their employment requirements. For those occupations experiencing negative growth, it will depend on the magnitude the negative growth rate is relative to the attrition coefficient to determine if there will be a positive change in the employment requirements. Auto mechanics and the chefs and cooks trades show the biggest increase in employment requirements. The number of required masons and carpenters will both decline. Using the Province's attrition levels, there will be marked increases in the requirements for chefs and cooks, auto mechanics, industrial mechanics, and food and beverage preparation (supervisory). There will be few new openings in tool and die making, inspecting - equipment repair, and inspecting - metal shaping trades.

Table 17

Projected Gross Change in Requirements for Nova Scotia
Based on the Provincial Growth Scenario
Using COPS Attrition Levels

	Occupations	1987	1988	1989	1990	1991	1992
6120	Super-Food+Bev Prep	63	57	67	54	88	97
6121	Chefs + Cooks	195	172	191	163	247	268
8310	Foremen-Metal Mach	3	4	1	5	5	6
8311	Tool + Die Making	1	1	0	0	0	0
8313	Machinist	7	27	19	27	28	32
8330	Foremen-Metal Shape	1	1	-1	1	2	4
8333	Sheet-Metal Workers	7	11	7	7	9	14
8335	Welding	0	26	-2	14	20	41
8336	Inspecting-Met Workers	-2	0	0	0	0	0
8337	Boilermakers	3	2	2	4	4	6
8533	Elec Equip Repair	33	30	23	20	27	37
8580	Foremen-Mechanics	44	46	41	29	42	40
8581	Auto Mechanics	152	146	123	60	135	111
8584	Industrial Mechanics	78	62	11	9	20	45
8586	Inspecting-EQ Repair	-2	1	0	1	1	1
8588	Precision Inst Rep	2	3	2	2	3	3
8589	Other Mechanics -Nec	40	30	20	9	16	19
8592	Marine Craft Fab	-42	13	28	32	33	45
8730	Foremen-Elec Power	25	20	4	-2	8	17
8731	Power Linemen	25	38	9	12	14	15
8733	Constr Electricians	4	-12	-13	-42	-25	3
8736	Inspect-Elec Power	1	1	0	0	0	1
8781	Carpenters	42	-23	-72	-173	-90	20
8782	Masons	-5	-20	-17	-28	-17	-6
8791	Pipefitting+Plumbing	16	-6	-12	-35	-17	7
8799	Other Constr-Nec	25	-1	-11	-40	-8	9
9539	Utilities EQ OP-NEC	46	47	31	29	36	39
	Totals	765	676	449	157	580	874

Source : Kilmorack Consultants (1987) Canada/Nova Scotia Apprenticeship Study (Unpublished paper)

The non-existence of labour supply projections makes labour market planning difficult. Without projections on supply, measures cannot be taken to regulate the number of new entrants into specific trades. If projections on supply were available, it would be possible to regulate the new entrants in accordance with demand. This would enable the occupational training system to be more responsive by matching labour supply with demand, thus helping to prevent labour shortages and surpluses.

Recent studies, using Labour Force Survey and CEIC unemployment data, have found strong surpluses in the following trades : chefs and cooks, auto mechanics, boilermakers, welding and construction related trades. These trades are more sensitive to cycles and other environmental factors in the economy. The trades that appear to be more in balance are as follows : linemen, tool and die making, equipment repair, and electrical power trades. This is probably a reflection of growing demand in these occupations due to technological progress.

The results for the pre-employment method of apprenticeship training are extremely poor. This could be partly due to the fact that entrants in this method usually face employment problems because of their lack of education before they enter the program, also most of the pre-employment training takes place at the AVTC in Cape Breton where the employment prospects are low, peaking at rates close to 30 percent at times.[51]

Entrants into the pre-employment method of the apprenticeship program are usually older individuals who have difficulty finding employment.[52] This is part of the criteria before admittance into the program by CEIC counsellors. The fact that many of these entrants had little secondary schooling and faced employment difficulties before entering the program, may make them less appealing to employers than an apprentice coming from the block-release or vocational school methods of the apprenticeship program.

Summary

This chapter indicated the importance of labour market planning. The model currently used for labour market planning, COPS, is hindered in its effectiveness partly because of the complexity involved in making accurate labour demand projections, but mainly because it is unable to make projections on labour supply.

The preceding material illustrates the poor job experience of occupational education graduates. This reflects on poor planing in Nova Scotia in matching graduates with employment. To prevent further problems, the COPS model must be further developed on the supply side and it must make adjustments to the CCDO codes so as to give a more accurate picture of the situation of individual trades. However, even though it is underdeveloped, the COPS model provides

a useful insight into the current and future labour market situation in Nova Scotia. This will be helpful in evaluating the current Nova Scotia occupational training system in the following chapter.

Chapter V

An Evaluation of the Nova Scotia Occupational Training System

The purpose of this chapter is to evaluate the current occupational training system in Nova Scotia. The results of the evaluation should provide information that will help in the improvement, design and operation of the programs within the Nova Scotia occupational training system. Before making the evaluation, the methodology that used for the evaluation will be outlined.

The methodology used to evaluate the Nova Scotia occupational system is based on the following criteria. First, the occupational training system is evaluated on the basis of the awareness of the programs among the public. The system cannot be entirely successful unless the public is aware of the programs and everyone that is eligible has access. Second, the occupational system is evaluated on the basis of its structure. The various departments must be arranged in a manner which allows for complete coordination and responsiveness to the demands of the parties involved. The third criterion used to evaluate the system is that of the costs involved. The costs involved must be examined to determine if resources are allocated in the most efficient manner possible. Also, opportunity costs and financial costs to the individual and employer are to be examined. Fourth, the content of the various

programs is another criterion. The content of the programs must be examined to determine if the proper material and techniques are being taught. Finally, the occupational training system must be evaluated on the basis of its responsiveness to individuals and industry. It must be determined if the system is providing individuals with appropriate levels of skills and experience, and successful placement rates. Moreover, the system is evaluated on how it has affected productivity, skill shortages, and recruitment within industry.

Awareness

The perceived inferiority of occupational training indicates a lack of awareness in the system. It appears that there has not been sufficient effort made to counsel students on the importance and high wages that are associated with some occupational trades. For example, teachers, guidance counsellors, and parents tend to encourage the "best and brightest" students to pursue a university education rather than an occupational education, despite the fact that employment prospects and wages may be better in some trades.[53] Even the least academically inclined high school graduates now set their sights on university rather than occupational education. These reasons deny students access to the occupational education system because their ignorance acts as a barrier.

The current system is not providing for everyone as it should. The Royal Commission on Post-Secondary Education identified a good example of this in the Atlantic Technical Vocational Center located in Amherst.[54] At this school, deaf students are not allowed enough time to learn a trade if they switch programs. Under the current funding formula, deaf students are allowed 24 months to learn their trade. If they switch programs, then the time spent learning the first trade is deducted from the time allowed for the second choice. This results in the deaf student having general knowledge in both trades, but not enough in one to secure employment.

There is also a problem with the physical access to the schools. Those with mobility handicaps require elevators, ramps, and washrooms that are suitable for wheelchair operation. However, these provisions are not offered in all of the institutions comprising the occupational training system.[55]

The providers of occupational training are not doing enough to encourage women to enter non-traditional occupations. This will become important if we are to prevent labour market problems in the future because most of the growth in the workforce over the next few years will be due to the increased number of women entering the workforce.[56] Women are currently concentrated in the service, sales, and clerical sectors of the economy and with technology limiting the openings in these occupations , there is a definite need for women to become more involved in non-traditional occupations. The counsellors in the occupational education

institutions don't seem to be doing much to encourage this since the only barrier for women entering apprenticeable trades is their mental perception. Furthermore, the fact that all the counsellors in the vocational schools in 1985 were male does not set a very good example.[57] In France, it is compulsory that industry pay a tax that goes for the further training of the female population.

The Nova Scotia occupational system is not doing much to encourage minority groups into the skilled workforce. Blacks and MicMacs are under represented in the skilled labour force.[58] This has caused severe adverse effects among the Indian communities in the Province. There are no current targeted programs nor adequate counselling to try to integrate these groups into the system.

Structure

Coordination has been a problem with the occupational education system in N.S. This has been a problem in three areas : 1) between manpower strategies and training providers; 2) between the different types of post-secondary education institutions; 3) between the different institutions comprising the occupational training system.

The Constitution assigns the provinces control over education while granting the federal government management of the national economy, including matching people with jobs. This has caused confusion over manpower policies as well as duplication of training

programs.[59] Both manpower policies and education are interrelated, for it is difficult for the province to develop comprehensive training and education programs without using federal funding and programs. Furthermore, the federal government depends on provincial education and training efforts and on provincial government's awareness of their own distinct labour market characteristics.

This problem was somewhat resolved when the subdepartments headed by the Deputy Minister of Vocational and Technical Training and the Deputy Minister of Manpower were combined into the Department of Vocational and Technical Training in 1986. This was aimed at improving the coordination of the occupational education system, enabling it to be more responsive and consistent with overall Provincial policy. The reason for this was to ensure that the staff entrusted with developing programs to meet labour needs and the staff entrusted for identifying the needs would no longer be hindered by having to go through formal channels in each department to communicate. Moreover, the aim was to generate greater concensus on the methods for identifying the labour market problems and correcting them. Overall cooperation and coordination, it was hoped, would be facilitated with the amalgamation of the two bodies.

Recently the Department was renamed the Department of Advanced Education and Job Training . As the name implies, this Department's mandate includes the responsibility of university education.[60] With this new Department, not only can occupational training

delivered in the regional vocational schools, AVTCs, and technical institutes be coordinated under one roof, but also the occupational education offered in the universities. This should help solve the problem of duplication of occupational courses in the universities and the technical institutes. The coordination of all occupational education is necessary for the future planning and course rationalization and standardization.

This needs to be taken one step further by giving the Department control over manpower policies and adult training that falls under the National Training Act and administered through CEIC. The province would be better able to coordinate all training together if it had total jurisdiction. European countries have less of a coordination problem because all their training and manpower strategies fall under one government. This causes less interference, duplication, and more efficiency in the system.

To a large degree each vocational school operates independently without reference to courses offered at other vocational schools operating in the Province. This problem is particularly noticeable with the lack of standardization of the courses across the Province. With entrance requirements varying significantly in some courses offered in the Province, the course content would vary as well since the length of the programs do not vary significantly from school to school.[61] This creates a problem with inconsistent quality and lack of responsiveness to industry because courses are

tailored to meet the competence of the students with no emphasis on a uniform standard in the course Province-wide.

This also creates a problem for the student if he/she has to transfer to another school part way through the course. In fact, it may make it difficult for the student to complete the program because of the inconsistency in the content of the course between the different schools.

Further to this problem of autonomy among the vocational schools, insufficient rationalization of the courses offered results. Each school offers as many courses as it can without regard to student numbers in each course.[62] The cost of offering a particular program and updating it periodically, where the enrollment figures are small, is often unjustifiable when the course is offered elsewhere.

Costs

The N.S. occupational education system is not allocating education resources in the most efficient manner. This is especially pronounced in the apprenticeship program. The average cost of training one person to journeyman status in 1985 was $ 12,940 for a vocational graduate, $ 5,688 for a pre-employment graduate, but only $ 4180 for a block release entrant.[63] Since the completion rate differences are only marginal between the block release and the vocational methods, it does not seem justifiable to

spend over twice the money training individuals for apprenticeship through the vocational method. Furthermore, there is an increased waste of resources when an apprentice fails to complete the program. Currently there is no mechanism that ensures that students have the potential to complete the program before they enter. In Northern Ireland this is done through competition with the student having creditability before entering apprenticeship.

As mentioned earlier, the independent nature of the vocational schools puts a strain on financial resources. In European countries, occupational training is more hierarchial with some schools designated to train the basics while others teach the advanced skills. This form of specialization appears to be more economically efficient.

The existing facilities are not operating at their potential capacity. With the declining youth population and the increasing older population, the schools and institutions are experiencing declining enrollment figures. They have the room to open themselves up for more adult training and retraining. With technology and the increasing growth rate of the older population, retraining and upgrading is becoming increasingly important. Currently, the occupational training schools are not accessible for many adults who cannot fit themselves into the normal school scheduling. Most of the vocational schools remain idle during the summer months and on weekends which would be ideal times for adult education.[64]

Content

The N.S. system does not put enough emphasis on teaching students to be flexible. The providers of education in N.S. appear to be more concerned with teaching skills in a specific area rather than teaching a range of related skills.[65] The education providers in Northern Ireland and Scotland have focussed on starting individuals off by introducing them to a number of trades. This gives the student a general feeling for each trade so that they can later specialize in a specific area. If a student is restricted from entering one trade, he/she has the experience in other trades to fall back on. This generic skill training that equips the student with a variety of important skills that are transferrable across a number of occupations and trades makes an individual less dependent upon a specific trade; the flexibility increases the individuals employment options. As well, much more has to be done to prepare individuals to market their skills and to learn how to apply skills in various occupational settings. For example, Holland College provides certification diplomas that list the actual skill or tasks the student has attained and which permits the employer to endorse additional skill attainment or higher levels of skills attained on the job.[66]

Responsiveness to Industry

The Royal Commission found many cases in which students were not trained in the use of the modern equipment found in industry. Students coming from N.S. training institutions were accustomed to being trained in traditional methods using obsolete equipment whereby they could not be responsive to industry.[67] This signifies that there is not enough contact between industry and education. Besides the apprenticeship program, there are very few co-op and on-the-job training programs in the courses being taught at the occupational training institutions. The YTP Workscheme in Northern Ireland is an example of how much more responsive on-the-job training is to industry demands. On-the-job training produces more experienced and responsive workers.

There does not appear to have been sufficient cooperation between industry and the education sector in program delivery. If the training is to be responsive to industrial requirements, there must be industry input into education. Education providers must know what the needs of industry are before measures can be taken to satisfy those needs. The success or failure of manpower programs depend on the reaction and support of the private sector. Industry should not expect government and public training institution to carry all the responsibility for producing competent motivated workers. In Northern Ireland, for example, part of the success of its occupational training system has been due to industry working

closely with the education institutions to develop training modules. In Germany, industries consider training an important investment.[68] Manpower needs are very diverse because of the vast range of different types of industries requiring different types of skills and the delivery of production methods even within the same industrial sector. This means that cooperation is needed from all levels of industries in the Province.

Responsiveness to Individuals

The lack of proper planning, cooperation, and coordination is reflected in the previous material presented in chapter three. As indicated there is a substantial surplus in many of the apprenticeable trades. This problem originates from a lack of monitoring over the supply flowing into the labour market. If there had been appropriate measures taken earlier to regulate the number of entrants into each trade, the problem could have been prevented. The problem indicates that the system has not been responsive to placing individuals with jobs. Not only is the system failing to match students with employment, but the waste of resources that results from students not completing the program is another factor to consider. With the existing surplus and the flowing of labour from the various supply sources combined with the poor job experience of journeymen, the future unemployment rate can only rise. It is apparent that our youth and adult vocational

institutions have been training too many individuals for non-existent jobs. The government cannot justify spending public funds on training individuals in trades that cannot absorb the existing supply of labour. The cost of training becomes even more pronounced when unemployment insurance benefits are taken into consideration.

The poor job experience of occupational education graduates reflects this. Other countries have been more concerned with regulating the numbers in each trade. In Northern Ireland, close cooperation between industry and education administration allow for an accurate projection of the number of required journeymen in each trade. Supply into the apprenticeable trades is then limited through competition. Nova Scotia uses COPS to project the required labour needed in each occupation, however no action is taken to limit the supply in accordance with demand.

Furthermore, the set-up of the current system acts as an incentive for individuals to enter different trades even though there may be a surplus in the trade. The on-the-job training part of the program will give the apprentice temporary employment since the regulation requires an apprentice to be paid a certain percentage of journeyman wages. Not only does this program provide employment and income for the individual, but once the apprentice has completed the required hours on-the-job, he/she is eligible for UIC benefits. Moreover, the Extended Benefits program entitles the apprentice to more benefits in an area of high unemployment, such

as Nova Scotia, which acts as an disincentive for interprovincial migration.

Further to this, the fact that apprentices can be hired at lower rates than journeymen, may displace some journeymen in favour of apprentices. Employers may rely on apprentices to do their low level skilled tasks instead of hiring a full time journeyman. Overall, instead of taking measures to limit the entrants into programs where surpluses exist, the system acts more as an incentive to enter the programs.

Projections

The COPS model, currently, is not developed well enough to make accurate projections both on the supply and demand for labour. On the supply side, the CCDO is not specific enough so that the supply situation in specific trades can be determined. As another downfall with the CCDO, it does not make a distinction between those holding a journeyman certificate and those working in the same trade who do not. The COPS model must be further developed if action is to be taken to coordinate manpower strategies with education so as to reduce labour market imbalances and improve responsiveness.

Summary

This chapter evaluated and identified problems with the Nova Scotia occupational training system. Generally problems were found in the overall awareness of occupational training, coordination between the different interests, efficiency, and responsiveness to individuals and industry. These problems are basically all related. These are the major problems that the proposed Community College system will seek to remedy. The following chapter will present the proposals of the Community College system and provide an assessment of the new system in relation to the problems identified in this chapter.

Chapter VI

A Community College System for Nova Scotia

After examining the current occupational training system, it is clear that it lacks the ability to respond to both the needs of individuals and industry. The system is beyond the stage where minor adjustments will remedy the situation. Nova Scotia is in need of a complete overhaul of the current occupational training system if it is to economically compete domestically and internationally. The previous material demonstrated the problems encountered in the system that range from the inability to adequately respond to the needs of individuals, to the inability to produce competent workers for industry and finally, the inability to efficiently allocate public funds for occupational training purposes. This chapter will give a general summary of the proposed Community College system for Nova Scotia. The chapter begins with a summary of the reasons that were advanced for the development of a Community College system. Then, the chapter will provide a description of the organization of the system, indicate how it will serve the students, describe the programs that will be offered, and outline the formula for funding the new system. Following this, a general assessment will be made to determine if the community college system will adequately solve the existing problems.

A Need for Reform

Upon subsequent recommendations put forth by the Royal Commission on Post-Secondary Education in 1985, the Provincial government recognized the need to further develop and improve the current occupational training system. The Provincial government's strategy for doing this is through implementing a new community college system for Nova Scotia. Almost 200 groups and individuals were involved in the community college discussion which involved 13 public hearings.[69] The Green Paper was circulated around the Province to provide more input and discussion. The conclusions of the discussions were that changes in economic growth, economic structure, technology, demography and the nature of labour markets called for a change in the current occupational education system.

With slower industrial growth, there is more competition for jobs. Nova Scotia must be able to produce the skilled labour that can compete for those jobs. Industry looks to the education sector for new developments in labour. If the Nova Scotia system is not upgrading its labour skills, industry will look elsewhere and this will hurt Nova Scotians. The Nova Scotia system must be able to produce world class skilled labour if it is to satisfy the new labour demands of industry.

There has been a shift in the structure of the Nova Scotia economy.[70] Labour is shifting from industry to the service sector. New courses and new techniques in labour are needed to accommodate

this shift. The traditional courses are becoming obsolete. This is especially pronounced in the occupations that have traditionally been mainly occupied by women.

Technology is creating new types of jobs as well as complicating the traditional ones. Emphasis must be put on continuous upgrading and retraining to accommodate this. Because of technology, workers can no longer rely on their initial training. They must be continually upgrading their skills if they are to adapt to change. Furthermore, a decreasing youth population and an increasing middle aged population requires expanded services to provide retraining and upgrading to prevent a serious labour market problem.[71]

There is a desire to improve the overall efficiency of the system that was accelerated by increasing federal funding cutbacks.[72] The Community College system should eliminate any dispersal of effort by ensuring standards and by taking a systematic approach by having individual colleges do more specialization. As mentioned earlier, it is costly for the institutions to function independently of one another. This should help to allocate the available resources more efficiently so that the increased enrollment and less educated students, that the college aims to attract, can be accommodated.

Finally, the example set by other provinces in improving their education systems has put pressure on the Nova Scotia Government to do the same. Newfoundland, Saskatchewan, Ontario,

and Quebec have all realized the importance of an education system capable of producing skilled labour not only for the present, but the future as well.[73] Nova Scotia has realized that its future hinges on a world class system and is following the trend.

Definition of a Community College System

There is no set definition for a Community College system. It is easiest to define a Community College system by listing the general characteristics. Community Colleges are responsive to a broad range of educational needs of citizens of all ages and backgrounds. Community participation on the input of recommendations is another characteristic. Community Colleges are more responsive to the educational needs identified by provincial governments. More informal learning takes place because there is a wider cross section of students to associate with each other. An open admission policy and operational flexibility to accommodate all individuals is a characteristic. There is a stress on the teaching aspect of the programs rather than research. Finally, the comprehensiveness of curriculum ensures that courses are taught in the most effective and responsive manner.[74]

Organization

The administration of the Community College system will become the principal function of the Department of Advanced Education and Job Training.[75] The Community College central administration will be responsible for planning, program development and administration, counselling, evaluation, and financial services. A Community College Advisory Committee will be established to advise on standardization and rationalization of programs. It will be composed of chair-persons from the regional boards and chaired by the Deputy Minister.

The central administration will set up several subcommittees. The creation of these new bodies should remedy the problems mentioned before concerning coordination and cooperation between the different interests. The Standards Committee will ensure standards across all the regional colleges by acting as a liaison between the regional boards and the central administration. It will replace the current Trades Advisory Committees.

A Transfer Committee will help bridge program and credit equivalences between universities and the community colleges. This should facilitate the smooth transfer of students from one institution to another. It should give students a wider range of options by having some of the credits they obtained from one program used toward a degree or diploma at another institution.

An Enterprise Agency will be responsible for marketing the community colleges locally and world-wide. This will be an important element of the Community College system. As mentioned earlier, one of the main failures of the current system is its inability to adequately respond to individual and industrial needs. The Enterprise Agency will have the function of marketing the skills and training that the community college system will produce and, through a close working relationship with industry, it should be able to obtain information on the types of training that industry desires. Another advantage of the Enterprise Agency is that it will be a body under the Community College administration. Unlike former Manpower Departments, the Enterprise Agency should be more responsive because it reports to the central administration causing less delay and confusion in communication.

Community Education and Training Officers will be on the staff of each regional board to promote the programs of the regional college, to determine the needs of the community, and to inquire an customized needs of industry.

Subject Assessors will be qualified people in the field who know what the content of the programs should entail. They will work closely with the other committees. These subject assessors will be people who are specialists in the subjects they are concerned with. The chief role of this committee is to make sure that the courses being taught and the institutional equipment used is consistent with the demands of industry. If the subject

assessors properly perform their role, they should cause the productivity of graduating students to increase once they commence employment. Overall, the subject assessors will help improve the responsiveness of the training system to industry.

The existing vocational schools and technical institutes will be grouped together into six regions. The six regional colleges will form the Community College system. The six regional colleges will be Southwestern Regional College, Valley Regional College, Halifax-Dartmouth Regional College, Northern Regional College, Straits Regional College, Cape Breton Regional College and College de l' Acadie. Each of these regions will group together the vocational and technical schools in that region to form a regional college. The vocational schools currently operated by the amalgamated school boards will be invited to become associate members of the regional colleges.

The regional colleges will be governed by a regulating board composed of community representatives. Members and chairs of the Board will be appointed by the Department of Advanced Education and Job Training. The regional boards will cooperate with the central administration. The regional boards will be responsible for program delivery and community needs.

A province wide board will represent the francophone community. The board for the College de l' Acadie will have representatives from the Acadian villages of the Province: Clare, Argyle, Halifax/Dartmouth, Isle Madam/Canso Strait, and Cheticamp.

The College de l'Acadie is one step taken towards facilitating learning for minority groups. This college should enable the French population of the Province to obtain occupational training by overcoming the language barrier.

Students

The current emphasis is on 15 to 21 year olds with high academic standing.[76] The Community College system will focus on the widest possible range of students to ensure that they reach their potential. Not only will graduates from secondary schools be served, but also older students and drop-outs as well. Providing high school drop-outs with an occupational education will not only increase their opportunities for employment, but will also save the government money in the long run. If these drop-outs have knowledge in a trade or skill, they will have a better opportunity of becoming employed and their unemployment rate should decrease leading to a reduction in the amount of UIC benefits that the federal government has to pay out. Retraining upgrading and updating are essential features of the new system which will become increasingly important because of the increasing older population and changing environment as mentioned before.

Career counselling will be very important in the Community College system.[77] Counselling is a fundamental element of the education system. Students entering career-oriented training can be

very vulnerable and ignorant on the options available to them. A counsellors influence on a student can greatly effect the orientation of a students career. For this reason, only the most competent and qualified counsellors should be recruited by the community college administration. The Community College counsellors will all be required to hold a certificate to ensure their qualification. A special emphasis will be put on entering students to help them choose their appropriate career path given their interest, aptitude, experience, etc. Improved counselling should help increase the awareness of occupational training. A record of the career path for each student will be kept on data base so that if a student decides to transfer to another institution, the administrators, teachers, and counsellors will have a clear picture. Also, this would be convenient for employers to use when recruiting an individual for employment. It could give the employer an idea of the skills the individual has learnt or is capable of learning as well as the experience the individual has had. The counselors are to cooperate closely with the central administration to ensure that standards are kept. To ensure that counselling is not deprived of its financial resources, non transferrable grants for this will be made available.

The Community College system will try to improve on its geographical access so that it is accessible for all students.[78] For those students living a distance away form any one of the regional colleges, new communication channels will be implemented.

For those students that want to take a course that another regional college specializes in, an effort will be made to deliver the course, through communication channels, to the closer college so that the student has easy access. A common characteristic of the Scottish and Northern Ireland occupational training institutions is their siting is such that everyone is within close geographical proximity of the institutions.

In addition, efforts will be made to make student loans available for Community College students. The students should be able to obtain student aid if it is necessary for them to obtain their occupational education. The loans would help those who have to locate to another college that is away from their home.

Facilities will be made more accessible to the disabled. Both learning equipment and physical access will be adapted for the handicapped. More student services will be offered to accommodate the older students.[79] For example, some people entering the college will be married and it may be necessary to have a day-care center to accommodate these people.

Programs

The Community College system will provide training in seven broad categories. They are upgrading, trades training, applied arts, technical training, university credit, community-based studies, and targeted programs.

Upgrading programs are aimed primarily at high school drop-outs who lack the general knowledge to pursue their education.[80] This type of program is currently under CEIC, but with the federal funding restraints, the program will be jeopardized. Upgrading programs will be available at all the regional colleges. Basic subject courses will be offered to fill education gaps that some students have that may hinder them from fulfilling their career interests. Programs to accommodate those with learning disabilities will ensure that people who currently cannot take advantage of the occupational education system can do so in the future.

Trades training will be restructured to make more efficient use of the available resources. The Community College system will implement a block/modular apprenticeship program that is similar to a combination of the pre-employment and block release methods. The Community College system will be responsible for all institutional training in the apprenticeable trades. This should maintain constant standards in the program. More flexible scheduling and decentralized delivery will ensure greater opportunities for apprentices to obtain theoretical training in their trades. The community college will inquire into staggered graduations for apprentices to relieve the pressure on the labour market at certain times of the year. The community college will also expand the apprenticeship program into other trades.

For those that are interested in an apprenticeable trade, but lack the ability to become a journeyman, there will be the option

of becoming a trades assistant. The idea of trade assistants should make better use of funds allocated for training because it should encourage those who do not have the potential to become journeymen to become trade assistants, therefore reducing the failure rate in the apprenticeship program. Furthermore, it should reduce labour market problems because trade assistants may be more appealing for employers who want someone to work at the less technical aspects of the trade and do not want to pay the full journeyman wages.

The applied arts students make up most of the enrollment in the current system.[81] Because of its practicality, the Community College system will put more emphasis on co-op study programs. These programs give students the chance to practice what they have learned in a real life situation. Placement of the co-op students in other provinces is another idea put forth. This would give students a knowledge of the procedures and standards in other parts of the world and this experience should benefit them in finding employment.

Technical and technological training will be more difficult to integrate into the Community College system because of the superior qualifications required.[82] However, because of its significance to occupational training, it should be part of the system even though there are some obstacles. Some technical courses will be offered at the regional colleges. Students should be able to proceed from the community colleges to the technical colleges

and transfer their technical credits obtained at a community college with them.

To provide the widest range of post-secondary education, students should have the opportunity to obtain some university credits at the colleges. This program, to obtain university credits, is aimed at those who do not live close to a university. Through cooperation with the universities, the Community College system will try to provide facilities that would enable university courses to be taught outside the university itself giving access to those who live a distance away from a university. Also, it is an objective to try to have some community college courses taught at the university facilities. The Community Education and Training Officers will be the liaison between the universities, community colleges, and the community. To facilitate smoother transfers between universities and the Community College system, the Transfer Committee and the Academic Advisory Committee will work together to bridge the transfer. This appears to be an indication of the Provincial government's effort to coordinate all post-secondary education. Not only does this provide a service to those who want to take university credits while living at home, but it further rationalizes the capacity of the occupational education institutions.

The primary responsibility of the Community College system will be to provide community based education.[83] Community Education and Training Officers will determine the needs of industry so that

customized training can be carried out by the new system. This type of training would produce firm specific trained labour and the firm would be charged a fee. This idea will also be marketed to federal and provincial governments as well as foreign countries. This set-up should make the community college system particularly responsive to industry. Furthermore, by charging a fee , it makes the firm more responsible for its own training.

The Community College system will provide more continuing education to accommodate the changes brought about by technology. The Community College system will cooperate with local school boards and universities to provide the continuing education classes. Affiliated courses will also be offered at the community college by non profit agencies. The Community Education and Training Officers will act as a broker promoting contacts between non profit agencies, wishing to offer courses, and appropriate college departments. These courses will be certified to ensure the quality.

The Community College system will have targeted programs to help accommodate all individuals. The regional colleges will adapt the equipment and course structure of the existing system, as mentioned earlier in this chapter, to aid the disabled. The College de l' Acadie will serve the French communities so that they are able to learn in the language of their choice. More emphasis will be placed on getting women to enter non traditional trades through counselling and programs. There will be more effort to

educate the Blacks and Mic MicMacs of the province. Programs will be developed that take into consideration their different circumstances and try to facilitate this. Less formal continuing education will be available for those who are not able to take part in the formal system. Such continuous learning devices as computer software, a lending library, and video cassettes will be made available so that these people can update and upgrade their education. These devices will also be available for industries to purchase or lease. Generally, the Community College system will make more of an effort to accommodate those are overlooked in the current system.

The community colleges will resist the pressures for lower quality that will arise because of the open admission policy.[84] To do this, upgrading programs will be used to bring the student up to the normal level that would be required to enter a course. If program standards rise because of technology, then the upgrading standards will have to rise as well. The establishment of common standards is the task of the Community College central administration. The central administration will have the help of The Standards Committee and Subject Assessors for monitoring and assessment of course content, teaching staff, and equipment. The Standards Committee, with the help of Subject Assessors will give the institutions all the advice and assistance they require concerning course content and delivery.

The community colleges will be concerned with the quality of the teaching staff. Many programs and options will be available so that teachers will be up to date and responsive to world developments. This is a necessity if the students of the community college are to be equipped with world class skills and knowledge on occupational training.

Resources and Funding

An increase in enrollment in the community colleges could be accommodated because of the excess capacity and teachers existing at present. The effectiveness and efficiency provided by grouping the existing occupational institutions under one body, will allow for lower cost through economies of scale. Therefore, the savings in cost by simply restructuring should help finance some of the new programs. Some new financial resources, however, will be needed for the new system. After discussing the alternative methods, it was decided that a program by program formula would be the most effective formula. This method would maintain standards across the Province to keep in line with the overall objective of the community college. Program enrichment grants will be made to ensure that the colleges keep up with the latest developments in the programs.

Summary

Overall the Community College system appears to provide a solution for many of the problems in the current occupational training system. The structure of the current system will be rearranged so as to provide more coordination among all the institutions which offer occupational training. As well, the channels for more community input into training will be opened. This should enable the system to be more cost efficient and responsive to individuals and industry. Through providing bodies to facilitate more industry input into program content and delivery, the system should be more responsive to industrial labour requirements. A close working arrangement with industry should allow for more medium to long term planning.

It appears that one of the most important elements of occupational training, counselling, will be more effective with the implementation of the Community College system. This should solve the awareness problem with occupational training as well as providing all students with the proper guidance so that they are more knowledgeable before choosing their career path.

The community colleges will improve and open options for more students. High school drop-outs and adults will now be able to take advantage of the occupational training system. This will help the young find employment as well as help the adult population keep

pace with technological change. Targeted programs should help to attract minority groups into the occupational training system. As a result of the College de l'Acadie, the French population will no longer be denied access to the system through the language barrier.

The new delivery approach in the apprenticeship program should be more cost efficient. This new block/modular approach will be more cost efficient and provide a more flexible approach to occupational training. However, the community college proposals made no mention of regulation regarding entry into the program. The occupational training system could be more cost efficient if entry into apprenticeship was based on competition as it is in Northern Ireland. Having a mechanism to regulate supply into apprenticeship is essential for a completely successful program.

Even though more student services will be offered with the Community College system, the desire for younger people to enter the system might be increased by going further and and expanding the social atmosphere of the colleges by providing lodging and social clubs similar to what is found at universities. This may make the community college system more appealing to the younger population.

To conclude, the Community College system should be a definite improvement over the current system of occupational training. Once the basic framework of the new system is implemented, improvements can be made as they are recognized.

Chapter VII

Summary and Conclusions

The introduction to this thesis made mention of the recent concern of the Provincial government to improve the Nova Scotia occupational training system. The Royal Commission on Post-Secondary Education identified critical problems in the current system. Specifically, two of the more serious problems found were, first, a lack of perception among individuals concerning occupational training and; secondly, the failure to provide an effective liaison between industry and the occupational training providers. These findings by the Commission provided the basis for examining and evaluating the system in the province. Chapter II described the current system of occupational training in the Province indicating the different institutions and the funding arrangements between the different levels of government. The chapter concluded with a brief description of the occupational education systems in other countries which provided a useful framework to compare and contrast the Nova Scotia system with.

One of the more important programs in Nova Scotia, the apprenticeship program, was examined in chapter III. The main problem found in this area was a poor completion rate. There were

many reasons given to account for this; however, an overall lack of planning between the involved parties appears to be the underlying reason. As seen in Chapter IV, imbalances in the labour market must be translated back into enrollment levels in the apprenticeship program.

The methodology and outline of the COPS model was described in chapter IV. The ability to make medium to long term projections was illustrated by examining data on the various occupations relevant to the apprenticeable trades. Substantial surpluses have been observed in most of the apprenticeable trades. However, the underdevelopment of the COPS model makes it difficult, as yet, to base serious policy conclusions on the results of the model. Although the results of the COPS model should not be taken as gospel, they do provide a useful insight into the problems encountered with poor labour market planning.

An evaluation of the current occupational training system was carried out in Chapter V. Basically this involved an elaboration and extension on the various deficiencies identified by the Royal Commission on Post-Secondary Education. When compared with the systems in some European countries, Nova Scotia lags behind in many areas. In general, the major problems with the Nova Scotia system have to do with a lack of coordination and cooperation among the different parties concerned.

The Community College system has the potential to make a significant contribution to the future for Nova Scotia occupational

training and economic growth and development. As indicated in Chapter VI, the new system should remedy many of the problems that appear to exist in the current system. The Community College system aims to establish Nova Scotia as an international competitor through providing world-class skills and trades training. The economic future of Nova Scotia will be significantly determined by the success of the Community College system in implementing its proposals.

APPENDIX A

As a result of the deliberations concerning the problems confronting the occupational education system in Nova Scotia, the Royal Commission on Post-Secondary Education recommends that:

1) Greater efforts must be made to enhance public perception and comprehension of the nature of occupational education and of the function of the various institutions within the occupational education system. The types and levels of occupational education should be given greater publicity.

2) A firm-by-firm, sector-by-sector survey of the industries in the province should be undertaken to determine what skills are required by each firm and each sector.

3) The development commissions, or other suitable agencies, should be encouraged to undertake skills inventories for their development areas.

4) Studies should be undertaken to determine whether equipment used in occupational training courses is similar to equipment most commonly used on the job.

5) Arrangements should be made to enable occupational instructors to attend formal upgrading courses and to spend regular periods on the job becoming acquainted with new techniques.

6) Arrangements should be made to permit practising tradespeople to teach their skills to students and instructors in the vocational schools and other institutions of occupational education.

7) Efforts should be made to extend cooperative education, though there should be a realistic assessment of the opportunities available for this form of work-study programme.

8) A study should be undertaken of the present functioning, and options for the future development, of the apprenticeship system in Nova Scotia.

9) The role and functions of the Trades Advisory Committees in the vocational schools should be clearly defined and steps should be taken to ensure that they fulfil the advisory role assigned to them.

10) Continuous operation of the vocational schools should be introduced only following a thorough study of the expenses involved and in response to a provincial manpower plan that identifies probable directions of labour market demand and the best educational means to meet them.

11) A yearly survey of occupational education graduates' success in finding employment should be undertaken, and the results should be printed and distributed to career guidance counsellors.

12) Career guidance counsellors should be encouraged to give more thought to directing suitable candidates toward the occupational education system, rather than toward the universities.

13) Guidance counsellors should encourage suitably qualified women to study non-traditional subjects offered in the occupational education system.

14) An effort should be made to increase the number of qualified women instructors on the occupational teaching staffs or on the Trades Advisory Committees.

15) A thorough study should be made of the occupational education programs and funding arrangements at the Atlantic Technical Vocational Center, Amherst, with a view to ensuring that training is responsive to deaf students' needs.

16) A core curriculum should be introduced in the secondary schools to ensure that students obtain the general educational background necessary to encourage them to seek a wide range of job skills. Mathematics should be compulsory in junior high school to Grade IX level, and senior high school students should experience a core curriculum including mathematics, English, a science, a social science and a language, all taught to a rigorous standard. They should also receive liberal exposure to the arts.

17) Occupational education institutions should give consideration to introducing training modules that provide a core of skills which can be transferred to a variety of different occupations.

18) Systematic response to short-term fluctuations in demand in the job market is best assured by concentrating the delivery of occupational education in the vocational schools and technological institutes, rather than in the universities.

19) If demographic changes lead to excess capacity in the vocational schools, the policy of restricting vocational school courses to students under the age of 21 should be reviewed with aview to opening these courses to adults as well. Alternatively more courses for adults only could be taught using the school facilities.

20) The subdepartment of Manpower, currently in the Department of Labour and Manpower, and the subdepartment of Vocational and Technical Training, currently in the Department of Education, should be removed from their present departments and amalgamated in a new Department of Manpower and Occupational Education.

21) The Employment Opportunities Branch, currently in the Department of Development, should be transferred to the proposed Department of Manpower and Occupational Education as a division directly responsible to the Deputy Minister.

22) The subdepartment of Vocational and Technical Training should ensure coordination of institutional occupation education throughout the system, in high schools, regional vocational schools, district vocational school, technological institutes and, so far as is possible, the universities.

23) District vocational schools should submit course outlines, proposals for new courses, proposed course enrollments and proposed employment of new instructors to the Program Support division of Vocational and Technical Training for approval.

24) The Vocational and Technical Training subdepartment should ensure that course rationalization and standardization occurs within the system of vocational schools and technological institutes.

25) The Vocational and Technical Training subdepartment should exercise a watching brief over the industrial arts and business education programmes in the high schools. The Programme Support division of Vocational and Technical Training should give ultimate approval to course outlines, proposals for new courses, proposed course enrollments and staff development in these two high school programmes.

26) Vocational and Technical Training should make a special effort in the high schools to publicize the entrance requirements of vocational schools and technological institutes.

27) The Deputy Minister of the proposed Department of Manpower and Occupational Education should be a non-voting member of the Council on Higher Education.

ENDNOTES

[1] Department of Advanced Education and Job Training, Foundation for the Future : A White Paper on a Community College System for Nova Scotians (Nova Scotia, 1988), 26.

[2] The recommendations by the Royal Commission on Post-Secondary Education, 1985 are included in Appendix A.

[3] See Speech From the Throne, Province of Nova Scotia, February 25,
1988.

[4] Nova Scotia, Report of The Royal Commission on Post-Secondary Education (Nova Scotia,1985), 5-56.

[5] Department of Advanced Education and Job Training, Foundation for the Future : A White Paper on a Community College System for Nova Scotians (Nova Scotia, 1988), 18.

[6] Nova Scotia, Report of The Royal Commission on Post-Secondary Education (Nova Scotia,1985), 5-3.

[7] Ibid, 5-3.

[8] Ibid, 5-3.

[9] Ibid, 5-12.

[10] Ibid, 5-11.

[11] Ibid, 5-13.

[12] Department of Labour and Manpower, A Focus on Manpower : Agenda for Action (Unpublished paper, 1982), 49.

[13] Nova Scotia, Report of The Royal Commission on Post-Secondary Education (Nova Scotia,1985), 5-12.

[14] Malcolm C. Brown, Established Program Financing : Evolution or Regression in Fiscal Federalism ? (Australia : The Australian National University, Canberra,1984), 11-13.

[15] Ibid, 19-22.

[16] Ibid, 22-29.

[17] Government of Canada, Federal-Provincial Programs and Activities (Ottawa : Supply and Services, 1987), 29.

[18] Ibid, 29.

[19] Morley Gunderson, Labour Market Economics : Theory, Evidence, and Policy in Canada (Toronto : McGraw-Hill Ryerson, 1980), 102-104.

[20] Kilmorack Consultants, Canada/Nova Scotia Apprenticeship Study (Unpublished paper, 1987), 12.

[21] Government of Canada, Federal-Provincial Programs and Activities (Ottawa : Supply and Services, 1987), 34.

[22] Based on personal interview with Dr. Paul Hobson.

[23] For reference to the occupational training system in Scotland, see Kilmorack Consultants, SCOTVEC's Modular Training Reviewed (Unpublished, 1987), 1-24.

[24] For reference, see Department of Economic Development, Methodology to Evaluate Training Assistance (London, Eng.: Coopers and Lybrand Associates, 1982).

[25] Ibid.

[26] Ibid.

[27] Department of Vocational and Technical Training, Training in the Apprenticeable Trades in Nova Scotia (Unpublished, 1986), 1.

[28] Kilmorack Consultants, Canada/Nova Scotia Apprenticeship Study (Unpublished paper, 1987), 8.

[29] Ibid, 96-97.

[30] Ibid, 97.

[31] Ibid, 20.

[32] Department of Vocational and Technical Training, Training in the Apprenticeable Trades in Nova Scotia (Unpublished, 1986), 7.

[33] Ibid, 8-9.

[34] Kilmorack Consultants, Canada/Nova Scotia Apprenticeship Study (Unpublished paper, 1987), 20.

[35] Department of Vocational and Technical Training, Training in the Apprenticeable Trades in Nova Scotia (Unpublished, 1986), 3.

[36] Kilmorack Consultants, Canada/Nova Scotia Apprenticeship Study (Unpublished paper, 1987), 36.

[37] Ibid, 26.

[38] Department of Labour and Manpower, Annual Report (Nova Scotia, 1983), 15-16.

[39] Kilmorack Consultants, Canada/Nova Scotia Apprenticeship Study (Unpublished paper, 1987), 28.

[40] Department of Vocational and Technical Training, Training in the Apprenticeable Trades in Nova Scotia (Unpublished, 1986), 27-30.

[41] Kilmorack Consultants, Canada/Nova Scotia Apprenticeship Study (Unpublished paper, 1987), 71.

[42] Ibid, 29.

[43] Ibid, 29.

[44] Department of Vocational and Technical Training, Training in the Apprenticeable Trades in Nova Scotia (Unpublished, 1986), 27-28.

[45] Kilmorack Consultants, Canada/Nova Scotia Apprenticeship Study (Unpublished paper, 1987), 31.

[46] Ibid, 32.

[47] Canada Employment and Immigration, The Canadian Occupational Projection System (Ottawa : Canada Employment and Immigration, 1983), 7.

[48] Kilmorack Consultants, Canada/Nova Scotia Apprenticeship Study (Unpublished paper, 1987), 36.

[49] Canada Employment and Immigration, The Canadian Occupational Projection System (Ottawa : Canada Employment and Immigration, 1983), 16.

[50] Norm Leckie, Projecting Canada's Occupational Requirements : Descriptive Analysis and Results (Unpublished, 1984).

[51] Department of Vocational and Technical Training, Training in the Apprenticeable Trades in Nova Scotia (Unpublished, 1986), 48.

[52] Ibid, 49.

[53] Eric Roher, "Singing the Blue-Collar Blues", Globe and Mail (March 14, 1988).

[54] Nova Scotia, Report of The Royal Commission on Post-Secondary Education (Nova Scotia,1985), 5-50.

[55] Department of Advanced Education and Job Training, Foundation for the Future : A White Paper on a Community College System for Nova Scotians (Nova Scotia, 1988), 65.

[56] Department of Labour and Manpower, A Focus on Manpower : Agenda for Action (Unpublished paper, 1982), 11.

[57] Kilmorack Consultants, Canada/Nova Scotia Apprenticeship Study (Unpublished paper, 1987), 86.

[58] Ibid, 79.

[59] Department of Labour and Manpower, A Focus on Manpower : Agenda for Action (Unpublished paper, 1982), 41.

[60] Department of Advanced Education and Job Training, Foundation for the Future : A White Paper on a Community College System for Nova Scotians (Nova Scotia, 1988), 19.

[61] Ibid, 7.

[62] Ibid, 8.

[63] Ibid, 75.

[64] Nova Scotia, Report of The Royal Commission on Post-Secondary Education (Nova Scotia,1985), 5-48.

[65] Ibid, 5-54.

[66] Department of Labour and Manpower, A Focus on Manpower : Agenda for Action (Unpublished paper, 1982), 76.

[67] Nova Scotia, Report of The Royal Commission on Post-Secondary Education (Nova Scotia, 1985), 5-55.

[68] Department of Labour and Manpower, A Focus on Manpower : Agenda for Action (Unpublished paper, 1982), 49.

[69] Department of Advanced Education and Job Training, Foundation for the Future : A White Paper on a Community College System for Nova Scotians (Nova Scotia, 1988), i.

[70] Ibid, 2.

[71] Ibid, 4.

[72] Ibid, 15.

[73] Ibid, 15-18.

[74] Ibid, 21-25.

[75] Ibid, 36.

[76] Ibid, 9.

[77] Ibid, 57-63.

[78] Ibid, 63.

[79] Ibid, 65.

[80] Ibid, 68-71.

[81] Ibid, 81.

[82] Ibid, 82.

[83] Ibid, 94.

[84] Ibid, 110-116.

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