FLEXIBILITY AND MOBILITY

IN APPRENTICESHIP TRAINING

BY

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A Thesis
Submitted to the faculty of Graduate Studies
In Partial Fulfilment of the Requirements
For a Degree of

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Abstract

This thesis examines the apprenticeship system of skill development to determine if improvements can be made that would enhance its effectiveness as a training model in the current economic climate. The critical argument is developed in three parts. The first part argues that historically, apprenticeship has been a very important mechanism for transferring knowledge and skills to new generations of workers though the overall importance of apprenticeship has declined somewhat in recent decades relative to the growth of institutionally based learning.

Secondly, this thesis demonstrates that despite this relative decline, apprenticeship still continues to be a priority with stakeholders and economically beneficial to all parties including workers, employers and the public such as government. The third part argues that the role, the flexibility and the benefits of the apprenticeship model of skill creation could be enhanced by reorganizing the delivery of the generic skills portion of the apprenticeship system in such a way that common, generic elements of related occupational skills are taught to all such occupations in the same relative sequence.

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Chapter 1: Introduction

Apprenticeship training is a time honoured method of skill development that has been used for centuries to transfer knowledge and skills from experienced tradespersons to the next generation of workers (Patterson and Hedges 8-9; Johnson in Acton, Goldsmith and Shepard 25). In response to social and economic trends the apprenticeship training program has evolved to its present structure that includes a mix of on the job and classroom training focusing on the skills imbedded in a specific trade.

This thesis will examine the apprenticeship system of skill development to determine if improvements can be made that would enhance its effectiveness as a training model in the current economic climate. The critical argument of this thesis is developed in three parts. The first part is that historically, apprenticeship has been a very important mechanism for transferring knowledge and skills to new generations of workers though the overall importance of apprenticeship has declined somewhat in recent decades relative to the growth of institutionally based learning as shown in Chapter 2.

Secondly, despite this relative decline, apprenticeship still continues to be a priority with stakeholders as demonstrated in Chapter 3 and economically beneficial to all parties including workers, employers and the public such as government as shown in Chapter 4. The third part of this argument is that the

role, the flexibility and the benefits of the apprenticeship model of skill creation could be enhanced by reorganizing the delivery of the generic skills portion of the apprenticeship system in such a way that common, generic elements of related occupational skills are taught to all such occupations in the same relative sequence (refer to Chapters 5 and 6).

Each trade has developed its own training schedule and curriculum intended to develop expertise in three to five years depending on the trade (Apprenticeship Branch, 1999)[1]. In reviewing this structure I found that there is an emphasis on commitment to one occupation with specialization commencing in the first year of training. Although these trades can be clustered into occupational fields and have common core skill requirements, the training for one apprenticeship trade does not parallel the training development of other related trades and is seldom recognized as transferable. As a result, this structure and training schedule tends to limit the flexibility and mobility of apprentices and journeypersons who choose new trades or change programs whether by necessity or design.

This lack of flexibility and mobility may be problematic to employers and employees in responding to the current economic climate characterized by rapid change due to technological innovations and new discoveries (Davis and Botkin 111). This economic climate, which includes on-going fluctuations in skill requirements is expected to create an increasing trend toward multiple jobs and

careers (Unger 44; Lankard 1996, 2). This predicted trend is widely accepted by government, employers and researchers who have begun to advocate for changes in the structure of training and development programs that address these evolving skill needs. To assist employers and employees in planning for and coping with this predicted trend, potential strategies have been developed that focus on generic transferable skills as shown in Chapter 5. It is suggested in these studies that the key to success in this climate of change is the development and identification of skills that can be applied to a variety of related jobs (Hiebert and Bezanson 2).

For the past two decades business has been responding to the advent of global competition and the need to be able to respond quickly and easily to consumer preferences in a timely manner with quality products (Davis and Botkin 111). In order to remain competitive and profitable, it has been necessary to maintain flexibility in the quantity and quality of inputs to the production process including labour. Businesses have restructured; laid off millions of workers; hired more part time, contract and specialized staff; and incorporated new technologies and methodologies (Borchard 9). This has created anomalies in demand, changed the nature of work and developed fluctuating skill sets which employers have found to be in short supply.

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1 The majority of information about the Apprenticeship program is the culmination of consultations with and documentary information from the Manitoba Apprenticeship Branch.

These trends have limited opportunities for advancement, impacted job satisfaction, working conditions and income. Employability security, rather than job security, has become the issue which means ensuring that one has and is able to identify the skills needed in the new economy and is able to expand and adjust these skills as requirements change (Saterfiel and McLarty 1; Kanter 9).

Recent literature examining these trends propose that this shifting labour market will continue as rapid changes and innovations require ever changing skills and abilities. For example, the National Research Council estimates that half of today's skills will be obsolete in three to five years (Davis and Botkin 89). Within this literature, the structure and focus of training programs have been examined to determine their effectiveness in meeting this new challenge (Lankard 1996, 1). The conclusions confirm the continuing role of post secondary education and the emerging need for commitment to life long learning that ensures skills and abilities remain current (Hachen 2).

In addition, the different types of transferable skills were examined as well as the alternative ways in which these skills can be acquired (Lankard 1995, 1; McLaughlin 1). It is suggested that it is essential that both employees and employers are able to identify and document skills applicable to situations other than the one in which they were acquired, whether they are developed through formal training or on the job (Hiebert and Bezanson 2). Recommendations include the standardization of the generic components of an occupational field

and that these components be delivered in the first stages training for related jobs (Smith 1).

In applying this theory to Manitoba's apprenticeship training, consideration must be given to the nature and structure of its current model. Most trades that utilize this model of training are tradition bound and characterized by secrecy, specialized terminology, methodologies, tools and rules developed over the centuries (Morton in Anderson and Gunderson 95-98). The current model involves a Trades Advisory Committee for each apprenticeship trade consisting of representatives of that trade and its employers. It is this committee that is responsible for the schedule of training, the content, the training standards and wages for that trade. There is no overall planning of all apprenticed trades to capitalize on efficiencies nor is there coordination between the trades. Skills or knowledge common amongst those trades within an occupational field are not recognized (Apprenticeship Branch, 1999).

The structure of the apprenticeship program that involves partnering between government, business and employees complicates restructuring this program to address emerging trends. All of these partners have defined roles and responsibilities in apprenticeship training. Significant time and money is invested in apprenticeship by all the partners with the expectation of long term return benefits (Apprenticeship Branch, 1999).

For example, employers pay higher wages than the apprentice's current skills would warrant and lose production when the apprentice is taking classroom training, in order to develop the potential for greater productivity in the future. Employees may lose wages during classroom training, pay program fees, tuition and training expenses for the opportunity to earn higher than average wages upon certification. Governments pay for the program administration, cover the fees to community colleges and may provide training allowances in order to ensure that that business has the skills needed to succeed and employees achieve higher than minimum salaries. Benefits to government include less reliance on other government programs and higher tax revenues (Apprenticeship Branch, 1999).

It would appear that the benefits exceed the costs although a detailed analysis of this has yet to be conducted. In fact it should be noted that there is very little by way of academic study in the field of apprenticeship training. However, a recent report by the Manitoba Apprenticeship Task Force provides an overview of government expenditures for this program compared to revenues from taxes. According to their calculations, government tax revenues from apprentices and journeypersons far outweigh government expenditures on this program (Task Force on Apprenticeship 21).

These on-going investments and benefits suggest that this program is a valuable component of skill development in Manitoba. To continue to be a viable training

program in this era of change and allow it to quickly react to evolving skill requirements, apprenticeship may benefit from the theory of transferable generic skills. This would require identification of common skills between the trades, standardization of common course content and reorganization of the training schedules to allow delivery of common content in the first stages of training.

Using the apprenticeship trades in the occupational field of construction as an example, the applicability of is theory has been tested in this study. In reviewing the course outlines for the trades in this field, numerous common topics were found that support the view that transferable generic skills exist between the construction trades. It was also determined that these common topics are taught at all levels of training. As a result, although several skills apply to multiple trades, the training schedule would require that apprentices or journeymen must start at the beginning if they wish to or are required to learn a different trade. This duplication of training and costs may represent a deterrent to workers developing proficiency in several trades that would enhance employability, flexibility and mobility in the labour market.

Benefits to restructuring may also include better cooperation and team work between the trades through a clearer understanding of where their expertise interrelate and how the construction process evolves. Rationalizing the use of scarce financial resources and better use of valuable time by eliminating

duplication would benefit all the partners in this program and augment existing investments.

Apprenticeship training and the theory of generic transferable skills are reviewed and described in the following chapters. A history of this training method is described in Chapter 2 showing its evolution in response to economic, social and industrial trends resulting in its existing structure. This existing structure is examined in Chapter 3 to provide the framework that governs acceptance to and progress through this training process. This includes the roles and responsibilities of the partners involved in developing and scheduling the training provided in this program. The costs and benefits experienced by each of these partners are analyzed in Chapter 4 using the human capital theory to assess the viability of this program and its continued benefit to developing skilled workers in Manitoba.

The current literature regarding skill development and employability is reviewed in Chapter 5 focusing on the proposed need for generic transferable skills to remain viable in the current economic climate of constant change. The training schedule for several construction trades is examined in light of this theory to assess its applicability to apprenticeship trades. The observations and conclusions provided in Chapter 6 suggest that this theory would make apprenticeship training more adaptable should it be applied to the existing structure.

Chapter 2: Transitions in Apprenticeship - An Historical Review

In this chapter I will show the historical importance of apprenticeship as a method of transferring occupational knowledge and skills to new generations of workers, though also noting that in the last few decades the importance of apprenticeship has waned somewhat, at least relative to institutional training. A historical review of apprenticeship training will show its evolution in response to economic, social and industrial trends resulting in its existing structure. This evolution is fundamental to understanding the current culture and nature of apprenticeship training that affects the approach taken to training and attitudes about change. Response to the emerging information age and economic climate of escalating change will be formulated from the successes and failures of this past experience.

As few studies of Apprenticeship Training have been conducted in Canada, this background is based in part on experiences in the United States, which are organized primarily by the same unions, and have strong similarities in industrial development. As most trades were unionized in both Canada and the United States, the pattern of evolutionary change is considered to be similar.

The process of transferring skills from one generation to another has taken place throughout recorded history (Patterson and Hedges 8-9). Skilled workers taught their crafts to apprentices who "gained skills while working alongside the artisan

or master" (Gordon, Edwards, Reich 247). However, it was not until the middle ages that apprenticeship was formalized through the emergence of craft guilds that developed specific rules, entrance criteria and defined roles (Encyclopaedia Britannica 494). The overall structure of this method of skill development was such that all of the complex skills and knowledge required for a particular craft or trade were passed on from master to journeyman to apprentice (Johnson in Acton et al. 25).

Although this training pattern was fairly constant within a trade, the duration of the training process was less formalized and could extend over a number of years. This created hardships for the apprentice whose income was affected by the level of skills acquired, but the long term benefits of achieving journeyman or master status was a primary hold (Morton with Copp 4-12; Johnson in Acton et al. 25; Palmer 31). Steeped in tradition, heritage, duty, loyalty, ethics and status the crafts were prestigious occupations organized into secret societies and guilds imbedded with cultural norms (Morton in Anderson and Gunderson 95-98; Morton with Copp 13). Stability and life-long commitment to a chosen occupation was the expectation in this era of relative slow progressive change.

However, this apprenticeship model evolved along with the parent trades in response to social, economic and organizational trends (Abendroth 9-26). Significant amongst these trends were changes in the production process, the advent of wage labour, industrialization, mechanization and the rise of capitalism

(Gordon et al. 48-99; Morton with Copp 1-34 80-83). Worker response to these changes and their impact on the organization of work and skills development processes has depended, in part, upon the economic climate of the day and its effects on labour force power to influence change (Morton with Copp 83; Williams in Anderson and Gunderson 206-208). Worker and craftsman power to affect change has long been influenced by public policy, procedures and legislative requirements (Morton in Anderson and Gunderson 95-116; Abendroth 7-26).

I believe that the struggle for control of the work place and work process has changed the very nature of apprenticeship but not its culture of independence, loyalty and pride. Although the stability enjoyed in previous times has declined substantially, the traditional life long commitment to one occupation continues to be the prevalent predilection. This is perpetuated by the structure of apprenticeship training that requires commitment to a specific trade upon entering into a legal agreement with an employer and the specialization of skills in the early stages of training. Should an apprentice need to, or aspire to, change occupations, this structure has not supported transferable skills and has required apprentices to commit to a whole new training program.

2.1 The Independent Apprenticeship Model

The apprenticeship model of the early eighteenth century remained virtually unchanged from its the model of medieval times (Encyclopaedia Britannica 494;

Johnson in Acton et al. 25). Skills associated with a specific craft were transferred to apprentices exclusively through demonstration. In some cases this transpired on an individual one to one basis with the apprentice learning the trade secrets while working side by side with the master (Gordon et al. 247; Johnson in Acton et al. 25). In other cases production took place in small workshops owned and operated by independent, "highly skilled master craftsmen who hired skilled journeymen who attached to themselves apprentices learning the trade" (Johnson in Acton et al. 25).

The rate at which training proceeded as well as the work standards were controlled by the artisan or master craftsman who also controlled the supply and therefore the price these services would bear (Encyclopaedia Britannica 494; Gordon et al. 64). "Commonly lasting seven years" (Encyclopaedia Britannica 494) but ranging up to ten years of training, these skills were highly valued by society and protected by those who eventually attained the status of master (Encyclopaedia Britannica 494; Palmer 28).

2.2 Formalization Through Legal Agreements

Palmer describes the secrecy that surrounded these skilled crafts and enveloped the apprenticeship relationship as the masters protected their hard-won knowledge and specialized skills. Keeping the master's secrets was but one requirement of the binding legal agreement that formalized the apprenticeship

relationship. This agreement laid out the rights and obligations of both the apprenticed youth and master. While the master was required to provide training, food, lodging, apparel and all other necessities of life, in sickness and in health, the apprentice was prohibited from gambling, fornication, marriage or being absent without the master's leave (Palmer 28).

Even with these strict obligations, both boys and girls were indentured with master craftsman by their parent(s) at an early age. Using Palmer's description of apprenticeship that states that that training could last as long as ten years but only until the apprentice was age 21, a child could be indentured as early as age 11 (Palmer 28). Since "journeymen were well paid and were the elite of the working class" (Johnson in Acton et al. 25) the opportunity to have their children taught a trade, science or occupation that would improve their quality of life was considered well worth the commitment. However, many parents did not have the connections or the money to obtain indentures for their children (Morton with Copp 12). This was typical of the class based educational structure of this period (Johnson in Acton et al. 21).

Despite the prestige, salary and legal requirements, many apprentices did not achieve master status as they did not receive the required training to which they had been committed. In some cases "the masters refused to fulfil their responsibilities" (Palmer 29) and in others apprentices rebelled against this paternalistic arrangement leaving their masters before completing their training

because of the "deprivation, abuse and oppression often associated with apprenticeship" (Morton with Copp 12).

As desertion became more prevalent, the masters engaged the legal system to strengthen their control by institutionalizing punishment for abandoning the employer (Palmer 41). For example, Master and Servants Acts were passed in 1847 in Upper Canada that allowed the courts to jail disobedient or absentee workers at the master's request (Morton with Copp 4).

It was not until 1877 that this legislation was changed and began to require employers to keep their half of the agreement (Morton with Copp 4). This was in response to the growing problem where masters did not complete the training required but continued to use the apprentices as cheap labour (Palmer 29; Morton with Copp 15). The impetus to maintaining lower paid unskilled or semi skilled workers was accelerated by the dawn of the industrial age that increased the supply of mass produced goods that served to drive down prices. The independent artisan and smaller craft shops were losing control of their product and finding it more and more difficult to compete (Gordon et al. 57-60).

2.3 Industrial Apprenticeship Model

Industrialization was characterized by the centralization of the production process into factories that allowed the owner to improve and stabilize productivity through

close supervision and controlling the work patterns (Gordon et al. 58). At this manufactory stage, the production process remained virtually unchanged with the master craftsmen continuing to control the production techniques, selection and training of apprentices, output and price (Johnson in Acton et al. 26). Artisan control of the apprenticeship process was considered essential to protecting the integrity of the craft while ensuring that it was not diluted thereby increasing competition and diminishing its value (Gordon et al. 94).

Centralization into manufactories was considered the first step in the demise of the crafts as it placed craftsmen in a position where they were "forced to defend themselves (. . .) on the capitalist's turf" (Gordon et al. 58). Capitalists considered this artisan control to be a bottleneck which acted as an incentive for them to transform the labour process (Gordon et al. 247). Thus began the struggle to introduce proletarian labourers into the production process and replace the craft workers in order to reduce costs, increase production and improve profits (Johnson in Acton et al. 26).

The original wage labourers consisted of aspiring apprentices and skilled craftsmen whose traditional calling had deteriorated "as a result of competition from capitalists entering the same line of endeavour" (Gordon et al. 60). This represents the first example of the displacement of workers from a chosen career in the trades despite years of training and accreditation. It appears that these

craft skills had little more value than those of the untrained primarily due to limited opportunity and the sectoral nature of apprenticeship training.

Since then skilled labour has constantly been under attack by employers and undermined by unskilled workers. As attempts to replace skilled craft workers with semi-unskilled labourers continued, the crafts organized into unions in order to protect the value of their skill, "their status and standard of living against such encroachments" (Johnson in Acton et al. 26; Morton with Copp 12).

Some of the issues first fought by unions included "specialization, unlimited apprentices and hours, and wages (. . .) judged inadequate compensation for the skills as well as insufficient for their needs" (Palmer 34). Maintaining craft pride, respectability and security were the basic driving force behind craft unionization (Morton with Copp 13).

The demise of the independent workshop in Canada took place long after it had been wiped out in England and the United States. "Bad roads and expensive transportation protected it against mass produced goods created in factories" under industrial capitalism (Johnson in Acton et al. 25). However, by 1870, large manufacturers and large unions were becoming common to the Canadian labour landscape (Morton with Copp 57-59; Johnson in Acton et al. 25).

But the skilled journeyman was still in control of the essential productive process in these manufactories (Johnson in Acton et al. 26). "The capitalists and plant foremen had little opportunity to intervene in the process since the technical knowledge of production resided with the skilled workers" (Gordon et al. 92). Capitalists through their plant foremen worked towards reducing the cost of production and use of skilled workers as discussed in the following section.

2.4 Specialization, Deskilling and the Decline of Apprenticeship

Specialization to minimize variables was one of the capitalists' first successes at restructuring and deskilling the production process. "In this process complex skills were broken down into simple repetitive tasks that could be done by the cheapest available workers" allowed the "replacement of high-cost skilled labour by low-paid unskilled labour" (Johnson in Acton et al.28).

Coupled with mechanization that replaced muscle power, specialization was the cornerstone of efficiency that came to be the battle cry of employers throughout the industrialized world. Workers had become an extension of the machine and "explicit instructions replaced the craftsman's traditional judgement" (Morton with Copp 81). Dehumanizing the production process undermined the traditional craft pride while deskilling reduced the value and demand for apprenticeship training (Morton with Copp 81).

Although the apprenticeship system of developing skilled craftsmen was not completely eliminated, by the turn of the century it had declined significantly. Limited opportunities to use these skills gave little incentive to new generations to commit to this lengthy training process. "Fewer and fewer skilled workers were being generated through the craft system itself" (Gordon et al. 174).

2.5 Introduction of Vocational Training

As apprenticeship training declined resulting in a void of skilled workers corporate leaders generally had three responses to this predicament of their own making (Gordon et al. 174). Some capitalists, such as Henry Ford, established their own vocational schools while others began hiring college graduates as foremen "who substituted their own authority for the coordinative and managerial activities that craft workers had formerly provided" (Gordon et al. 135, 247). Still others began advocating for state run vocational training to provide the skills they needed (Gordon et al. 174-175).

About this time, Germany set the trend toward supplementing on-the-job training with vocational training in vocational schools (Lipsmeier in OECD 13). However, Canada and the USA would not follow suit for another twenty years except for isolated cases of specific industries where deskilling had already been successful and private vocational training institutes had been established (Gordon et al. 174).

Improvements in public education were becoming a priority within the Canadian labour movement since cheap replacement workers were primarily blacks, women, children and immigrants most with little or no education (Palmer 141; Gordon et al. 56). This was one of the primary issues being addressed by the Trade Labour Congress (TLC) that represented the "select minority of Canadian workers who had managed to unionize" (Morton with Copp 61). In 1898 the TLC passed the *Platform of Principles* that summarized the attitudes and priorities of these workers. This set of resolutions included the abolition of child and female labour, but at the top of this list was free and compulsory education (Morton with Copp 61).

As a result of this strong support by business and labour for higher education and better skills development programs, interest in technical training was developing in the Canadian legislature. A Royal Commission of inquiry identified the lack of technical training and its relation to industrial efficiency as an issue for study beginning in 1910 (Canada Royal Commission 171-173). The resulting reports that included a number of recommended changes sparked further discussion at conferences across Canada. For example, support for the proposed changes in the educational system was demonstrated at the National Conference of Women in 1912. Subsequent resolutions "called for technical training for women through the establishment of trade schools and equal educational and employment opportunities for men and women" (Rotenberg in Acton et al. 46).

It was in this same year (1912), that the Canadian Federal Government first became involved in vocational education under the *Agricultural Instruction Act*. In a description entitled a "Brief History of Apprenticeship in Canada", the Canadian Vocational Association explained that:

> "even though education was, and still is, a provincial/territorial responsibility, this strategy was justified based on:
> a) an adequate national supply of skilled workers,
> b) provision of equality of education opportunity, and
> c) the lessening of the excessive costs by local and provincial authorities" (Canadian Vocational Association 5).

Beyond the above, few other improvements were made to the vocational training system in Canada. It was not until the 1920's that either corporate or educational planners had "systematically attended to the problems of generating a greater supply of skilled workers" (Gordon et al. 174). And it would take the "Great Depression" and World War II to motivate the formalization of the relationship between vocational training and skills development through apprenticeship training (Patterson and Hedges 146).

2.6 Institutionalization of Apprenticeship Training

Despite the success of deskilling many occupations and wrestling control over the work process from the skilled workers, it was recognized by business and government that there was still a need for training in the skilled trades (Canada Royal Commission 171-173). It was also recognized that the best system for

developing those skills was through apprenticeship training on the job with supplementary information provided through schooling. In examining early examples of this formula, it was found that apprenticeship training was "based on all-round education of the skilled craftsman with specialization in the fifth or sixth year of his tutelage" (Patterson 12).

To address this need, *The Apprenticeship Act* came into force June 26, 1944 on proclamation by the Government of Manitoba. According to the annual report of the Department of Labour in 1945, an Apprenticeship Board was appointed as were seven Trade Advisory Committees to draft the rules for the thirteen trades designated under the regulations (Manitoba Labour, Annual Report, 1945).

The Apprenticeship Board was comprised of employer and employee representatives, staff from the Department of Labour and the Department of Education. The secretary to this board was the director of the newly formed Apprenticeship Branch. The responsibility of this group was to develop the initial structure, policies and procedures of the apprenticeship program (Manitoba Labour, Annual Report, 1945).

Their first challenge was to develop a process to assist in the rehabilitation and reintegration of ex-service personnel as described in the 1946 Annual Report. A tripartite agreement was reached between Manitoba Labour, the Federal Department of Veterans' Affairs and the Canadian Vocational Training Branch of

the Federal Department of Labour. Veterans' Affairs was to refer applicants requesting training in the skilled trades to Manitoba Labour. The vocational schools provided initial training and aptitude ratings while Manitoba Labour found probationary employment placements. In 1946, one hundred and eighty two ex-servicemen were indentured as apprentices under this plan (Manitoba Labour, Annual Report, 1946).

2.7 Post Institutionalization

Through a review of the annual reports since 1945 it was found that the structure and responsibilities of this formalized apprenticeship program has remained fairly constant since they were established in 1944. The most significant change came with the introduction of the Interprovincial Standards Program in 1958 better known as the Red Seal Program. This program was established to address inconsistencies in apprenticeship training content and journey level certification standards across Canada arising from the individual provincial and territorial responsibility for skilled trades. These inconsistencies made it difficult for certified workers to move freely from one part of Canada to another (Apprenticeship Branch, 1999). This program is discussed further under Chapter 3, Manitoba's Apprenticeship Program.

Other primary changes have centred around the development of a cost sharing formula established under the Federal Government's *Technical and Vocational*

Training Assistance Act passed in 1960. This act provides for a 50/50 funding arrangement for trade and apprenticeship training between the federal and provincial governments. According to research conducted by the Canadian Vocational Association, this was in response to the economic recession and high unemployment experienced at that time (Canadian Vocational Association 5). This funding arrangement has been revised over time to its current formula provided in the Labour Market Development Agreement (Apprenticeship Branch, 1999). This agreement allows for Federal funding to cover the training costs discussed in Chapter 3.

"The *Adult Occupational Act* introduced by the Federal Government in 1967 placed emphasis on the purchase of Apprenticeship Training from public institutions in each province or territory using federal funds" (Canadian Vocational Association 6). Although this constituted the end of the "apprentice allowance" paid during periods of in-school training, it signals the introduction of Unemployment Insurance Commission payments to apprentices considered to be unemployed during "block release" from their jobs (Canadian Vocational Association 6).

During this period a number of public partnerships were developed to improve apprenticeship training mainly focused on the in-school portion of the program. For example a formal agreement was established with Manitoba Education to

improve classroom technical instruction while a partnership with the Manitoba Technical Institute broadened training options (Apprenticeship Branch, 1999).

During the 1980's the number of apprenticeable trades increased substantially primarily due to the distribution of power provided under the new act. The new *Apprenticeship and Trades Qualifications Act* delegated the power to designate trades under the apprenticeship program from Cabinet to the Apprenticeship Board (Apprenticeship Branch, 1999).

In 1993/94 responsibility for the Apprenticeship Program was transferred from Manitoba Labour to the Manitoba Department of Education and Training with the staffing complement increased from 26 full time equivalents (FTEs) to 30 FTEs the following year. Further restructuring occurred in 1996/97 when the Apprenticeship Branch was combined with the Workforce 2000 Program resulting in significant changes in funding and staffing discussed below (Apprenticeship Branch, 1999).

As shown in the following Table 2.7.1 Manitoba Apprenticeship Program Expenditures and Staffing, the expenditures for these combined programs for the year prior to being combined would have equalled $2,571,900 in salaries for 59 FTEs and $6,685,700 in other expenditures. However, the 1996/97 Supplementary Information for Legislative Review and Departmental Expenditure Estimates for Manitoba Education and Training shows an actual total of

$1,458,400 in salaries for 32 FTEs and $2,317,400 in other expenditures. This represents a 43.5% decline in total funding for the two programs (Manitoba Education and Training, Supplementary Information for Legislative Review, Departmental Expenditure Estimates, 1993-1999).

Table 2.7.1

Manitoba Apprenticeship Program Expenditures & Staffing

	Salaries	Other Expenditures	Total	FTEs
1993/94*	$936.6	$235.8	$1,172.4	26
1994/95	$1,256.6	$297.3	$1,553.9	30
1995/96**	$2,571.9	$4,113.8	$6,685.7	59
1996/97***	$1,458.4	$2,317.4	$3,775.8	32
1997/98****	$1,171.4	$371.3	$1,542.7	26
1998/99	$1,464.1	$1,486.1	$2,950.2	33

* Apprenticeship Transferred to the Department of Education and Training

** Adjusted Vote showing combined expenditures for Workforce 2000 and Apprenticeship

*** Actual expenditures and staffing for combined Apprenticeship and Workforce 2000

**** Workforce 2000 separated from Apprenticeship with a Salary budget of $367.8 for 7 FTEs and Other Expenditures of $1,484.9.

Source: Supplementary Information for Legislative Review
Departmental Expenditure Estimates:
Manitoba Labour
Manitoba Education and Training

As this Table indicates, the following year in 1997/98 the Apprenticeship Program was once again separated from the Workforce 2000 Program. The resulting expenditures for the Apprenticeship program were about 1% less than before it

was combined with Workforce 2000 in 1995/96. However, this seemingly small budget reduction was the balance between an $85 thousand dollar loss in salaries representing the elimination of four FTEs and a $75 thousand dollar increase in other expenditures.

The most recent revisions to Manitoba's apprenticeship program were initiated in 1997 when a provincial task force was established to review apprenticeship in Manitoba and to develop recommendations for revitalization. This was predicated in part on the proposed changes in funding from the federal government that will be discussed in the Chapter 3. The primary focus of this next chapter is to provide a comprehensive description of today's apprenticeship model in Manitoba including recent efforts to improve mobility and flexibility through the program restructuring (Apprenticeship Branch, 1999).

Chapter 3: Manitoba's Apprenticeship Model

This chapter will show that apprenticeship continues to be a priority with employers, government and workers as demonstrated by their participation in the program and ongoing allocation of resources. That all the partners involved in this program are committed to its continued contribution to skills development in Manitoba is evident by their support for and contribution to recent attempts to improve its effectiveness, enhance accessibility and address flexibility and mobility concerns.

The structure, participants, roles and responsibilities of the existing Apprenticeship model will be examined in this chapter, including legislative requirements and the various methods of accessing this program[1]. This will provide the context within which decisions are made regarding commitment to this training program, training schedules and skill development patterns. This framework governs acceptance to and progress through this training process which directly affects resource requirements of each partner. Changes to this program in response to a recent review conducted by the Manitoba Government will support the view that stakeholders are predisposed to improvements in this training that would enhance flexibility and mobility.

1 The majority of this chapter is the culmination of consultations with and documentary information from the Manitoba Apprenticeship Branch.

Although Manitoba's apprenticeship system has seen a number of changes over the years, the basic traditional concept of transferring skills from experts to learners on the job continues to be the primary concept. In achieving the goal of refining the model, formalized apprenticeship established in 1944 developed linkages between business, government, education and apprentices. These linkages have been maintained and strengthened over time and represent an important component of its modern structure.

The revisions to apprenticeship in Manitoba have mostly been attempts to meet industry's needs for specific skills and to improve access by target populations. However, this program along with many others suffered from significant program cuts due to government budget constraints and the trend toward more efficient corporate models in the early 1990's.

Since then, industry concerns regarding the program's ability to ensure a skilled and productive workforce is available to meet the competitive requirements of a global economy, coupled with changes in funding announced by the federal government, sparked the need for an in-depth program review as described in the task force report (Task Force on Apprenticeship 18). Currently the Manitoba Government is in the process of implementing the recommendations from the task force report and changes are on-going. Those changes that have been initiated as of the fall of 1999 are highlighted throughout the detailed program description provided in the following sections.

Among the changes was the development of a new *Apprenticeship and Trades Qualifications Act (A110)* which received royal assent on June 29, 1998 and was proclaimed as coming into force on May 1, 1999. This act provides the regulatory framework and legal basis for the apprenticeship contract and outlines a formal advisory structure that includes the key stakeholders in this employment centred training.

3.1 Apprenticeship and Trades Qualifications Act (1998)

This new legislation was developed to address recommendations outlined in the final report of the Apprenticeship Task Force released in May 1997. This task force conducted an extensive review of Manitoba's apprenticeship to determine ways to improve its effectiveness and address existing and anticipated skill shortages. Flexibility and responsiveness to meet current industry training needs and to fit new businesses and jobs within a climate of constant change are the goals of these recent changes. The news release announcing the changes stated that revitalization of Manitoba's apprenticeship program "supports youth and Aboriginal participation, flexible training delivery, the development of new trades for apprenticeship and doubling the size of Manitoba Apprenticeship system". Industry's involvement in the development of these changes leads me to the conclusion that these initiatives meet their current needs.

The new apprenticeship model is described by the Department of Education and Training responsible for this program as "industry driven" with the intent to ensure the skills needed by employers are developed in the workforce. This is achieved through a process by which employers can apply to have new trades designated for apprenticeship training if sufficient justification and demand is demonstrated by industry. Through this process, increased involvement by stakeholders is expected to improve the system's effectiveness and responsiveness.

This legislation provides the structure for a revised Apprenticeship Program and defines the roles, responsibilities and levels of authority of the different participants. It identifies the designated trades that qualify for apprenticeships of which some are traditional apprenticeship occupations such as plumber and ironworker. Others designated trades identified in the legislation have been recently developed into apprenticeships such as cooks and sprinkler system installers.

Trade Regulations under this Act continue to prescribe the minimum wage rates for apprentices and the required standards of progress including the number of hours of experience required to qualify for each level of apprenticeship. These regulations stipulate that time spent attending technical classes is accepted as experience toward apprenticeship certification but overtime hours are not.

3.2 Program Access

The new flexibility announced with the release of the revised legislation includes new ways in which work experience may be acquired and applied to the apprenticeship program and new avenues to access the program by workers and employers. The complete set of alternatives available to both employers and employees are described as follows.

3.2.1 Employee Initiated Access

There are several traditional ways that employees can access the Apprenticeship Program and/or have experience recognized as described in the following subsections. This description includes a number of new options that include ways in which experience acquired before becoming an apprentice may be recognized as applicable to certification.

However, in all cases access to this method of acquiring skills and recognition of experience in an apprenticeable trade depends upon the support and cooperation of an employer as a primary requirement. The decision to enter a particular trade is culminated in signing an Apprenticeship Agreement which commits both parties to the duration of the training program and can only be broken if one or the other does not meet the conditions laid out in that agreement.

a. Traditional Entrance:

What has been the normal method of entering apprenticeship continues to be included in this new model. Worker(s) find employer(s) who will hire them as apprentice(s) in the chosen trade and the schedule of training and experience as set out by the provincial government is followed. This same method applies to someone already employed who has decided to enter apprenticeship to become a qualified tradesperson. The employer must agree to this arrangement which is familiar to employers in these industries.

b. Senior Years Apprenticeship Option (SYAO):

This is a new program that has been established to provide senior high school students with the opportunity to experience and access apprenticeship training during their Senior 3 and 4 high school years. This provides a clearer connection between academic education and practical application as previously students left high school before understanding the usefulness of academic education.

The minimum qualifications for the chosen trade must be met and the student must have a signed Apprenticeship Agreement with a participating employer. The student continues to attend regular classes but becomes an apprentice while on the job. Several weeks of training in trade theory is required that must be taken through a

community college approved by the Apprenticeship Branch. Students who successfully complete Senior 4 while in the SYAO will have their accumulated time for on-the-job training and work experience applied to their apprenticeship if they continue toward certification.

c. Trades Qualification Program:

An individual who has several years of 'hands on' experience in a designated trade throughout the last ten years may become a fully qualified journeyperson. Documented proof of the practical experience is required in the form of letters from employers specifying exact dates and a detailed description of the type of work performed. In lieu of these testimonials, a Statutory Declaration made by the applicant before a Notary Public or Commissioner of Oaths that provides the same information is permissible.

A Trades Qualification Application Form along with the above documentation and applicable fee is submitted to the Apprenticeship Branch. If this application is accepted, an examination is scheduled which may include a written test of theoretical knowledge and a practical exam demonstrating the skills of the trade.

Passing the written test with a grade of 70% or more and successfully completing the practical exam results in certification being conferred.

Individuals who fail either exam must wait a minimum of three months before applying for Trades Qualification examination again. Failure a second time means the applicant must successfully complete a course of training approved by the Director of Apprenticeship before taking any further exams.

d. Transferring to Alternate Trades:

Mobility between trades is difficult but possible at the discretion of the Apprenticeship Counselors. Apprentices or journeypersons can request that past relevant experience be considered in applying to apprentice in a different trade. The employee must demonstrate their level of knowledge by achieving a minimum of 70% on the test for one level to qualify for placement at the next level. Manitoba Government charges a fee of $100 for each test.

This process does not allow for easy transfer between trades due to the differences in training schedules discussed in Chapter 5. In general, common elements between trades may be provided to apprentices at different levels of training in each trade. Therefore, a skill that is not taught in one trade until year 2 or 3 may be included in the test to skip level 1 in another trade that is organized to teach that skill in the first year.

3.2.2 Employer Initiated Access

There are two ways in which the Apprenticeship Program can be accessed by employers:

a. an employer may register the company name with the Apprenticeship Branch to be matched with an apprentice seeking an employer, or
b. an employer may propose to the Apprenticeship Branch a specific person already employed with the company who is interested in becoming an apprentice.

3.3 Program Activity

Through these access options the number of apprentices is expected by government and industry to increase in the coming years. With the recent innovations to the program the provincial government predicted in their press release that the apprenticeship system will double in the next few years through the anticipated increase in the number of designated trades. This should translate into a corresponding increase in the number of apprenticeships.

The program activity to date has steadily increased by around 10% each year since 1994/95. The following Table 3.3.1 provides the number of active apprentices as reported in the Manitoba Government Annual Reports (Manitoba Labour, Annual Reports, 1991-1993; Manitoba Education and Training, Annual

Reports, 1993-1999). It should be noted that in the early 1990's there was a significant decline in apprenticeship activity primarily due to a drop in apprentices registering for the program. Although registrations generally range over 800 and have been has high as 999, they dropped to 585 in 1992/93 and 520 in 1993/94 which is also the year the program was transferred from Manitoba Labour to Manitoba Education and Training. The department has been unable to determine the cause for this significant decline to date. In conjunction with continued graduation, this decline in registrations resulted in the total number of active apprentices dropping to 2,302 by the end of 1993/94.

Table 3.3.1
Apprenticeship Program Activity By Year

Fiscal Year	Active Apprentices at Year End*	Year Over Year Change	Percentage Change
1991/92	3398		
1992/93	3096	-302	-8.9%
1993/94	2302	-794	-25.6%
1994/95	2485	183	7.9%
1995/96	2710	225	9.1%
1996/97	2967	257	9.5%
1997/98	3177	210	7.1%
1998/99	3550	373	11.7%

* Manitoba Labour, Annual Reports, 1991-1993;
Manitoba Education and Training, Annual Reports, 1993-1999

Among apprentices there is a tendency for certain trades to be more popular than others. The active trades, which are those that have registered apprentices, are shown in the Annual Reports under general trade categories which include

occupations in the same field. An examination of recent activity by category shows that construction related trades, such as carpenter, plumber and electrician, attract approximately 50% of all apprentices. The next most popular category is the mechanical trades, such as mechanic and motor vehicle repairer, at about 30% of all apprentices. Although the totals shown in Table 3.3.2 differ somewhat from those quoted above due to adjustments made to the statistics to reflect inactive apprentices, the general trends are clear.

Table 3.3.2
Apprenticeship Activity by Category

Trade Categories	1996/97		1997/98		1998/99	
Industrial	487	16.7%	466	15.4%	588	16.6%
Mechanical	870	29.9%	957	31.6%	1076	30.3%
Construction	1453	49.9%	1512	49.9%	1784	50.3%
Service	99	3.4%	97	3.2%	102	2.9%
Total	2909	100.0%	3032	100.0%	3550	100.0%

3.4 Roles and Responsibilities

Fundamentally, Manitoba's Apprenticeship Program is a skill-building partnership among business, labour and government each with specific roles and responsibilities. These partners include individual employers, business sector representatives, labour organizations, employees, community colleges, Manitoba's Apprenticeship Branch including its Board and Provincial Trade Advisory Committees, and the Employment Insurance Division of Human

Resources Development Canada. These participants may have individual roles or may provide guidance and advice through several boards, councils and committees.

3.4.1 Employers

Employers provide the essential context within which apprenticeship takes place by operating businesses, of any size, that require skilled workers in either designated trades or in a trade with demonstrated demand. The employer must complete and sign an "Agreement of Apprenticeship" which becomes legally binding upon registration with the Apprenticeship and Training Branch (Attachment "A").

Although this agreement is governed by the provincial act and pursuant regulations a number of rules are specified directly in the agreement itself. These rules include contract termination procedures and minimum apprenticeship wages that are discussed later in Chapter 4. In addition, an employer who has agreed to an apprenticeship program is obligated to commit to the full term stated in the applicable Trade Regulation, provide specified on-the-job training, and verify hours worked. This last requirement is due to the stipulation that a year of actual apprenticeship employment consists of the hours prescribed in the Regulation for the particular trade. These hours include attendance at technical classes.

This reflects the employer's commitment to developing skilled workers through academic and practical training.

3.4.2 Employees

Since the apprenticeship program is based on a mixture of institutional and on-the-job training, any individual wishing to become a skilled journeyperson must work for an employer in need of these skills and be willing to commit to the full term of training. In addition, an individual must meet the academic standards specified for the particular trade of interest including required high school courses and minimum standings.

Most trades require Manitoba high school standings in mathematics and science. Based on these academic requirements and the view of Manitoba Education and Training that most employers prefer to hire high school graduates, those considering apprenticeship are strongly encouraged to stay in school.

Participants must be a minimum of 16 years of age with some exceptions where they must be older. Although anyone meeting these requirements may participate in the program the recent provincial government literature identifies several target groups as listed in Attachment "B". These are groups that are underrepresented in the skilled trades due to lack of opportunity or who have traditionally been excluded due to race or gender

discrimination. An example of efforts to expand representation is the introduction of the Aboriginal Apprenticeship program that is applicable to carpentry, plumbing and electrical trades. This is a two year apprenticeship program that provides training equivalent to and recognized as level 1 in the normal apprenticeship program. Only aboriginal reserves in northern communities are eligible to participate in this program.

Employees who make a commitment to train in a specific apprenticeship occupation also complete and sign the Apprenticeship Agreement. Among the Terms and Conditions (Attachment A) applicable to the apprentice are the requirements to "attend regularly at the employer's place of employment" and "to serve the employer faithfully, honestly and diligently". This reflects the loyalty and tradition that is still attached to apprenticeship.

Apprentices may be transferred, for cause, to another employer, if the Apprenticeship and Trades Qualifications Board so orders when it is recommended by the Director of Apprenticeship and Trades Qualifications. This exemplifies the expectation that apprentices will be employed by one employer.

3.4.3 Apprenticeship and Trades Qualifications Board

The Apprenticeship and Trades Qualifications Board consists of business and labour representatives from across the province appointed by and reporting directly to the Minister of Education and Training. The board is responsible for the policies and procedures governing the Apprenticeship Program and for developing proposed changes to the Act and regulations. These changes may be initiated by the Provincial Trade Advisory Committees and must be referred to the Minister for approval. Any changes in the Apprenticeship Agreement must be approved by the Board.

3.4.4 Provincial Trade Advisory Committees

A Provincial Trade Advisory Committee is established for each designated trade and consists of representatives of industry tradespeople appointed by the Apprenticeship and Trades Qualification Board usually as recommended by the Apprenticeship Branch Counselor. The Board also appoints the chair of these committees. Primary responsibilities are to deal with industry related issues such as setting training standards, curriculum, and scheduling progression through the training levels. Recommendations on minimum wages are made by this group to the Board for consideration.

New responsibilities were encompassed in the program reform that gives these committees provincial jurisdiction and a clearer mandate to advise the board on training and qualification matters. It can be expected that this advice would be trade specific without consideration of its impact on other trades. A new appeal function being developed will also be added to committee responsibilities.

3.4.5 Manitoba Government

Manitoba's Department of Education and Training develops and administers the legislation, regulations, policies and procedures governing the Apprenticeship Program. The Apprenticeship Branch of this department provides administrative, coordination and development services to the programs, advisory committees and the board through offices located in Winnipeg, Brandon and The Pas.

Specific examples of the responsibilities of the Apprenticeship Branch include promotion of occupational training, registration of Apprenticeship Agreements, monitoring on-the-job training through a competency check list to ensure minimum skill development standards are being met, examination and certification of journeypersons. It administers the Trades Qualifications examinations for those who have demonstrated experience and wish to obtain trade certification and coordinates the Senior Years Apprenticeship Option program.

The Apprenticeship Program Guide for each trade, also developed by the Apprenticeship Branch, provides a framework of standards and time frames for in-school instruction. These guides identify the core competencies, tasks, sub-tasks, enabling objectives and tools/equipment that apprentices must master at each level in order to progress to the next level and achieve certification. For trades under the Red Seal Program, these guides are based on the National Occupational Analysis Series (NOA) that identifies the tasks that are performed by skilled workers in every province and territory that forms the basis for the inter-provincial exam. The NOA is maintained by the federal government to offer consistent definition of occupations across Canada.

The Apprenticeship Branch also conducts accreditation of training facilities, establishes the training "blocks", schedules classroom training and manages training funds provided by the provincial and federal governments. The Provincial Government provides financial support to apprentices who are not eligible for benefits through the Employment Insurance Program as described in Section 3.3.7. Although this provincial assistance matches the direct training costs covered by the federal government, it does not include income support.

3.4.6 Community Colleges and Training Institutions

Community colleges and training institutions deliver the theoretical knowledge applicable to trades and introduce new technologies as they become available. To be able to deliver these courses each facility must be accredited by the Apprenticeship Branch to ensure that the curricula, facilities and instructional staff are acceptable. A list of currently accredited institutions is provided in Attachment C.

From 1,200 to 1,800 hours, or about 20% of apprenticeship training, involves classroom instruction distributed fairly evenly throughout the duration of the apprenticeship program and ranging from four to ten weeks per year. The course content for this classroom training is developed by each institution based on the Trades Qualification Guides following the curricula outline approved by the Provincial Trade Advisory Committees.

3.4.7 Federal Government

The Canadian Federal Government provides financial support to apprenticeship training programs delivered by the provinces and territories. This support which will be discussed further in Chapter 4 takes two forms:

a) direct funding of the fees charged by vocational institutions for training, and

b) indirect funding through income support payments made to apprentices during their in-school training through Employment Insurance (EI). Apprentices must meet the normal eligibility criteria for EI benefits including the minimum required number of weeks (52) of employment prior to being laid off for the training period. Once qualified for EI benefits under this "layoff of convenience" apprentices may also qualify for other financial support through this same program. These include a "living away from home allowance", commuting allowance, day care allowance, disability allowance and other grants in the form of taxable benefits to offset tuition costs.

3.5 Red Seal Certification

The Interprovincial Standards Program came into existence in 1958 to support the mobility of certified journeypersons throughout Canada. It has also encouraged standardization of Provincial/Territorial training and certification programs. Those who have graduated from a recognized apprenticeship program or hold a Provincial or Territorial Certificate of Qualification may apply to write the Interprovincial Standards Examination for that trade. Successful candidates receive a "Red Seal" attached to their certificate which is how the program got its name. An interprovincial number is also issued to those who qualify for this program.

This certification allows journeypersons to move between participating provinces without requiring recertification or formal assessment of competence. Some jurisdictions require renewal from time to time and charge a fee to obtain a Journey Level Certificate of Qualification. There are currently a total of 44 Red Seal trades recognized in twelve Canadian jurisdictions including Manitoba.

3.6 Future Challenges

Several issues have yet to be addressed in the apprenticeship program. Technological changes continue to have a significant impact on trades and apprenticeship. Keeping up to date with state of the art technology and new methodologies requires a lifelong commitment to learning. Ensuring opportunities exist to acquire these skills and that trade certification reflects a journeyperson's expertise in technological advances and new ideas will be challenging to all stakeholders. Certification of existing journeypersons in the emerging technologies and skills will be one of the new challenges.

The current Apprenticeship Program with the recent improvements described above has increased the mobility of apprentices across Canada, expanded the flexibility of the program to address emerging occupational and skill requirements, enhanced the accessibility of apprenticeship training to high school students and experienced workers and increased the participation of industry.

However, the basic structure still exists that:

1. requires commitment from an employee to specialize in one trade upon entering the program,
2. provides a pattern of training that is specific to and is established by the individual trades and has no requirement that generic transferable skills be developed in the first year(s), and
3. includes a legal contract that binds the employee to an employer for three to five years of the training.

These characteristics limit employee options to transfer to different occupations within their chosen field or to have previous relevant training recognized.

With the anticipated trend toward multiple jobs, and emerging new occupations and trades while others are in decline, I would contend that the next step is to address how employees may enjoy a smooth transition between jobs. Certification in new skills should be take into consideration the applicability of previous training in other trades that may no longer be in demand or may have lost their economic standing due to advances in technology or over supply of journeypersons. Further restructuring of the Apprenticeship Program to address the emerging requirement for worker mobility will be reliant on the economic costs and benefits of doing so which are examined in Chapter 4.

Chapter 4: Economic Analysis of Apprenticeship Training

This chapter will demonstrate that the Apprenticeship Program is a cost effective system for skills development which also brings economic benefits to workers, employers and the government, and therefore, is worthy of expansion and reorganization to maximize its utilization. While investments by those involved in and responsible for this program will be shown to be substantial, the multifaceted returns to society benefit all stakeholders at various levels.

An economic analysis of apprenticeship training will be conducted using the human capital theory to assess the viability of this training program and its continued benefit to developing skilled workers in Manitoba. The intent is to determine if the benefits from this program are sufficient to off-set the investments by the partners. As no economic studies of apprenticeship training in Manitoba have been conducted to date, the costs and benefits to the various participants will be documented and compared where possible.

As described in the previous chapter, the development of skills through apprenticeship requires various inputs from a number of sources. These inputs include the use of capital resources and commitment of human and financial resources. To determine the economic impact of choosing to allocate these

resources to this method of training, an examination of the costs and benefits will be developed in the following discussion.

An economic analysis of apprenticeship training can be conducted through applying the Human Capital Theory which proposes that investments in human resources are made to improve productivity, which should translate into higher profits for employers and higher earnings for employees (Gunderson and Riddell 364). Under this theory, education and training are considered to be primary sources of human capital that provide both skills and an indication of an employee's potential. However, such investments come at a cost paid in the present which must be weighed against potential future returns that may result from the new skills and improved productivity (Gunderson and Riddell 378).

According to this theory, the decision to invest in human capital will be made when the benefits outweigh the "costs by a sufficient amount" (Gunderson and Riddell 364). On the supply side of the equation, conducting a cost benefit analysis of acquiring a particular skill must include calculations of both direct costs such as tuition and "opportunity costs or income forgone while (. . .) people acquire human capital" (Gunderson and Riddell 369-370). However, Gunderson and Riddell contend that the latter component can prove difficult to evaluate due to the need to estimate what people would have earned without the investment in human capital (Gunderson and Riddell 365).

It is commonly acknowledged by economists that there are a number of complicating factors affecting the decision to make human capital investments that include personal, financial and social variables (Gunderson and Riddell 375-377; McConnell, Brue and Pope 341-343). Individual choices to avail oneself of education or training may be affected by personal propensity for learning, leisure time preferences, attitudes toward risk and the need for job satisfaction (Gunderson and Riddell 370-371). Interest rates, educational subsidy programs and available savings as well as unemployment rates may also impact investments in skill development (Gunderson and Riddell 371-372). As these factors are controlled in the human capital theory, the analysis of apprenticeship training attempted in this chapter will focus on the primary elements of this theory of current costs and potential income (Gunderson and Riddell 367-368).

On the demand side of this theory, employer preferences for workers with enhanced or specialized skills will vary depending on the production process, the organizational structure, and the market. Employer preferences for hiring transferable skills versus developing skills on the job will also vary depending on the type of required skills and the labour market (Gunderson and Riddell 371-372). An employer may choose to train an employee on the job based on limited supply of skills in the market, the specialized nature of the skills required or the

economic costs/benefits of employing a worker while skills are being developed (Gunderson and Riddell 371-372).

Through the apprenticeship model of training, the costs of this investment tend to be shared by both the employer and employee with some inputs from government (Gunderson and Riddell 380-381). The provincial government provides organizational support to the apprenticeship trades providing the linkages between employer and employee and ensuring the quality of training while subsidizing training costs for employees who qualify (Apprenticeship Branch, 1999). The pubic expenditures committed to this support will be discussed under Section 4.2, Direct Costs.

The costs to the employer under this model of training include the requirement that, in order to acquire potential, apprentices be paid at a rate regulated by the government that is higher than that paid an unskilled worker but less than that paid a skilled worker (Apprenticeship Branch, 1999). In return the employer benefits from the employee's productivity although it will be less than maximum due to time utilized for both on the job training and classroom instruction. The employer also benefits from the knowledge of new techniques and technologies acquired by the employee while at school (Apprenticeship Branch, 1999).

The employee benefits from earnings that are greater than what would be earned as an unskilled labourer. Apprentices commonly are recognized by industry as unskilled but with the potential ability to become certified journeyperson and are paid more based on this potential (Apprenticeship Branch, 1999). The employee also has the opportunity to earn more as new skills are acquired as shown in the regulated schedule of wages that increases with each year of training.

Costs to the employee can include lost wages during classroom training, forgone earnings by accepting a lower wage during a lengthy training period and other direct costs such as tuition and books. The employee also must weigh the risks of committing to one specific trade versus choosing another as the structure of these training programs discussed in Chapter 5 is such that changing to a different apprenticeship occupation virtually means starting over. In this case most of the investments in previous training would be lost.

An examination of the wage structure for apprenticeship training to determine the benefits to both the employer and employee follows in Section 4.1. This includes an income comparison to other regulated salaries such as the provincial minimum wage rate and minimum wage rates for related occupations. The direct costs of investing in skills needed to achieve these wages are described in

Section 4.2 including tuition and program fees. In addition, indirect costs such as lost income during classroom training will be included.

4.1 Skills Impact on Wage Rates

To determine the impact of skill development on wage rates, the resulting income streams under the regulated wage structure of the apprenticeship program will be examined as well as the minimum potential wage once journeyperson status is achieved. Also I will compare to other potential income streams that may reasonably be assumed should the individual choose not to participate in this training program. It was found that the potential for higher future earnings are significant for almost all of these occupations in the long run.

In Manitoba the minimum wage rate effective April 1, 1999 is $6.00 per hour which means that an employee working a 40 hour week would earn $240 gross salary. Therefore, an occupation requiring limited skills or training would pay approximately $12,500 per year to a full time employee. This minimum wage increases from time to time when the provincial government determines that a higher minimum wage is warranted. It should be noted that this wage rate could be considerably higher for unskilled workers when shortages are experienced in a tight labour market. Also, unskilled labour in a unionized industry generally

realize higher than minimum wages as a result of the collective bargaining process.

Under the apprenticeship model employees earn an hourly wage that is higher than the provincial minimum as laid out in the regulations governing each trade under the Apprenticeship Training Program. These wage rates are expressed in terms of:

1. a percentage of the prevailing wages of a journeyperson which are also set in regulation, or
2. as a percentage that must be paid above minimum wage (Apprenticeship Branch, 1999).

Each of these two formulas and an analysis of their impact on income are examined in Sections 4.1.1 and 4.1.2.

These minimum wage rates tend to be based on the generally accepted standard for apprenticed trades that in the first year or term this wage will be at least 10% above the provincial minimum wage rate. Incremental increases upon completing each term of training are also stipulated in the regulation and are expected to be a minimum of 10%. In many trades under *The Apprenticeship and Training Qualifications Act*, these 10% minimum increases are stipulated in the governing regulations.

Beyond these minimums, the wage rate paid apprentices varies among employers depending upon company size and the impact of unionization. Where a collective agreement exists that specifies wage rates, the apprentice receives whichever is higher, the legislated wage or that which is specified in the collective agreement (Apprenticeship Branch, 1999).

The employer is responsible for paying these wages while apprentices are on the job and not attending technical courses. Although employers are not required to remunerate apprentices while they are away from the job taking classroom training, they are encouraged to do so (Apprenticeship Branch, 1999). Income received by apprentices during this period of training will be discussed under Section 4.3, Public Expenditures.

4.1.1 Apprentice Wages as a Percentage of Journeyperson Wages

Apprentices for trades that are part of the Greater Winnipeg Building Construction industry are paid a percentage of the journeyperson's wage rate as specified in the Building Construction Minimum Wage Regulations which was last revised on May 1, 1997. Within these trades, apprentices are paid between $8.30 and $14.05 per hour in their first term. In the last term of apprenticeship, apprentices can earn between $15.67 and $20.06 an hour (Manitoba Labour, The Construction Industry Wages Act; Apprenticeship Branch, 1999). This maximum apprenticeship wage can

be achieved in three, four or five years depending on the organizational structure of the training program (Apprenticeship Branch, 1999).

It should be noted that where occupations are organized into six month terms an average hourly wage for the year has been calculated for consistency in making comparisons between the occupations. For example, the schedule for Painter and Decorator apprentices provides for a minimum hourly wage of $7.37 to be paid in the first six months and $9.22 in the second six months (Apprenticeship Branch, 1999). An annual average of $8.30 has been used in this comparison.

Using the same calculations and assumptions applied to a minimum wage earner described above, an apprentice working a 40 hour week on a full time basis in these trades could earn from $330 to $560 per week in their first year or approximately $17,160 to $29,120 a year. This may be somewhat less if the employer does not pay the apprentice during periods of classroom training to be discussed later. As the construction industry tends to be seasonal by nature, the calculation of annual salaries allows for more of a perspective and comparative analysis. Real annual income may be less.

Workers in this sector of the economy could have a couple of alternative income streams without training. Without investing in the apprenticeship training, workers could enter several other types of occupations. The following provides a comparison of the regulated apprenticeship salaries summarized above to salaries that would be earned under minimum wage as an "Unskilled Labourer" in the construction industry and as a "General Construction Labourer". The following tables 4.1.1.1 and 4.1.1.2 provide data for reference purposes in this comparison.

Table 4.1.1.1
Comparison of the Lowest Wage Rates Paid Apprentices to Other Regulated Wage Rates

Lowest Apprenticeship Wage*	Difference from Minimum Wage $6.00*		Difference From Unskilled Construction Labourer Wage $10.38*		Difference from General Construction Labourer Wage $16.80*	
	$	%	$	%	$	%
1st Year ($8.30)	2.30	38.3	-2.08	-20.0	-8.50	-50.6
2nd Year ($11.98)	5.98	99.7	1.60	15.4	-4.82	-28.7
3rd Year ($13.82)	7.82	130.3	3.44	33.1	-2.98	-17.7
4th Year ($15.67)	9.67	161.2	5.29	51.0	-1.13	-6.7
5th Year** ($19.58)	13.58	226.3	9.20	88.6	2.78	16.5
Journeyperson ($18.10)	12.10	201.7	7.72	74.4	1.30	7.7

* Manitoba Labour, Various Regulations
** Applies only to Plumber & Refrigerator/Air Conditioning Mechanics.

Table 4.1.1.2
Comparison of the Highest Wage Rates Paid Apprentices to Other Regulated Wage Rates

Highest Apprenticeship Wage*	Difference from Minimum Wage $6.00*		Difference From Unskilled Construction Labourer Wage $10.38*		Difference from General Construction Labourer Wage $16.80*	
	$	%	$	%	$	%
1st Year ($14.05)	8.05	134.2	3.67	35.4	-2.75	-16.4
2nd Year ($16.22)	10.22	170.3	5.84	56.3	-0.58	-3.5
3rd Year ($17.94)	11.94	199.0	7.56	72.8	1.14	6.8
4th Year ($20.06)	14.06	234.3	9.68	93.3	3.26	19.4
5th Year** ($19.60)	13.60	226.7	9.22	88.8	2.80	16.7
Journeyperson ($24.50)	18.50	308.3	14.22	137.0	7.70	45.8

* Manitoba Labour, Various Regulations
**Applies only to Plumber & Refrigerator/Air Conditioning Mechanics.

4.1.1.1 Comparison to Minimum Wage

The regulated apprenticeship wage rates represent a minimum increase of 38.3% above $6.00 provincial minimum wage for new apprentices. Apprentices in their final year of training could earn up to 234.3% more than the minimum wage although it can be reasonably assumed that three to five years of experience even in an unskilled, non-unionized occupation would result in some increase in pay over minimum wage.

4.1.1.2 Comparison to Unskilled Construction Labours

It is also relevant to compare these wage rates with that of an "unskilled labourer" in the construction industry. It could be assumed that someone considering construction as an occupational field may enter this career path as a labourer.

As the wage rate for an unskilled labourer is specified under the building construction regulation at a minimum of $10.38 per hour, the theory of forgone wages could be applied. Workers who choose apprenticeship over unskilled labour would lose a maximum of $2.08 an hour or about $83 a week representing $4,316 in the first year for a full time employee. This may be a factor in the short run but only for a few trades as out of the twelve apprenticeship occupations included in this construction category five pay less than an "unskilled labourer's" minimum wage in the first year and all pay more in the second year.

However, the regulations limit the number of "unskilled labourers" in the construction industry to one for every ten "general construction labourers" per employer (Apprenticeship Branch, 1999). Therefore a comparison to the regulated wages for this latter occupation follows.

4.1.1.3 Comparison to General Construction Labourer

The minimum wage for a "general construction labourer" is specified under the Building Construction Minimum Wage Regulation at $16.80 an hour (Apprenticeship Branch, 1999). Using this wage rate as a comparison, most apprentices would experience a diminishing wage loss beginning at $8.50 in the first term and declining to $1.13 in the fourth term. The maximum loss that may be experienced by apprentices in their first term would be $8.50 per hour or $340 per week representing approximately $17,680 per year for a full time employee (see Table 4.1.1.1). This shows that although workers can achieve higher wages in the short run, investments in human capital through training will result in higher returns in the long run.

In all of these occupations, certified journeypersons are paid a minimum of between $1.30 and $7.70 an hour or from about 8% to 46% more than the General Construction Labourer. Therefore, the investments in apprenticeship training are offset by higher wages than could be earned in the same occupational field with no training.

In these construction occupations, the employer is able to realize substantial savings by hiring apprentices who perform the duties of a general construction labourer while learning their trade. Using the

minimum wages earned by apprentices, these savings over paying the minimum salary of a general construction labourer range from 50% in the first year to 7% in the fourth year. For the more highly paid trades, the lowest savings that could be realized by the employer would be 16% for the highest paid apprentice in the first year.

Some savings are also realized if the apprentice functions as unskilled labourers in the first year but only for the lower paid apprentices. Construction labourers are paid approximately 20% more than the lowest paid apprentice.

4.1.2 Apprentice Wages as a Percentage of Minimum Wage

The wage rates for all other apprenticeship occupations that do not fall under the regulation for construction related trades are described in regulation as a percentage above the $6.00 per hour provincial minimum wage rate (Apprenticeship Branch, 1999). This percentage ranges significantly between the trades.

As of April 1, 1999, this salary top up ranges from 10% to 45% of minimum wage for apprentices in their first term. This results in an hourly wage rate for new apprentices ranging from $6.60 to $8.70. In the final year of their training, apprentices under this regulation earn from 20% to

125% more than the provincial minimum wage or up to $13.50 per hour. It should be noted that only the aestheticians and hairstylist apprenticeships fall into the 20% category with all other trades paying at least 40% above the minimum wage rate in the last year of training.

Using the same calculations and assumptions applied to a minimum wage earner described earlier, an apprentice working a 40 hour week on a full time basis could earn between $264 and $348 per week or between $13,728 and $18,096 a year. This may be somewhat less if the employer does not pay the apprentice during periods of classroom training.

The rate at which an apprentice's wages increase depends on the trade, the duration of each term and the schedule of incremental increases established by the trade council. Incremental increases range between 10% and 20%. However, when the trades organized into six month terms are assessed on an annual basis, the wages for most trades increase by 20% per year. One notable exception is that of cabinetmaker, which begins at 45% above minimum wage with incremental increases of 30%, 25% and 25% each consecutive term resulting in the apprentice receiving 125% above minimum wage in the fourth year of training.

Although in the short run there is an opportunity to earn wages in other occupations that are higher than those offered for some trades under the Apprenticeship Program, the potential for higher future earnings are significant for almost all of these occupations in the long run. Theoretically these employees may also experience less unemployment as an employer commits to the apprenticeship program and does not wish to risk losing someone in whom several years of training have been invested as they expect a longer return on their investment.

The prediction of future benefits must be grounded in the economic trends and potential for realizing these benefits. In periods of stable or growing economy, employees can invest in training with the certainty that not only will they have an opportunity to complete their training but that theoretically there will be jobs in their chosen field upon certification.

However, the recent trends toward downsizing and restructuring have reduced the availability of full time positions, resulted in pay cuts and created the need for transferable skills. These transferable skills allow workers flexibility to obtain returns on their investments in their human capital beyond specialist aspects of individual businesses (Gunderson and Riddell 380-381). It has been estimated that most workers will have between six and eight different jobs in their lifetime and up to five complete career changes (Unger 44). If potential income is a

primary consideration in deciding on a career path, the workers must be assured that the skills they invest in will be valued in the future in more than one capacity.

4.2 Investment Costs

Investments generally come at a cost that is paid in anticipation that there will be future rewards. As indicated earlier, these costs are shared to differing degrees by several partners in the Apprenticeship Training Program for whom the rewards also differ.

4.2.1 Impact of Classroom Training on Incomes & Expenditures

Each apprenticeship training program includes a required period of classroom instruction that provides the apprentice with theoretical knowledge and technical training. The duration of these training periods varies between the trades and can change with each succeeding term.

The amount of time spent in school ranges from four to ten weeks a year throughout the program although a few trades require no classroom training in the final term of apprenticeship. The total time spent in classroom training ranges from eleven to forty weeks according to the schedule established for each trade (Apprenticeship Branch, 1999).

During these training periods, employers have three options:

1. Lay off the apprentice who may then be eligible to apply for Employment Insurance Benefits and support for training costs as described below under Public Expenditures;
2. Lay off the apprentice and make-up the difference between their regular wages and the training allowance; or
3. Pay the apprentice their regular wages (Apprenticeship Branch, 1999).

Employers who choose not to pay apprentices during classroom training realize minimum savings of between $1,320.00 and $5,600 a year in the construction industry and between $1,056 and $3,480 in all other apprenticeships. However, the employer may not experience an equal amount of lost productivity. In sectors that are seasonal by nature, the employer may require that the apprentice attend classroom training during seasonal down time to bridge the gap between productive periods.

These savings to the employer in unpaid apprentice wages may not result in an equal amount of lost income to employees. Apprentices who are laid off and are eligible for and apply to the federal government for benefits under the Employment Insurance Program may experience a lower income over the period of training for two reasons:

1. two weeks lost salary due to the minimum required waiting period between the last day of employment and the first day benefits are paid, and
2. maximum rate of benefits set at 55% of normal salary.

Consequently by my calculations, expenditures per apprentice for employers who choose to top up these benefits to equal the apprentices' normal wage would range between $600 and $2,500 in the construction industry and between $475 and $1,560 in all other apprenticeship trades.

However, employees who do not qualify for Employment Insurance Benefits and are not provided a salary by their employer during training periods would experience lost income equal to the employer's salary savings described above. As a result, these workers are making a greater personal investment in human capital.

4.2.2 School Related Expenses

School related expenses include tuition, books, travel, and accommodation which the employer is encouraged but not required to pay. While travel and accommodations apply only to those who are employed in areas outside of Winnipeg, Brandon or The Pas where training is generally offered, tuition and books are a constant expense for all apprenticeships (Apprenticeship Branch, 1999).

Effective July 1, 1998, tuition fees were set by the Apprenticeship Branch at $200 for all courses up to eight weeks in duration. An addition $25 charge was set for each additional week of in-school training (Apprenticeship Branch, 1999). Therefore tuition can range from $200 to $250 per year and represent a total of between $400 and $1,000 over the course of an apprenticeship program.

As indicated in Chapter 3, apprentices may be eligible for financial support to cover these direct training costs. Although other training costs such as travel and day care may also be covered, an estimation of these costs would require a detailed study due to the multitude of various combinations and rates depending on the apprentice's personal circumstances and location within the province.

4.2.3 Program Fees

The Apprenticeship Training Branch has developed a set of standard fees that apply to new apprentices, graduating journeypersons and qualified journeypersons. New apprentices are charged a registration fee of $50 upon application to enter the program. They may also be charged a Prior Learning Assessment & Recognition Examination fee of $100 to

determine if previous experience and training qualifies them to enter at a higher level (Apprenticeship Branch, 1999).

Graduating apprentices are levied a $250 fee for conducting a Trades Qualification Assessment/Examinations, and may be required to pay a $75 fee for re-examination if the first exam is failed. A $75 fee is also charged for issuing a Certificate of Qualification that is renewable in two years to each apprentice who has completed the Apprenticeship Training Program, demonstrated satisfactory experience and passed all required examinations. Should the journeyperson wish to be qualified to practice across Canada, a $75 fee is charged for conducting the Inter-Provincial Standards Examination or to receive a Red Seal (Apprenticeship Branch, 1999).

Besides paying for a renewal of certification, qualified journeypersons may pay a $75 fee for a review or validation of credentials, $35 for a replacement certificate, pocket card or record book or $15 for a temporary permit (Apprenticeship Branch, 1999). Upon graduation, the minimum total fees paid to become a journeyperson eligible to practice across Canada would be $400. Over the course of the apprenticeship program, fees could total up to $640.

4.2.4 Public Expenditures

There are two levels of public funding made available to participants in the Apprenticeship Program. At the provincial level, budget allocations to this program cover the administrative costs as well as the salaries of staff who co-ordinate and deliver services to the employer and apprentices as outlined in Chapter 3. These expenditures include the financial support for direct training costs to apprentices who do not qualify for Employment Insurance Benefits as described earlier.

At the federal level, in addition to the benefits provided under the Employment Insurance Program, financial support for the educational component of Apprenticeship training is also provided. These two levels of investment in training will be examined below.

4.2.4.1 Provincial Government Funding

The Manitoba Government's financial commitment to the delivery of the Apprenticeship Program has been steadily increasing since the early 1990's. As shown in Chapter 2, Table 2.7.1, total funding for this program reported in the 1993/94 Detailed Expenditure Estimates was just over one million dollars. This increased the following year by about 30% or to approximately $1.5 million which has remained relatively constant for the last four years despite the fluctuations in the

organizational structure outlined in Chapter 2. Although this represents a small portion of the total provincial budget, the increased staffing and budget while other programs were in decline, suggests a commitment to responding to industry's needs for skilled workers to remain competitive in an expanding global market.

Using these figures in conjunction with the level of activity generated by the program shown in Chapter 3 - Table 3.3.1, a preliminary analysis can be conducted as to the direct costs to the public. Accordingly there were 2,302 active apprentices in Manitoba at the end of the 1993/94 fiscal year. The budget expenditures for that year represents about $520 per apprentice. In 1994/95, the number of active apprentices increased to 2,485, however, the increased budget expenditures resulted in about $620 being spent per apprentice which was standard for the following four years.

In 1998/99 both staffing and operating costs for the Apprenticeship Program increased including an additional one million dollars designated to cover training costs for apprentices who do not qualify for Federal benefits. With 3,550 program participants that year, this results in increased funding to about $830 spent per apprentice.

4.2.4.2 Federal Government Funding

Training institutions that deliver theoretical instruction charge tuition fees for each student. Under the Apprenticeship Program, students are required to pay $200 of this fee while the federal government funds the balance. For example, if a college charges $2,000 per apprentice for an eight week course, the federal government would be responsible for $1,800. The total amount available for tuition to Manitoba has been capped at a maximum of $3.6 million dollars (Apprenticeship Branch, 1999).

Until recently, this federal funding was provided to the provincial government which was responsible for paying the training institutions. Changes by the Federal Government in this funding format effective in1999/2000 will result in this fee being paid directly to the student rather than to the Provincial Government. At this time, that portion of the tuition fees paid by the Federal Government will become a taxable benefit to students (Apprenticeship Branch, 1999).

This has been opposed by both industry and provincial governments based on the argument that Employment Insurance is funded solely by contributions from employers and employees including apprentices. Optional funding bases are being explored such as establishing an

Apprenticeship Training Fund that would be sustained by dedicated funding from tuition fees, grants and program fees discussed above (Apprenticeship Branch, 1999).

These investments were examined by the Manitoba Apprenticeship Task Force and compared to government revenues realized from apprentices at different income levels. Government income sources included in this analysis were based on 1994 income tax (provincial and federal), Employment Insurance contributions, and PST/GST paid on 60% of after tax income (Task Force on Apprenticeship 20).

By their calculations, government revenues from an apprentice who makes $8.00 per hour or more is greater than the government's expenditures toward the apprentice's training. This net government revenue, as shown in Attachment IV taken directly from the task force report, ranges up to $9,397 per year for an "unmarried apprentice earning $20 an hour, employed full-time and attending in-school training eight weeks a year" (Task Force on Apprenticeship 20).

4.2.5 Investments in Time and Commitment

Although the duration of an apprenticeship training program can range from two to five years, most are organized into three or four "year"

schedules. The duration of apprenticeship training is expressed in terms of years. However, a "year" is defined by the number of hours of training and experience required for each trade. In some cases these are described in the regulation such as the "Trade of Carpenter Regulations" that describes the term of apprenticeship as "four calendar years of [on the job] training and [classroom] instruction of at least 1,800 hours each year".

A log book in which hours worked are recorded and verified by the employer is used to determine when these required hours have been completed. In seasonal industries, accumulating the required number of hours can extend over several calendar years (Apprenticeship Branch, 1999).

This represents a significant investment by employees in time and commitment toward one specific set of skills with the anticipation that once certified, full time employment will be available in the chosen occupation. In a climate where it is predicted that employees will have between six and eight different jobs in their lifetime and up to five major career changes, it is important that investments in training develop transferable skills that can be continuously upgraded to remain current.

While the salaries for apprenticeship trades may be sufficient to offset the costs of training, the instability of many of these occupations makes them less attractive to many workers. Fluctuations in economic climate and rapid technological changes tend to affect construction and mechanical based jobs that currently form the greatest portion of apprenticeship trades. Workers who have invested in these skills can be unemployed temporarily or permanently depending upon their mobility or their re-trainability. The latter can require starting from scratch due to the structure of apprenticeship training that does not provide for common core competencies for related occupations to be learned in the initial stages of training shown in the next chapter. This inhibits flexibility and mobility in apprenticeship training.

Chapter 5: Skills Development and Employability

In this chapter, I will argue that one way of improving flexibility of the apprenticeship system and bring benefits to all stakeholders is to reorganize the delivery of the generic skills portion of the apprenticeship system in such a way that common, generic elements of related occupational skills are taught to all such occupations in the same relative sequence.

The current skills development process will be examined in light of the economic climate and business response to trends such as rapid advances in new technology and global markets. The rising need for flexibility by both employers and employees will be discussed as well as proposed strategies to meet this challenge. A review of recent research reports and findings will be provided as background including the proposed realignment of public educational policy that focuses on the development of generic skills. Related concepts including life long learning and core competencies will also be explored as requirements for worker mobility. Finally, the different types of generic skills will be examined as the foundation for reviewing apprenticeship skills.

Given the level of investments in time, energy, commitment and resources by each partner in apprenticeship training, it is important that the resulting skills be both valuable in the marketplace and remain relevant over time. However, this has become a challenge as the rapid rate of change, evolving global economy

and corporate restructuring have resulted in continuously changing skill-sets, fluctuating levels of demand and adversities in supply. As a consequence, there has been a rising need for flexibility by business, labour and training institutions.

"Rapid and continuous technological, economic, demographic and social changes directly influence" (Redekopp and Others 1) the nature of work and promotes the need for emerging new trades (Lankard 1996, 1). As the nature of work has become increasingly dynamic, the need for employees to develop transferable skills and for educational institutions to create environments that foster acceptance of change becomes of greater importance (Kerka 1991, 2). Training programs must evolve to provide skills that equip employees to remain employable and that address changing business and occupational needs in existing and newly designated trades.

Consequently, current skill development models are being re-examined in light of these changes to develop options that will support worker mobility (Lankard 1996, 1). Concurrently, initiatives to study what skills employers need to remain competitive have also been undertaken by government. The primary focus of these studies has been an attempt to identify generic skills and to determine the skill transferability between occupations that would provide greater flexibility for workers, employers and vocational training programs (Smith 4). "Employability security" rather than job security has become the primary goal (Saterfiel and McLarty 1; Kanter 9). Employability security is defined by Kerka as "the

knowledge that one has the competencies demanded in the new economy and the ability to expand and adjust those competencies as requirements change" (Kerka 1993, 2).

5.1 Rising Need for Flexibility

The emerging modern global economy that has been the impetus to reduced industry and labour stability has developed due to a number of factors:

1. "decreasing transportation and communications costs";
2. "new political structures and economic alliances (such as the European Community and North American Free Trade Agreement)"; and,
3. "homogenization of tastes influenced by the media, travel" and the spread of multinational corporations such as McDonalds (Kerka 1993, 1).

This economy is characterized by global competition, cultural diversity, new technologies and new management processes (Kerka 1993, 1; Lankard 1996 1). Competitive organizations in this global economy are characterized by service, productivity, speed flexibility and affordable quality (Davis and Botkin 111; Kerka 1993, 1). Companies need to have the flexibility to quickly and easily adjust to rapidly changing trends in consumer preferences and be able to produce quality results in a timely manner with the right inputs. As labour is one of those inputs, flexibility in the quantity and quality is required.

Through the globalization of the world economy, many Canadian businesses have experienced great rewards and challenging competition. In an effort to remain competitive and profitable, they have re-structured and re-organized their work places and production processes (Lankard 1994, 1). Upon doing so, business found that the new skills they required were often in short supply due in part to rapid change (Lankard 1996, 2). The National Research Council estimates that one-half of a worker's skills now become obsolete in three to five years as opposed to seven to fourteen years (Davis and Botkin 89).

One way that employers can ensure an adequately trained workforce is to enter into partnerships with education and the community. Benefits to such partnerships include reduced training costs, increased productivity and profit line (Lankard 1995, 2). Apprenticeship is one such partnership that provides the employer with the opportunity to be directly involved in program and course development while benefiting from public support for training costs and program coordination.

In addition to skills shortages, the process of restructuring highlighted problems traditional skill development systems have in matching rapidly changing requirements (Lankard 1994, 1-2). Restructuring also highlighted the insecurity of job specific skills and put into motion a mobile labour force, more by accident than design.

5.2 Worker Mobility

The rate of job and career mobility has escalated to the point that the old way of one job or one career for life is no longer a reality for many people. Although job/career tenure ranges between occupations, changes can occur as often as every few months in trades such as carpentry. The need for industrial, occupational and geographical mobility can be triggered by either employee or employer decisions.

Employee motivated job or career changes can occur as workers strive for advancement, job satisfaction, better conditions or continued employment. The elimination of career advancement opportunities through the flattening of job ladders and the effect of unstable occupations in cyclical sectors such as construction and mining have been cited as creating "job hoppers" and "career drifters" who change jobs and occupations on a regular basis (Davis and Botkin, 115; Brown 1998 Career Mobility 1; Cahill and Martland 1). However, in many instances where restructuring has eliminated jobs and/or careers, survival is the motivating factor that moves workers between jobs.

Other strategies initiated by employers to develop flexibility and reduce costs have affected the structure of the labour market and created anomalies in demand for skills that affect the success of displaced workers. "Over the past two decades, Fortune 500 companies have laid off millions of workers to re-

engineer organizational functions" (Borchard 9). In some cases this has created a surplus of qualified candidates that exceed the number of job opportunities while in other advances in technology have created demands for new basic skills with which training and retraining programs have had difficulty keeping pace (Borchard 9).

Also resulting from this re-organization, there has been a dramatic increase in part-time jobs, contract work and "portfolio people" (Brown 1998 Part-Time Work 3. "Portfolio people" are those workers who have specialized skills that are used by organizations to fill short term needs (Kellett and Conger 1). According to Brown, this mobility comes at a cost to employers. As workers remember job loss and lack of stability, company loyalty has diminished. It was reported that between 50% and 60% of newly hired workers change jobs within the first seven months of employment (Brown 1998 Career Development 1).

Whether employer or employee initiated, it has been reported that 10 percent of the workforce in the United States switches jobs every year according to the Bureau of Labour Statistics (Henkoff 53). As a result, it has been anticipated that employees should expect to have at least five career changes during their working life (Unger 44) or four to six occupations (Lankard 1996, 2). People who "change jobs every two to three years" should not be considered failures as many "are forced to (. . .) by system factors beyond their control" (Hiebert and Bezanson 1).

It has been suggested that success in these multitude of jobs and careers is based in part on the education and training of the employee. In his research paper entitled "Three Models of Job Mobility in Labour Markets", Hachen found that that education increased success in job mobility. This is echoed in a 1999 report from the Council of Ministers of Education, Canada, which noted that "post secondary education gives the learner the opportunity to acquire relevant and diverse knowledge, competencies, and skills for a complex social environment and labour market". As this trend toward complexity and career mobility is likely to continue there is strong support for continuous skill development and lifelong learning (Brown 1998 Career Mobility 4; Kerka 1993, 2; Redekopp and Others 2).

5.2.1 Life Long Learning

"Skill enhancement through continuing education and training can open new doors to workers in transition" (Brown 1998 Career Mobility 3). Redekopp suggests that the argument for lifelong learning is based on the impacts of continuous change. "Learning is constant when change is constant, and learning can be enjoyable and meaningful when it is seen as part of a journey that fulfils one's heart. (Redekopp and Others 2)"

Davis and Botkin state that individuals should develop a lifelong learning strategy that includes:

a) short term objectives that focus on skills essential to their existing job;
b) mid range goals that focus on skills needed for the future that build on a solid base of knowledge; and
c) a lifelong learning vision based on interests and beliefs (Davis and Botkin 168).

They should be encouraged to review and up-date these on an annual basis and to enjoy the journey of achieving those goals (Davis and Botkin 168; Redekopp and Others 2). It is thought that this strategy can alleviate the stress of having to make one "right career decision (Redekopp and Others 2)".

"Unfortunately, many people cringe in terror whey they hear about "lifelong learning" (Redekopp and Others 2). They have had little success with formal learning "and need to know that most learning does not occur in formal settings" (Redekopp and Others 2). Experiential learning constitutes much of an individual's accumulated knowledge but many people have not been given the tools to recognize the resulting skills or record them as assets (Redekopp and Others 2).

Workers must begin to understand that knowledge, today's most sought after resource, resides in the individual rather than the organization (Davis and Botkin123). When an individual takes responsibility for developing

this resource then changes in control and power in the labour market may be realized.

5.3 Rejuvenating Skills Development

Responding to these changing needs has been an issue since the early 1980's predicated by high unemployment across North America. Numerous studies as described below have been conducted to determine the new skills that are most valuable to employers, the skills that will enhance the employability of workers and how development of these skills should be achieved.

The traditional structure of skill development has focused on training in job specific skills beginning with simple concepts or tasks upon which more complex skills and processes were built (Kerka 1993, 3; (Lankard 1996, 2). With the exception of basic foundational skills such as mathematics, reading and writing, little emphasis was placed on the transferability of these skills. As a result of the new work environment, the following studies have focused on this philosophy and attempted to categorize skills as to their contribution to flexibility and mobility.

These studies and research projects have attempted to define transferable skills and identify their benefits to employees and employers. Although several different terms have been used by different researchers, the concept and value

of "generic skills" has been established and is being promoted by educators, policy makers and employers alike as the best solution for ensuring employability and meeting the changing needs of business and industry (Saterfiel and McLarty 2; Lankard 1996, 1).

An extensive research study of employer needs was conducted by the Conference Board of Canada's Corporate Council on Education in 1992. "One of the guiding principles in the Employability Skills Profile developed by the council was that the skills needed for a high-quality Canadian work force now and in the future must be generic foundational skills rather than skills specific to certain occupations, levels of responsibility or limited to today's jobs" (McLaughlin 1). This last criterion is a vital consideration as it has been predicted that "as many as 85% of the jobs available by 2010" have yet to be conceived (Brown 1998 Career Mobility 2).

In developing the Employability Skills Profile, a survey of 25 of Canada's major employers was conducted to identify needed skills. In McLaughlin's summary of the results, the following traits were identified as of primary importance in recruiting and retaining employees. It should be noted that equal emphasis was placed on each as necessary in varying combinations based on the nature of the job. These employers stated that their primary requirements are for:

1. "people who can communicate, think, and continue to learn throughout their lives,

2. people who can demonstrate positive attitudes and behaviours, responsibility, and adaptability, and
3. people who can work with others" (McLaughlin 1).

The specific skills that support these traits are listed in the Employability Skills Profile published in 1992 and are discussed in Section 5.4.

Hiebert and Bezanson propose that people need expanded skill sets to succeed in the work place. They cite the Conference Board of Canada as highlighting "higher order thinking, personal management and team working skills" (Hiebert and Bezanson 2). In addition, they suggest that people must learn to be self-motivated, pro-active, and develop a positive attitude. "It is also necessary to develop skills in marketing oneself, to enhance skills and attitudes that promote being flexible, and to foster skills for determining one's generic transferable skills" (Hiebert and Bezanson 2). Their proposed strategy is for education to "focus on developing knowledge, skills and attitudes generic to most career/life transitions situations" (Hiebert and Bezanson 2).

Some educators also believe that this new and emerging workplace "eliminates the viability of vocational education programs that concentrate solely on the acquisition of job skills" (Lankard 1996, 1). This opinion is supported by Smith who stated that the problem is not resistance to change by the workers but the content of curriculum that applies to a specific job rather than a family of jobs.

He felt that in an age of specialization it is important to develop and recognize skills that "are transferable to a variety of occupations" (Smith 4).

Other studies conclude that educational institutions should incorporate into their programs elements that develop coping skills, methods for assessing and renewing capabilities, and attitudes that welcome uncertainty (Brown Career Development 3). Lankard further suggests that vocational programs should prepare students by developing "basic academic skills, teachability and flexibility, the commitment to lifelong learning that permits them to rapidly change in ways required by new organizations of work and content changes in the processes and performances of work" (Lankard 1996, 1). Re-envisioning ways of preparing people for life and for work is the emerging challenge for today's educational institutions.

One approach discussed by the Professional Development Centre of Australia in an article entitled Generic Skills, recommends that educational institutions should:

> begin immediately to develop, for each program they offer, a "programme specification" which identifies potential stopping-off points and gives the intended outcomes of the programme in terms of:
> - the knowledge and understanding that a student will be expected to have upon completion;
> - key skills: communication, numeracy, the use of information technology and learning how to learn;
> - cognitive skills, such as an understanding of methodologies or ability in critical analysis;
> - subject specific skills, such as laboratory skills (Professional Development Centre 2).

Although generic skills are acclaimed to be the key to success in today's world, it is apparent that there are a number of interpretations, definitions, alternative terms and skill levels discussed under this title. There are also a wide variety of varying skills identified as generic.

5.4 Generic Skills

Throughout the literature generic skills are described in a number of ways:

1. transferable, transitional, foundational, employability, basic, essential, core competencies or life-skills;
2. skills or attributes such as problem solving, decision making, interpersonal, communication, technology usage, manipulative, science, working in teams;
3. techniques which contribute to "life long learning";
4. skills that may be transferred into contexts different from the ones in which they were developed (Lankard 1995, 1-2; McLaughlin 1).

Within these differences there appears to be a general consensus that the key component of generic skills is their transferability. In other words, the need for these skill sets to apply to situations different from the original one in which they were developed tends to be common to most of the definitions and descriptions. However, there are a wide variety and range of skills that are identified as

transferable. Some examples taken from a number of studies including Canada's Employability Skills Profile include:

Listening	Positive Attitudes	Honesty	Adaptability	Supporting Organizational goals
Creative Thinking	Scheduling	Communication	Keyboarding	Counting
Reading	Problem Solving	Team Work	Use of tools	Chemical Interactions
Self Motivated	Monitoring	Supervising	Lifting/ carrying	Calculate Angles
Evaluation	Cost Estimates	Demonstration	Climbing	Reading graphs

These skills appear to fall into four categories:

1. General Basic Skills such as literacy and numeracy which are applicable to all jobs and required to succeed in life;
2. Cognitive Skills such as organizational, evaluation, planning, and problem solving skills needed to progress to different levels of an organization;
3. Self-Management Skills such as self-motivation, promotion, continuous learning and ability assessment skills necessary to sustain employability and remain current in their speciality; and,
4. Specialist Skills required to become an expert in a particular field or family of occupations (Kerka 1993, 2; Lankard 1994 2-3; McLaughlin 3; Smith 4; Professional Development Centre 1-3).

This fourth level of generic skills is proposed by several leading authorities in education and employment and supported by employers across Canada.

According to Canada's Employability Skills Profile discussed earlier, generic skills which provide the "basic foundation to get, keep and progress on a job include the application of specialized knowledge from fields such as skilled trades" McLaughlin 3).

However, the skilled trades have traditionally been organized into separate and distinct occupations each with its own set of methodologies, knowledge, tools and rules. They continue to be considered specialities each requiring distinct training programs to achieve mastery. Although similar trades have been clustered into categories such as construction, industrial, mechanical and service, they are treated as individual rather than inter-related crafts (Apprenticeship Branch 1999).

For example, in the construction industry carpenters, electricians, plumbers and pipefitters are all specialists required in the completion of residential and commercial buildings. Although all are trained in the same occupational field, they are considered to have little in common and few skill overlaps. If generic specialist skills and knowledge exist between these complementary trades that would support flexibility and mobility between occupations, they are not highlighted or widely acknowledged.

In order to determine the degree to which generic specialist skills exist within the trades and to determine if these skills can be easily translated into flexibility and

mobility for workers, I have conducted the following study of the apprenticeship trades. Trades identified as relevant to the construction industry have been selected as an example for this analysis as discussed in the following section.

5.5 Analysis of Generic Specialist Skills in the Construction Trades

The training process for apprenticeship trades that includes on-the-job training supplemented by classroom training provides a unique opportunity to identify the skills being developed and to track their progression through the different levels. The pattern of skills development is documented through the course outlines that specify the topics being delivered at each level of the apprenticeship program.

A study of the course outlines for the apprenticeship training delivered by the Red River Community College for the construction trades was conducted. The trades that were included in this study were Bricklayer, Carpenter, Construction Electrician, Plumber, Refrigeration and Air Conditioning Mechanic, Sprinkler and Fire Protection Installer, and Steamfitter/Pipefitter. Other trades also considered to be construction related were omitted as they were either under development, unavailable or have become industrialized to the point that their inter-relationship with other construction trades is minimal and highly specialized e.g. Cabinet Makers also entitled Industrial Wood Workers.

The topics listed in these course outlines were reviewed to determine which were common to more than one trade and therefore could constitute a transferable or generic skill. This was complicated by the trade specific course descriptions in each outline which are developed by the journeypersons conducting the training and approved by the Trades Committees. Those skills that could be clearly identified as offered in multiple apprenticeship programs are listed in Table 5.5.1 showing at which training level(s) they are offered by each program.

Table 5.5.1

Apprenticeship Classroom Training In Construction Trades

TRADES: / SUBJECT AREAS	Bricklayer	Carpenter	Construction Electrician	Plumber	Refridgeration & Air Conditioning	Sprinkler & Fire Protection Installer	Steamfitter/Pipefitter
Backflow (Water) Prevention				L2		L2	
Blue Print Reading & Sketching Architectural Plans	L1	L1 L3 L4	L1 L2 L3 L4	L1 L2	L4	L2 L3	L1 L2
Boiler Controls						L3	L1 L2
Boiler Types				L3			L1
Building Codes	L2	L1 L3					
Capacitance & Capacitive Reactance (AC)			L2		L1		

TRADES: / SUBJECT AREAS	Bricklayer	Carpenter	Construction Electrician	Plumber	Refridgeration & Air Conditioning	Sprinkler & Fire Protection Installer	Steamfitter/Pipefitter
Circuits: - Series - Parallel - Open/Closed - Controls - Relays			L1 L2	L3	L1 L2		L3
Communications Written and Oral: - Reporting - Contracts - Bills/Ordering - Labelling - Quotations		L3				L1	
Concrete - Basic	L1	L1					
Current - Voltage			L2	L3	L1		L3
Drawing & Sketching	L3		L2 L3	L1		L1	
Electrical Code (Canadian)			L1 L2	L3	L1 L2 L3		L3
Electrical Diagrams & Specs Interpretation			L2		L2		
Electrical - Ohm's Law			L1	L3	L1		L3
Electrical Testing Equipment/Meters			L1 L3	L3	L1 L2		L3
Electronic Controls (Refrigeration)			L1		L1		
Electronic Theory			L1	L3			L3
Estimating Materials & Costs	L1	L3	L4			L1	

TRADES: / SUBJECT AREAS	Bricklayer	Carpenter	Construction Electrician	Plumber	Refridgeration & Air Conditioning	Sprinkler & Fire Protection Installer	Steamfitter/Pipefitter
Fire Protection Systems: - Wet Sandpipe - Dry Sandpipe - Water Supply				L4		L1	
Gas Appliances				L3	L3		L3
Gas Burners				L3	L1		L3
Gas Codes				L3	L1 L3		L3
Gas Combustion				L3	L1 L3		L3
Gas Fundamentals - Types - Ignition Temp				L3	L1 L3		L3
Gas Meters & Testing Equipment				L3	L1 L2		L3
Gas Piping & Sizing				L3	L3		L3
Gas Valves				L3			L3
Gas Venting				L3	L3		L3
Health & Safety - Ladders/Scaffolding - Hazardous/Toxic Materials - First Aid - Fire Procedures - Personal Hygiene - Safety Equipment	L1	L1 L2 L3	L1 L2 L3 L4	L1 L2 L3	L1	L1	L1 L3
Laying Out/Squaring - Building - Cabinets	L1	L1					
Leveling/Squaring	L1	L1		L2			
Magnetism			L1		L1		

TRADES: / SUBJECT AREAS	Bricklayer	Carpenter	Construction Electrician	Plumber	Refridgeration & Air Conditioning	Sprinkler & Fire Protection Installer	Steamfitter/Pipefitter
Mathematics – Basic	L1 L2 L3	L1 L2 L3 L4			L3	L1	L1
Mathematics – Advanced - Geometry - Trigonometry - Boolean Algebra			L2 L4	L1 L2		L2 L3	L2
Measuring & Laying Out	L1	L1 L2 L3	L1 L2 L4	L1 L2		L1 L2	
Motors & Controls			L1 L3	L3	L1 L2		L3
Motor Starters			L3		L1		
Pipe Fitting & Joining Practices				L1	L1	L1	L1
Pipes & Materials				L1	L1	L1	L1
Pipe – Glass & Plastic				L2		L1	L2
Piping Methods						L1 L2	L1 L2
Pipe Offsets					L2		L1
Pipe Supports & Insulation				L1	L1	L1	L1
Properties & Uses					L3		L3
Refrigeration Basics					L1		L4
Resistance & Factors			L1		L1		
Science		L1 L2 L3 L4		L1 L2	L1 L4	L2 L3	L1 L2
Tools – Common Hand Tools & Saws	L1	L1			L1		
Tools – Portable Power		L1	L1	L2			

TRADES: / SUBJECT AREAS	Bricklayer	Carpenter	Construction Electrician	Plumber	Refridgeration & Air Conditioning	Sprinkler & Fire Protection Installer	Steamfitter/Pipefitter
Transformers/Three Phase 120/208 System			L2 L3	L3	L1		L3
Water Properties				L2		L2	
Water Supply				L2		L1 L2	
Welding Electric Arc: - Polarity - Beads - Techniques						L2	L2
Welding Oxy-Acetylene: - Basics - Types of Flames - Types of Welds - Welding Positions - Welding Techniques				L1	L1 L2	L1	L1
Welding Oxy-Acetylene: - Cutting Torch - Fusion - Non-Fusion Brazing - Silver Brazing - Welding Rod				L1	L1 L2	L1	L1
Wire Sizes & Types				L3			L3
Wiring Diagrams: - Residential - Commercial - Industrial			L1 L2 L3	L3	L1 L2		L3
Wiring Appliances				L3			L3
Workplace Hazardous Materials Information System (WHMIS)		L1	L1		L1	L1	

L – Level

This table indicates that there are a significant number of common topics taught throughout these trades that could be considered generic. In total there are fifty-nine topics that have been identified as common across seven apprenticeship trades. However, some trades have more commonalties than others. While Bricklayers were taught only eleven skills common to the other trades under this study Plumbers were taught thirty-nine. In addition, those trades that work with metals have the highest portion of common topics, with fifty-two taught across five trades.

These topics were delivered through two hundred forty two courses across all four levels of training. Many trades offer the same topics at several levels of training representing increasing complexity in course content. However, the fundamentals of a topic may be provided at level one in one trade and level four in another depending on the organizational structure.

Another observation made of the organizational structure of apprenticeship training is that most programs provide an introductory course that describes trade practices in general and/or its historical context. These introductions are available only to those who have chosen that trade as their career and are not available to other students.

Chapter 6: Conclusions

The development of generic transferable skills has been identified in the previous chapter as the key to success in the current economic climate. My analysis shows that the benefits to employers include flexibility and adaptability to rapid change while the benefits to employees include employability and mobility. Overall the benefits to Manitoba's economy suggest that organizing training to focus attention on generic transferable skills would be a prudent investment of both public and private sector time and resources.

Throughout the literature, reference is made to several levels of complexity in generic skills. As discussed in Chapter 5, these different levels of skills can be grouped into four different categories of General Basic Skills, Cognitive Skills, Self-management Skills and Specialist Skills. It is the prevailing opinion that each of these levels of generic skills is fundamentally important to successfully adapting to changing jobs or occupations.

The category of Generic Specialist Skills describes those skills required to become an expert in an occupational field or family and are necessary to get, keep and progress in a job as previously discussed. In order to easily move between jobs within an occupation, one must not only be trained in applicable specialty skills but those skills that are generic and transferable need to be easily recognizable.

These Generic Specialist Skills must first be identified within a set of related occupations. Within the skilled crafts system this will require that definitions be developed for the trade specific terminology and language describing the required skills. Understanding the meaning of the trade terminology will allow for a clearer comparison of core competencies, tasks, sub-tasks, tools and equipment.

The course descriptions may also require further explanation and in depth examination in order to identify all of the topics included and the related skills. Beyond the trade terminology, some of the outlines examined for the example provided in Chapter 5 provided only a general description of the topics while others were more detailed. These general descriptions may have generic skills imbedded in them that are not obvious in the initial review.

Once identified, the training structure for delivering these skills should be organized in such a way so as to ensure consistency in the pattern of training in the generic skills. It is fundamental that generic skills be introduced in the first years of training throughout all occupations within a specific field and be developed at the same pace. If generic skills are delivered in the first years of training for all related occupations, trainees who enter an occupation different from the one in which generic skills have already been achieved, may do so without repeating that training.

This facilitates transition between occupations regardless of the level of training achieved by the individual in any one of the related occupations. It would also shorten the re-training period for those who have completed training in these skills in other occupations and enhance cross-training possibilities. A reduction in time spent on training and better use of training resources should result.

At first glance, it would seem difficult to apply this theory to the skilled trades due to their individual independent nature. However, an examination of the apprenticeship training program for the construction trades has shown that there are a number of common topics taught across a the trades reviewed. However, the fundamentals for generic specialist skills were scheduled in a number of different levels while other skills specific to one trade may be taught in the first year.

Despite their independent nature the construction trades, for example, each must also understand the basic requirements of the other trades in order to complement and complete their work. The plumber requires that electrical power be available at a certain step in the process in order install thermostats which must wait until the drywall mechanic has completed the walls which must wait until the electrical and plumbing basics are complete.

Coordination of these services and cooperation at building sites requires project analysis, team work, communication and cooperation. These types of Cognitive

Generic Skills were identified by Canadian employers as primary requirements in selecting new employees. Although these skills are not identified in the curricula examined, it would appear that including courses of this type would support both employee and employer needs.

There are a number of courses covered at different levels throughout apprenticeship training that could be categorized as Basic Generic Skills. These include communications and basic mathematics that are individually scheduled for each trade. In addition most trades include an introduction to the background of the trade and its primary functions that are also available only to those who are registered for that specific trade.

Providing these basic and foundational courses together to first year apprentices would support the identification of commonalties between the trades and their interdependencies. This type of "Construction Trades 101" format would also be beneficial to potential apprentices in high school who are looking for information upon which to make career choices.

While these strategies would increase the development of generic skills and facilitate mobility between occupations in a related field, the ability to recognize these generic skills would be a basic requirement. Consideration should be given to the need for Self-Management skills such as those that enable an individual to recognize and document their transferable skills. These courses

could include techniques that help students develop resumes that highlight for potential employer's the transferable skills.

In considering the theory of generic transferable skills in accordance with Apprenticeship Training, several issues must be considered:

1. Curricula development is currently controlled by the industry through the individual Trade Advisory Committees. In addition the schedule of training is established that best satisfies the production needs of the industry.
2. Additional classroom training may be opposed by employers who may not consider the new skills achieved by the employee worth the loss in production.
3. Employees may also be unwilling to commit to the additional training or forgo more wages during the training period. This could be offset in part if courses in Self-Management and Cognitive Skills were offered during evenings and weekends.

Whether job and occupational changes are caused by rapid technological change or cyclical nature of some occupations, the difficulties experienced in the period of transition can be the same. Without the tools to move smoothly from one job or occupation to another, the loss of productive skills and training creates economic and social problems for employees, employers and governments. The development and recognition of generic transferable skills is one such tool that

educational institutions are being encouraged to embrace. Restructuring their training curricula in order to encourage the acquisition of generic skills would also support continuous learning as students would clearly see that their efforts would not be in vain if and when they move to another trade.

Skill development through apprenticeship training for the skilled trades is a time honored process that has evolved over time from its roots as a one-to-one transfer of skills between master and apprentice, to a complex interactive process involving a multitude of individuals and organizations. The investments in time, financial resources and commitment toward achieving the skills encompassed in the trades designated for apprenticeship training are significant for all participants.

Ensuring that these investments are rewarded through economic benefits for employers and employability for employees requires flexibility and mobility between jobs and occupations. While recent revisions to the apprenticeship program have improved the mobility of trainees between jurisdictions within their trade, improving transition between trades is in its infancy. Rationalizing training could be the next step in the evolution of Apprenticeship training.

ATTACHMENT A

Manitoba
Education and Training
Apprenticeship

Application/Agreement

INSTRUCTIONS TO COMPLETE FORMS

1. If a NEW APPLICANT complete sections 1, 2, 3, and the Agreement.
   Fee Required.

2. If RE-REGISTERING or changing your employer return your record book and complete sections 1, 3 and Agreement only.
   No Fee Required.

3. Complete and sign the Agreement
   a. company signature must be either the Owner or an authorized representative.

4. RETURN ALL COPIES of the Application/Agreement to the apprentice branch.

5. Cheques and Money Orders made payable to the "Minister of Finance".

6. Include a transcript of your marks (copy only).

7. A copy of the completed Agreement will be returned to the employer and the apprentice for their file.

A FIFTY DOLLAR REGISTRATION FEE IS REQUIRED. PLEASE FORWARD A CHEQUE OR MONEY ORDER PAYABLE TO THE MINISTER OF FINANCE

REMINDER:

HAVE YOU?

1. Attached a copy of your marks transcript.
2. Submitted the required fees.
3. Signed the Agreement.
4. Returned all copies of the Application/Agreement.

All cheques made payable to the Province of Manitoba - Minister of Finance which are dishonoured by the payers' Financial institution will be assessed a chargeback fee of $20.00.

MS 1401 Rev. 11/89

Apprenticeship Application/Agreement

Manitoba
Education and Training
Apprenticeship

1010-401 York Avenue
Winnipeg, Manitoba
R3C 0P8.

Telephone: (204) 945-3337

OFFICE USE ONLY

Special Project Code ⌊_⌊_⌊_⌊_⌋
New Applicant ⌊_⌋
Agreement Change/New Employer ⌊_⌋

PLEASE PRINT

Trade Applied for: _____

Last Name: _____ First Name: _____ Mid'd Initial _____

(1) PERSONAL

Street/Box No.: _____

City/Town: _____

Province: _____ Postal Code _____

Phone No.: _____ D.O.B. ⌊_⌊_⌋ ⌊_⌊_⌋ ⌊_⌊_⌋ (yy mm dd)

Social Insurance No.: ⌊_⌊_⌊_⌋-⌊_⌊_⌊_⌋-⌊_⌊_⌊_⌋

Previously registered apprentice yes⌊_⌋ Appr. No. ⌊_____⌋ no ⌊_⌋

Last school grade achieved _____
(attach transcript of marks)
Next of kin or relative not living with you
Name: _____
Address: _____ Postal Code _____ Phone No.: _____

SELF DECLARATIODN

Gender: Male __ Female __
Visible Minority: Yes __ No __
Native Ancestry: Status __ Non SStatus __ No __
Metis Ancestry: Yes __ No __
Marital Status _____
Disability: Yes __ No __
If yes specify _____

(2) EDUCATION AND TRADE EXPERIENCE

Trade related courses taken: _____

College, Trade, or Vocational School attended: _____

Date started ⌊_⌊_⌋ ⌊_⌊_⌋ ⌊_⌊_⌋ (yy mm dd) Date completed ⌊_⌊_⌋ ⌊_⌊_⌋ ⌊_⌊_⌋ (yy mm dd)

Previous trade related employment (additional sheet attached check here)⌊_⌋

	Company	No. of Months	Work Performed
1.			
2.			
3.			

(3) EMPLOYER AGREEMENT

Company Name: _____ Phone No.s. _____

Street/Box No.: _____

City/Town: _____ Prov. _____ Postal Code: _____

Date applicant commenced employment ⌊_⌊_⌋ ⌊_⌊_⌋ ⌊_⌊_⌋ (yy mm dd) Has it been continuous yes : __ no __

Date applicant commenced work in the trade ⌊_⌊_⌋ ⌊_⌊_⌋ ⌊_⌊_⌋ (yy mm dd) Recommended Time Credit:

Designated Trainer/contact person: _____ Hours/Months _____

Number of Journeyperson(s) employed _____ apprentice(s) now employed _____

OFFICE USE ONLY DO NOT COMPLETE THIS SECTION:

P.O.E. Received yes __ no __ Signatures yes __ no __
Entered in register yes __ no __ REGISTERED ⌊_⌊_⌋ ⌊_⌊_⌋ ⌊_⌊_⌋ (yy mm dd)
Cheque Received yes __ no __
Apprentice start date ⌊_⌊_⌋ ⌊_⌊_⌋ ⌊_⌊_⌋ (yy mm dd) Anticipated Completion ⌊_⌊_⌋ ⌊_⌊_⌋ ⌊_⌊_⌋ (yy mm dd)
Time recorded from ⌊_⌊_⌋ ⌊_⌊_⌋ ⌊_⌊_⌋ (yy mm dd) Appr. No. _____
Time Credit _____ hrs. Banked Time _____ hrs. Course Lev req'd. _____
Call for level test yes __ no __ Date requested _____
Level I __ Date: _____ (Mon) Level 2 __ Date: _____ (Mon) Level 3 __ Date _____ (Mon)
Field Officer/Supervisor: _____ (Signature)

Branch Dasie Stamp

APPRENTICESHIP AND TRAINING

AGREEMENTT OF APPRENTICESHIP

THIS AGREEMENT, INCLUDING THE TERMS AAND CONDITIONS ON THE REVERSE, IS BINDING ON THE PARTIES WHEN COMPLETED AND SIGNED BBY THE EMPLOYER AND THE APPRENTICE AND REGISTERED WITH THE APPRENTICESHIP AND TRAAINING BRANCH.

Between the parties listed in the Trade of: _____

When completed and signed by all parties below tthis AGREEMENT, including the TERMS AND CONDITIONS on the reverse constitutes a legal document when rregistered with the Apprenticeship and Training Branch, and is made between the following parties:

1. The Director, acting on behalf of the Apprenticeship and Training Branch, Manitoba Labour, herein referred to as "The Director" and

2. _____, herein referred to as the "Employer" and
(company name) Please Print Firmly

3. _____, herein referred to as the "Apprentice"
Name – Please Print Firmly

WAGE RATE (Refer To Trade Regulation)

_____
As Witness

X _____ Date

X _____ Employer (title) Date

X _____ Date

X _____ Apprentice Date

_____ Date

_____ Next of Kin (if a minor) Date

OFFICE USE ONLY — DO NOT COMPLETE THIS SECTION

_____ Director Date

TERMS AND CONDITIONS

This Agreement is governed by the Apprenticeship and Trades Qualification Act and Rules and Regulations made thereunder and includes, without limiting the generality of the foregoing, the following:

1. THE APPRENTICE AGREES TO:
   (a) attend regularly at the Employers place of employment.
   (b) serve the Employer faithfully, honestly and diligently.
   (c) obey the lawful commands of the Employeer and those whom the Employer places in authority over the Apprentice.
   (d) attend such technical classes as required by the Director.
   (e) sit for such examinations as required by the Director.

2. THE EMPLOYER AGREES TO:
   (a) receive the Apprentice for the term stated inn the applicable Trade Regulation and to maintain the Apprentice in employment, except where the Director relieves the Employer of this obligation.
   (b) instruct the Apprentice to the best of thhe Employers power, skill and knowledge, personally or by authorized and capable employees.
   (c) pay to the Apprentice wages not less than:
      minimum rates as prescribed in the applilicable Trade Regulation or provided that where wage rates of Apprentices have been determined by a collective labour Agreement, those rates shall apply if they are higher than the minimum rates establishhed under the Apprenticeship and Trades Qualification Act or any other Act or law in force in the Provinnce.
   (d) to release the Apprentice for attendance at each period of technical classes to which the Director calls the Apprentice.
   (e) to adjust the wages of the Apprentice so ass to maintain the intended proportion between journeyman wages and Apprentices wages.

3. The parties agree that, for the purpose of this Aggreement, a year of actual employment shall consist of the hours prescribed in the Regulation for this trade, inclusivve of attendance at technical classes.

4. Attendance at work and at scheduled technical clasasses and the meeting of required standards of progress shall be a condition which must be filled before the Apprenntice qualifies for certification.

5. The Director may, if the Apprentices progress iss unsatisfactory, recommend to the Apprenticeship and Trades Qualification Board (herein after referred to as thee "Board") that this Agreement be terminated, and the Apprentice be notified of this decision by mail.

6 The Employer shall not require the Apprentice to work in excess of the working day and working week prevailing in the area of employment and in the trade, unlesss one-and-one-half times the scheduled rate set out in paragraph 2(c) hereof is paid as wages.

7 Overtime hours shall not reduce the period of Apppprenticeship.

8 If the Apprentice shall at any time be willfully dissobedient to the lawful commands of the Employer or authorized representative or be negligent in the conduct of tthew work or care of the Employers equipment, the Employer may apply to the Director for termination of the Agreemment. A copy must also be given to the Apprentice

9 If the Board so orders, on recommendation of thee Director, the Apprentice may be transferred for cause, to another Employer.

10 There shall be a probationary period of three moonths calculated from the day the employment of the Apprentice by the Employer commenced, during which the Empployer may, or the Apprentice may, terminate this Agreement upon written notice to the Director of Apprenticeship annd Trades Qualification.

11 In case there is an inconsistency between the teerms and conditions of this Agreement and the Apprenticeship and Trades Qualification Act, and Rules and Regulatiioons made thereunder, that the Act and Rules and Regulations apply.

ATTACHMENT B

Manitoba Apprenticeship Program

TARGET POPOULATIONS

- Existing employees who want to better their job qualifications while continuing to earn a living
- Young people just starting out
- Older people looking for a career change
- Individuals wanting to re-enter the workforce
- Women
- Aboriginal people
- Visible minorities
- People with disabilities

ATTACHMENT C

Manitoba Apprenticeship Program

CERTIFIED TRAINING INSTITUTIONS

- Assiniboine Community College, Brandon (ACC)
- Keewatin Community College, The Pas (KCC)
- Northern Alberta Institute of Technology, Edmonton (NAIT)
- Red River Community College, Winnipeg (RRCC)
- Southern Alberta Institute of Technology, Calgary (SAIT)
- Stevenson Aviation Technical Training Centre, Winnipeg (SATTC)
- Saskatchewan Institute of Applied Science & Technology, Moose Jaw (SIAST)

	$10,982	$520	$944	$308	$476	$476	$2,723	$2,356	$864	$500	$3,720	($997)
	$11,898	$647	$1,117	$333	$512	$512	$3,121	$2,356	$936	$500	$3,792	($671)
	$12,813	$774	$1,290	$359	$548	$548	$3,518	$2,356	$1,008	$500	$3,864	($346)
	$13,728	$901	$1,462	$384	$584	$584	$3,916	$2,356	$1,080	$500	$3,936	($20)
	$14,643	$1,027	$1,635	$410	$621	$621	$4,314	$2,356	$1,152	$500	$4,008	$306
	$16,474	$1,289	$1,961	$461	$693	$693	$5,096	$2,356	$1,296	$500	$4,152	$944
	$18,304	$1,534	$2,326	$513	$765	$765	$5,903	$2,356	$1,440	$500	$4,296	$1,607
	$20,134	$1,784	$2,672	$564	$837	$837	$6,694	$2,356	$1,584	$500	$4,440	$2,254
	$21,965	$1,998	$3,018	$615	$911	$911	$7,453	$2,356	$1,728	$500	$4,584	$2,869
	$23,795	$2,212	$3,364	$666	$937	$937	$8,115	$2,356	$1,872	$500	$4,728	$3,387
	$25,626	$2,426	$3,710	$718	$1,059	$1,059	$8,971	$2,356	$2,016	$500	$4,872	$4,099
	$27,465	$2,641	$4,057	$769	$1,133	$1,133	$9,733	$2,356	$2,160	$500	$5,016	$4,717
	$36,608	$4,329	$6,650	$1,025	$1,469	$1,469	$14,941	$2,356	$2,688	$500	$5,544	$9,397

Based on an unmarried apprentice, employed full-time and attending in-school 8 weeks per year, 1994 tax tables, rent $400/month.
PST and GST paid on 60% of after tax income.

ATTACHMENT D

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