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Exploring Adult Learning and Work in Advanced Capitalist Society

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***Exploring Adult Learning and Work in Advanced Capitalist Society* by David Livingstone**

Introduction

This paper argues that studies of learning and work in advanced capitalist societies have generally been conceived too narrowly in terms of formal education and paid employment. In order to more fully comprehend current processes of learning and work and their interrelations, informal learning and unpaid work should be considered. Secondly, the now widespread assumption that an emergent knowledge-based economy (KBE) requires substantially increased learning efforts from most workers needs to be assessed carefully with the aid of empirical evidence on both learning efforts and actual job requirements. The paper analyses the findings of two recent Canadian national surveys of adults' paid and unpaid work and their formal and informal learning activities. These 1998 and 2004 surveys find that unpaid work and informal learning are both very extensive and have distinctive links with paid work and formal education. In addition, the presumed learning deficit in the current labour force is a smaller phenomenon than the underemployment of many workers' existing skills and knowledge. Implications of these findings for reversing the dominant optic on educational and economic reforms are discussed. The empirical analysis in this paper is based on Canada for three reasons: (1) I am Canadian; (2) Canada has one of the most expansive systems of advanced formal education in a fully developed capitalist economy; and (3) our Canadian research offers the only substantial national-level data to date on all basic forms of adult learning and work¹. The concepts and arguments should find application in all advanced capitalist societies.

Paid and Unpaid Work

A generic definition of "work" includes any activity directed toward making or doing something. "Work" is now commonly used as synonymous with "earning a living" through *paid employment* in the production, distribution and exchange of goods and services commodities. There has been an increasing tendency since the rise of market-based economies for work to be identified in popular thought and practice with commodity exchange and paid wage labour. Growing commodification served to obscure unpaid labour. More recently, some aspects of unpaid housework and community volunteer labour have received more recognition for various reasons, including relative scarcity and resistance to their own further commodification. Both housework and community volunteer work are typically unpaid and under-appreciated, but they remain essential for our survival and quality of life (see Waring, 1988). All three forms of labour should be included in any general accounting of contemporary work practices.

Paid Work

Since the rise of industrial capitalism, the forms, extent and duration of paid employment have been increasingly determined by the profitability of private enterprises, as well as the relative bargaining strength of business owners and hired labourers and the availability of labour-saving technologies. Changing employment conditions in recent decades have evoked much dispute about the rise of a “new economy”, as well as about the knowledge and skill requirements to perform most jobs.

Since the nineteenth century, a distinctive occupational class hierarchy has emerged, structured first around ownership, and secondly around the division of social authority and technical tasks. We can identify eight major class groupings: *corporate executives, small employers, the self-employed, managers, supervisors, professional employees, service workers, and industrial workers* (see Livingstone and Mangan, 1996). Corporate executives, small employers and the self-employed have historically enjoyed most of the decision-making power and opportunity to use their own and others’ technical skill, while industrial and service workers have been largely dispossessed of discretionary control in both respects. Managers, professionals, and supervisors have experienced intermediate or “contradictory” class positions; these employees have been delegated somewhat more organisation-level decision-making power and technical discretion but they have remained vulnerable to changing ownership objectives (e.g. restructuring, downsizing, outsourcing).

Significant changes have clearly occurred in paid work processes over the last half-century or so in terms of development and diffusion of information and communication technologies (ICTs), growth in financial and personal services and decline in manufacturing jobs, and increased business spending on research and development (OECD, 1996). Employer *demand* for workers with advanced educational credentials has been increasing (OECD, 2001) while formal and continuing educational attainment among the general populace has increased steadily (Machin, 2003).

For those proclaiming a post-industrial or knowledge-based economy (KBE), these changes signify deep, systemic change. The social relations of production (the structure of authority) and the technical relations of production (the complexity of tasks) under industrial capitalism are giving way to a bright, post-industrial future. Knowledge is now the “intangible” key to profit, productivity, and power, not the physical means of production or financial capital (Drucker, 1993; Stewart, 1997). Many claim that there is now less hierarchy, greater meritocracy, more discretion for all workers, and a consequent need for ongoing learning at both the personal and organisational level (Klein, 1998). Mundane and routinised labour will be left behind; increasingly, *everyone will be a knowledge worker* (Cortada, 1998) and every business will be a “learning organization” (Senge, 1994). More and more companies are said to be embracing

such “knowledge-based work practices” as teamwork, profit sharing, job rotation and sharing, access to training, and greater employee involvement in decision-making (Black and Lynch, 2003; OECD, 1999). The only barrier to the spread of knowledge-based work practices, we are told, is a lack of education and skills among the general workforce (Neef, 1999; Stewart, 1997).

In contrast to claims of the revolutionary emergence of a KBE, more critical theorists argue that the organising principles of industrial capitalism remain intact. Instead of discontinuity or revolution, we are simply witnessing a recent acceleration in the rate of change (Schement and Curtis, 1995). We may have had a technical revolution (Davis, Hirschl, and Stack, 1997) and the emergence of a “perpetual innovation economy” (Morris-Suzuki, 1984), but this is simply a natural evolution within a capitalist system that always depended upon innovation for competitive advantage. The introduction of software into the manufacturing process in the 1960s enabled greater automation via flexible manufacturing systems. This did not mean the “end of work” (Gorz, 1980; Rifkin, 1995). But manufacturers did suddenly find their ability to increase profit via lowered (human) labour costs (Kenney, 1997; Morris-Suzuki, 1984) much diminished. Business owners thus experienced a much more intense need to increase productivity in their administrative offices, service departments and product development divisions.

Whether opportunities for workers’ use of their minds, either in terms of their autonomous control of their technical tasks or their discretionary role in workplace authority relations, are increasing, decreasing, or remaining static in current paid work is a crucial question for any assessment of the learning needs of the workforce. Yet this topic remains significantly under-researched (see Livingstone and Scholtz, 2006).

The best available direct estimates of the *actual* technical skill requirements to perform jobs indicate only gradual upgrading over the past generation (Wolff, 2000; Handel, 2000; Leckie, 1996). The U.S. Bureau of Labor Statistics’ estimates that only about 20 percent of job openings in the near future will require a university degree, compared with over a third of new entrants who have one, while the vast majority of new jobs will require only short-term training (Hecker, 2001). There have also been only marginal increases in the *proportion* of the labour force in the high skilled professional and managerial jobs widely heralded as essential to the realisation of a “knowledge-based economy” (Lavoie and Roy, 1998; Handel, 2000; Baldwin and Beckstead, 2003). The occupational structure in advanced capitalist countries has not changed nearly as fast or to the extent that many post-industrial or KBE theories claim.

Further evidence is provided by the WALL Survey and a comparable national survey conducted in 1982-3 (Clement and Myles, 1994). When asked for their general impressions of skill requirements, about half of all Canadian employees in 2004 thought that the level of skill to perform their job had increased in the past

five years while very few perceived de-skilling. However, when asked more directly about the level of formal education required for their job, their overall ratings were *very similar* to the national survey done in 1982, with around 45 percent of hired employees having jobs requiring post-secondary education (see Scholtz and Livingstone, 2005).

More generally, when findings of the WALL Survey are compared to our 1998 national survey, there were significant increases in time devoted to paid employment during this period, from an average of 38 to 40 hours per week, while the proportion of the active labour force employed for more than 50 hours a week rose from around 15 percent to around 20 percent. The participation rate in paid employment reached about 68 percent of the working age population, the highest rate on record (compare Statistics Canada, 2004). A long-time trend toward part-time jobs may have slowed in this period of economic recovery, but those in part-time jobs appear to be working longer hours as well, without increasing benefits. The official unemployment rate remains stuck at around 7 percent and has fluctuated upward from that rate since the mid-1970s.

In terms of the stability of employment, about a third of the active Canadian labour force moved to a new job in the past five years. Many workers have experienced significant organisational changes at their workplaces. Around 40 percent have seen downsizing of employees, growth in multi-skilling/job rotation and growing reliance on part-time or temporary workers, while around a third have witnessed increased overtime. While downsizing was common practice in many enterprises in the mid-1990s, the incidence of job rotation and reliance on part-timers appears to have increased in recent years (Statistics Canada, 1998).

There has been a very significant amount of recent organisational restructuring with declining stability and longer hours for many jobholders. But in spite of widespread acceptance of the rhetoric of a rapidly emerging knowledge-based economy and increasing skill demands, *there is little objective evidence that the actual performance requirements of the changing job structure have increased significantly in recent years* (see especially Livingstone, 2004; Handel, 2000). Workers are being called upon to use a wider array of skills for longer hours, but not necessarily a higher level of skill. Over the longer span of the past generation, there is considerable evidence that growing concentration of large corporations, extensive automation and declining unionisation have been associated with increasing intensification of employment hours and a rise in temporary jobs, as well as greater levels of chronic unemployment. The "knowledge-based economy" does not yet appear to be providing better paid jobs for many people.

Unpaid Work

Housework, including cooking, cleaning, childcare and other household tasks, has been largely relegated to women and only gained some public recognition as women have gained power through increased participation in paid employment. Unpaid housework is now reported by over 90 percent of Canadian adults who indicate they spent around 17 hours a week doing it in both 1998 and 2004. For homemakers who devote themselves primarily to housework, the average is now around 40 hours per week and appears to have increased over this period. If we express labour expended in terms of the total amount of paid employment time and housework time done by all Canadian adults, the averages are around 25 hours of paid employment and 15 hours of housework per week in these recent surveys. By these general estimates, total employment hours may have increased, but total housework hours have not. While the small numbers of primary homemakers are doing more hours of housework, most others may be doing marginally less. The point of these estimates is simply to establish that unpaid housework is a very substantial portion of the work that most of us do and deserves to be consistently recognised on its own merits.

Indeed, these estimates exclude other essential labours of childcare and eldercare. In 2004, over a third of Canadian adults report some involvement in unpaid childcare, for an average of over 30 hours per week. About 15 percent are now involved in eldercare, for an average of over 10 hours per week.

As everyday life has become more fragmented with dual-earner commuter households, time devoted to *community work* to sustain and build social life through local associations and helping neighbours has declined, and the productive importance of this work has been rediscovered as "social capital" (Putnam, 2000). Unpaid volunteer work still remains essential for our collective survival. Voluntary organisations including neighbourhood associations, cultural, political, cultural and religious groups, sports clubs and many others play vital roles in sustaining community life. In both 1998 and 2004, around 40 percent of Canadian adults participated in such organisations for an average of 7 to 8 hours per week. Over 65 percent spent an average of 5 hours per week helping out friends and neighbours in their communities.

Even in terms of rough estimates, it is likely that *around half of the work that Canadians now do is still unpaid*. The crudeness of these estimates must be stressed. Paid employment is typically measured in industrial clock time, another instrument of commodification. While both housework and community volunteer work have been increasingly constrained by paid employment, they do not obey the same rhythms (Sorokin, 1943). Most obviously, childcare responds to the needs of the child. For many mothers this is a constant labour of varying intensity but inherently different than the time measured by a plant or office time clock. Even in terms of clock time measures, mothers with small children are

among the longest working people in the country. If they also happen to be employed, clock time fails utterly to grasp the extent of their labours.

The major change in the distribution of paid and unpaid work in recent generations has been the massive increase in the participation of married women with children in the paid labour force. This change has put growing pressure on households to reorganise domestic labour to ensure it gets done. The growing reliance on machinery in paid jobs has put an increasing premium on workers' active use of their minds in tending machines and made it more difficult for many workers to turn off their "job minds" when not officially on the job clock (see Rikowski, 2004). Longer and less defined paid work hours and the consequent time squeeze on unpaid work mean work intensification in both spheres.

Debate over the skill requirements of paid work persists and we will revisit this debate in the section on work and learning. But we must note that the skill complexity of housework and care work has not even been hinted at by most prior research. As Margrit Eichler's (2005) recent studies demonstrate, some of this labour requires high levels of planning and co-ordination ability. A similar observation might be made about volunteer work (see Schugurensky and Mündel, 2005). Unpaid work continues to be under-appreciated and understudied.

Formal and Informal Learning

A generic definition of *learning* involves the gaining of knowledge or skill or achieving understanding anytime and anywhere through individual and group processes. Learning occurs throughout our lives. The sites of learning make up a continuum ranging from spontaneous responses to everyday life to highly organised participation in formal education programs. The dominant tendency in contemporary thought has been to equate learning with the provision of instructional opportunities in settings organised by institutional authorities and led by authorised teachers. *Formal schooling* has frequently been identified with continuous enrolment in age-graded, bureaucratically-structured institutions of formal schooling from early childhood to tertiary levels (see Illich, 1971), ignoring other types of instruction in bodies of traditional knowledge in subordinate groups, such as aboriginal education by elders. In addition, *further or continuing adult education* includes a diverse array of further education courses and workshops in many institutionally organised settings, from schools to workplaces and community centres. Such continuing education is the most evident site of lifelong learning for adults past the initial cycle of schooling.

But we also continually engage, as we always have, in intrinsic informal learning activities to gain knowledge, skill or understanding outside and beyond the curricula of institutions providing educational programs, courses or workshops. *Informal education or training* occurs when mentors take responsibility for

instructing others without sustained reference to a pre-established curriculum in more incidental or spontaneous situations, such as guiding them in experientially learning job skills or in community development activities. Finally, all other forms of explicit or tacit learning in which we engage either individually or collectively without direct reliance on a teacher/mentor or an externally-organised curriculum can be termed *non-taught self-directed or collective informal learning*. As my colleague Allen Tough (1978) has observed, informal learning is the submerged part of the iceberg of adult learning activities. It is likely that, for most adults, informal learning (including both informal training and non-taught learning activities) continues to represent our most important learning for coping with our changing environment. No account of "lifelong learning" can be complete without considering peoples' informal learning activities as well as their initial formal schooling and further adult education courses through the life course.

Formal Education

Scholars have been welcoming the "learning society" since the explosion of enrolments in both post-compulsory schooling and further education courses in the 1960s (Hutchins, 1969; Husen, 1974). Adults are now spending unprecedented amounts of their discretionary time in pursuit of new knowledge and skills through advanced schooling and continuing education courses. The human species' primary means of engaging with environmental change has always been to pursue further learning activities. The increasing development and use of information technologies in all spheres of human life may encourage greater efforts at knowledge acquisition to deal with the continuing array of economic, political and cultural changes.

Canada has long had a relatively high level of formal educational attainment. But recent post-secondary growth rates remain impressive. The proportion of the age 25-to-29 cohort that had completed a university degree was about 4 percent in 1961. The completion rate had quadrupled by 1990 to 17 percent and continued to grow rapidly up to 1998, when 26 percent of this age group had received degrees. Growth of community college completion has been even greater. Most comprehensive community colleges were created after 1960. By the 1990s, comparable proportions of young people had completed college diplomas as university degrees. While the US and Norway have higher proportions of their adult populations with university degrees, Canada now leads the world in the proportion with either university or college completion. Over 40 percent of Canadian adults 25 to 64 had college or university qualifications in 2000. Other trade-vocational programs including registered apprenticeships have been chronically under-developed in Canada, but in the early 1990s over 10 percent of those 25 to 64 had some such qualifications; this proportion has since declined. University and college qualifications levels have continued to grow and now the majority of adult Canadians have some form of post-secondary certification (see Statistics Canada, 2003), compared to a very small minority just two generations

ago. Canada remains one of the most highly schooled countries in the world. However, Canada trails most other OECD countries in early childhood education (Statistics Canada, 2000) and serious inequities in post-secondary access persist by economic background (Statistics Canada, 2000, p. 67; Livingstone and Stowe, 2001).

Further or continuing adult education participation in courses and workshops can include, for example, courses in job retraining or upgrading, second language training, courses to complete a diploma or degree program, as well as a wide array of general interest courses ranging from accounting processes to zoo-keeping and of different durations. In light of the growth of post-secondary education, recent surveys have found it increasingly difficult to distinguish adult course participation from completion of the initial cycle of schooling².

National surveys have found that participation in adult education underwent very rapid growth from about 4 percent of all Canadians over 17 years of age enrolled in any sort of educational institution course in 1960 (Dominion Bureau of Statistics, 1963) to 20 percent in 1980 (Devereaux, 1985). By the early 1990s, the rate exceeded 30 percent (Statistics Canada, 1997). During the 1990s, adult education participation appeared to decline somewhat according to official government statistics (Statistics Canada, 2001). Various reasons have been suggested for this apparent decline, but it may well be largely an artefact of excluding those young adults who prolonged or returned to their schooling in the face of poor job markets. In any case, our recent surveys have found that participation in formal training courses grew to over 43 percent in 1998 and nearly 45 percent in 2004. If all of those over 18 registered in school programmes are excluded, this still amounts to around 35 percent of all adults participating in some form of course annually. Canadian adult education participation has grown very rapidly over the past two generations. But it remains significantly lower than that of various other areas, notably Scandinavia (Statistics Canada, 1997).

Informal Learning

Both advocates of a learning society in which all citizens have enhanced opportunities to combine learning with their everyday lives and more democratized work, as well as promoters of an instrumental-vocationalist view of continual skill upgrading to respond to a knowledge-based economy, now agree on the importance of the principle of "lifelong learning", if not the substance (see Wain, 2004). As formal schooling has become more widespread and more expensive in "advanced" capitalist societies, promoters of this principle have become more focused on informal learning beyond formal settings (OECD, 1996). Informal learning activities are much more difficult to estimate than adult educational participation. Informal learning includes virtually any non-institutionalized learning in which adults choose to engage. *Intentional informal*

learning is distinguished from more *tacit informal learning*, as well as from everyday perceptions and *general socialization*, by peoples' own conscious identification of the activity as significant learning (see Eraut, 1999). To study informal learning empirically, most researchers have focused on those things that people can identify for themselves as actual learning projects or deliberate learning activities beyond educational institutions. There are numerous obstacles to studying informal learning but there is a growing consensus that any discussion of lifelong learning of adults beyond their initial cycle of schooling requires at least some address to informal learning.

The NALL and WALL national surveys of learning and work in 1998 and 2004 had a primary focus on informal learning (for further information on these research networks and the full interview schedules, as well as numerous related case studies, see the NALL website: www.nall.ca and the linked WALL website: www.wallnetwork.ca). These surveys address all four basic forms of learning, but with a special focus on intentional informal learning, as well as all three forms of work and a variety of social background factors. The survey respondents were first given a definition of informal learning as including anything people do to gain knowledge, skill or understanding. They were then asked to indicate their participation in four kinds of informal learning: employment-related; community volunteer work-related; household work-related; and other general interest-related. In each case, a list of possible learning topics was read. The basic findings follow.³ These estimates, summarised in Table 1, exclude those registered as students in degree or diploma programs at any level of formal schooling.

Table 1: *Work and General Interest Related Informal Learning (Average Hours per Week), Canadian Adults, 1998-2004**

Year	Job	Housework	Volunteer work	General interest	Total
1998	6.6	6.2	4.3	6.0	16.0
2004	4.6	5.0	3.1	4.3	11.9

Sources: NALL Survey, 1998 (N=1562); WALL Survey, 2004 (N=9063).

*Excludes students registered in degree/diploma programs

Paid work-related informal learning

Of the 68 percent of the adult population who were employed for at least an hour a week at some point during the prior year, 82 percent reported that they were involved in some form of job-related informal learning in 2004. The average number of hours devoted to such job-based learning was over 6 hours per week in 1998, dropping to under 5 hours in 2004. Around 15 percent were estimated

to spend less than an hour per week in employment-related informal learning activities, including those who found it too difficult to provide a specific estimate. Less than 10 percent estimated that they spent more than 20 hours per week, suggesting that even when respondents are given extensive opportunities to identify job-related informal learning, they try to distinguish explicit informal learning from other activities, recognise both the time constraints of multiple other activities in the 168-hour week, and are very unlikely to regard learning as a “seamless web” occupying most of their paid work time.

Household work-related informal learning

Those involved in at least one hour of household work over the prior year (around 90 percent) averaged about 6 hours per week in informal learning related to their household work in 1998, dropping to 5 hours in 2004. Again, there are small numbers at the extremes, with around 10 percent indicating they devote less than an hour per week to housework-related informal learning and about 5 percent saying they spend more than 20 hours per week in such learning. Given the greater proportion of Canadians involved in housework than in paid employment, and the similar average hours devoted to informal learning, it appears that we now devote about as much aggregate time to informal learning related to housework as to paid employment.

Community volunteer work-related informal learning

Those involved in organised community work over the prior year (around 40 percent) devoted an average of about 4 hours a week to community-related informal learning. The majority of those who participate in community work indicate that they devote one hour or less per week to related informal learning activities, while less than 5 percent devote more than 10 hours per week. The relatively low levels of participation in community volunteer work and related informal learning are consistent with the fact that this is the most discretionary type of work in advanced capitalist societies, and many people simply choose to opt out.

Other general interest informal learning

Most people engage in some other types of informal learning related to their general interests and not directly connected to any of the three forms of work. Those who do so (around 80 percent) spent on average almost 6 hours a week on these learning activities in 1998, declining to just over 4 hours in 2004. Around 40 percent of respondents spend an hour or less per week in informal learning related to all of these general interests. The majority spend no more than two hours, while less than 10 percent devote more than 10 hours a week to such general interest learning. While there is evidently very wide participation in informal learning related to diverse interests, the incidence of work-related

informal learning appears to be considerably greater – if learning related to both paid and unpaid work is included.

Total involvement in informal learning

Most Canadian adults (around 85 percent) are involved in some form of informal learning activities that they identify as significant. These surveys provides estimates of the amount of time that all Canadians, including those who say they do no informal learning at all, are spending in all four areas (employment, community, household, and general interest). The average number of hours devoted to all informal learning activities by all Canadian adults during 1998 was over 15 hours per week. In 2004, the average had dropped to about 12 hours per week. These average estimates emanate from surveys devoted primarily to identifying the existence of intentional informal learning on multiple topics in several spheres of life activities. Virtually all prior empirical studies of informal learning found considerable initial reluctance among respondents to identify their learning outside educational institutions as legitimate learning⁴. It is only when people had an opportunity to reflect on actual learning practices in the context of their daily lives that much intentional informal learning was recognized as such by the learners themselves. Intentional informal learning activities often also occur in combination with other social activities. While this makes time estimates more difficult and less exact, it is not grounds to either devalue or ignore informal learning processes.

Most other international surveys that have attempted to estimate the incidence of informal learning have found similar magnitudes of these learning activities (see Livingstone, 2005 for a summary). Generally, the average estimated time devoted to informal learning has been found to exceed significantly the time devoted to formal educational activities. About three-quarters of Canadian adults now say they are spending 6 hours or more each week in some kind of intentional informal learning activities, most of it related to paid or unpaid work, while time devoted to adult education courses, averaged over all adults, amounts to only a few hours per week (Bélanger and Valdivielso, 1997).

When we asked which of these learning activities are *most important* in the respective spheres of activity, the most common responses were about computer skills related to employment, home renovations and household cooking skills, communications skills through community volunteer work, and general interest learning about health issues. Clearly, the overwhelming majority of Canadian adults now regularly spend substantial amounts of time in these pursuits and, at least when asked seriously, they recognise this intentional informal learning as a significant aspect of their daily lives.

Relations Between Schooling, Adult Education and Informal Learning

Schooling and adult education continue to be mutually reinforcing. As Table 2 shows, the more schooling people have obtained, the more likely they are to participate in continuing education courses. The majority of those who have completed university programs took some form of adult education course during the past year; about 40 percent of those with college diplomas did so, a third of high school graduates and less than 20 percent of school dropouts. A very similar pattern occurs for plans to take more education courses in the future. These basic relationships have been widely documented (e.g. Cross, 1981; Courtney, 1992). While both school attainments and adult education made very impressive aggregate gains since 1960, participation in adult education courses still tends to reproduce prior differences in educational attainments. The apparent decline in adult course participation rates between 1998 and 2004 for all but school dropouts is at least partly because it *excludes* the growing numbers of adults currently registered as students in degree/diploma programmes.

But, as Table 2 also shows, the general incidence of informal learning is not strongly associated with either level of school attainment or continuing adult education. School dropouts are only slightly less likely to participate in informal learning activities than those with higher levels of formal education, and those dropouts spend as much time in informal learning as university graduates. Lack of motivation to learn *per se* is not a major factor in school dropouts' non-participation in adult education courses. Our longitudinal analysis finds that among Canadians who did not take courses in either 1998 or 2004 there was declining involvement in job-related informal learning (Livingstone and Stowe, 2005). But most adults are generally active learners engaged in an array of different learning activities.

Table 2: *Participation in Adult Education and Informal Learning by Formal Educational Attainment, All Adults, 1998/2004**

FORMAL schooling	Taken adult education course or workshop past year (%)	Plan to take course (%)	Informal learning (%)	Informal learning (Hrs/week)
Year	'98/04	'98/04	'98/04	'98/04
No diploma	15/18	24/17	78/68	18/15
High school diploma	40/33	49/35	95/83	17/15
Community college	55/42	59/44	95/88	15/13
University degree	64/53	64/50	99/98	14/12
TOTAL (%)	37/34	43/34	89/81	16/13

Sources: NALL (1999)/WALL (2005).

*Excludes students registered in degree/diploma programs

Any study of lifelong learning should attend to differences in learning through the life course. These surveys have found that young adults are most likely to take further education courses, and more likely than older people to value formal courses rather than their own independent informal learning efforts. But younger adults tend to do the most informal learning as well. The findings also confirm the longstanding relationship of declining participation in adult education with aging. The increasing educational attainment of Canadians has led to increased course participation at all ages. Declining course participation in the later years remains pronounced. But those over 65 indicate that they still spend almost the national average of about 12 hours per week in various informal learning activities.

Aging is not significantly associated with a declining incidence of informal learning beyond the intense period of entry into adulthood. The stereotype that the active interests of older adults rapidly diminish as they approach and enter their retirement years is contradicted by both these survey findings and other recent research (see Glendenning and Stuart-Hamilton, 1995). The older we get, the more likely we are to rely on our prior learning experiences rather than formal courses to guide our further learning. The notion that older people do not continue to be active learners should be discarded. Of course, there are other differences in learning and work relations that may be imputed to sex, race or disabilities. Some of these will be alluded to later. But the focus of this paper is on occupational class differences, assumed to be most directly implicated in the production and reproduction of advanced capitalism *per se*.

In sum, Canadians are now spending large amounts of time in school attendance and adult education courses. Canadians' proportion of post-secondary educational completions, after two generations of rapid growth, now lead the world. Participation in adult education appears to have grown equally quickly during the same period. Although there are few available measures of informal learning, *the incidence of adults' intentional informal learning activities related to paid work, housework, volunteer work and general interests appears to be far more extensive than participation in formal education.*

The apparent decline in participation in both adult courses and informal learning during recent years may be related to the lengthening of paid employment hours and consequent intensification of both paid and unpaid work, leaving less time and energy for more voluntary learning activities. Also, the WALL survey asked the questions about formal education first while the NALL survey had asked the informal learning questions first, perhaps encouraging wider identification of learning beyond conventional course forms. In any case, the vast majority of Canadian adults now are continually involved in a wide array of activities in pursuit of more knowledge, skills and understanding. Most of these learning activities occur informally, beyond the purview of institutional authorities.

Work and Learning

Theories

Learning, the acquisition of skills and knowledge, is the quintessential human activity to engage with our changing environment, and work is what we do with this knowledge. In these generic terms, learning and work are constantly interactive and often simultaneous activities. In this sense, the notion of a "knowledge-based economy" is redundant; all human activities are essentially knowledge-based. But most theorising about work and learning has been limited to trying to explain relations between paid employment and formal educational attainments. In simplest terms, these theories can be identified as either supply side, demand side or supply-demand interactive.

Very briefly, *supply-side theories* basically assume that investment in education necessarily results in increased economic growth and good jobs (Becker, 1993). *Demand-side theories* include both advocates of a "knowledge-based economy" who assume that modern production systems require workers with more complex skills and that education systems must increasingly produce such knowledge workers (Marshall and Tucker, 1994), as well as prophets of the degradation of paid work who see deskilling and automation leading to widespread unemployment (Braverman, 1974; Rifkin, 1995). *Supply-demand interactive theories* emphasise the relational character of education and job connections in terms of the bargaining processes between employers and employees (Stiglitz, 1975; Collins, 1979). Generally speaking, supply-demand interaction theories are

better able than simpler supply or demand-side theories to explain complex patterns of education-employment relations, notably the phenomenon of mismatches between the educational qualifications of the available labour force and aggregate job requirements.

The version of a supply-demand interaction theory of employment-learning relations that I have developed elsewhere (Livingstone, 2004) posits differential degrees of matching of knowledge attainments and job requirements related to negotiations between specific occupational classes, genders, generations and ethnic groups. In simplest terms, the extent to which the relevant knowledge of specific groups is recognised in employment relations is contingent on how much power they are able to exert. So, there are always likely to be significant "mismatches" between employers' overall demand and requirements for employees on the one hand, and the overall supply and qualifications of job seekers on the other.

The accelerating productivity of capitalist enterprises regularly throws workers into unemployment, reproducing the most evident part of the reserve army of labour. In societies like Canada with liberal democratic state regimes that acclaim the right to equal educational opportunity, and with labour markets in which both employers and job seekers make mainly individual employment choices, the dominant historical tendency has been for the supply of educationally qualified job seekers to exceed the demand for any given type of job. These same dynamics also generate formal under-qualification of some workers, particularly older employees who are experienced in their jobs and have had few incentives to upgrade their credentials. But it also follows from this perspective that more informal work-related learning which occurs beyond the direct control of dominant occupational class, gender, age and ethnic groups is likely to be less hierarchically ordered in many respects, including the time devoted to it and the competencies attained, than is the case for formal schooling credentials. Employment-related informal learning, especially, may occur anywhere at the discretion of the learners.

This theoretical perspective also can be applied to unpaid household and community work. Household labour is just as necessary as paid employment labour for social reproduction. But time devoted to such domestic labour tends to be inversely related to economic and political power, with women who lack employment-based bargaining power still doing most of it with little recognition. The correspondence between different types of work and relevant informal learning activities should also vary according to how much discretionary control people can exercise over the work. Since people are not generally compelled to do community volunteer work, relevant informal learning activities may be more closely associated with involvement in this sort of work than either hierarchically structured employment or necessary domestic labour.

The almost universal involvement in housework and its relatively low exchange value have generated very little interest in housework-related learning. This is presumed to be mundane work that anybody can do with little learning. There has been virtually no prior research done on learning associated with housework. But as the Eichler (2005) study is beginning to show, this work not only is more complex than normally thought, but often involves quite challenging learning activities which may have much broader relevance than to housework alone. Again, the same argument can be made about community volunteer work and learning (Schugurensky and Mündel, 2005). Household and community volunteer labours and their relations with learning activities are only examined briefly in this report. But future studies of work and learning should attend much more fully to their significance.

Whatever interpretive perspectives we may prefer, our major research objective should be to assess actual interactions between learning and work. Approaches that simply assume either inevitable benefits from further investment in human capital or pervasive demands for greater skills from a knowledge-based economy are likely to be poor guides to social policy-making.

Relations of Work Time and Learning Time

All other things being equal, the more time people spend in a particular type of work, the more time they are likely to devote to learning about it. But no prior study seems to have systematically explored this relationship. On the basis of the previously presented profiles of work time in paid employment, housework and community volunteer work as well as time spent in adult learning activities, we can begin to assess these connections more closely. I will focus here on informal learning because informal learning is both much more extensive and can be more freely chosen than adult education courses, and because these two national surveys provide the most inclusive measures to date of both work time and informal learning. These data therefore offer a strong test of the posited relation between work time and learning time.

Conventional measures of statistical association (pair-wise Pearson r correlation coefficients) confirm that in both the 1998 and 2004 surveys, among those engaged in each of the respective spheres of work *and* indicating they do any related intentional informal learning, there is a significant positive association between hours of work and hours of sphere-specific informal learning.

Paid employment is generally the most compulsory sphere of work for the more than 60 percent of the adult population who do it. Most households are compelled to send at least one wage earner, increasingly more, out to the labour market to ensure their continuing subsistence. Employed people may generally feel they have relatively little choice over the number of hours per week they actually perform paid work. There is a weak positive association between employment

hours and job-related informal learning hours
($r=.12$ to $.15$, $p > .01$, $n=759/4381$).

Housework is a somewhat less compulsory sphere of work, at least in terms of the amount of time and the intensity of labour most people devote to it. Most of us have to do some, but more aspects of this work are discretionary in the sense that they can be more flexibly scheduled and distributed by household members than paid work. The general relationship between housework and informal learning times is somewhat stronger ($r=.23$ to $.32$, $p > .01$, $n=991/6170$). In spite of the fact that women still generally do more housework than men, the strength of this association is virtually identical for both sexes.

Community voluntary organisation work is the most discretionary form of work. The general relationship between work and informal learning appears to be strongest for the minority who chose to do this work ($r=.33$ to $.48$, $p > .01$, $n=535/2365$). Again this association is of similar strength for both men and women. It is notable that the majority of those who give more than 3 hours per week to voluntary work report more than 3 hours on related informal learning.

The finding that the strongest association occurs in the most voluntary sphere of work suggests that those who exercise more discretion in any work sphere may generally be more active informal learners. Further in-depth research including all spheres of work is required to assess this relationship.

Occupational Class and Learning Activities

The inter-generational reproduction of social classes through school selection processes based on occupation and family-centred transmission of differential cultural codes have been well-documented (Bourdieu, 1984). As a consequence of these selection biases as well as the greater financial resources, Canadian children with origins in the families of corporate executives, managers and professionals have continued to be much more likely to graduate from universities and get better jobs than children from working classes (Curtis, Livingstone and Smaller, 1992). This reproduction cycle has continued to operate in adult education, so that those with lower school attainments who typically end up in lower occupational class positions have exhibited lower levels of participation in adult education courses (Tuijnman, 1991). Current patterns for the employed labour force in Canada are illustrated in Table 3.

Table 3: Schooling, Further Education and Job-related Informal Learning by Occupational Class, Employed Canadian Labour Force, 1998/2004

Occupational class	Year 98/04	University degree (%)	Course/ workshop last year (%)	Informal job- related learning (median hrs/week)
Corporate executives*		70/81*	20/38*	*
Small employers		22/22	51/44	4/2
Self-employed		15/23	45/49	3/2
Managers		34/39	71/67	4/3
Professionals		58/63	61/52	3/2
Supervisors		12/13	60/63	3/2
Service workers		8/8	50/48	2/2
Industrial workers		3/3	31/41	4/2
Total	N=928/5720 98/04	16/20	49/51	3/2

Source: (WALL 2005)

*Estimates for Ontario corporate executives in 1998 and 2002 from Livingstone, Hart and Davie (1999, 2003); no comparable data are available on their job-related informal learning but self-reported total informal learning is very similar to that of other class groups.

The class differences in completion of university degrees are still very substantial between occupational classes in the active labour force. The vast majority of corporate executives and nearly half of all managers and professionals have university degrees, while less than 10 percent of all waged workers do, including about 3 percent of industrial workers. But around 20 percent of industrial workers now have community college diplomas. Class differences in the incidence of participation in adult education are less marked and appear to be decreasing. About half of the employed labour force has taken a course or workshop of some duration in the previous year, including over a third of industrial workers.

Participation in diverse forms of informal learning, including job-related learning, unpaid work-related learning and general interest learning is far more extensive than participation in adult education courses (see Livingstone, 1999). As Table 3 indicates, time devoted to job-related informal learning is fairly similar between class positions. Industrial and service workers are just as likely as corporate executives, managers and professional employees to devote time and energy both to informal job-related learning generally, ranging from computer literacy to health and safety, as well as to informal learning related to unpaid domestic and community work and other general interests (Livingstone, 2002). While some of this general knowledge may be irrelevant from the immediate objective of

enhancing firms' profitability, it can be directly applicable in other socially useful and fulfilling household and community work and, potentially, in jobs redesigned to more fully use workers' growing repertoire of skills. Our survey evidence and related case studies (Livingstone and Sawchuk, 2004) suggest that Canadian workers are already "lifelong learners", whether they have achieved a high level of formal education or not.

Underemployment

Current theories make varied predictions about the association between education and jobs. A central claim of KBE advocates is that the economy is rapidly creating more highly skilled jobs than can be filled by the current educational system. But we have documented the very substantial increases in formal schooling and adult course participation over the past two generations among Canadian workers. We have also documented their more extensive engagement in informal learning. Over the same period, the level of formal education required for jobs has changed only marginally, and there is little objective evidence that the actual performance requirements of the changing job structure have increased significantly in recent years - a wider array of skills for longer hours but not a higher level of skill. The likely consequence is increasing general levels of underemployment, workers who have skills and knowledge that they are unable to apply in the jobs available to them (Livingstone, 2004; Handel, 2000).

The phenomenon of underemployment has several different time-based and skill-based dimensions, as I have argued and documented elsewhere, specifically: *general unemployment; involuntary temporary unemployment; credential underemployment; performance underemployment; and subjective underemployment* (see Livingstone, 2004).

Canadian studies have identified the existence of some of these dimensions of underemployment since the 1960s (e.g. Tandan, 1969; Statistics Canada, 1999). I have documented the persistence of general unemployment and involuntary reduced employment elsewhere (Livingstone, 2004). Both of these time-based conditions represent serious underemployment of the capabilities of millions of Canadians. But the other skill-based dimensions of underemployment which affect job holders are also serious problems which deserve closer examination.

Table 4 offers some indication of the present situation in Canada in terms of the credential underemployment; performance underemployment; and subjective underemployment of the currently employed labour force.

Table 4: *Measures of Underemployment, Employed Labour Force, 1998, 2004*

TYPE OF MEASURE	Underemployed (%)	Match (%)	Underqualified (%)
Credential gap	30/34	49/48	22/18
Performance gap	28/32	52/50	20/19
Self-assessment	20/27	75/64	5/6

Sources: NALL (1999). N=951; WALL (2005) N=5720.

The *credential gap* can be estimated by the degree of correspondence between the formal educational attainment required for entry into the job and the actual educational attainments of job entrants. As Table 4 shows, over 30 percent of the employed labour force now have educational credentials that exceed current entry requirements for their jobs by at least one credential level, such as community college graduates in jobs requiring only a high school diploma. About half of the labour force has matching credentials and credential requirements. The remaining 20 percent of the labour force appear to be underqualified with lower educational credentials than now required for entry. However, many of these people are older workers who obtained their jobs before educational entry requirements were raised and who have gained the work experience to continue to perform their jobs adequately. Employers have inflated the credential requirements for even the simplest clerical and unskilled manual jobs in Canada over the past 20 years. Yet the proportions of workers who exceed these entry requirements has exceeded 20 percent of the employed workforce throughout this period (see Livingstone, 2004) and appears to have increased in recent years.

The *performance gap* has been typically estimated by the degree of correspondence between formal educational attainment and the general level of education actually required to perform the work, typically as estimated by general educational development (GED) scores produced by independent rating experts. Various assumptions about the equivalences between GED levels and years of schooling have been made by different analysts. There is much dispute over such measures, including possible inflation of years of schooling equivalencies simply because average school attainments have increased so greatly since the 1950s. These measures also completely ignore the informal learning and accumulated practical knowledge of the current labour force.

Prior studies have found that as much as half of the currently employed Canadian labour force have job-related skills and knowledge that exceed the actual performance requirements of their current jobs while less than 10 percent are under-qualified and perhaps should be pursuing some form of remedial training to ensure more adequate performance (see Livingstone, 2004). Research to develop more accurate estimates of performance requirements continues. But here we will rely on survey respondents' own estimates of the educational

attainments really required to perform their jobs, and compare these with their actual formal attainments. As Table 4 shows, this measure also finds that about half of Canadian workers have formal education matching their job performance requirements. Around 30 percent appear to be over-qualified, and about 20 percent to be under-qualified. Over-qualification, or underemployment, may have increased slightly in the past five years.

In terms of the *subjective gap*, a larger majority of around two-thirds of Canadian workers feel they are at least adequately qualified for their jobs. Over 20 percent overall think they are over-qualified, while only 5 percent believe they are under-qualified. Comparison of the two surveys suggests that feelings of over-qualification may have increased in the past few years while self-assessments of matching qualifications have decreased. As subjective indicators, self-ratings of job qualifications are likely to produce few underestimates of ones' own qualifications, especially in the context of competitive labour markets, and they may also underestimate under-employment. Previous Canadian surveys have found quite high correlations between subjective self-ratings and more objective measures of job requirements (Myles and Fawcett, 1990).

Other more objective measures suggest that under-employment in current paid workplaces may be even more substantial (Livingstone, 2004). So, employed respondents' own subjective assessments generate the highest ratings of matching job requirements and qualifications. Constructed measures based on credential required for entry versus credential held produce lower levels of matching and higher levels of under-employment. Measures based on educational equivalency performance requirements give either similar or higher estimates of under-employment. But all measures find the extent of underemployment to be greater than the extent of under-qualification. Available evidence indicates that *skill-based under-utilisation* of capabilities in employment is increasing (see Livingstone, 2004).

Virtually all recent surveys on all three dimensions of the matching of employed workers' qualifications and job requirements have found levels of underemployment to be substantial (i.e. 20 percent or greater) and to exceed levels of under-qualification. More accurate measures of people's employment-related skills and knowledge and their extent of correspondence with available jobs are certainly needed. But the weight of present empirical evidence strongly suggests that the actual skill development of the currently employed workforce generally matches or exceeds the gradually increasing job requirements.

Further analyses of these under-employment measures by occupational class confirm the occurrence of this pattern within most class groups. The basic pattern is summarised in Table 5 for wage and salary earners. These findings are based on the WALL survey of 2004 and a comparable national survey done in

1983, which permit rough comparison of class-based performance gaps over this period.

Table 5: *Educational Job Requirements and Performance Underemployment, Canadian Wage and Salary Earners, 1983-2004*

JOB TITLE	Post-Sec Credential Required for Job (%)	Under-employed (%)	Post-Sec Credential Required for Job (%)	Under-employed (%)
Managers	81	17	67	26
Supervisors	35	24	39	34
Prof employees	89	14	79	21
Service employees	16	33	27	40
Industrial employees	15	33	16	31
AVERAGE	47	24	46	30
N	1444	1442	3954	3920

* Source: Canadian Facts' Class Consciousness Survey, 1983 (Clement and Myles, 1994).

** Source: WALL National Survey of Learning and Work, 2004. (www.wallnetwork.ca).

While these data permit only rough comparisons, they tend to confirm that there has been little aggregate increase in the advanced education required to perform jobs. Secondly, the performance underemployment gap has increased somewhat. The proportions under-qualified are substantially less and declining. Advocates of KBE posit exactly the converse condition. More specifically, industrial workers, whose jobs have the lowest performance requirements, continue to have high rates of underemployment and service workers have the highest rates. But the under-employment of professional-managerial employees also appears to be increasing. Other empirical studies indicate that visible minorities and recent immigrants also tend to be more highly under-employed (see Expert Panel on Skills, 2000). Generally, those in lower positions in terms of economic power are more likely to be underemployed. There is little support in such evidence for the general skill deficit often assumed by KBE promoters.

Under-employment and Adult Learning

In the 1960s when under-employment was first identified as a social problem, some observers predicted that the spread of this condition would lead to widespread disaffection and rebellion among young people who could not get jobs corresponding to their educational investments, as well as a disinterest in further job-related learning efforts. Our surveys have found limited support for the disaffection with learning thesis in the currently employed Canadian labour force. Majorities in all occupational classes are engaged in job-related informal learning activities. In terms of course participation, as Table 6 summarises, there are some small differences by both self-rated and constructed measures of under-employment. Those who are under-employed on any skill-based measure are slightly less likely to be taking courses. Those who are under-qualified in terms of currently required entry credentials are most likely to be taking courses to close this credential gap. But the current range in course participation rates is only between 33 and 48 percent. The under-employed generally appear to be continuing competitors in the “educational credentials arms race”.

Table 6: *Participation in Further Education Courses/Workshops by Measures of Underemployment, Wage and Salary Earners, 2004*

MEASURES OF UNDER-EMPLOYMENT	Underqualified (%)	Matched (%)	Underemployed (%)
Credential gap	48	41	36
Performance gap	41	42	37
Self-assessment	44	44	33

Source: WALL (2005).

The unemployed are generally the least likely members of the labour force to be participating in job training courses - at least partly because of cost barriers. But the majority of the unemployed who are currently looking for jobs are actively engaged in job-related informal learning (see Livingstone, 2002). Those in all employment statuses have general informal learning participation rates over 80 percent. Discouraged workers, who have the least commitment to either current jobs or the search for them, appear to have the highest *total* informal learning average of all workers. There is no indication here that discouraged workers become discouraged learners. More generally, there appears to be a massive and more egalitarian informal “learning society” iceberg hidden beneath the pyramidal class-structured schooling system and the somewhat less hierarchical array of further education courses.

Reversing the Education-Jobs Optic: Priority to Economic Reforms

Since the origins of mass schooling in the nineteenth century, a common response to every economic crisis has been calls for educational reform (see Curti, 1935). The current era is not much different, with various claims of degradation of educational standards and calls for large-scale reforms to meet current skill shortages and anticipated demands. But the national survey evidence suggests that – excepting chronic skilled trades shortages related to the limited Canadian apprenticeship system – lack of technical skills is not a fundamental problem.

The employment-related evidence reviewed here indicates that most of those in the active Canadian labour force, whatever their job status, are engaged in a wide array of continuing learning activities related to their current or prospective jobs. This pursuit of additional knowledge, skill and understanding related to employment applies across occupational classes. Extensive engagement in job-related learning even applies to the considerable numbers who already have much more knowledge and skill than their jobs require, the “underemployed”. We are living in an “information age” in terms of the accessibility of employment-related knowledge from multiple sources, and in a “learning society” in terms of the continuing informal learning efforts of most workers. Although extensive under-employment contradicts the frequent claims that we are also living in a “knowledge-based economy”, the lack of immediate opportunities to use their new knowledge in available jobs does not appear to have dissuaded workers from continuing to seek ever more of it.

The priority problem appears to be the creation of a genuine knowledge-based economy in which more of those who have skills and knowledge could more fully use them in paid workplaces. We should be spending at least as much energy on thinking about economic reforms as educational reforms. Figure 1 suggests some basic alternatives that could inform emerging public debate on such reforms and their implications for learning and work relations.

Figure 1: *Economic Alternatives: Shareholder Capitalism, Stakeholder Capitalism or Economic Democracy*

	Shareholder Capitalism	Stakeholder Capitalism	Economic Democracy
Ownership	People’s Capitalism	Profit sharing	Socialized Market
Labour Process	Re-engineering	Co-determination	Self-Management
Work Redistribution	Flexible Labour force	Reduced Workweek	Full Employment
New Forms of work	Workfare	Guaranteed Income	Green Work

Source: Livingstone (2004).

Three basic economic alternatives are currently available to us. In shareholder *capitalism*, pursuit of greater profits through private markets rules social life. The labour process is constantly reorganised to maximise productivity for higher profits. The workforce must be prepared to move from job to job on brief notice. Growing numbers of people are relegated to marginalised forms of employment or welfare. *Stakeholder capitalism* features joint management and regulation of the private market economy by capitalist class interests in negotiation with labour unions and social democratic political parties. Profit-sharing schemes distribute formal ownership more widely. Workers have more say in work design through works councils and other forms of co-determination. Paid work is more likely to be redistributed through reduced normal workweeks rather than the contingent labour force strategies of shareholder capitalism. There are measures to ensure that the unemployed continue to be part of commodity consumption circuits through direct state subsidies that amount to modest guaranteed annual incomes. *Economic democracy* is the organisation of production and consumption by the majority for the majority.

It is based on socialised markets in which enterprises are owned by workers and communities, self-managed co-operatives in which earnings are used for all members' benefit as well as to improve production conditions. Work reorganisation decisions are based on one person, one vote. The combination of self-management with socialised markets permits substantial reductions in paid work time and wider distribution of employment because human needs linked to complementary money systems rather than profit maximisation have priority in determining the scale, intensity and distribution of production. The reproduction of households and sustainability of communities are as important as the production of goods and services, so the "green work" of domestic nurturing, community building and environmental stewardship receives recognition and priority time.

I have examined these economic alternatives and their basic learning and work links more fully elsewhere (see Livingstone 2004). Here I will only suggest that unless we develop clear visions of the work alternatives that actually exist, that are preferable and that are feasible, we are unlikely to accomplish sustainable, progressive workplace change. The basic thesis is that greater genuine democratic participation will be associated with lower levels of under-employment.

The most feasible immediate work reforms include work redistribution and workplace *democratisation*. In light of the increasing polarization of paid employment between those who feel compelled to work over 50 hours per week and those involuntarily working under 30 hours or unemployed, an obvious response is to redistribute employment hours among them. The most equitable and effective measures will probably involve some form of legislation for shorter regular workweeks, coupled with financial incentives for the overworked to

reduce their hours and collective bargaining agreements that ensure both work-time flexibility and job security (see Hayden, 1999). Western European implementation to date has seen some serious conflicts and recent reversals. But with little public debate, proposals to establish a shorter standard employment week and further restrictions on overtime work to create more jobs have been supported by about half of Canadians in recent opinion surveys (Livingstone, Hart and Davie, 1999). If the alternative is to witness the persistence of our current polarisation of work time along with chronically high numbers of officially unemployed and discouraged workers, can we afford to ignore the challenge?

Even with significant paid work-time reduction measures, skill-based conditions of underemployment are likely to persist among the employed labour force. If the measures of mismatch cited above are remotely accurate, workplace reorganisation is much needed to allow many workers to use their skills and knowledge more fully in their jobs. The finding in our two national surveys that the strongest positive relationship between work and learning is found in voluntary community settings supports the thesis that greater discretionary control or self-management can lead to fuller use of work-related skills and knowledge. In short, greater democratisation does appear to be the most sustainable way of reducing underemployment in the paid workplace.

A growing number of enterprises and unions are beginning to comprehend the magnitude of skill-based underemployment and are taking positive steps to more effectively recognise the knowledge and skills of their workers, mainly through job redesigns that share strategic information, involve workers in decision-making and otherwise permit them to have more discretion in the social relations of production (see Lowe, 2000 for a recent overview). There are multitudes of specific innovations (including work teams, job rotation, job enrichment, incentive pay, flexible scheduling, etc.) that have sometimes been successful in enhancing both the quality of working conditions and productivity per worker. But as Lowe (2000) observes, it is not specific job innovations that lead to sustaining high quality paid workplaces, but the creation of a deeper organisational and societal work culture based on principles of a right to decent, fulfilling, healthy paid work, with involvement in strategic decision-making. Implementing these principles in many of our current paid workplaces, to say nothing of the world economy in general, will be very difficult. The documented existence of a workforce that is amply qualified to achieve such participatory workplaces, and the alternative prospect of increasing under-employment, should stimulate serious continuing efforts in this direction.

The general recognition of widespread under-employment of the existing pool of knowledge and skill should encourage employers, labour unions, employees, governments and local community groups to develop collaborative programmes to identify more fully the actual local pools of knowledge and skills in their enterprises and communities, and cooperate in community economic

development initiatives to match people's underused skills and knowledge with local needs through democratised job redesign, work redistribution, and creation of environmentally sustainable new jobs (e.g. Milani, 2000).

The expanded conception of work which includes recognition of unpaid housework and community volunteer work as vital contributors to the reproduction of human life must continue to be documented in order to more fully understand work and learning interrelationships in advanced capitalist societies. Various new forms of paid employment (e.g. environmental cleanup programs, domestic care companies, other new socially useful products) in both public and private sectors are being created by the commodification of some of this work. While such jobs may alleviate unemployment somewhat, most of the domestic and household service jobs created so far are in small businesses in which self-employed, contract or home-based workers face the largest challenges to building high quality work cultures and overcoming underemployment conditions. More equitable divisions of paid and unpaid labours between the sexes can certainly aid women to participate more fully in the labour market, but they cannot ensure reductions in underemployment within paid workplaces. The primary solution to underemployment is likely to remain in the redistribution and democratisation of existing forms of paid employment.

Concluding Remarks

The purportedly low literacy level of many Canadian adults, as measured on recent international standardised tests (e.g. Statistics Canada, 1996, 2005) has been of great concern to literacy advocates, policy-makers and some employers. The increasing marginalisation of school dropouts with functional literacy problems and declining capacity to do paid work is indeed a serious problem and needs immediate attention. So does Canada's chronic failure to develop a domestic apprenticeship system to produce enough skilled trades-people. But the literacy panic has been overblown. The majority of Canadian workers are not under-qualified but adequately qualified for their jobs, and increasing numbers are overqualified in terms of their formal education and literacy levels in relation to job demands (compare Krahn and Lowe, 1998). The amount of informal learning these workers are doing, most notably through on-the-job training by mentors and their own self-directed pursuit of new skills, suggests that even most of those who lack formal qualifications are finding ways to continue to perform their jobs quite adequately in relation changing employment conditions.

Housework, on the other hand, is presumed to be so simple that anyone can do it. In fact, to do it well requires learning some very complex activities that many of us may be under-qualified to perform because of poor or limited training. Housework should be validated in its own right as well as appreciated as an essential source of lifelong learning for everyday life, citizenship, health and some of the subtlest forms of understanding needed for sustainability in

advanced technological society. Again, learning in community volunteer work may have similar benefits.

Formal education is now a basic human right. It should be supported generally and unconditionally, subject only to people's actual learning capacities and availability of public resources. Educational programs should be constantly revised to transmit the most accurate accumulated wisdom of human inquiry. But our fundamental problems are not with formal education *per se*, rather with its access and use.

Inequitable access to formal education and consequently to rewarding jobs and lives persists. The lack of access to advanced education in this country with the highest global level of overall post-secondary attainment remains a serious problem for youths of working class origins, visible minorities and aboriginals, those with disabilities, as well as for women and older people to particular programmes. All of these forms of under-representation signify a large waste of talent. But the serious under-employment of many and growing numbers in the current job structure, especially service and industrial wage workers, continues to be largely submerged in continuing rhetoric about urgent need for educational reforms to address economic problems. The central educational question is not whether we can create a learning society but whether paid workplaces and educational institutions can respond effectively to continuing increases in popular demand for knowledge and interest in using it. In any case, economic reforms should now be understood as at least as relevant to improving current learning and work relations as formal educational reforms.

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Endnotes

¹ The survey data analyzed in this paper are drawn from two national surveys conducted as parts of two Strategic Research Initiatives supported by the Social Sciences and Humanities Research Council of Canada: the New Approaches to Lifelong Learning (NALL) research network funded from 1996 to 2001 and the Changing Nature of Work and Lifelong Learning (WALL) research network funded from 2002 to 2006. Further details about the studies of these networks may be found at the respective websites: www.nall.ca and www.wallnetwork.ca, respectively. Thanks to Doug Hart, Milosh Raykov, Antonie Scholtz and Rhonda Sussman for assistance with this paper.

² Surveys of adult education in Canada usually have *excluded* many adults over 16 who are still involved in their initial cycle of schooling. They have included: adults taking non-credit courses for specific purposes at various locations including schools, paid workplaces and through electronic media; adults who have returned to school *part-time* to complete certification or upgrade through programs of study; adults who have returned to school *full-time if they are supported by their employer*; and initial cycle students taking *supplementary courses* (see Devereaux, 1985; Statistics Canada, 1997, p. 10). These inclusions and exclusions appear increasingly arbitrary as the initial cycle of formal schooling has extended further into adulthood and young adults have increasingly combined school completion with employment. The transitions between schooling and employment are now both more frequent and more complex. Many people combine both statuses and it is often unclear which one might be primary at any given time. For example, over 10 percent of the adult Canadian population were enrolled in certification-based formal education programs during the 1997-98 period, and around half of these adults were enrolled in these programs while also engaged in paid employment (see Livingstone, 2002).

³ Both the estimates of magnitude and the group differences in intentional informal learning patterns should be treated as preliminary findings. This is because: (1) there are no valid precedents for the specific array and format of items about informal learning used in the NALL and WALL surveys; (2) the prior empirical studies of self-directed learning found no significant group differences; (3) margins of error are nearly as large as the differences noted, especially in the relatively small NALL sample (N=1562); and (4) informal learning is a particularly diffuse phenomenon which is prone to wide subjective differences in personal estimates. Further replication studies are much needed to test the reliability of all of these original estimates as well as to determine trends in the incidence of informal learning.

⁴ Recent attention to the significance of lifelong learning has stimulated government agencies to begin to estimate the extent of informal learning. The 1998 General Social Survey (Statistics Canada, 1999b) contained a few questions on informal learning. About 30 percent of respondents gave an initial positive response, estimated that they were spending about 19 hours per month on these learning activities, or nearly 5 hours per week. Averaged over the entire sample, this would reduce to about 1.5 hours per week, or about one-tenth of the NALL and WALL estimates. This is likely a serious underestimate of the actual current extent of intentional informal learning. The initial screening question is posed immediately after a series of questions about initial schooling, adult credit courses and non-credit courses which emphasize the relation between organized education and learning, and provides no opportunity to consider informal learning in relation to any specific learning context. In addition, the question dichotomizes courses and learning on your own, suggesting that you can only do one or the other, which is clearly false. While further survey and case study research is required to provide reliable extent and trend estimates, it is likely that this initial GSS survey effort has merely found the iceberg of intentional informal learning rather than plumbing its depth.

About the author

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