

*FOLLOWING IS AN EXCERPT FROM :*

## **HIDDEN KNOWLEDGE**

**Organized Labour in the Information Age**

by D.W. Livingstone and Peter H. Sawchuk

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for more  
information  
please contact  
garamond@web.ca

## **INTRODUCTION**

# **Dimensions of Learning and Work in the Knowledge Society**

Working people are more knowledgeable and actively engaged in learning than public discussion generally assumes. Two basic assumptions underlie much recent discussion about work and learning: 1) a new “knowledge-based economy” is quickly emerging with new jobs generally requiring greater knowledge and skill; and 2) a “lifelong learning culture” must be created in order for workers to cope with these employment-related knowledge demands. Virtually every recent public policy statement about employment in every advanced industrial country begins with these assumptions. It implies that most workers suffer from a deficit of necessary skills and knowledge which must be rectified by greater education and training efforts.<sup>1</sup> We challenge these assumptions.

Constant change has been the hallmark of industrial capitalist societies since their inception in the early 1800s. Paid workplaces in capitalist economies are characterized by continual change as enterprises compete with each other for commodity markets, employers negotiate with employees over maximizing profits and/or creating fulfilling working conditions, and new technologies are adopted to aid all of these objectives. In the twentieth century, capital intensification in extractive and manufacturing industries has put an increasing premium on human mediation of expensive machinery. The rise of the service sector has been contingent on the selling of labour-intensive services rather than material goods. The proliferation of information technologies has made a wider array of work tasks dependent on workers’ initiative. In short, there has been a secular trend in which the motives and learning capacities of the workforce play a more central, strategic role in capitalist labour processes. The dominant discourse of management theory has shifted from advocacy of scientific management of workers’ bodily movements through extrinsic rewards to

promotion of learning organizations designed to enable continuing learning and enhance worker motivation to share their knowledge (see Boud and Garrick, 1999; Bratton, Helms-Mills, Pynch and Sawchuk, 2003). While actual working conditions in most paid workplaces may seriously diverge from idealized versions of such “learning organizations,” there is little doubt that employers, employees and researchers alike are paying more concerted attention to workplace learning activities as we enter the twenty-first century (e.g., Belanger and Federighi, 2000; Garrick, 1999; and Lasch and Urry, 1994).

In this context, the dominant discourse incessantly repeats the mantra that a “knowledge-based economy” requires a much higher proportion of highly skilled workers and the creation of a “learning society” is imperative for people to acquire the additional knowledge and skills needed to survive in this new economy (see OECD, 1998: 10). However, there is considerable empirical evidence that the reality may actually be the reverse of this. That is, careful assessments of the changing occupational composition of the employed labour force and of specific vocational preparation requirements for the aggregate array of jobs in countries like Canada and the United States have found only very gradual net upgrading of the actual skill requirements of jobs over the past few generations (Barton, 2000; Handel, 2000; Lavoie and Roy, 1998; Leckie, 1996). On the other hand, rates of completion of post-compulsory schooling and participation in further education courses have grown exponentially during the same period (Livingstone, 2002). The increases in educational attainment appear to be outpacing increases in job requirements and suggest that we may already live in a “learning society,” but not yet in a “knowledge-based economy.”

All truth claims are subject to the interplay of knowledge forms and power relations. Dominant discourses or ideologies about work and learning tend to reflect the interests of the most powerful economic groups. Critical social theorists working against dominant forms have helped to deconstruct such regimes of truth, as in Foucault’s (1977) documenting of the historical construction of coercive institutions, and in Herman and Chomsky’s (1988) analysis of the ideological effects of mass media on popular opinion. But critiques of dominant social forms, in and of themselves, shed little light on the actual work and learning practices of most people; that is, the practices that are most directly constitutive of everyday life (e.g., de Certeau, 1984). This is not to suggest that there exist some natural popular standpoints amongst ordinary people that are unaffected by dominant ideologies of work, learning or social life generally, quite the contrary (see Rose, 1990). But the less powerful mediate dominant truth

claims through their own direct experience and both their perceptions and their practices may well differ from articulated dominant versions of social reality (e.g., Seccombe and Livingstone, 1999). Empirical studies conducted from the standpoints of ordinary working people (e.g., Howell, 1973; Luttrell, 1997; MacLeod, 1995; Sawchuk, 2003a; Sennett and Cobb, 1972) are a necessary supplement to dominant discourses and scholarly critiques in order to comprehend the contemporary character of work and learning. This book will suggest a more inclusive conceptual framework for studying multiple dimensions of learning, work and their interrelations, present illustrative findings from our case studies of learning and work practices, and suggest some implications for further research and practice.

Our research starts by questioning the dominant discourse on learning and knowledge, and proceeds to document the actual activities of working people. Our evidence, based mainly on a series of in-depth interviews with unionized workers and their families, presents a picture that diverges sharply from dominant stereotypes to reveal highly active learners who face serious barriers to applying much of their current skill and knowledge in their paid workplaces, formal educational settings and civil society generally. In fact, working people are far more likely to be underemployed in their jobs than to be underqualified for them. A growing body of survey-based studies has confirmed this condition in many countries.<sup>2</sup>

But this reality is difficult for many people to accept because they continue to hear knowledge deficit claims (see Valencia, 1997) asserted so frequently by opinion leaders – who tend to focus on chronic skilled trades shortages and occasional shortages of specific professional and technical workers, which are exceptions rather than the general rule. Instead of recognizing the rich skill and knowledge base of the general population that could serve to overcome these specific shortages through, for example, prior learning assessment and recognition, the fixation with these specific deficits is typically taken to demonstrate general shortages. This book looks beyond both the dominant rhetoric of skill deficits and the growing survey data on underemployment to the direct experiences of working people.

Knowledge and power are intimately related. The most powerful people – corporate executives, top managers, and professionals – are most likely to have their knowledge and skills institutionally certified and closely linked with opportunities to apply these capabilities. The least powerful people – those hired for an hourly wage and the unemployed – are most likely to have their knowledge and skills institutionally ignored or devalued and to have only more fragmented and submerged chances to

apply their capabilities in most paid workplaces or other public settings (Sawchuk, 2003a). Through our focus on organized wage workers, we have, in a sense, chosen to do our research with the *most* powerful among the *least* powerful. In fact, working people, to contest the exploitation of their labour power as well as the appropriation, degradation or suppression of their skills and knowledge, have often banded together in labour unions and related social movements based in their paid workplaces. It is within and because of these organizations that working people have been most able to share information, develop common world views, traditions and strategies, and mobilize capacities towards their own collective interests. It is through these organizations that “working-class cultures,” indigenous knowledge and distinctive learning practices of working people (Chapter 2) are likely to be most visible and accessible. Our focus is therefore on union locals as primary sites of selection for this study. There are substantial variations among these unions in economic power and consequent educational provisions for their members, as we shall see. But we will also see that *informal learning* holds a special place for subordinate social groups such as these, and that it is much more extensive amongst all unionized workers than any type of formal education. At the same time, the organized core of working people represented in this study should not be easily assumed to be more knowledgeable and skilled than the unorganized periphery just because they are relatively more powerful – any more than corporate executives should be assumed to be more intelligent than union leaders just because they have more economic power. A similar argument can be applied to the capabilities of women homemakers, who are an unorganised labour force and whose skills remain hidden in the household. Innate intelligence and acquired skills and knowledge vary widely in all social positions, indeed much more widely *within* social groups than *between* them (Curtis, Livingstone and Smaller, 1992). It is a self-serving conceit of the powerful that they are necessarily more intelligent and skilled than the powerless. Finally, none of these observations is intended to denigrate formal educational attainments, but rather to suggest that the formal attainments of working people are currently underutilised in paid workplaces and their informal learning capacities are even more widely ignored.

### **Spheres of Work and Learning**

Our study begins by selecting organized workers from paid workplace sites, partly in terms of varied levels of formal schooling. But we intend to go beyond conventional thinking and research about work and learning which generally suffers from narrow conceptions of both phenomena. In

economically advanced societies, there are at least three distinguishable spheres of work – paid employment, housework and community volunteer work – and four spheres of learning – initial formal schooling, further or adult education, informal training and self-directed informal learning.

“Work” is commonly regarded as synonymous with “earning a living” through *paid* (or, more rarely, unpaid) *employment* in the production, distribution and exchange of goods and services commodities. Such presumptions conflate the “job-place” with the “work-place” (Bratton *et al.*, 2003). While we will analyze paid employment specifically, we will also examine other important forms of work. Most of us must do some household work, and many of us need to contribute to community labours in order to reproduce ourselves and society. Both *housework* and *community volunteer work* are typically unpaid and underappreciated, but they remain essential for our survival and quality of life (see Waring, 1988). Furthermore, the relations between paid work, housework and community work may represent major dimensions of future economic change. Men and women continue to renegotiate household divisions of labour, while more and more aspects of housework and community work are being transformed into new forms of paid employment.

In its most generic sense, *learning* involves the acquisition of understanding, knowledge or skills, anytime and anywhere. It takes place throughout our lives, and the sites where it occurs make up a continuum, ranging from spontaneous and tacit responses to everyday life to highly organized participation in formal education programs. Formal schooling, adult education and informal learning are the three forms of intentional learning that researchers now commonly identify. *Formal schooling* is a sequentially structured and hierarchical series of curricula and credentialing programs of study typically administered at elementary, secondary and tertiary levels. It happens in settings organized by institutional authorities, planned and directed by teachers approved by these authorities, and typically requires compulsory attendance until mid-adolescence. *Adult education* includes a diverse array of further education programs, courses and workshops with authorized instructors in many institutionally organized settings, from schools to workplaces and community centres, and it is typically voluntary. Adult education is the most evident form of lifelong learning for adults past the initial cycle of schooling. But people also continually engage in informal learning activities to acquire understanding, knowledge or skills outside of the curricula of institutions providing educational programs, courses or workshops. Informal learning – which we undertake individually or collectively without externally imposed criteria or the presence of an institutionally authorized instructor –

is much more widespread amongst adults than either initial school attendance or further adult education. Informal learning includes both *informal training* provided by more experienced mentors and *self-directed learning* which we do on our own or with peers.<sup>3</sup> It displays many self-conscious as well as tacit dimensions, the latter of which are only now being carefully explored (e.g., Sawchuk, 2003b). As Allen Tough (1978) has observed, informal learning is the submerged part of the “iceberg” of adult learning activities. It is at least arguable that, for most adults, informal learning represents our most important form of learning for coping with our changing environment. Beneath the surface of formal schooling and further or adult education, no account of a person’s “lifelong learning” is complete without considering their informal learning activities.

In sum, both work and learning are more extensive and complex phenomena than is often implied in discussions of employment and education. A narrow focus on relations between paid employment and organized education ignores significant interrelations between these other dimensions of work and learning as well as interrelations across broad spheres of activity including home and community practices. Early informal childhood socialization is increasingly recognized as highly influential in determining success in formal schooling. There is far less appreciation of the fact that continued informal learning is vital for success in paid workplaces. Recent studies confirm that most job-related training is done informally (see Betcherman *et al.*, 1997; Center for Workforce Development, 1998). The majority of workers manage to become at least adequately qualified for their jobs through a combination of initial schooling, further adult education, informal training and self-directed learning. Even so, the dominant discourse about a pressing need for the creation of “learning organizations” ignores these realities of interaction between organized education, informal learning and job performance, presuming instead that the central challenge for improved enterprise performance is for workers to become more active and motivated learners. Also, many valuable transfers of knowledge and skill between these four basic spheres of learning and among the three spheres of work are similarly unrecognized or discouraged by actual workplace organization (see Livingstone, 1999a; Sawchuk, 2003a).

Another disadvantage in much research about paid work and education is that most studies focus too narrowly on immediate payoffs to employers. From a short-term management perspective, virtually the only relevant learning for employees is job training that quickly enhances the company’s productivity or profitability on a quarterly basis. From this vantage point, much learning that workers gain both on and off the job is

effectively non-existent. However, preliminary studies from workers' standpoints have discovered, for example, that many assembly-line workers develop informal learning networks to learn how to use personal computers. Some become competent computer programmers, despite having no employer encouragement or immediate formal opportunities to use these skills in their jobs (e.g., Sawchuk, 1996, 2003a). What workers learn informally on and off the job is at least potentially applicable both in jobs redesigned to use workers' growing repertoire of skills more fully, and in other socially useful and fulfilling household and community activities. We need to find out how relevant this more general and informal knowledge is, and not continue to ignore it. This study attempts to address this gap directly by proceeding from workers' own standpoints (Chapter 1).

Taking into account unpaid work and informal learning generates much more extensive general profiles of the actual activity patterns of adults. For example, the total adult population in most advanced industrial countries is now spending as much time in unpaid household and community work as in paid employment, averaging around fifty hours of work per week (Statistics Canada, 1999b). People employed full-time as well as homemakers with children at home currently work around sixty hours per week in all forms of paid and unpaid work. Those not in the employed labour force generally do quite a lot of unpaid work, including over twenty hours per week of housework by unemployed and retired women and an average of around three hours per week of community work in all social groups. There are continual changes in employment conditions, including the growth of service sector occupations, an increase in part-time jobs and polarization of employment hours to produce both overwork and underemployment, and diffusion of information technology through paid workplaces. People continually move in and out of the official labour force; about a quarter of current women homemakers expect to return to employment within the next year (Livingstone, 2002).

In terms of learning, all spheres appear to have experienced rapid growth during the past generation. Participation in advanced schooling has increased exponentially. Between 1961 and 1998, the proportion of the Canadian 25-to-29 cohort who completed university degrees increased from 4 percent to 26 percent (Livingstone, 2002: 18). Canada now leads the world in its levels of post-secondary education with nearly half of the age 20–64 population having attained some form of post-secondary credential by 1996 (Statistics Canada, 2000). Adult course participation may have expanded even more rapidly. In Canada, according to government surveys, the participation rate grew from 4 percent in 1960 to 35 percent in the early 1990s (Livingstone, 2002: 20–24). There is less direct evi-

dence on informal learning. The first national survey on this was only conducted in Canada in 1998 and the only prior comparable national survey was in the United States in 1976 (see Livingstone, 2002: 24–32). But, according to their self-reports in the 1998 survey, around 95 percent of Canadian adults were devoting some time to *intentional* informal learning activities related to their paid employment, household duties, community volunteer work and other general interests, an average of about fifteen hours per week (Livingstone, 1999b). So, the incidence of intentional informal learning also appears to have increased substantially since the first empirical studies conducted in the 1960s and 1970s estimated averages of around ten hours per week (Tough, 1978). Those in the employed labour force now report spending an average of six hours per week in job-related informal training and non-taught learning pursuits. The participation rates and time involved in informal learning are much greater than in adult education courses in which only around a third of all adults currently spend an average of only a few hours per week (Doray and Arrowsmith, 2001; Statistics Canada, 2000). The suggestion that adult learning is like an iceberg, with most of it submerged informal learning, appears to be very appropriate. More generally, the findings suggest that, by any reasonable definition, Canada and, probably, most other advanced industrial countries are already “learning societies” or “knowledge societies.”

### **Class and Learning**

It is also rare in dominant discourses to hear any reference to social classes. While much attention is paid to the exploits of the rich and famous and much less to the plight of the homeless, the rest of us are generally assumed to be “middle class.” Increasing income polarization makes this image more difficult to sustain, but the underlying reality is that there has always been a strong class structure in capitalist societies, generated by paid workplace relations and linked closely with activities in many other aspects of social life. Social classes are relational rather than categorical in character so simple classification schemes are not very informative. But it is important for a class analysis such as ours to be as specific as possible about major active class groupings (see Livingstone and Mangan, 1996). *Corporate capitalists* who own large assets and employ many others can live very affluently. Other proprietorial classes include *small employers* who own their own enterprises with fewer employees and the *self-employed* who survive through businesses based on their own labour. The larger private enterprises and public organizations hire *managers* to control their regular operations and *professional employees* to perform various specialized functions semi-autonomously. In larger or more dispersed

organizations, managers delegate some operational control roles to supervisors and forepersons. The rest of the employed workforce who do not own their organizations, have no official authority roles and no autonomous control over work processes are the *working-class*; *industrial workers* who produce goods and *service workers* who provide various clerical and sales services. In this book, the term “working-class” generally refers to industrial and service workers. Outside the actively employed labour force, there is an underclass or lumpen class made up of a variety of people unable to find sustaining employment. There are also others who are connected to the class structure of the active labour force through their personal trajectories or household relations, including *students*, *retired people* and *homemakers*. As wages and salaries have become the increasingly pervasive form of labour and enterprises have become larger over the past century, more and more intermediate managerial and professional employee class positions between capitalist owners and the working-class have been created. The massive entry of married women into paid employment in the post–World War II era has produced many double-income households. As always, capitalist relations of production are continually changing, so the class structure is increasingly complex. But different class locations in these terms continue to have real consequences in terms of social consciousness, life chances and lifestyles, as we and others have extensively documented elsewhere (see Seccombe and Livingstone, 1999; Wright, 1996).

The fact remains that the majority of those born into the working-class in most advanced industrial societies remain in the working-class throughout their lives (Livingstone and Stowe, 2003) and our primary interest here is their knowledge acquisition processes. We must begin by registering the well-documented finding that those from working-class origins have been persistently underrepresented in higher education. Not only do those from higher class origins have a much greater likelihood of obtaining post-secondary degrees, but those currently in higher class positions are also more likely to continue to participate in further education courses and workshops. As Table 0.1 shows, Canadian corporate executives, professional employees and managers are much more likely to have university degrees than most other occupational classes while service workers and industrial workers are least likely; corporate executives are about ten times more likely to have a university degree than are industrial workers. Adult education is somewhat more evenly distributed between occupational classes. Surveys based on narrow definitions of formal course participation typically find much greater enrolment rates for professional and managerial employees than for workers (Arrowsmith and Oikawa, 2001:

35). Even when workshops of very short duration are included, as in Table 0.1, corporate executives, managers and professional employees are about twice as likely as industrial workers to have participated in the past year. Further analysis finds that unionized workers, who often have more bargaining power, tend to have higher participation rates in, and employer support for, further education courses than do non-union workers (Livingstone, 2002; Sawchuk, in press).

**Table 0.1: Occupational Class by Schooling, Further Education and Incidence of Informal Learning, Employed Labour Force, Canada, 1998**

Occupational Class	University Degree	Course or Workshop Past Year (%)	Employment-related Informal Learning (%)	Total Informal Learning (Hrs/week)
Corporate executives	70	71	98	17
Small employers	22	52	97	16
Self-employed	15	52	91	14
Managers	34	73	90	13
Professionals	40	67	92	15
Supervisors	12	63	87	14
Service workers	8	54	81	17
Industrial workers	4	33	83	17
Total (N=951)	17	56	86	16

Source: Livingstone (2002).

But the second vital point to recognize is that the distribution of the incidence of self-reported informal learning appears to be *quite equitable* regardless of occupational class, prior schooling or adult education participation. The more highly educated occupational classes are only marginally more likely to be involved in employment-related informal learning and no more likely at all to spend time doing informal learning generally. Around 90 percent of those in all occupational classes indicate involvement in employment-related informal learning and the average time devoted to informal learning generally is around fifteen hours per week in all classes. Service workers and industrial workers are just as actively involved in learning activities that they control themselves as are occupational classes with greater economic power.

Further analyses of the interrelations between work time and learning time find that full-time workers are somewhat more likely than part-time

workers to participate in further education courses but that the longer hours people are employed, the less time they tend to spend on job-related courses. However, there are generally positive associations between the amount of time that people spend in paid employment, household labours and community work and the time they spend in the respective types of work-related informal learning. The association between community volunteer work and community-work-related informal learning is much stronger than the relation between paid employment and job-related informal learning (see Livingstone, 2002: 38–40). These findings suggest that the greater degree of discretionary control one has to engage in the particular sphere of work, the closer the relation between work time and informal learning time. These findings are compatible with earlier research that discovered reciprocal effects between holding less supervised jobs and engaging in more intellectually demanding “leisure-time activities” such as hobbies and general interest reading (see Kohn and Schooler, 1983). But the survey results suggest that informal learning is now also pursued extensively by those holding more routine, highly supervised working-class jobs. Such research has probably only touched the tip of the iceberg of adult learning, especially the learning of working-class people. Our study tries to go deeper into this largely hidden dimension of working-class learning

### **Working-Class Underemployment**

Prior studies revealed that members of the active labour force have achieved rapid increases in their formal educational attainments and adult education participation rates, while also pursuing vast and increasing amounts of informal adult learning. By most reputable measures, the skill and knowledge requirements of the job structure have experienced much slower growth. It follows that, in overall terms, the cumulative employment-related knowledge and skills of the potential labour force probably now exceed the capacity of the current labour market to provide adequate numbers of corresponding jobs, a condition called *underemployment*.

For a comprehensive discussion of the multiple dimensions of underemployment see, for example, Livingstone, (1999a). Commonly recognized dimensions include: *structural unemployment*, *involuntary temporary employment*, *credential underemployment*, *performance underemployment* and *subjective underemployment*. The most relevant measures for our purposes focus on the employed labour force. Credential underemployment includes job holders who have attained at least one credential higher than is required for job entry; performance underemployment includes job holders whose achieved levels of skills and knowledge signifi-

cantly exceed the levels required to do their job, regardless of any entry credentials; and subjective underemployment includes those whose self-assessment is that they are overqualified for the jobs they have held. Many Canadian studies have documented the general existence of some of these dimensions of underemployment since the 1960s (e.g., Statistics Canada, 1999c; Tandan, 1969). The most recent estimates indicate that about 20 percent of the employed labour force now consider themselves to be subjectively underemployed, while around 30 percent have at least one credential higher than required for entry to their current job, and measures based on the general educational level required to perform the job suggest that as much as half of the labour force may have skill levels that exceed those actually required (see Livingstone, 2002).

Analyses of these underemployment measures by occupational class provides further insight into current employment-education matching for the employed labour force. The basic patterns are summarized in Table 0.2.

**Table 0.2: Incidence of Underemployment by Occupational Class, Employed Labour Force, Canada, 1998**

Occupational group	Self-assessment (%)	Credential gap* (%)	Performance gap (%)
Corporate executives*	2	9	17
Small employers	16	28	47
Self-employed	14	30	43
Managers	22	13	31
Professionals	9	16	38
Supervisors	20	30	70
Service workers	30	41	77
Industrial workers	20	38	47
Totals	20	28	53

Source: Livingstone (2002). N=951.

\*Data for Ontario from Livingstone, Hart and Davie (1999c).

The most consistent finding on all three measures is that corporate executives, who wield the most economic power, are least likely to be underemployed. Few consider themselves overqualified for their jobs and their incidence of underemployment on other measures is significantly lower than other occupational groupings. At the other extreme, service workers,

including mainly clerical and sales workers, appear to have the highest levels of underemployment on all job-specific measures. Nearly one-third of service workers report feeling overqualified for their jobs, about 40 percent hold a higher credential than the job currently requires for entry, and on a general educational development (GED) based performance measure around three-quarters have more formal education than actually needed to do their job. All occupational groups have lower levels of underemployment on self-assessment and self-reported credential criteria than on independent performance measures. There may be a number of group-specific reasons for these discrepancies.

For example, the proprietorial classes, including corporate executives, small employers and the self-employed are unlikely to perceive limits on the use of their skills since they can set their own working conditions. However, the performance gap measures are based on their much more diverse occupational categories rather than their proprietorial status. Managers, at the top end of the authority structure among waged and salaried employees, tend to have consistent levels of underemployment on all measures and relatively low levels on the more independent measures. While professionals tend to rely most strongly and directly on their high formal educational credentials for job entry and have accordingly low levels of subjective and credential underemployment, they do tend to have less control than managers do over the application of their skills in actual working conditions. Supervisors (mainly drawn from the working-class), service workers and industrial workers, at the bottom of the occupational status hierarchy, have the highest levels of underemployment on actual performance measures and the greatest discrepancies between self-rated and independent measures. This difference may reflect their more limited discretion to actually use the credentialed skills they needed for their jobs, but the overall orderings of results on each of these measures by occupational group are generally consistent with the prediction that those in lower positions in terms of economic power are more likely to be underemployed. Therefore, in spite of their relatively low levels of formal schooling, those in working-class jobs are still less likely than those in dominant class positions to be able to use their formal schooling on the job. The finding that working-class employees are just as likely as others to engage in informal learning activities – which are usually unrecognized and unrewarded by employers – only serves to accentuate the likely extent of working-class underemployment. Again, we will explore this in greater depth.

Most of those in the active labour force 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 different employment statuses and occupational classes. Extensive engagement in job-related learning even applies to the considerable numbers of the “underemployed,” who already have much more knowledge and skill than their jobs require. Working-class employees appear to be more likely to be underemployed than more dominant economic classes but no less likely to continue to engage in extensive informal learning activities.

### **Information Access in the Computer Era**

The end of the twentieth century is increasingly seen as the onset of an “information age,” largely due to the increasing proliferation of information technologies (IT) that purport to provide quicker and easier access to diverse forms of data, information and knowledge. The dissemination of IT in the form of personal computers and the Internet has been extraordinary in recent years. While less than 20 percent of Canadian homes owned a personal computer in 1989 (Lowe, 1992: 83), by 1997 the proportion had more than doubled and continued to grow rapidly from 45 percent of homes in 1998 to 55 percent in 2000 (Sciadas, 2002). It has been a mere decade since a publicly accessible electronic information exchange network, the Internet, was created but by 2001, 60 percent of all households had at least one member who used the Internet regularly either from home or another location (Statistics Canada, 2002). Most North American adults – including working-class adults – now have access to computers and the Internet (see Weis, 2001).

The impact of new technologies on knowledge acquisition has typically been wildly exaggerated (see Cuban, 1986; Livingstone, 1997b) but the combination of personal computers and the Internet provide a more interactive and dynamic mode of acquiring knowledge than any previous form of IT. The vast majority of Internet users indicate that it has already had a significant impact on their lives, mostly by making them more knowledgeable by providing access to various information sources, and not by just making them more frequent shoppers (Angus Reid, 2000).

Despite significant growth in access and use of computers in the households of the employed working-class, the diffusion of home computers has been extremely uneven across economic groups, with recent ethnographic research (e.g., Schön, Sanyal and Mitchell, 1999) indicating important new exclusionary effects among low-income communities. Statistically, about three-quarters of the households in the highest income quintile had computers in 1998, compared with less than 20 percent of those in the lowest quintile (Statistics Canada, 13 December, 1999) and this gap continues

to grow (Sciadas, 2002). This growing gap is the basis for justifiable social concerns about a “digital divide” among Canadians (Reddick, Boucher and Goseilliers, 2000) but general access and the capacity to use computers are much more widely distributed. Even in 1989, when less than a fifth of all households owned a computer, nearly half of the entire adult population was able to use a computer, and about one third had taken a computer course (Lowe, 1992: 71). A recent analysis based on in-depth interviews and ethnography analysis (Sawchuk 2003a) suggests that these basic access and use statistics tend to underrate working-class computer literacy activity by ignoring collective and informal dimensions of practice as well as exclusionary effects of dominant discourses of “learning.” Nevertheless, both the diffusion of home computers and the development of basic computer literacy have continued to increase rapidly (Angus Reid, 2000).

According to most indications, adult workers have also continued to acquire computer skills to a greater extent than they have had opportunities to apply them in paid workplaces. The General Social Survey (GSS) in Canada indicates that, by 1989, around one third of the labour force was using computers for some tasks in paid workplaces. By 1994 that proportion had increased to 48 percent (Lowe, 1996). However, according to the GSS, in 1989 – when 35 percent of Canadian workers were actually using computers in their jobs – 59 percent of workers had the ability to perform work-related computer applications; by 1994, when 48 percent of all workers used computers in their jobs, computer literacy had increased to 68 percent of the employed workforce (Lowe, 2000: 75). Similarly, while around 80 percent of adults now have some form of Internet access, net users are far more likely to say that they use it to acquire general knowledge, for entertainment, personal communications and financial transactions than to improve their job performance (Angus Reid, 2000; Dickinson and Sciadas, 1999). We will examine this discrepancy between knowledge acquisition and use on the job more closely in our case studies of the service and industrial workers who appear to experience it most frequently.

We certainly appear to be living in a “knowledge society” in terms of the accessibility of information from multiple sources, and in a “learning society” in terms of the continuing learning efforts of most workers. Although extensive underemployment 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. There is considerable general evidence that we now have an active life-long learning culture in the Canadian labour force, but one that seems to

be insufficiently recognized in both dominant discourse and in many paid workplaces. With these general observations as a backdrop, we can now introduce our own site-based research findings, which are intended to shed further light on the specific processes involved in working-class learning from the standpoint of the working-class.

### **Sector-Based Research Sites**

Employment organizations differ greatly in their general managerial practices and in their related approaches to worker training and use of worker knowledge. In comparative historical terms, increasing technical and social divisions of labour have required more planned coordination of labour processes and those organizations that have more effectively integrated the specialized knowledges of their workforces have tended to be most successful economically. Economic historians such as William Lazonick (1991) have suggested a progression of dominant business organizational forms over the past century, from the origins of “proprietary capitalism” in Britain through the “managerial capitalism” that emerged most distinctly in the United States beginning in the early 1900s, to the “collective capitalism” that can be most directly associated with Japanese firms at the close of the twentieth century. This progression can be understood pivotally in terms of the increasing extent of integration of the knowledge and skills of the labour forces. The organizations with the greatest capacity for innovation and quick response to environmental change are now generally considered to be those that invest most in developing employee skills and give operative workers most discretion in using them. The popular notion of the “learning organization” and knowledge-intensive work, while operative in niche markets for specific periods (e.g., Cohen and Sproull, 1996; Dixon, 1992; Frenkel, Korczynski, Shire and Tam, 1999), generally idealizes and exaggerates this tendency. But a central concern for management in dominant firms now involves attempts to consolidate and control knowledge production – that is, learning – and to gain privileged access to workers’ creativity and capacities (through loyalty and commitment). Different organizational forms and managerial strategies can co-exist between sectors and firms, and even in some companies at the same time. It follows that different economic sectors, types of firms and organizational strategies of management may be related to different tendencies in worker-learning strategies.

Lazonick (1991) demonstrates the “myth of the market economy,” specifically that leading firms tend to subvert open competition and free-market determination to achieve economic success. He shows that, in fact, the internalization, integration and cooperative coordination of production,

distribution and exchange processes (within and between firms) leads to more advantageous capital accumulation and sustained economic survival and growth. Successful capitalist enterprises use these collaborative strategies as a means of obtaining privileged access to the “commodities” of human creativity and learning at below market value. Lazonick (1991: 88–89) summarizes the logic thus:

When faced with the international challenge, the substantial productive resources that the dominant organization has at its disposal enables it to choose from two broad, and very distinct, competitive strategies – one innovative and the other adaptive. The innovative strategy is to plan, invest in, and create more powerful organizational and technological capabilities, perhaps coordinating the organization’s strategy with privileged access to resources provided by the state. Alternatively, the adaptive strategy is to try to compete on the basis of productive capabilities inherited from the past.... In the face of competitors who are actively developing and utilizing their productive resources, the economic viability of the adaptive strategy may be prolonged by degrading product quality and by demanding longer harder work as well as pay concessions from employees. Depending on the extent of its prior competitive advantage, the productive capabilities of its competitors, the bargaining power and mobility of its employees, the quality requirements and brand loyalty of its customers, and the serviceability of its plant and equipment, the old leader may be able to make adequate profits for a period of time. In the long run, however, the once-dominant organization will eventually reach the limits of the adaptive strategy as it loses [privileged access to] productive employees and customers, as well as its productive capital base.

Such analyses as Lazonick’s, while insightful in terms of organizational strategies, have been conducted largely from managerial standpoints and pay little comparative attention to differences in worker responses. The general strength and strategic responses of organized labour in unionized employment sites may be equally important to understanding organizational performance generally (cf. Mishel and Voos, 1992) and are certainly important mediating factors in comprehending the provision of employment-related learning opportunities for workers (e.g., Doeringer and Piore, 1971). Labour union approaches to promoting education and training programs may encourage worker learning even under the most regressive adaptive managerial regimes.

Our process of site selection for this research began with a concern to ensure that the sites represented a wide range of employment organizations and worker learning contexts. We therefore decided to focus on sectors of the economy with different employment trends and wage levels,

innovative or adaptive managerial practices, union strength and training programs. As Table 0.3 summarizes, the basic industry profiles for the five sectors we chose differed quite widely on all of these features when we began our study in 1994–95.

**Table 0.3: Organizational Dimensions of Employment Sites**

Site	Wage Level*	Training	Managerial Practice	Employment	Union Strength
Auto	high	high	innovative/adaptive	down	very strong
Chemical	high	high	innovative	up	strong
College	medium/high	stratified	adaptive/innovative	down	moderate
Small parts	medium /low	low	adaptive	contingent	weak
Garment	low/medium	low	adaptive	contingent	very weak

**\*Note:** “Wage Level” is defined relative to other sectoral sites in our study; “Training Policy” is defined by the existence of contract language directed specifically towards workers at the level of operative; “Managerial Practices” are based on policy statements by company, worker interviews and partial ethnographies; employment trends are based on industry statistics for the 1990–95 period; estimates of union strength are based on the subjective views of several independent observers.

The automotive industry had high established wage levels and fairly stable general employment levels. Union strength was significant with large concentrations of workers in a highly strategic industry. Managerial practices have been largely adaptive variations of neo-Taylorism through “lean production” but mixed with some innovative initiatives to nurture training in relation to new technology. An extensive array of worker education programs has been developed under pressure from a strong unionized workforce as well as increased global competition. The chemical industry was generally characterized by innovative managerial practices and relatively high commitment to worker training programs, as well as continuing employment growth, high wages and strong unions benefiting from cooperative strategies. Public sector service organizations have experienced pronounced employment reductions and intermediate wage levels. Managerial practices have been generally mixed with some innovative training policies focused mainly on managerial and professional employees. Union locals are typically of moderate strength bringing together fairly large numbers of workers located in diverse units. Small auto parts manufacturing firms have witnessed widely fluctuating employment patterns dependent on the needs of the larger firms they supply, with gener-

ally lower wages as well as more adaptive managerial practices and unions, where they existed, with quite limited bargaining power. There has consequently been little commitment to sustained training programs. Finally, the garment sector underwent major restructuring and fragmentation. Managerial practices were mainly adaptive and unions were seriously weakened by many factory closures and increasing reliance home-working and sub-contracting. There were widely fluctuating employment levels and generally very low wage levels. Little commitment to work-based training programs was evident in the sector.

While we were committed to exploring a range of employment sites, the support of labour unions to provide effective access to a wide range of workers within each of these sectors was central in determining specific site selection. Our research project began with the active participation of three prominent labour educators (Mike Hersh, D'Arcy Martin and Jennifer Stephen) and relied heavily on their connections with specific unions and labour federations which then provided advice on the selection of appropriate employment sites and access to the leaders of union locals. The specific labour unions that provided support were:

- Automotive Sector: Canadian Auto Workers (*CAW*)
- Chemical Sector: Communication, Energy and Paper Workers (*CEP*)
- Public Service Sector: Ontario Public Service Employees Union (*OPSEU*)
- Small Parts Sector: United Steel Workers of America (*USWA*)
- Garment Sector: International Ladies Garment Workers Union (*ILGWU*) and United Needletrades, Industrial and Textile Employees (*UNITE*)

The actual method of the field research at each site is discussed in Chapter 1. It is most important to note that the specific sites reflect quite closely the general features of their respective sectors. Most pertinently, the stronger union locals in the higher wage sectors have typically been able to negotiate more extensive training programs and generally (though not exclusively) somewhat greater opportunity to develop and apply working-class knowledge forms.

In the automotive assembly plant, economic conditions are likely to produce relatively positive effects in terms of workers' learning practices. Industry Canada pointed out in its sectoral framework document during the period of our research (Automotive Industry Sector Competitive Framework, 1997) that the automotive assembly sector was in a "reasonable position," though it remained dependent on trade/tariff policy and the general economic environment which have now turned sour for workers in

Canada. But this mature sector, with a highly developed and innovative unionism (Livingstone and Roth, 1997) partially stabilized employment levels through the late 1980s and through much of the 1990s while production has steadily increased. There has been, for example, a large increase in unit production in the last few years, both across the industry and in the auto plant we researched. However, employment levels at this plant tell a different story. As the site chapter details, since 1984 – with sell-offs of a major section of the plant included – employment levels have dropped by almost 50 percent. Managerial practices have been “innovative” in the past partly because of organizational action by the union. It may be that the company has now adopted more adaptive strategies and thus, according to Lazonick’s form of analysis, is “compet[ing] on the basis of productive capabilities inherited from the past” (1991: 88–89). In any case, through some combination of innovative and adaptive strategies, the plant, the firm and the entire auto assembly sector have continued to express a relatively strong commitment to worker training programs.

Workers at the chemical factory appear to be in a fairly advantageous position to engage in effective workplace learning. Their company is a relatively large, transnational market leader that consistently ranks in the top 200 net sales in the *Financial Post* indices and exhibits strong employment growth and strong capital investment. According to industry profiles, the chemical sector in Canada has weathered the 1980s and 1990s with relative ease, losing some jobs but maintaining strong overall growth in GDP, efficiency (GDP/employee) and capital investment (Industry Canada, 1997a). As Industry Canada notes, the sector is in fact poised for further growth should domestic conditions allow. According to Turner and Hadfield (1994), this growth has already been initiated by an invigorated worker-centred quality approach which stresses the centrality of continuous worker training.

The public sector union, a college staff union based at a community college, represents an organizational form that appears to have placed considerable stress on forms of innovative strategy (e.g., “Participatory Management Program;” Employee Development Centres and the “Worker-as-Educator” initiatives). But public sector economic fortunes are directly tied to the general political climate and fiscal policies of governments. With the rise of an ambitious right-wing provincial government in Ontario, financial conditions seemed to change almost overnight. As we document in the site chapter, between the 1995–96 and 1996–97 fiscal years alone, the total provincial funding to Ontario colleges dropped enormously. As workers at the site outline, suddenly the college was in a state of severe contraction, labour adjustment and “doing more with less.” In

this context, any innovative strategies the administration/management had entertained in the past gave way to adaptive ones focused on downsizing, work intensification, multi-tasking, “bumping” and reorganization issues. While such educational institutions are in the “business of training,” both organizational commitment to staff training and the discretionary control by lower-level workers has generally tended to decline in such situations.

The small auto parts plant, our example of light manufacturing, is part of a privately-owned firm with several complementary units located in the same region, each with a mix of continuous run and batch production lines using largely outdated technologies. In this particular plant the company’s investments are finely balanced, requiring it to make the most out of only one shift, overtime and work intensification mixed with periodic lay-offs and re-hiring based on (just-in-time) customer orders. Employment in the auto parts sector almost doubled between 1980 and 1995. As in the chemical industry, there was massive capital investment over the same period and steadily increased productivity (Industry Canada Report, 1997b). These conditions appeared relatively promising for innovative management and worker learning. However, there has since been a massive convergence, with large producers gobbling up smaller ones who because of increasing costs in the areas of technological upgrading, product development, greater quality assurance and warranty responsibility, can barely afford to operate. In addition, with auto parts manufacturers now operating globally, small Canadian firms increasingly face the threat of international suppliers undercutting their deals with the large automakers. Small regional parts suppliers, with little capital in comparison to the global giants of the sector, are almost compelled to use adaptive strategies: that is, work intensification and demands for wage concessions. Accordingly, the opportunities for development of training programs linked to workers’ learning capacities are likely to be quite limited.

Finally, the garment industry has faced the most difficult economic circumstances of virtually any sector. While conditions vary drastically between the larger men’s apparel factories (whose managerial practices and worker learning issues are very much like those of the auto parts factory workers above), the smaller contract shops and the growing numbers of home-workers, overall this is a sector that seems to have institutionalized a range of “cut-throat,” adaptive strategies while ushering in the rebirth of sweat-shops. As the site chapter points out, the sector was ravaged by liberalized trade policies that saw garment sector employment drop by more than one third in the early 1990’s. With the exception of basic and competitively essential technological changes such as CAD/CAM in the men’s apparel factories, the political-economic climate has made the innovative

managerial strategies seen in some of the other workplaces impossible here – most obviously so in the case of home-workers. The effect on workers’ learning is likely to be quite negative, with the influence of low wages and low managerial commitment to training programs combined with the spatial fragmentation and social divisions of the labour force all serving to discourage employment-related worker learning. While factory employment levels may have increased with comparative low-wage access to the U.S. market in the wake of the continental free trade agreement, there is little indication of more innovative training strategies.

These structural and formal program features provide criteria for selection of these industrial sectors and specific employment sites, and for offering corresponding predictions about workers’ actual learning practices in relation to their paid employment. But many other factors are potentially related to workers’ learning. Differences in age, sex, ethnicity, technical skill competencies and prior educational attainments may all influence the incidence, content or effectiveness of learning activities. At each research site, we have conducted in-depth interviews with key union informants and with random selections of workers with all of these background features. The findings discussed in the following chapters are intended to be exploratory and illustrative rather than representative of workers generally. But, at the very least, the common patterns and some of the differences suggested here should both provoke further serious research on workers’ own learning activities and clearly demonstrate that much of workers’ knowledge, skill and continuing learning practices do, in fact, represent hidden dimensions of the knowledge society.

## **Chapter Outlines**

The remainder of the book is organized in three parts. In Part I, we contextualize our method and conceptual approach to studying workers’ knowledge and learning practices. Chapter 1 documents how we went about our research by describing what we call the “hard way”: a type of participatory action research intended to fit the traditions, rhythms and distinct cultures of workers and their unions. We detail our experiences and provide a running, reflexive critique. By the end of this chapter we arrive at a critical understanding of the importance of alignment with and commitment to the standpoint of workers. Next we suggest an explanatory perspective on learning that is suited to understanding the practices of subordinate groups such as the working-class. Our critique of “deficit theories” of working-class culture and learning capacity is elaborated, followed by a critical review of existing adult learning theories and the pres-

entation of a cultural historical activity theory approach which orients much of our analysis.

The case studies in Part II are the core of the book. These five chapters all originated as site reports on our interviews and observations at the respective sites. After the reports were given back to the members in each union local, they were further developed based on feedback from the local. The different thematic foci of these chapters reflect the central concerns raised by the respondents at each site.

In Part III, we offer some comparisons between these groups of workers. Chapter 8 presents an exploration of household and community learning, practices that are rarely if ever discussed in research literature on learning. This chapter sets the groundwork for further research in hidden dimensions of the knowledge society, and sums up our experiences with interviewees in the process. In the final chapter, we summarize and compare key findings across all chapters and provide a set of recommendations for progressive social research and social action by groups interested in fully recognizing and finding relevant ways to apply the knowledge of working people to build a better workplace and a better world in the new millennium.

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## Notes

- <sup>1</sup> See, for example, *Information Highway Advisory Council*, 1995 (vii, 57); *Advisory Committee on the Changing Workplace*, 1997 (5–6); *Speech from the Throne to Open the Second Session of the Thirty-Sixth Parliament of Canada*, 2000 (1–4).
2. For conceptualization of the multiple dimensions of underemployment and a review of mainly survey-based studies of education-job requirement matching in Canada and the United States, see Livingstone (1999).
3. For a fuller discussion of definitions of informal learning, recent general studies and continuing research challenges, see Livingstone (2001).