Articles

RE-EXPLORING THE ICEBERGS OF ADULT LEARNING: COMPARATIVE FINDINGS OF THE 1998 AND 2004 CANADIAN SURVEYS OF FORMAL AND INFORMAL LEARNING PRACTICES[1]

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Abstract

This paper summarizes the findings of the 2004 Work and Lifelong Learning (WALL) survey of self-reported further education and intentional informal learning activities of Canadian adults (N=9,063) and compares them with the results of the 1998 New Approaches to Lifelong Learning (NALL) survey on the subject, as well as with other Canadian surveys of further education. Particular attention is given to informal learning since there have been no other extensive Canadian surveys to date. After distinguishing forms of adult learning, major findings on current participation in further education courses and intentional informal learning activities related to employment, housework, community volunteer work, and general interests are presented. Over 40% of adults are participating in further education annually, but vastly more (over 90%) are engaged in intentional informal learning activities regardless of prior schooling or current further education involvement. Participation in further education courses remains high until near retirement from employment, when it declines rapidly, but engagement in intentional informal learning remains high into old age. Considering Canadian adults' very high levels of schooling and extensive continuing adult learning, there now may be significant underutilization of the learning capacities of the labour force.

1 The 2004 survey data reported here were gathered as part of the research network on The Changing Nature of Work and Lifelong Learning (WALL) funded by the Social Sciences and Humanities Research Council (SSHRC) from 2003 through 2007 as a Major Collaborative Research Initiative on the New Economy (Project No. 512-2002-1011). This network is composed of the national survey and 12 case study projects. I thank the members of the WALL network for assistance with questionnaire design; the Institute for Social Research (ISR) at York University for administering the survey; David Northrup of ISR for advice on its development; Doug Hart, Milosh Raykov, and Antonie Scholtz for conducting the computer-based analyses; and Rhonda Sussman for text formatting. I am also grateful for the comments of anonymous CJSAE reviewers. Further information about WALL, this national survey, and the related case studies may be found at the network Web site: www.wallnetwork.ca. Detailed information on the prior NALL survey may also be found through this site or www.nall.ca.

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Résumé

Cet article fait la synthèse des résultats du sondage mené par le réseau Work and Lifelong Learning *(WALL) en 2004 sur le perfectionnement professionnel déclaré et les activités intentionnelles de formation informelle auprès de 9063 adultes canadiens et les compare avec les résultats de celui du projet NALL (*New Approaches to Lifelong Learning, *nouvelles approches en apprentissage tout au long de la vie), mené en 1998, et avec d'autres sondages menés au Canada sur le même sujet. L'article s'attarde à l'apprentissage informel, car il n'existe aucun autre sondage sur le sujet au Canada. Il fait d'abord état des différentes formes d'éducation des adultes, puis présente les dernières recherches sur la formation continue et sur l'apprentissage informel intentionnel lié à l'emploi, au travail domestique, au bénévolat et aux activités d'intérêt général. Plus de 40 p. 100 des adultes participent à des activités de formation continue tout au long de l'année, mais encore plus (soit plus de 90 p. 100) participent à des activités d'apprentissage non formel de façon intentionnelle, et ce sans considération du niveau de scolarité ou d'une implication dans un programme de formation continue. La participation à des activités de formation continue demeure élevée jusqu'à la retraite, puis décroît de façon drastique. Toutefois, la participation intentionnelle à des activités d'apprentissage informel se maintient même chez les personnes âgées. Considérant le niveau de scolarité élevé de la population adulte canadienne et le haut taux de participation dans des activités de formation continue, il y a peut-être une sous-utilisation significative des capacités d'apprentissage de la population active.*

Introduction

"Lifelong learning" has become a mantra invoked to address changing conditions of work and a widening array of other challenges in the contemporary world, but precious little research attention has been devoted to documenting this phenomenon. This paper is a sequel to one published in *CJSAE* in 1999 (Livingstone, 1999) reporting on the findings of the first Canadian survey of formal and informal learning practices in 1998. That survey was conducted by the New Approaches to Lifelong Learning research network and hereafter is called the NALL survey. The present paper reports and compares findings from the 2004 Work and Lifelong Learning (WALL) survey of the formal and informal learning activities of Canadian adults. Both the NALL and WALL surveys address adults' formal educational attainments, enrolment in further education courses, and participation in informal learning activities related to paid and unpaid work and general interests, as well as various questions about working conditions and social background. The results offer some empirical benchmarks for more substantive discussion of dimensions of and trends in lifelong learning.

Before the survey findings are presented, a few conceptual distinctions should be noted. Learning is a continual process. Any identification of forms of learning is a somewhat arbitrary exercise. But several basic forms of learning may be roughly distinguished in terms of the primacy of teachers and the organization of the body of knowledge to be

learned.[2] In this study, these basic forms are *formal education*, *further education courses*, *informal education*, and *self- directed informal learning*. These forms may be defined as follows. Education involves the presence of a teacher—someone presumed to have greater knowledge—and a learner or learners to be instructed by said teacher. When a teacher has the authority to direct designated learners to learn a curriculum taken from a pre-established body of knowledge, the form of learning is formal education or schooling.[3] When learners opt to acquire further knowledge or skill beyond schooling by studying voluntarily with a teacher who assists their self-determined interests by using an organized curriculum, the form of learning is further education. When mentors instruct novices in spontaneous learning situations without sustained reference to an intentionally organized body of knowledge, such as guiding them in acquiring job skills or in community development activities, the form of learning is informal education. Finally, all other forms of intentional learning in which we engage either individually or collectively without direct reliance on a teacher or mentor and an externally-organized curriculum can be termed self-directed or collective informal learning.

Such distinctions continue to be actively debated and also contrasted with more implicit and reactive forms of learning (see Smith, 2000) but for our purposes here we will assume: (1) that formal and intentional informal learning are best understood as a continuum with interplay and overlap between different learning activities[4] (Colley, Hodkinson, & Malcolm, 2003); (2) that more informal learning activities have tended to be ignored or devalued by authorities and researchers (Livingstone & Sawchuk, 2004); and (3) that survey methods that necessarily rely on respondents' self-reports can only "scratch the surface" of informal learning by documenting intentional informal education and self-directed learning that respondents recognize as leading to new knowledge (Livingstone, 2005). To study informal learning using the sample survey techniques normally required for representative readings of human behaviour, we have to focus on those things that people can identify for themselves as deliberate learning activities beyond prescribed curricula and without externally-authorized instructors. Incidental informal learning is increasingly recognized as substantial and significant (e.g., Marsick & Watkins, 2001), and WALL case studies, such as those reported in other papers in this issue, attempt to identify more tacit forms of informal learning through more in-depth interviewing or other more sensitive methods. But it should be stressed at the outset that the focus of short surveys of adult informal learning is necessarily on self-reported intentional learning that ignores the depths of tacit, incidental, and unintended learning. In addition, this report will focus on adults' post-compulsory formal education and on those over age 18, because this age was a practical selection criterion for both national survey samples.

The origins and limitations of prior research on informal learning were reviewed in the report on the 1998 survey (Livingstone, 1999). In recent years, other preliminary surveys of informal learning have been conducted, such as a few specific questions on the

2 For a fuller discussion of these distinctions and review of other relevant surveys, see Livingstone (2005).

3 The level of formal educational attainment of respondents is considered in the following discussion but the focus is on these other forms of adult learning.

4 From this perspective the commonly used term "non-formal education" becomes illogical or misleading as it was intended to refer mainly to further education courses. See Colley, Hodkinson, and Malcolm (2003) for further discussion.

Adult Education and Training Survey (*AETS*) of 2003 in Canada (Peters, 2004), similar questions on the *Adult Literacy and Life Skills Survey* (*ALLS*) of 2003 in Canada and several other countries (Organisation for Economic Co-operation and Development [OECD] & Statistics Canada, 2005), and a brief survey, also in 2003, of preferred informal learning contexts among countries of the European Union (European Centre for the Development of Vocational Training, 2003). Again, we remain under no illusion that such survey questionnaires are capable of uncovering deeper levels of either individual or collective knowledge gained in informal learning practices. But, together, the 1998 and 2004 surveys offer fuller empirical evidence than prior research does of basic patterns of continuity and change in dimensions of self-reported intentional informal learning, their associations with levels of formal education and further education, and the influence of social background features on these aspects of lifelong learning activities.

The 1998 and 2004 Canadian Surveys of Formal and Informal Learning Practices

The 1998 NALL survey of adults' current learning was the first large-scale survey in this country and the most extensive one anywhere to attend to the array of adults' self-reported learning activities, including not only schooling and further education courses but also informal learning. The 1998 survey included 1,562 Canadian adults. Detailed information on the NALL survey was reported in Livingstone (1999) and is now available through the WALL Web site (see footnote 1). Given much greater funding, the 2004 WALL survey, conducted between October 2003 and July 2004, includes 9,063 adults aged 18 and over, who speak English or French, and reside in a private home (not old age/group homes/penal or educational institutions) with a telephone. All provinces and households and individuals within households were given an equal chance of selection using random digit dialling. The average telephone interview time was over 30 minutes. Again, the limits of a short self-report survey to comprehend the extent of informal learning should be registered. Efforts to maximize response rate included extensive call-backs at different times of day when necessary: 51% of the interviews were completed within four calls, 77% within nine calls, and 94% in 19 or fewer calls, while the final 6% took over 20 calls. The general response rate was 51% of the eligible households—58% if we exclude the households whose eligibility was not determined. The NALL survey was identical in most respects, interview time and response patterns were very similar, and the response rate was slightly higher at 60%. The data presented here are weighted by known population characteristics of age, sex, and educational attainment to ensure profiles are representative for Canada as a whole. A summary of the basic 2004 findings follows, with comparisons to the 1998 NALL survey as well as to other studies where relevant.[5] It should be noted at the outset that, while there may appear to be decreases in plans to participate in further education as well as various specific informal learning topics between 1998 and 2004, there is no statistically significant difference in the two surveys between actual participation rates in further education or the four general types of informal learning, nor general differences in the incidence patterns of

5 Both surveys were administered by the Institute for Social Research (ISR) at York University. The ISR technical report on the WALL survey sample, interview schedule, codebook, and summary report of basic findings (Livingstone & Scholtz, 2006) are all available at www.wallnetwork.ca. Similar information for the NALL survey may be found at www.nall.ca. All statistical differences reported in the text are significant at the .01 level or greater level of confidence using Z tests for two independent proportions, except for Tables 2 and 7 which used the McNemar test for dependent proportions.

respective informal learning topics. Such apparent specific differences may be artifacts of changed question order, with informal learning items appearing first in the NALL survey and further education items appearing first in the WALL survey.

The survey findings reported in the following sections are drawn mainly from the NALL and WALL surveys. These are the only known Canadian surveys of adult learning to date that deal extensively with both further education and informal learning. Statistics Canada's *Adult Education and Training Survey* (AETS) is the major source of survey data on further education in general during the 1990s, but has since been restricted to job training courses and programs, while also beginning to ask a few questions about adults' informal learning (see Peters, 2004). Brief references will also be made to the 1994 *International Adult Literacy Survey* (IALS) and the follow-up 2003 *Adult Literacy and Life Skills Survey* (ALLS), both conducted by the OECD and Statistics Canada (2005). These surveys included people as young as 16, used more expansive criteria of participation in further education, and added a few items on informal learning in 2003.

Findings

The presentation of findings begins with a profile of the current formal educational attainment of Canadian adults, followed by a profile of participation in further education and analysis of the relation between schooling and further education. Most of the remainder of the text focuses on intentional informal learning, in terms of participation patterns and relations with other aspects of learning and with paid and unpaid work. We conclude with findings on the relations between age, occupational class, and adult learning, as well as an assessment of the correspondence between employed adults' learning attainments and their job requirements.

Formal Education

The NALL and WALL surveys confirm that Canada is one of the most highly schooled societies in the world. Participation in post-secondary formal education has expanded rapidly over the past two generations.[6] The proportion of the 25 to 34 age cohort that had completed a university degree was less than 4% in 1961. By 2001, the completion rate had increased to 28%. The increase in completion of community college diplomas was also rapid, with rates rising from similar levels (e.g., 4%) in 1960 to 21% in 2001. In addition, 12% were qualified in a trade through some form of apprenticeship in 2001. So, by 2001, over 60% of Canadian adults aged 25 to 34 had credentials beyond the secondary level. Of all the advanced market economies, Canada had attained the highest cumulative level of university and college completions by 2002, with 21% of those in the "working-age population" from 25 to 64 having a university degree and 22% having a college credential. Only the U.S. had significantly higher cumulative university completion rates (29%) but much lower college completion rates. From a small minority in the 1960s, a growing majority of young Canadians are now completing post-secondary schooling. The rapid expansion of post-secondary formal education is a very important contextual feature for understanding the growth of further education.

6 The following completion statistics are drawn primarily from Statistics Canada and Council of Ministers of Education Canada (2003, 2005) as well as Livingstone (2002).

Further Education

Participation in all types of further education also expanded rapidly from about 4% in 1961 to 35% in the early the 1990s (Livingstone, 2002). Statistics Canada's AETS series is the major source of evidence since the late 1980s. The AETS report for the 1990s found that there was some decline in participation rates in the late 1990s (Statistics Canada, 2001a). This apparent decline may be largely an artifact of AETS excluding those young adults who prolonged or returned to schooling in the face of the poor job markets of the mid-1990s. As noted above, the subsequent AETS in 2003 restricted itself to job training courses and programs and found that the incidence of such courses for the non-student, working-age population increased from 29% to 35% from 1997 to 2003 (Peters, 2004). The 2003 ALLS, including people as young as 16, found that the more general participation rate was about 49% in 2003, increasing from 36% in the 1994 IALS survey. The NALL and WALL surveys asked about adult participation in all types of courses in both 1998 and 2004. As summarized in Table 1, these surveys, using similar sample criteria to AETS, found further education rates for the 18 and over population increasing to over 40% by 2004. The available evidence suggests that Canadian further education participation has grown over the past two generations to more than 10 times the 1961 rate. But participation remains significantly lower than that of most Nordic countries with more fully developed institutional provisions (Desjardins, Rubenson, & Milana, 2006; Statistics Canada, 2001b.).

Table 1. Participation in Any Further Education Courses in Past Year, All Respondents, 1998–2004

Year	Taken any further education (including current students) (%)	Taken any further education (AETS)* (%)	N
1998	43	40	1,565
2004	45	42	9,026

Sources: NALL Survey, 1998; WALL Survey, 2004.
*Note: This is the measure used by Statistics Canada in the AETS up to 1997. This indicator excludes full-time students under 20 years of age in high school diploma programs or under 25 years of age in post-secondary programs unless their education is supported financially by an employer (Statistics Canada, 2001a).

Schooling and Further Education

The most consistent finding in research on education has been the strong association between formal schooling and participation in further education. Table 2 once again confirms that these two forms of education continue to be mutually reinforcing.

Table 2. Participation in Further Education by Schooling, 1998–2004

Schooling	Taken further education course in past year (%)		Plan to take course (%)	
	1998	2004	1998	2004
No diploma	18	23	25	20
High school diploma	53	48	58	44
Community college	58	52	61	49
University degree	70	63	69	57
Total	43	45	49	41
N	1,548	8,863	1,534	8,726

Sources: NALL Survey, 1998; WALL Survey, 2004.

With increasing educational attainment, the likelihood of participating in further education courses and the likelihood of planning to continue to participate increase. Although both forms have made huge aggregate gains since 1960 and the participation gap in further education may be narrowing, participation still tends to reproduce prior differences in educational attainments, with university graduates about three times as likely to participate as high school dropouts. The Canadian adult education system remains beset by accessibility barriers, most notably inconvenient times and places as well as the high cost of courses, especially for those with limited formal education (Livingstone, Raykov, & Stowe, 2002; Myers & de Broucker, 2006).

With regard to inferences, based on recent literacy surveys, that over a third of Canadian adults have inadequate literacy skills to cope with the demands of a knowledge-based economy (OECD & Statistics Canada, 2005), both NALL and WALL surveys found that less than a quarter of adults rate their reading skills as only moderate or poor. More significantly, the vast majority of these people rate themselves as at least adequately qualified for available jobs, and they are increasingly participating in further education.

In summary, in this most highly schooled society, over 40% of adults are now participating in further education courses annually and are planning to take further courses in the near future. But millions more who would like to participate continue to face substantial barriers (Livingstone & Myers, 2007).

Informal Learning

The 1998 NALL survey built most directly on the research on self-directed learning led by Allen Tough (1971) and it drew heavily on the interview schedules developed by Tough and his colleagues and used by Penland (1977) in a U.S national survey. Tough's pioneering case studies of individuals' self-directed informal learning found that adult learners generally were devoting about 10 times as much time to self-directed informal learning projects as they were to further education courses—hence the relevance of the iceberg metaphor for adult learning (Tough, 1978). The 1998 NALL survey was distinctive

in probing informal learning related to different forms of work (i.e., paid employment, housework, community volunteer work) as well as general interest-based informal learning. Respondents were asked if they learned informally over the past year about several topics in relation to respective types of work or to general interests. Again, responses refer to self-reported intentional informal learning. The general interest topics closely paralleled those used by Tough, with the notable addition of computer learning. The work-related learning topics were generated through review of prior case studies of paid and unpaid work as well as by NALL pilot studies. The limited survey administration time allowed only brief responses to general pre-coded topics. The 2004 WALL survey repeated the same basic set of questions. The comparative findings are summarized here, first for employment-based informal learning, then for other unpaid work and general interest informal learning, and finally for informal learning overall. Once more, the reader is reminded that the survey addresses intentional informal education and self-directed informal learning while saying nothing about unintentional informal learning.

Employment-related informal learning.

The vast majority of job training has been found to be done informally through the mentoring of more experienced co-workers and relatively little through formal courses (Betcherman, McMullen, & Davidman, 1998; Center for Workforce Development, 1998). Table 3 summarizes employed respondents' views in the NALL and WALL surveys on the most important source of their specific job knowledge.

Table 3. Most Important Source of Job-specific Knowledge, Employed Workers, 1998–2004

Sources of job-specific knowledge	1998 (%)	2004 (%)
Own independent efforts	44	43
Co-workers	29	28
Employer training	16	16
Combination	12	13
N	864	5,555

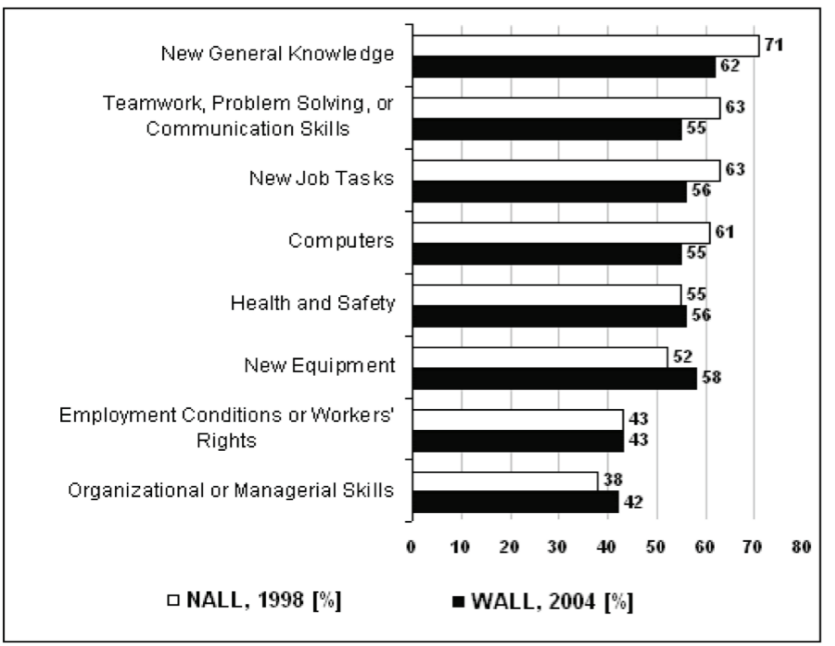
Sources: NALL Survey, 1998; WALL Survey, 2004.

The results for both 1998 and 2004 confirm that workers' informal learning is far more likely than employer training programs to be regarded as the most important source of knowledge to do one's job. While over 40% of workers give priority to their own independent efforts, over a quarter recognize co-workers as the major source of their specific job knowledge, and others see this mentoring as most important in combination with themselves; only about 15% regard employer training programs as most important. There is now burgeoning research literature on informal workplace learning, mostly case studies, which may provide useful guides for future larger-scale inquiries (e.g., Billett, 2001; Garrick, 1998; Rainbird, Fuller, & Munro, 2004)

Both the 2003 AETS and the 2004 WALL survey asked employed workers about the frequency of mentoring. Both found that around a third of all workers had sought advice within the past month from other knowledgeable colleagues to develop their job skills—32% in AETS and 39% in WALL—using exactly the same question.[7] These responses at least hint at the general importance of mentoring, or informal education, to employment-related learning.

Partly informed by the 1998 NALL survey, the 2003 AETS asked a specific set of yes-no questions about job-related informal learning activities. The overall finding was that about 80% of all employed workers had engaged in some of these job-related informal learning activities in the past month (Peters, 2004, pp. 16, 32). The NALL and WALL surveys using yes-no items referring to a wider array of learning topics found that over 85% were engaged in such informal learning in the past year. Employment-related informal learning topics used in NALL and WALL are summarized in Figure 1.[8] The learning frequencies for the respective topics were very similar in 1998 and 2004, with over half of all workers indicating informal learning about new general knowledge, new job tasks, computers, general problem solving, and health and safety.

Figure 1. Topics of Job-related Informal Learning, Employed Labour Force Participating in Informal Learning, 1998–2004



Sources: NALL Survey, 1998 (N=940); WALL Survey, 2004 (N=5,428).

7 The AETS figure is computed from the original data file. A higher figure is quoted in Peters (2004, p. 17) with reference *only* to those who reported participating in specific types of self-directed informal job-related learning.

8 A few additional topics were added to the 2004 WALL items on job-related informal learning, largely for comparison to similar items in unpaid work-based learning.

Informal learning related to unpaid work and general interest

Informal learning related to unpaid activities is even more difficult to estimate than employment-related learning because these activities themselves are typically less well-defined than paid work. Research on job-related informal learning remains underdeveloped, but study of informal learning related to housework and volunteer work has scarcely begun (see Eichler, 2005; Schugurensky & Mündel, 2005). The NALL and WALL surveys were the first to examine informal learning related to housework and volunteer work and to do so in conjunction with case studies. In each survey, respondents who indicated they did housework or volunteer work were asked whether they engaged in any of a variety of related informal learning topics (see Figures 2 and 3), and then asked to estimate the amount of time they devoted to these learning activities on a weekly basis. All respondents were also asked whether they engaged in any other informal learning in their general interest pursuits (such as sports or leisure) not directly related to either paid or unpaid work (see Figure 4). The summary findings on participation rates for all four areas of intentional informal learning appear in Table 4.

Table 4. Participation Rates in Informal Learning Related to Paid and Unpaid Activities, Eligible Respondents*, 1998–2004

	Area of Informal Learning							
	Paid work		Housework		Volunteer work		General interest	
	1998	2004	1998	2004	1998	2004	1998	2004
	%	%	%	%	%	%	%	%
Male	86	88	80	83	78	79	82	83
Female	85	86	77	82	83	74	84	80
TOTAL	86	87	79	82	81	76	83	82
N	962	5,734	1,436	8,607	795	3,745	1,565	9,024

Sources: NALL Survey, 1998; WALL Survey, 2004.
* Only those currently working are included in the "Paid work" total, and only those performing housework or volunteer work were asked questions about related informal learning.

The vast majority of participants in housework, volunteer work, and general interest activities indicated that they engaged in some types of related informal learning. The participation rate was around 80% in all of these unpaid activities in both 1998 and 2004. These rates tend to be only slightly lower than those for employment-related informal learning.

The estimated duration of time devoted to intentional informal learning in relation to each of these unpaid activities is summarized in Table 5. The participation rates in paid work and these unpaid activities vary greatly, from a minority in volunteer work, to over 60% in paid work, to virtually everyone in some form of housework and general interest activities. But the amount of time given by participants to related informal learning appears to be quite similar in all of them, averaging around 5 hours per week in each instance. Such averages mask a wide range of variation and the respondents' estimates themselves are

merely rough approximations. But we can at least conclude that there is very substantial intentional informal learning occurring in relation to each of these adult activities.

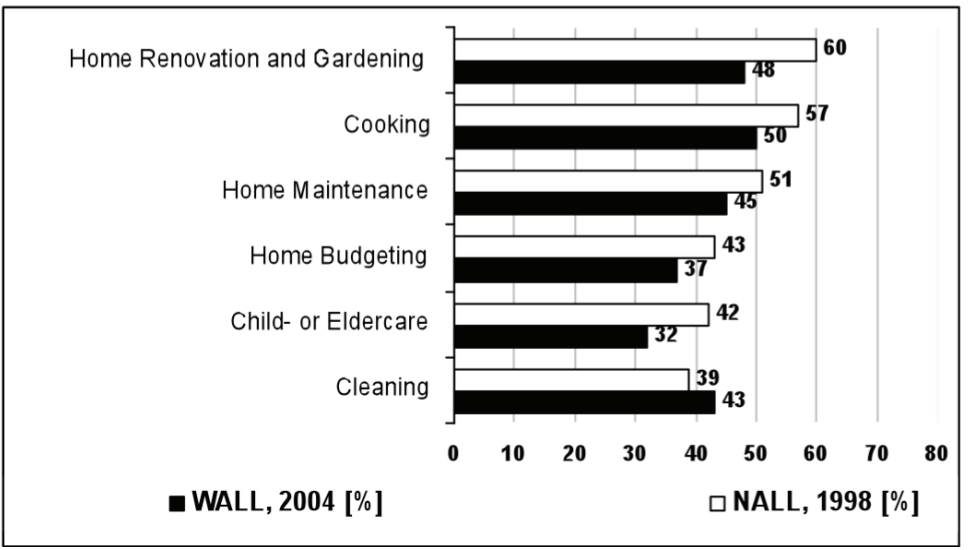
Table 5. Informal Learning (Average Hours per Week) by Activity, All Participants, 1998–2004

Year	Job	Housework	Volunteer work	General interest
1998	7	6	4	6
2004	5	6	4	5

Sources: NALL Survey, 1998 (Job N=825, Housework N=1,129, Volunteer N=655, General Interest N=1,297); WALL Survey, 2004 (Job N=4,978, Housework N=7,087, Volunteer N=2,839, General Interest N=7,363).

Some idea of the content of intentional informal learning in each of the unpaid activity areas is provided by the following graphs, which summarize the frequency of informal learning involvement in different topics. Since more people do housework than any other form of work, and since participation rates in informal learning are similar for participants in all forms of work, housework-related informal learning is probably the most widespread type of unpaid work-related learning, albeit the least studied. In terms of basic housework activities, as Figure 2 shows, more people indicated involvement in informal learning related to home renovation/gardening and cooking than related to other basic tasks that may involve less discretionary choice.

Figure 2. Housework-related Informal Learning Topics, Eligible Participants*, 1998–2004

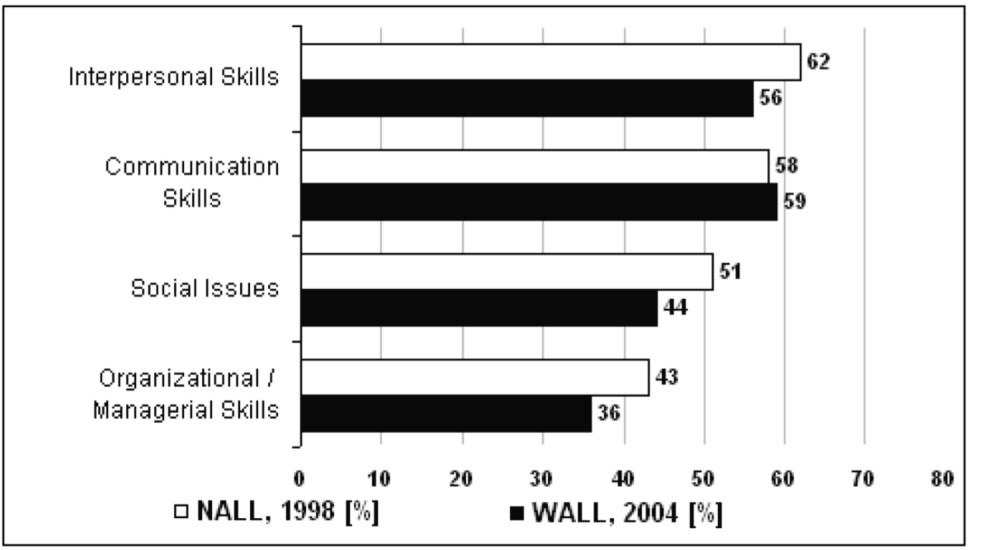


Sources: NALL Survey, 1998 (N=1,129); WALL Survey, 2004 (N=7,087)

* Only those who reported doing some housework-related informal learning were asked questions about topics.

Since volunteer work is by definition the most discretionary work, those who do it are also freer than those who do housework and paid work to engage in related learning. Figure 3 summarizes topical frequencies. The majority of volunteer learners said they have learned about interpersonal and communications skills in this work.

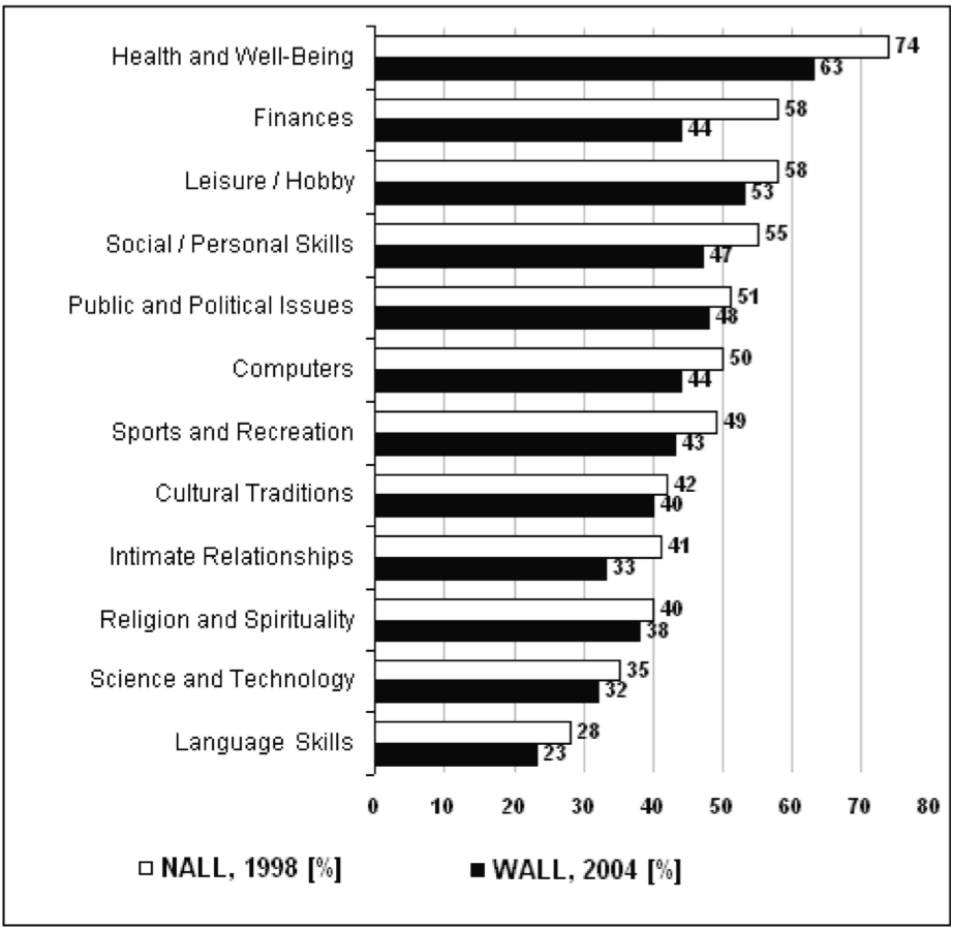
Figure 3. Volunteer Work-related Informal Learning Topics, Eligible Participants*, 1998–2004



Sources: NALL Survey, 1998 (N=655); WALL Survey, 2004 (N=2,839).
*Only those who reported doing some volunteer work-related informal learning were asked questions about topics.

When all respondents were asked about doing any informal learning related to their general interests, topical frequencies were widely varied. As Figure 4 indicates, the most popular topic was health and well-being. The only other area in which a majority consistently engaged in self-reported learning was in pursuit of their hobbies. The areas in which people in general were least likely to engage in independent informal learning were sciences and languages, forms of knowledge that are most likely to require a disciplined approach for effective learning.

Figure 4. General Interest Informal Learning Topics, All Respondents*, 1998–2004



Sources: NALL survey, 1998 (N=1,297); WALL survey, 2004 (N=7,363)
*All survey respondents were asked questions about general interest learning topics.

Total informal learning

Tough's (1978) array of primarily Canadian case studies and the 1976 U.S. national survey (Penland, 1977) found that the vast majority of adults reported significant involvement in self-directed learning projects and that the average time involvement was around 10 hours per week in all informal learning activities. The NALL and WALL surveys are not directly comparable with this prior research as they were not limited to self-directed, non-taught informal learning projects, and inquired about work-specific as well as general interest learning. In any event, as Table 6 summarizes, when these different aspects of informal learning are considered in aggregate, the participation rate of Canadian adults in some form of intentional informal learning is very high (92% in 1998 and 91% in 2004). Considering

all forms of self-reported informal learning for all participants, the time devoted averaged around 14 hours per week.

Table 6. Total Informal Learning (Average Hours per Week), All Participants, 1998–2004

Year	Do Any Informal Learning [%]	Average Hours / Week*
1998	92	16
2004	91	14

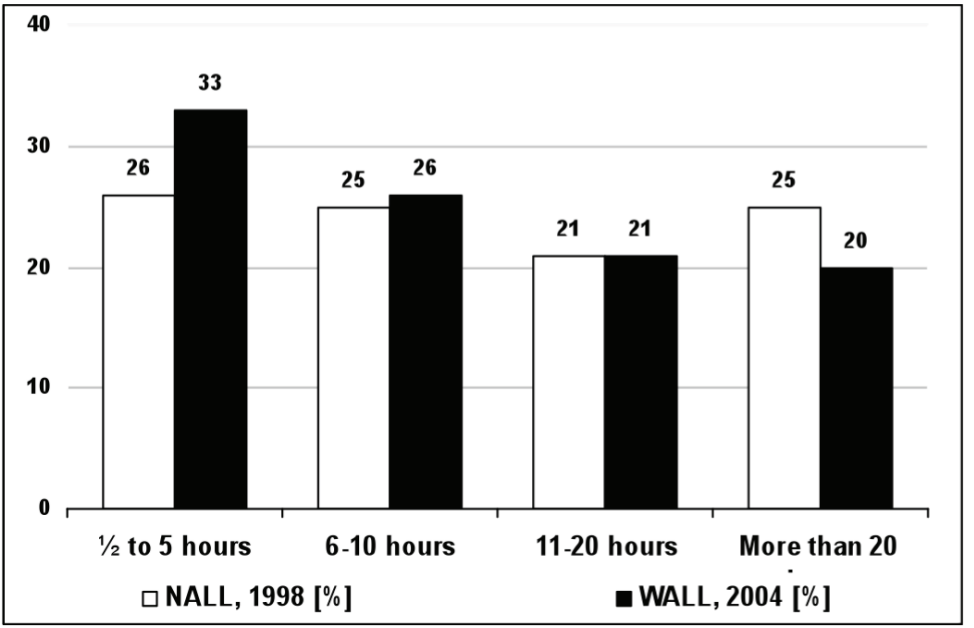
Sources: NALL Survey, 1998 (N=1,565); WALL Survey (N=9,024)
* Average hours per week are calculated as the mean of those doing informal learning.

These time estimates are of similar magnitude to earlier case studies and the few generally comparable prior country-level surveys,[9] but they should be compared with available estimates of overall time use based on detailed diaries of daily activities. The most recent Canadian *General Social Survey on Time Use* (Statistics Canada, 2005) found that, based on time diaries covering a 24-hour period in 2005, only 10% of those over 15 had participated in educational activities, for an average of half an hour. However, the general population also registered over five hours per day of free time beyond paid and unpaid work, sleeping, and eating. This translates into over 30 hours per week that could be devoted to intentional informal learning, among other activities. Much informal learning is likely to be interactive with work and other activities and difficult to distinguish from them. In terms of detailed estimates of general time constraints, the NALL and WALL estimates of informal learning appear plausible.

As noted above, there is wide variation in time reported for various aspects of intentional informal learning. This variation is reflected in the distribution of total informal learning time for all those who report any informal learning, as displayed in Figure 5. As the average informal learning hours for respective types of activities imply, the majority of participants in each instance were spending less than five hours per week in related informal learning. Overall, about a third claimed to spend less than five hours per week in all informal learning, a quarter spent between six and ten hours, a fifth spent 11 to 20 hours, and the remaining fifth spent over 20 hours per week. Again, these are rough approximations based on respondents' own estimates. But the overwhelming majority of Canadian adults report that they are now spending significant and recognizable amounts of time regularly in intentional informal learning pursuits.

9 For an overview of other international surveys, including participation rate and time estimates, see Livingstone (2005).

Figure 5. Distribution of Hours of All Informal Learning, Respondents Reporting Participation in Any Informal Learning, 1998–2004



Sources: NALL Survey, 1998 (N=1,443); WALL Survey, 2004 (N=7,423).

AETS estimates of time devoted to further education courses by participants in both 1997 and 2003 averaged around 150 hours per year (Peters, 2004, p. 12), less than three hours per week—or close to one hour per week if averaged over the entire adult population. NALL and WALL survey estimates for further education time are quite similar. Estimates of time spent in intentional informal learning activities are much more approximate, given their more seamless, less discrete character. But the NALL and WALL results are well over 10 hours per week on average, so the analogy of the iceberg to compare adults' formal and intentional informal learning activities (Tough, 1978) remains quite apt.

Formal Education and Informal Learning

Tough's (1979) studies found no significant relationship between levels of schooling and the incidence of self-directed informal learning. As Table 7 shows, the NALL and WALL surveys also find that respondents at all levels of schooling report 80% or greater participation in and similar amounts of time devoted to intentional informal learning. This is not a remarkable finding if one considers that humans inherently cope with their changing environment by learning and that informal learning can be done anytime, anywhere, whereas higher levels of schooling involve both sustained effort and substantial access barriers.

Table 7. Incidence of Informal Learning by Level of Schooling, 1998–2004

Level of schooling	1998		2004	
	Do any informal learning (%)	Average hours / week*	Do any informal learning (%)	Average hours / week*
No diploma	81	16	80	15
High school diploma	97	15	94	15
Community college	97	14	96	13
University degree	99	13	96	12
TOTAL	92	16	91	14
N	1,548	1,407	8,861	7,423

Sources: NALL Survey, 1998; WALL Survey, 2004.
* Average hours are calculated as mean of those reporting any informal learning

However, the huge hidden informal part of the iceberg of adult learning should have some further connections with the visible pyramid of formal education that appears to float above it. Analyses of recent surveys that have focused on intentional informal learning activities to develop specific competencies have begun to identify some relations with school attainment. The 2003 AETS finds an association between higher school attainment and a few specific job-related informal learning activities over a month-long period (Peters, 2004, pp. 17, 44). The 2003 international ALLS (Desjardins, Rubenson, & Milana, 2006, pp. 54–56) finds that learning informally by using tools interactively (such as literacy, numeracy, computers, Internet) is more common among those with higher levels of formal education. Longitudinal research with a continuously employed sub-sample from the 1998 NALL survey in 2004[10] finds that those who do not participate in adult education courses tend to reduce their participation in job-related informal learning over time (Livingstone & Stowe, 2007). As Table 7 suggests, there may be a tendency for early school leavers to be somewhat less involved in general self-reported informal learning. This finding may be due to under-reporting by people less disposed to see what they do as "learning". But further analysis of the WALL survey has found that, regardless of level of schooling, unionized employees with decision-making roles in their workplaces also tend to be more involved in informal learning in some areas such as keeping up with new knowledge in their job fields (Livingstone & Raykov, 2008). Recent case studies find that many workers with limited schooling are achieving high levels of competency through informal mentoring and their own informal learning efforts (Livingstone & Sawchuk, 2004). Subsequent research on relations between level of schooling and different types of informal learning may reveal other significant patterns. In any case, the most important point to register here is that a very large part of adults' intentional learning is done informally and, regardless of their formal schooling, most adults should be recognized as continuing, actively engaged informal learners.

10 A longitudinal sample of 600 NALL respondents was asked the WALL questionnaire in 2004. This sample has been analyzed separately from the 2004 WALL sample per se. For further information, see www.wallnetwork.ca.

Age, Class, and Adult Learning

With the rudimentary understanding to date of the processes and outcomes of adult informal learning, there has been little research on relations with social background factors. The most basic of these is age. As we have seen, formal schooling and further education are closely related, while both post-secondary school completion and further education participation rates have increased exponentially over the past two generations. We would expect that participation rates in further education would increase in older age groups as they become more highly schooled. But schooling in advanced market economies has been highly youth-oriented, with compulsory attendance from early childhood to the mid-teens and with most people who attend post-secondary education doing so as young adults prior to fully committing themselves to the labour market. Most further education has been job-oriented. Older adults may be more likely to rely on their cumulative experience than added courses to learn new things. So further education participation is still likely to decline with aging. There is no compelling reason to expect that informal learning does so.

As Table 8 indicates, about two-thirds of those under 25 now participate in further education courses annually. In the age groups between 25 and 54—which make up the majority of the employed labour force—about half now take further education. The finding that nearly half of those between 45 and 54 are taking courses is consistent with the increased level of schooling of this cohort compared to prior generations. As adults leave the active labour force, further education drops off rapidly to around 15% of those over 65. But there are indications that participation in general further education also may be increasing among those over 55 as these cohorts become more highly schooled.

Table 8. Age by Participation in Further Education and Informal Learning, 1998-2004

Age Group	Taken further education course in past year (%)		Do any informal learning (%)		Avg. hours informal learning / week*	
	1998	2004	1998	2004	1998	2004
18–24	67	65	99	95	23	17
25–34	53	55	94	96	17	16
35–44	55	51	97	95	17	13
45–54	46	48	94	94	15	13
55–64	25	34	84	88	12	12
65+	10	15	79	77	12	13
Total	44	45	92	91	16	14
N	1,533	8,772	1,538	8,772	1,422	7,348

Sources: NALL Survey, 1998; WALL Survey, 2004.
* Average hours exclude those reporting no informal learning.

The pattern of participation in informal learning is much different. As Table 8 shows, the participation rate in intentional informal learning remains over 90% until the mid-50s and then gradually begins to drop. A more detailed analysis of five-year age groups with the larger 2004 sample finds that two-thirds of those over 80 years of age are actively engaged in informal learning activities for an average of around 10 hours per week (Livingstone, 2007). Beyond the intense period of both formal and informal learning during entry into adulthood, aging is not very significantly associated with a decline in the incidence of learning activities. Older adults spend nearly as much time on informal learning activities as middle-aged adults. The drop-off in course participation in the mid-50s is explained largely by declining incentives for job-related training as people approach retirement. The older we are, the more we rely on our own prior learning experiences rather than courses as a guide for further learning. It might also be noted here that no significant gender differences were found in the incidence of intentional informal learning.

Socio-economic class and formal schooling are closely related (Curtis, Livingstone, & Smaller, 1992). Economic class positions in credential-based labour markets are intimately linked to levels of schooling. It follows that further education participation is likely to exhibit a similar association with class positions, but, again, there is no inherent reason to predict that lower level class positions are less likely to engage in informal learning generally.

Table 9 summarizes the patterns for the 1998 and 2004 samples, using an economic class measure distinguishing several ownership, intermediate managerial and professional employee, and working class positions.[11] Large employers, professional employees, and managers clearly have the highest levels of schooling with around three-quarters completing post-secondary education and a third or more obtaining a university degree. At the other extreme, a third of industrial workers have post-secondary credentials and around 5% have university degrees. Further education participation rates follow somewhat similar patterns but the extremes are much less, with two-thirds of large employers, professional employees, and managers participating annually, compared with around 40% of industrial workers. It should be noted here that employer support for the further education of managerial and professional employees has been consistently much greater than provisions for working class employees (Betcherman, Leckie, & McMullen, 1998; Livingstone & Scholtz, 2006). Patterns of participation in general job-related informal learning are much less differentiated. Over 80% of those in all economic classes indicate they are engaged in intentional job-related informal learning and their time estimates are also quite similar.

11 For definitions and empirically grounded discussions of the differences between these occupational classes in Canadian society, see Livingstone and Mangan (1996). Large employers are owners of businesses with 50 or more employees.

Table 9. Economic Class by Post-secondary Completion, Further Education, and Incidence of Job-Related Informal Learning, 1998–2004

Economic class	(University)/ total post-secondary completion* (%)		Taken further education course in past year (%)		Do job-related informal learning (%)		Job-related informal learning time* (hours/week)	
	1998	2004	1998	2004	1998	2004	1998	2004
Large employers	**	(35)76	**	67	**	87	**	5
Small employers	(22)36	(23)55	56	46	87	88	10	5
Self-employed	(16)40	(22)56	54	46	83	87	6	6
Managers	(25)66	(34)72	71	68	96	92	6	5
Supervisors	(10)45	(14)56	37	54	95	88	5	6
Professional employees	(49)73	(46)83	75	67	88	92	5	5
Service workers	(9)31	(10)50	63	52	83	84	6	5
Industrial workers	(4)23	(4)34	45	41	83	84	8	5
TOTAL	(18)41	(21)56	61	53	86	87	7	5
N	948	5,365	945	5,436	940	5,428	825	4,978

Sources: NALL Survey, 1998; WALL Survey, 2004.
* Average hours per week are calculated as the mean of those doing informal learning.
** N too small for reliable estimate.

Matching Learners' Capacities and Job Requirements

The assumption that substantial learning deficits must be overcome for the Canadian economy to be successful is now widespread but largely unexamined empirically. Available evidence in Canada and other advanced market economies suggests that educational attainments have been increasing faster than the education required either to get or to perform jobs (see Felstead, Gallie, & Green, 2002; Hartog, 2000; Livingstone, 2004; Vaisey, 2006). In any case, Canada has become one of the most credential-oriented societies in the

world. In addition, as the NALL and WALL surveys have documented, virtually the entire labour force self-reports being engaged in a vast amount of intentional job-related informal learning, some of which surely addresses any presumed deficits.

Table 10 compares the 2004 match of employed respondents' qualifications to their job requirements according to the length of training time needed to learn the job. Over a quarter of the employed labour force feel that they are overqualified for their jobs, about two-thirds think they are adequately qualified, and only around 5% are underqualified.[12] All of the above-cited overview studies have found that the proportion overqualified exceeds the underqualified. Comparisons with the 1998 NALL survey and other earlier surveys suggest that overqualification is increasing while the proportion with matching qualifications and requirements declines.[13] As Table 10 indicates, overqualification exceeds underqualification at all levels of training time. While a third of those with required training of only days or weeks are overqualified, so are about 20% of those whose jobs require more than three years of training. Chronic underqualification is surely a serious problem for some of the unemployed and others excluded from the active labour force through low literacy skills and other social disadvantages. But, for the employed labour force, underqualification is a relatively minor and temporary condition that usually can be overcome by continuing formal and informal learning. Overqualification, or underutilization, is a more enduring and growing issue.

Table 10. Time to Learn Job by Qualification Requirement Match, 2004

Time to learn job (%)	Overqualified (%)	Adequately qualified (%)	Underqualified (%)
Few days (12)	35	59	6
Several weeks (13)	35	60	5
Few months (20)	29	66	5
Less than one year (7)	31	65	4
One to three years (19)	26	66	8
Over three years (19)	19	73	8
Depends on person (11)	27	68	5
TOTAL	28	66	6
N = 5,032			

Sources: NALL Survey, 1998; WALL Survey, 2004.

12 Self-assessments may tend to overestimate abilities and relatively few people are generally inclined to rate themselves as below average, but similar patterns of overqualification in excess of underqualification are found with measures relying on formal educational attainments and general educational development required to enter or perform jobs (see Livingstone, 2004).

13 There are growing and largely separate research literatures on overqualification, overeducation, and underutilization of workers. All refer to the surplus of workers' capacities in relation to the formal education requirements either to get or perform their jobs. For further review and comparative analyses of education-job requirement matching patterns, see Livingstone and Scholtz (2006) and Livingstone and Contributors (2008).

Unpaid work continues to be ignored in studies of learning and work, in spite of its extensive nature. Both housework and volunteer work often involve higher order skills and knowledge than is commonly recognized, and also involve continual informal learning. If we are living in a "learning society", much of this learning is related to unpaid work and the benefits of such learning remain almost completely unrecognized (see Eichler, 2005; Schugurensky & Mündel, 2005).

Concluding Remarks

Canada's post-secondary educational attainment level outpaces most other advanced market economies. Participation in further education courses has also grown impressively since the 1960s but still trails other countries with better-organized adult education systems. Unmet demand for further education is likely to grow unless governments and employers provide more coherent programs and sustained resources, especially for the least credentialed.

Informal learning is still the invisible part of the adult learning iceberg. While the 2003 AETS as well as the NALL and WALL surveys have begun to document the extent of self-reported intentional informal learning on a country-wide basis, attention to informal aspects of lifelong learning remains largely rhetorical in policy and program terms. For example, a movement for prior learning assessment and recognition emerged a generation ago in Canada.[14] So far, it has mainly provided a means for those who have already entered post-secondary institutions to complete advanced programs faster, with little educational or employment benefit for the vast numbers who may have achieved advanced knowledge and competency through informal learning directly related to their jobs, and no recognition at all for learning related to housework and volunteer work. There is vast unmet demand for prior learning recognition (Livingstone & Myers, 2007).

It may be inherent in a market-driven economy for the general supply of qualified workers to exceed the demand, as entrants continually try to prepare for competitive labour markets. Greater formal and informal learning are also driven by the urge to cope with many changing aspects of modern life beyond the instrumental one of getting a decent job. But underutilization of the education, skills, and knowledge of over a quarter of the employed labour force is now chronic. There are growing numbers with advanced education who are not able to find jobs that require such lengthy formal schooling. Working class and visible minority employees experience the greatest underutilization (see Livingstone & Scholtz, 2006). Discrimination on grounds of gender and disability also continues to block many from using their full capacities in today's paid workplaces. The underutilization of those excluded from employment but desiring it is largely beyond the scope of these surveys. For the vast majority of those experiencing underutilization, the key problem is not a lack of relevant formal education, nor is it the failure to engage in continual job-related informal learning. More and more people are engaging formally and informally in an educational arms race. Continuing escalation per se will only produce greater underutilization of skills and knowledge. There is an ever-greater prospect for economic reforms to redistribute work and design more decent jobs for an increasingly knowledgeable population, even more so than for coherent education and training initiatives (Livingstone, 2004).

14 For useful information on this movement, see the Web site of the Canadian Association for Prior Learning Assessment: www.capla.ca.

In any event, the 1998 NALL and 2004 WALL surveys are primarily intended to provide general benchmarks for continuing studies of adult learning and work. Readers are encouraged to use the findings in conjunction with the 12 WALL network case studies, some of which are reported in this issue and all of which can be found, along with the WALL Resource Base (2007), at www.wallnetwork.ca. Sustained exploration of the massive icebergs of further education and intentional informal adult learning, and of their movements in an unfathomed larger sea of tacit adult learning, has now begun in earnest. Further critical inquiry into the full array of adult learning and work relations is much needed.

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