Unravelling the lifelong learning process for Canadian workers and adult learners acquiring higher skills

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ABSTRACT

This article reports on a mixed methods study that investigated aspects of formal, non-formal and informal learning for workers and adult high school learners seeking literacy and essential skills. Three key themes emerged from the qualitative data : motivations for participation in various forms of learning; seeking out informal learning activities and pedagogical practices in the teaching and learning interactions of workers and adult learners. Findings from the quantitative analysis also seemed to indicate that workers and adult learners acquiring literacy and essential skills tend to possess both the resources and readiness to continue their lifelong learning in the less formal settings.

INTRODUCTION

One of the nation wide issues drawn out in a recent report entitled "*State of the Literacy and Essential Skills Field*" describes how a widening skills gap and ongoing shifts in the labour market will have an impact on Canada's economy and social fabric (Canadian Literacy and Learning Network, 2012). Upskilling, removing barriers and widening adult learning opportunities are all cast as parts of the solution in freeing up significant fiscal resources for government. In yet another call for lessening the skills gap, Miner (2012) looks at the need for redesigning Canada's post secondary system by creating a national adult education framework which includes various ways of recognizing all forms of adult learning and training. What these reports have in common is the underlying importance of lifelong learning for workers and other types of adult

learners. However, as Taylor, Evans and Pinsent-Johnson (2010) suggest there is a large gap in wrestling down the nebulous areas of formal, non-formal and informal learning for employees with low skills as well as for adult learners seeking entry into the labour market.

To help guide the dialogue on this topic, several researchers such as Hager (2011) have described these three different types of learning. *Formal learning* is any clearly identified learning activity that takes place in an organized, structured setting that leads to certification, for example a learner who enrolls in an adult high school credit program to complete a biology course to graduate with a grade 12 certificate. *Non-formal learning* refers to learning that takes place alongside the mainstream system of education and training that does not typically lead to formalized certification. An example of this type of learning is a worker employed in a lumber company taking a 10 hour on site workshop called "Improving Customer Service". The third type, *informal learning*, is referred to as experiential learning and results from daily life activities related to work, family and leisure. Examples of this type of learning may be the young worker who identifies a mentor on the shop floor to help him better troubleshoot electrical problems with a cooling machine or the student who independently navigates through the Internet to find information on her employment goals as an early childhood care assistant.

One research area and adult population that has not been investigated in a systematic way is the relatedness of formal, non-formal and informal learning for workers and adult learners seeking literacy and essential skills. Two research objectives guided the study: (1) What are the common motivations and practices among workers and adult learners seeking literacy and essential skills in formal, non-formal and informal learning

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environments? (2) How prepared are workers and adult learners seeking literacy and essential skills in terms of their readiness to manage their own learning and their social support networks?

FOCUSED LITERATURE REVIEW

As Eaton (2012) implies formal learning is the most studied of the different types of adult learning. However, she suggests that developing a better understanding of non-formal and informal learning is essential to recognizing learning that takes place outside of a formal setting. Although little empirical evidence exists on the topic of non-formal learning, some gains have been made in consolidating the literature on informal learning. This is briefly sketched out here.

In an attempt to generate theoretical discussion, Sawchuck (2011) reviewed three leading models of informal learning related to work. Although each model views informal learning in a distinctive way, when taken together, they provide an overview of informal learning dynamics and associations with more formal settings. The *Social/conflict model* (Livingstone, 2001) emphasizes how learning opportunities may be unequally distributed depending on power relations; however the cognitive and emotive factors associated with informal learning are not explicitly addressed. The *Situated/cognitive model*, on the other hand, brings to the foreground "information processing" and goal-directed problem-solving (Eraut, 2011) but does not make explicit, the connections between the situational and more global concerns and pressures that also characterize informal learning. The third model referred to as the *Learning in working life model* by Illeris (2011) proposes that informal learning is mediated by technical-organizational, social-cultural and individual factors. This model also draws attention to

the emotional features that shape the work-related learning process which is absent from other frameworks. Although, the models have been formulated based on data from employees with higher educational attainment only, they can provide insights into the nature of formal, non-formal and informal learning among workers and other adult learners seeking higher skills.

Also related to lifelong learning for workers and adults with low skills is the growing body of research on the relationship among learning, human capital and social capital (Field & Spence, 2000). Of particular interest to this study are the works of Falk and Kilpatrick (2000) and their model of building social capital. As opposed to explaining the broad nature and impacts of social capital, the focus of this model "is on the micro processes involved in the production of social capital. It suggests that social and human capital co-evolve" (Balatti & Falk, 2002, p. 284). The model consists of three key elements: knowledge resources such as networks, knowledge and skills (human capital); identity resources such as cognitive and affective attributes (social capital) and the learning that occurs between the knowledge and identity resources. As Balatti and Falk (2002) explain, learning occurs when social capital is built, or in other words, when the set of interactions calls on existing knowledge and identity resources adds to them. What may be important to unravel here is whether or not social capital can be viewed as an outcome or as a resource and whether it is an individual characteristic that varies at given times of work and schooling life. The implications of this on the learning process have yet to be determined. As much as there is a recent growing interest in exploring the relationship between social capital and adult learning there is a dearth of adult literacy

research and no empirical investigations with workers with low skills or other adult learners who are preparing for labour market entry.

METHODOLOGY

Research Design and Instrumentation

For this study, a mixed methods research design was used. This allowed for concurrent timing of the data collection with qualitative and quantitative strands being independent and given equal priority (Creswell & Plano-Clark, 2011). Qualitative data were obtained in semi-structured interviews with instructors and trainees/learners from different locations in three Canadian provinces. The interview schedule for instructors included 12 open-ended questions which were drawn from the international literature on formal, non-formal and informal learning and 7 open ended questions on social capital. Similarly, interview schedules for trainees and learners consisted of 13 open ended questions and probes that delved into motivations, benefits, supports and types of activities in the different learning environments. All participants were given definitions of the key terms such as formal, non-formal, informal learning and social capital at appropriate times during the interview. The two schedules were pilot tested with instructors and trainees in a non credit custodial training program and wording modifications were made based on participant feedback.

The quantitative data was collected through the administration of the self-scoring, Social Capital Inventory (SCI) developed and piloted at the University of Ottawa, Ontario, Canada (Taylor, Trumpower & Pavic, 2012). This tool uses a five-point Likert-type scale, and is comprised of 24 items which are divided into four 6-item subscales. The first subscale was called *Network Qualities* (NQ) and included sub-

concepts of trust levels, efficacy and diversity. The second sub-scale referred to as *Network Structure* (NS) measured sub-concepts of network size and communication mode while the third subscale was called *Network Transactions* (NTr) and focused on sub-concepts of sharing support and sharing knowledge. The final sub-scale integrated sub-concepts of bonding, bridging and linking and was referred to as *Network Types* (NTy). Psychometric analysis of data obtained for the present study yielded Cronbach's alphas of .86, .82, .89, .88, and .96 for the NQ, NS, NTr, NTy subscales, and overall scale scores, respectively. Cronbach's alphas in the .8 – 1 range are generally considered to indicate adequate to excellent internal reliability (George & Mallory, 2003; Nunnally & Bernstein, 1994).

As well, the Self-Directed Learning Readiness Scale (SDLRS) was employed. The SDLRS is a self-administered questionnaire that uses a five-point Likert-type scale designed to measure "the complex attitudes, skills, and characteristics that comprise an individual's current level of readiness to manage his or her own learning" (Guglielmino & Associates, 2012, p. 1). Based on a review of published studies, Delahaye and Choy (2000) have concluded that the SDLRS provides a valid measure of its intended construct. For the purpose of this study, the *SDLRS-S – The Learning Preference Assessment*, a 58-item, self-scoring version was implemented, so that the learners could view their results immediately upon completion. Biographical information, including age, gender, and marital status was also obtained as part of the questionnaire. In addition, workers and learners were asked to list any clubs or groups to which they belonged as an indication of their network structures that may occur within or outside of the workplace.

Site Locations and Participants

  The data was collected in three Canadian site locations: Manitoba, Ontario and Nova Scotia. The Ontario site was an Eastern Ontario Adult High School which delivers credit and non-credit educational programs for adults returning to high school and seeking re-entry into the workforce. Information on formal, non-formal and informal learning was gathered from adult learners in this location. The data collected in Manitoba and Nova Scotia was facilitated through Workplace Education Manitoba and the Association of Workplace Educators of Nova Scotia. They provided access to various workplace programs in their provinces. Information on non-formal and informal learning was gathered from both of these locations. A total of seven sites were used for data collection, one in Ontario, four in Manitoba and two in Nova Scotia.

  The participants were employees of workplace programs providing learning opportunities to improve or upgrade their essential skills, adult learners enrolled in a job readiness program preparing for entry into the workforce, and adult learners enrolled in an academic program seeking further education opportunities. A total of 32 workers and 63 adult learners completed the SCI and SDLRS-S. Of this group, 39 participated in face-to face interviews. As well, 10 instructors from the various programs participated in semi-structured interviews to provide a more complete representation of the learners and learning process. Overall, 67% of the informants in this study were female, 42% were in the 18-25 year old age range and 64% were single. Racial, language and ethnicity data were not collected from the sample. Given that programs are designated in either official language of English and French and since all participants were English speaking, the populations were very homogenous.

Data Analysis

In order to analyze the qualitative data sources related to the first research question, the constant comparative technique was used to identify patterns in the narratives which were developed from the interview transcripts (Merriam, 2002). To answer the second research question, quantitative data from the two instruments were used. The statistical software, Statistical Program for the Social Sciences (SPSS) was employed to provide various descriptive statistics as well as various analyses of potential relationships between the biographical data retrieved from the participants such as gender, age, and membership in clubs that could influence the overall scores on the SCI and/or SDLRS-S. As indicated earlier, these instruments measure network resources and readiness to learn which are important qualities associated with the lifelong learning continuum, especially in the ill-defined area of informal leaning.

RESULTS

To help answer the first research question, "What are the common motivations and practices among workers and adult learners seeking literacy and essential skills in formal, non-formal and informal learning environments?" results from the qualitative data sources are presented for the three groups. These include workers who are upgrading in their current jobs; adult learners preparing for direct entry into the labour market, and adult learners seeking further education opportunities as a transition pathway to employability.

Motivations and benefits for participating in the continuum of adult learning

One way of understanding the motivations for participating in the different forms of adult learning is to view the spectrum of education and training activities on a continuum.

This continuum has three main points: formal learning which included credit courses and certification; non-formal courses and workshops for specific skill improvement; and informal learning which included various types of experiential learning driven from work, family and leisure interests. For the most part, worker motivations for non-formal learning were related to improving their work performance on the job or self improvement while adult learners were driven by the identification of short term and long term job and career goals. Learners seeking entry into the labour market opted for the shorter non-formal programs while learners interested in the longer career objectives chose the more formal credit programs. Both workers and adult learners were also engaged in different types of informal learning activities.

Workers participating in the non-formal programs offered at the work site were very motivated to learn new skills to enhance performance in their current jobs or hold onto their jobs given the threat of unemployment. As one worker commented, "I took this course to better myself and to get the extra skills to stay employed." Another employee mentioned that "I wanted to better fit the position of Quality Inspector. I've been away from education so long that I needed a refresher on how to study and write reports." Some workers were also motivated to participate in the non-formal programs as a means for preparing to write the General Education Development (GED). Even though no credits were offered for completing this short term non-formal course, workers believed that the goal of eventual high school equivalency was an investment in their futures. As Marla explained; "Yes, obtaining my high school equivalency certificate was my motivation as well as a willingness to further my education." Betty captured the drive for self-improvement through the non-formal program succinctly, when she said "What

benefitted me the most about this program was that I now have a better understanding of who I am as a person. I am figuring out that everyone here is different, they have different qualities and different ways of learning."

 Adult learners in the formal programs offering credit courses for a grade 12 certificate were often motivated by a long-term employment goal. Susan described it this way "I dropped out of high school because I had personal issues. When I turned 25, I realized I didn't want to be a waitress for the rest of my life, so I joined up at this school. I hope to get my high school diploma and then go to university to be a teacher." As well, learners in the formal credit program were motivated to learn skills that would be put to use once employment was found. For example, Curt went on to say "I want to learn to establish work habits that are expected in any workplace; things like consistent attendance, punctuality, and basic problem solving skills." Adult learners participating in the non-formal job readiness programs were motivated to get off of social assistance and find work that would put them back into the mainstream. One learner who completed a 12 week custodial training program mentioned, "This has given me the chance to get back on my feet after having some health problems and the work placement really gave me confidence to apply for a job as a janitor."

Seeking out informal learning opportunities

 Common practices to all three groups was their interest in seeking out informal learning opportunities as a result of participating in some kind of structured education and training activity beforehand. Workers and learners who were seeking immediate labour market entry had similar types of experiences with informal learning. Employees who had just completed a non-formal program often sought out internal workplace

infrastructures as their venue for continued learning. Health and Safety committees and brown bag lunch meetings held with co-workers were often mentioned as activities where informal learning occurred. One worker stated that he liked the lunch meetings because he could "learn different things about other jobs as I am sometimes called to fill in lots of areas." A fellow worker, Kyle, from the same company said that, "during our safety meetings we ask advice from each other to come up with a better or quicker way of doing things." Alia revealed that through the Social Committee at the company she was learning about a new charity that the company was supporting and could use her speaking skills that she learned.

Adult learners who were enrolled in the non-formal programs sought out advice from co-workers or supervisors. These types of job readiness programs which offered a work placement component acted like an apprenticeship where through trial and error, trainees could learn a new skill such as measuring the exact amounts of chemicals needed for cleaning solutions. Using manuals to understand company policies was also a type of informal learning activity. As Jim pointed out, "There was this accident on the 3rd floor and I remembered that they kept the manual in the lunch room so I found the part on how to report the accident, wrote it up the best I could and gave it to my supervisor to correct."

Looking things up on the Internet was cited as one of the main informal learning activities for the three different groups. Adult learners seeking further education towards employability consistently described this activity as the most commonly used outside of the classroom. They consulted books online to complete homework assignments, gathered information to fill out tax forms and researched topics such as school/life

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balance, government news and politics. One employee who had just completed the non-formal workplace program described how he learned how to use Excel on his own and now can make charts and templates. Another worker declared that she had learned how to use a new software program from a co-worker on forecasting revenues through sales. She also said that she first observed the skill from her manager and was intrigued to see if you could learn how to do it.

Pedagogical practices teaching workers and learners

Instructors in the different formal and non-formal programs had similar teaching practices with both the workers and learners. Along with adhering to adult learning principles as the cornerstone of their teaching philosophy, instructors focused on active participation, sharing expertise with learners in the group and developing individual learning plans as tools for success during the course or workshop. There were also several common practices used with these instructors such as making sure there was time during the course to talk about their goals and their families as a way of getting people connected with each other. This often spilled over into peer assistance, especially when the instructor was busy attending to an individual student and his/her learning plan. These teaching strategies often laid the foundation skills for the informal learning that happened outside of the classroom. As Samantha stated "We always encourage the essential skill of continuous learning; the sky is the limit. We encourage the workers to have goals outside of this program."

Another instructor teaching in a non-formal program at the workplace often ran into employees who were former trainees. These workers told her that because of the course they had increased their communication skills which in turn resulted in better job

satisfaction. They felt more loyal to the company and now understood why lifelong learning was so important. This same instructor went on to say that one worker after completing the essential skills program was led into an informal learning experience that changed his life. "One of our learners participated in a national numeracy workshop. This fellow travelled to Toronto for three days yet had never left the province in his life. It was an unbelievable experience that he will never forget."

Another instructor from the formal credit program mentioned that leadership was a topic that often came up in the English class. As Claire stated, "we would practice how to debate so that the students could see and model certain behaviours like active listening and how to ask questions, and in our high school we have a student council where I have seen some of our same students volunteer on the council as a way to learn these leadership skills." Another instructor in the work readiness program mentioned that her focus "was helping learners to establish routines and work habits that are expected at the workplace. After being in a group for a couple of weeks, you start to see an improved self-concept and they can start identifying their own strengths and weaknesses. Their worldview expands." A similar comment was made from another instructor teaching in a short job entry non-formal program. Maria described it this way "After the morning when Angie presented the social capital workshop the entire group wanted to talk about all of their contacts for employment. What was interesting is a couple of my ESL trainees who are often shy to speak in the group came forward to ask how they could learn to better network as they never did this in their mother country."

In interviewing the workers, learners and instructors about their interactions in both the formal and non-formal programs, a common pattern that emerged was the

transferability of skills to their informal learning experiences. Adult learners who
worked independently in the credit course with minimal instruction believed that they
developed a sense of self-directedness in learning outside of the classroom. These
learners had no difficulty forming learning objectives and identifying the resources to
match their objectives. One instructor who brought in community representatives to
speak to her groups remarked, "some of the students began networking outside of the
class early in the program and others began networking towards the end." Another
worker also explained that "having an instructor teaching was important for the specific
details, but working independently was my preferred way because I can now do it on my
own away from work."

Results from the quantitative analysis

To help answer the second research question, "How prepared are workers and
adult learners seeking literacy and essential skills in terms of their readiness to manage
their own learning and their social support networks?", results from the quantitative data
sources are presented here. The quantitative data was analyzed as follows. First, each
participant's overall and subscale scores on the SCI and overall score on the SDLRS-S
were calculated. Next, the distributions of scores on the SCI and on the SDLRS-S were
determined. Finally, potential differences in scores on both the SCI and SDLRS-S were
examined by gender, age, marital status, club membership (those who reported
belonging to at least one club or group versus those who did not report belonging to
any), and the two different groups of workers and adult learners.

Overall, the mean score on the SDLRS-S was 219.66 (*SD*=26.50). According to
norms provided by Guglielmino & Associates (2012), a majority of learners' scores

(77%) indicated average to above average self-directed learning readiness. For the SCI,

the total scale score was determined by summing responses to each of the 24 items for a

potential range of 24-120. Subscale scores were likewise determined by summing the

responses for the six subscale items for a potential range of 6-30 each. Higher scores

indicate higher levels of social capital. Overall, subscale scores were roughly normally

distributed with very few individuals scoring below 18 on any of the subscales,

indicating moderate to strong agreement with most items on the scales. Thus,

participants tended to agree that they had access to supportive social networks and

services (NS), that there is trust, respect, and openness within their social networks

(NQ), that there is reciprocal sharing within these networks (NTr), and that they have

the confidence and ability to make links with individuals/services that have different

perspectives than their own (NTy) (see Table 1 for means and interquartile ranges of

total scale and subscale scores on the SCI). Given the distribution of total scale scores

on the SCI, cut-off values of 89.5 and 99.5 were used to divide participants into three

roughly equal-sized groups, which were labelled as: below average (0-89), average (90-

99), and above average (100-120) social capital[1].

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[1] This decision to convert the continuous SCI score into a categorical variable
was based on the rationale that developers of the SCI intended for it to be used for
profiling individuals as having below average, average, and above average social
capital, rather than providing them with a numerical score that they may have difficulty
interpreting. See DeCoster, Iselin, and Gallucci (2009) for justification of this
procedure.

Chi-square analyses revealed that social capital varied systematically with some of the biographical variables. In particular, a marginally disproportionately higher percentage of females than males had average or above average scores on the SCI, χ^2 (1) = 2.80, p = .094. More specifically, this gender difference was more pronounced for learners who reported not belonging to any clubs, χ^2 (1) = 4.26, p = .039. No gender difference was found for learners who reported belonging to one or more clubs, χ^2 (1) = 0.02, p = .896 (see Table 1). Scores on the SCI were not found to be statistically significantly related to age, marital status, or worker and adult learner group. In addition, scores on the SDLRS-S were not found to be statistically significantly related to any of the biographical variables.

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DISCUSSION AND IMPLICATIONS

Applying andragogy across learning domains
Drawing from the andragogy in practice model espoused by Knowles, Holton and Swanson (2011) may shed some light on understanding the commonalities and motivations around the three types of learning and other complicated questions related to the new lifelong learning discourses. According to the authors, this practice model has "offered an enhanced conceptual framework to more systematically apply andragogy across multiple domains of adult learning practice" (p.146). In a nutshell, there are three

dimensions to the model: goals and purposes for learning; individual and situational differences and the core adult learning principles. These three aspects of the model interact to offer a three dimensional process for understanding adult learning situations. Results from this study seem to indicate that a driving force for engagement in any one of these three types of learning are the goals and purposes of the specific education and training activity, whether it was for organizational, individual or societal growth. As well, we see from the findings that there are differences between workers and learners that impact the type of learning and act as filters that shape the event. These differences were related to the subject matter that was chosen for the job related learning, the real life situational circumstances such as multiple roles of family and work and individual characteristics like autonomy.

The core adult learning principles, especially motivation to learn, the orientation to learning, and the readiness to learn, were all very prevalent in both workers and learners of the study. Evidence from this investigation seems to suggest that the andragogy practice model could be useful in understanding formal, non-formal and informal learning as it recognizes the lack of homogeneity among learners and learning situations and illustrates the learning transaction as a multifaceted activity. The framework could be viewed as a contextual analysis step in developing adult programs or individual trainee plans.

The dynamics of lifelong learning models

Returning to the literature on work-related informal learning cited earlier, it was noted that much of the data used to develop these models was drawn from employees with higher educational attainment only. Based on the findings from this study some

additional insights can now be made on the situated/cognitive model developed by Eraut (2011) that relates to adults with low skills. In his typology of early career learning taken from studies with nurses, engineers and chartered accountants, he identifies work processes with learning as a by-product (p.187). What we find in this study are very similar types of work processes reported not only by the employees but also by the adult learners. For example, when describing their experiences with informal learning, both groups reported the importance of participation in group processes, working alongside others, consultation, tackling challenging tasks and roles, trying things out and consolidating and extending skills. Therefore, it would appear that for both adults with higher and lower educational attainment most of the informal learning reported occurred as a by-product of the normal working processes. This further reinforces the idea that for adult learners still in a training situation, the structure of that situation has much to offer as a practical work environment for the development of lifelong learning skills.

Another interesting finding from this study on the nature of non-formal and informal learning was that the current role and tasks of the worker and learner had much to do with the engagement of the activity. For example, workers who were interested in improving the conditions of the workplace sometimes volunteered on a Health and Safety committee or learners returning to school for second career training did so as role models for their family members. This seems to support the earlier work of Taylor (2006) who studied the literacy practices of adults with low literacy skills in the home, community and workplace environment. In this ethnographic study, he found that the life roles of these adults, such as parent, volunteer and worker were the driving forces behind the learning, much of which took place outside of the formal literacy programs.

Viewing the three types of learning on a continuum at a policy level also seems to be receiving support from various Organization for Economic Cooperation and Development (OECD) countries. In describing the learning contexts, Werquin (2010) points out that non-formal learning can be viewed as the connector between formal and informal learning on the continuum of learning. He goes on to say that defining learning on a continuum is "meant to enable policy makers, researchers and practitioners to speak the same language in their international activities" (p.24). Using the same kind of language with all participants in this study did help to sort out some of the distinguishing elements among these different learning activities. It also helped the participants bring to the forefront the range of possible connections among these three forms of learning. This seems to corroborate the previous findings by Taylor and Evans (2009) who found it is useful to view notions of informal and formal learning on a wide continuum when they explored the training paths of basic level employees. They found that participation in a formal workplace education program acted as the catalyst for the subsequent informal learning that took place back on the job. Together these findings support the work of Colley, Hodkinson and Malcom (2003) who remind us that formal and informal learning are far from being discrete categories; "It is more accurate to conceive formality and informality as attributes present in all circumstances of learning" (p.i).

Is there an interplay between human and social capital and types of learning?

There seems to be some evidence from the qualitative data sources to support the idea that human and social capital co-evolves as suggested by Balatti and Falk (2002).

This appears to be apparent for both workers and adult learners that were enrolled in the formal and non-formal programs. As the job related knowledge, competencies and essential skills were acquired by the participants there was also various types of social capital that was realized at the same time. This type of social capital was marked by the awareness and existence of networks and the levels of trust in the work and classroom clusters which helped to promote collective action among members of that particular social grouping. In the custodial training non-formal program, for example, which offered a social capital workshop, both trainees and instructors strongly advocated for this type of activity to be integrated into the regular curriculum. This type of approach also builds on the work of Balatti, Black and Falk (2007) that used the interactions between networks within and outside literacy classrooms to foster social capital outcomes.

Preparedness for lifelong learning

The quantitative results of this study indicate that workers and adult learners acquiring literacy and essential skills, in general, possess both a readiness to continue learning in a self-directed fashion in the less formal settings and the social capital to help make this happen. Participants in the study had scores on a standardized measure of self-directed learning readiness that were predominantly in the average to above average range. Although norms for the SCI are not yet available as this instrument was newly developed as part of the present study, participant scores appeared to indicate a generally high level of social capital, as well. Thus, the quantitative results support and extend some of the qualitative findings – not only are workers and adult learners interested in

continuing their lifelong learning in informal settings, many appear to have the readiness and resources with which to do so successfully.

Given the design of this study, it is not clear if workers and adult learners already possessed self-directed learning readiness and social capital *before* enrolling in their current workplace, job readiness and academic programs, or if they acquired the skills and social resources that have prepared them for informal, self-directed learning *during* these programs. It is possible that participants enrol in these types of programs precisely because they were already self-directed and prepared to learn. Alternatively, they may not have been quite ready to undertake new learning on their own, so enrolled in a more structured program in which they could acquire the necessary skills and resources to later apply in the informal learning settings. Based on the qualitative findings, we believe it is, at least partially, the latter. For example, instructors reported instances in which learners acquired study skills, gained proficiency in using the Internet, and made connections with other learners that could benefit them in future learning in informal settings.

Although the overall outlook for workers and adult learners towards lifelong learning is positive, males with no participation in clubs and groups appear to be more at risk for having lower social capital. Females who lack participation in clubs and groups do not appear to be at such risk. Several explanations for this finding are possible. It may be that males do not form bonds with family, friends and co-workers to the extent that females do, if they are not involved in formal clubs or groups. Alternatively, it may be that males have the connections to family, friends and co-workers, but simply do not recognize the support that these relationships can provide. In either case, males in

particular may benefit from specific training to point out the nature and utility of social capital.

Limitations and areas for further research

Given the exploratory nature of the research questions and the nebulous area of lifelong learning, there are several limitations to the study. Although incentives were provided for various workplace education programs in other provincial locations to participate in the investigation, the range of work sites and types of employees was limited. An interesting extension of this work would be to conduct case study research involving small, medium and large companies across several industrial sectors with a focus on employees seeking to acquire higher skills training. This may shed some light on worker preferences for types of learning formats and venues specific to occupations. Another limitation of the study was the lack of empirical evidence in using the Social Capital Inventory (SCI) with other marginalized adult populations seeking further education and training. Further research questions using the SCI could include: Does the amount and type of social capital acquired as a result of a program influence the search for further informal learning activities? Do adults with high levels of social capital seek out learning activities outside of the education and training systems? Is there an association among social capital and participation rates in formal, non-formal and informal learning? Also related to sampling limitations was the participation of learners in one adult high school located in a particular economic region of Canada. It may well be that the results provided through the adult learner data from this location are atypical from other regions where the service, government and tourism sectors are not as dominant. Additional research needs to be done with different community colleges and

community–based literacy and essential programs trying to understand whether such programs designed for employability also provide learners with a propensity for civic engagement. What is hopeful about this study is that some initial uncovering has been done around the relatedness of formal, non-formal and informal learning. These findings could jump start some conversations among literacy and essential skills professionals which may lead us in some new directions for understanding, recognizing and reinforcing lifelong learning for adults.

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Table 1. Means (Standard Deviations), Interquartile Ranges[a], and Cronbach's Alphas of

Total Scale and Subscales of the Social Capital Inventory

Scale	Mean	Interquartile Range	Cronbach's Alpha
NQ	24.29 (3.32)	23.61-24.98	.86
NS	23.24 (3.26)	22.56-23.91	.82
NTr	23.42 (3.83)	22.63-24.21	.89
NTy	23.44 (3.28)	22.77-24.21	.88
Total	94.49 (12.04)	92.02-96.97	.96

[a] The interquartile range indicates the values between which 50% of all respondents scored.

Table 2. Social Capital by Sex and Participation in Clubs[a]

Clubs	Sex	Social Capital		
		Below Average	Average	Above Average
None	Female	9	14	19
	Male	12	6	7
One or More	Female	7	7	6
	Male	2	2	2

[a] Values in table represent frequencies.