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## Ecologies of Learning:

How Culture and Context  
Impact Outcomes of  
Workplace Literacy and  
Essential Skills

Juliet Merrifield • October 2012

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*The opinions and interpretations in this publication are those of the author and do not necessarily reflect those of the Government of Canada*

## PREFACE

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### **Workplace Literacy and Essential Skills (WLES): A complex interplay of workplace, societal and individual factors**

by Sue Folinsbee, Tri En Communications

Juliet Merrifield's paper brings a breath of fresh air to the discussion on Workplace Literacy and Essential Skills (WLES) in an accountability era where the major discourse emphasizes individual skills deficits, how these skills can be raised, and measuring individual gains. In this terrain, there is a constant search for the "holy grail" that can directly correlate WLES program outcomes to factors such as productivity gains and improved literacy proficiency on the job. Merrifield brings us back to the "messiness" and complexities of WLES and acknowledges the terrain as one that is contested with different interests, different approaches and different philosophies.

To achieve success with WLES, these complexities need to be considered, worked with, and negotiated with all involved. Furthermore, the factors at play around WLES are constantly changing, as government policies, labour market conditions, workplace cultures and processes are in a constant state of flux. My own experience over the years shows there are no quick-fix, simplistic solutions or unitary views.

Those of us who work in WLES understand these complexities and the inherent contradictions among them. We know that learning must be "customized" to the workplace and to the needs of employers and employees. We creatively navigate the interests of employers, unions, policy makers and others to make things work on the ground. Part of this navigation involves creating a space within clearly defined power structures to develop ethical, high-quality initiatives and satisfy the needs of all stakeholders.

Merrifield reminds us of the importance of workplace and societal context and culture and how these factors influence WLES learning and its results. Her organizational view of the workplace context and its impact on WLES programs is of particular interest. It is useful to understand how the nature of workplace learning cultures — whether or not the workplace is unionized, size, champions and triggers for learning — all affect both learning and its outcomes. Specifically important is the fact that WLES program participants need opportunities to use the essential skills they have learned at work.

Merrifield underscores the push over the past two decades to quantify outcomes of WLES programs in relation to gains in productivity or gains in proficiency as measured by test scores even though those are not generally the interests or goals expected by employers. The difficulty of trying to make a direct correlation between training and organizational performance or literacy gains is well illustrated by this quotation in the paper: "The Measures of Success research framework notes that 'the training intervention is only one part of a larger system where other factors play a role in influencing worker behaviour, performance and business outcomes'."

The excellent contribution that this paper makes for those involved in WLES at any level is a clear analysis of the interconnectedness of societal, workplace and participant contexts, which create or limit opportunities for successful learning, and their potential impact on results. Merrifield does this through the concept of social ecology as a means to describe all the dynamic elements at play in relation to a whole. This framework proves useful in understanding WLES learning as a larger tapestry of interconnected threads. She shows how learning cultures at work, workplace or government policy, workplace structures, and employer and worker interests all form part of a social ecology at the workplace.

The idea of an ecology reaffirms the need to understand all its parts — players, environments, processes and their interconnections — in order to be able to offer and "measure" meaningful WLES learning.

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# FOREWORD

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This paper was commissioned by The Centre for Literacy to consider how context and culture impact the outcomes of Workplace Literacy and Essential Skills (WLES) and similar programs. It reviews research from Canada and other countries. This perspective is part of a broader way of thinking about WLES in Canada. Historically, some WLES programs have worked fairly holistically, relating teaching, learning content and materials to the workplace. These programs were often led by multi-agency partnerships that included employers, unions, government agencies and educational institutions. Such an approach embeds learning in organizational issues and development, suggesting a need for closer connections between WLES and the broader community of workplace learning, from which it has often been isolated (see Derrick, 2012). It leads to asking broader questions about purpose (whose purposes dominate?) and accountability (who is accountable to whom?). It also points to the necessity of understanding the interactions between individuals, organizations and wider institutions as they influence the nature of learning.

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Learning always takes place in a particular context and culture, yet educators have tended to focus their attention mainly on the form of learning, its methodology, content and teaching approach. While these can and do affect learning and its results, this paper looks beyond the particulars of the program to explore how the context and culture of learning can influence its outcomes.

Despite many exemplary programs, WLES in Canada is a patchwork of initiatives. With no single national WLES agency, there is a multiplicity of program types developed by provincial governments, unions, employers, non-profits and partnerships, and great variation in program design between provinces. WLES is complicated and contested, with different philosophies and approaches. A Canadian Council on Social Development literature review suggests a range of perspectives on workplace literacy, including:

- the human capital and individual skills perspective, dominant in the International Adult Literacy Survey (IALS) and many policy initiatives,
- the social practice view, rooted in literacies research, and
- other perspectives from labour, employers, educators and policy-makers

(Roberts and Gowan, 2007, p. 3).

There is no agreed upon position on purpose, form or outcomes.

Exploring how culture and context influence WLES outcomes is challenging. The question has not been directly addressed in any international research we have located. Ethnographic research on workplace literacies that explores the socially situated nature of learning gives us a good understanding of workplace contexts but not the wider contexts beyond these. Most research on outcomes is not comprehensive or lengthy enough to distinguish different contextual influences. Some current research in Canada, by the Social Research and Demonstration Corporation (SRDC), may shed more light on these issues.

While current literature does not directly address our question, there is nevertheless enough research to indicate some contextual factors that may be important.

# INTRODUCTION

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The first section of this paper looks at how aspects of three contexts shape WLES program delivery and results. Program participants' cultural and contextual factors affect how they participate and learn. The nature of the workplace, employers and unions also influence learning, while the macro context of social, economic and political factors affects both programs and workplaces.

The second section reviews research on “ecologies” of learning in which participants, stakeholders, partners and programs interrelate within complex environments. The final section discusses how WLES programs might apply the findings.

## TERMINOLOGY

The term Workplace Literacy and Essential Skills (WLES) is used in this paper because it is widely used in Canada. Other terms used in international research include “workplace basic skills” and “workplace literacy” (U.S.), “Adult Literacy and Numeracy (ALN)” and “Skills for Life” (England), “Workplace English Language and Literacy (WELL)” (Australia), and “Literacy, Language and Numeracy (LLN)” (New Zealand). International literature provides valuable insights for Canada, but program cultures and contexts differ by country in terms of skills addressed, curriculum, teaching and quality assurance systems. If WLES in Canada is complex and contested, the international picture is even more so.

## OUTCOMES

Outcomes of WLES programs that have been documented in research vary over time and from perspectives of different participants.

*For WLES program participants<sup>1</sup>*, the main outcomes are changes in attitude, namely confidence, morale, and openness to further learning. Confidence is important for supporting further learning work engagement. Evaluation of a large-scale workplace literacy program in England found that confident workers were “more ready to suggest new ideas, and have a wider circle of workplace friends and acquaintances, and higher expectations of what they will get from a course” (TLRP, 2008b, p. 3). There is evidence of improvement in skills, although limited, and increased engagement in literacy practices. Little evidence exists of economic and employment outcomes for participants in WLES (e.g., better pay or job advancement), as these outcomes would need expensive longitudinal tracking.

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<sup>1</sup> Research on outcomes for participants reported in: Australian Industry Group, 2012; The Centre for Literacy, 2009; Centre for Workplace Skills, 2011; Macleod and Straw, 2010; NALA, 2011; NRDC, 2009; TLRP, 2004, 2008a, 2008b; Warner and Vorhaus, 2008.

*For employers<sup>2</sup>*, the main outcomes are in staff morale and employee confidence, which are valued by employers as part of employee development. Employers report that because employees are confident they participate more in team work and communication and are more independent in tasks involving literacy and information technology. Although there are some reports from employers of productivity gains such as reduced staff turnover, higher production, and lower supervision costs, these have not been quantified. They are difficult to document and challenging to track back to particular interventions. Increasingly, some researchers take the view that to try “to identify a direct correlation between training and organizational performance is a pointless exercise” (Unwin 2004, p. 2).

*For wider communities, including unions, and society as a whole<sup>3</sup>*, there is evidence of program participants using their new skills outside the workplace, with families, community groups and unions. Policy-makers often expect that through participation in WLES programs, low-wage, low-skill workers will overcome individual disadvantages to create human and social capital. These kinds of outcomes are not substantiated in research—and indeed it would be difficult to do so. From the U.K. there are recent critiques of the expectation that workplace training could yield such results (Keep and James, 2010; Waite et al., 2011; Wolf, 2004; Wolf et al., 2010).

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<sup>2</sup> Research on outcomes for employers reported in: Ananiadou et al., 2003; Australian Industry Group, 2012; Cameron et al., 2011; Canadian Council on Learning, 2009; Hillage et al., 2006; Long, n.d.; Skill New Zealand, 2002; TLRP, 2008b; Wolf et al., 2010.

<sup>3</sup> Research on outcomes for wider communities reported in: Canadian Labour and Business Centre, 2005; CODA, 2011; National Institute for Literacy, 2010; NRDC, 2009.



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WLES outcomes are affected by the contexts and cultures of individual workers who participate in the programs, by those of their workplaces, and by wider social environments.

### PARTICIPANT CONTEXTS

“The further along the life-course people are the more their previous life experience comes into play, and learning forms part of complex patterns of cause and effect with a host of different factors interacting over time.” (Schuller et al., 2004, p. 14)

Participants bring to the WLES program their past life experiences, current life circumstances, motivations and aspirations, broader social networks and communities. Research suggests that their histories and contexts create motivators and barriers for learning, affecting learning outcomes in different ways.

### PAST LIFE EXPERIENCES

**Parental education.** Research has established a close link between parental education and performance of children in school, including their literacy and numeracy skills, and this carries forward into adult life. Two studies of British birth cohorts (people born in a particular week in 1958 and 1970) show that “the trajectory of disadvantage begins early, characterized by poor family circumstances, limited educational achievement and low aspirations” (Parsons and Bynner, 2007, p. 5). Cohort members with the poorest grasp of literacy or numeracy as adults had a relatively disadvantaged home life as a child; their own parents were most likely not to have any educational credentials and were three times more likely to report having current or previous reading difficulties than the parents of cohort members with higher level literacy skills (Parsons and Bynner, 2007).

**Prior learning experience.** Past learning experiences are known to influence further learning. A literature review on union-led learning found a number of studies indicating that negative experiences of education made people reluctant to enter formal learning environments (Canadian Labour and Business Centre, 2005). However, past learning experiences can be overcome—in the British cohort study, 23% of men gained their first qualification in their 20s (Parsons and Bynner, 2007). Programs in the workplace seem particularly well-suited to recruiting participants who had negative prior learning experiences (TLRP, 2008c). The Canadian Labour and Business Centre (2005, p. 20) cites research indicating that trade union courses are effective at recruiting “hard to reach” learners with negative educational experiences.

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### CURRENT LIVES

Characteristics such as age, gender, ethnicity and social class shape participation in general adult learning and WLES programs, thus indirectly or directly affecting outcomes.

**Age.** Age impacts participation in workplace learning. Two studies in Canada, the International Adult Literacy Survey (IALS) and the Adult Employment and Training Survey (AETS), show that younger workers are most likely to participate, and that rates decrease with age (Roberts and Gowan, 2007). An Australian study found that older workers in low-paid, low-skill jobs are much less likely to participate in training unless it is mandatory (Pocock et al., 2011b) and are also less likely to seek formal credentials (Pocock et al., 2011a). New Zealand research on transfer of LLN skills found that workers approaching 60 years of age usually did not see significant tangible career benefits for themselves and so did not participate in workplace training (Cameron et al., 2011). The U.K. Employer Training Pilot evaluation found that age had an impact on both participation and self-reported learning gains (Hillage et al., 2006).

**Gender.** Gender also has an impact on participation in adult learning. In the workplace, under-investment in training of female employees has been noted in several countries including Australia (Pocock et al., 2011b) and Canada (Roberts and Gowan, 2007; Livingstone and Sawchuk, 2004 as quoted in Canadian Labour and Business Centre, 2005, p. 11). Two factors seem to be important in shaping differential gender participation. One relates to barriers to participation created by family responsibilities, where burdens of childcare, care-giving and household maintenance fall disproportionately on women. The other relates to gender differentiation in jobs, with women and people of colour concentrated in low-wage jobs least likely to offer training (Livingstone and Sawchuk, 2004).

**Ethnicity and language.** There are also barriers to labour market participation for newly arrived immigrants. The Metropolis research project in Canada found a variety of barriers for young people—the greatest being language and discrimination due to accent (Wilkinson, 2010). There is little research on language issues for speakers of other languages who are not immigrants (e.g., in Canada, members of aboriginal and Francophone communities). While minority language speakers and members of ethnic minorities may be concentrated in low-wage jobs with few training opportunities, evidence from the U.K. suggests that when workplace basic skills training is available, they make stronger skill gains than native English speakers (TLRP, 2008b; 2008c).

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**Social class.** Social class distinctions continue from birth into the workplace. British cohort study members with the lowest skills were far more likely to be employed in less secure, unregulated parts of the labour market, and were much less likely to have been involved in work-based training (Parsons and Bynner, 2007). In societies that are already unequal, work tends to reinforce social inequalities rather than reduce them (Wilkinson and Pickett, 2010).

**Practicalities of learners' lives.** Life circumstances, family/other demands and responsibilities may all create barriers to participating, persevering and succeeding in learning within workplace programs. These barriers are well known from research in both workplace and community settings. They include time constraints, care-giving responsibilities, transport issues (cost and availability) and the complex work patterns of different family members. A recent Australian study looked in depth at how workers in low-paid occupations juggled work, home and learning (Pocock et al., 2011a). Among the challenges for participation were cost (where training had fees or required travel, books, etc.) and time (when training was not integrated into the working day) (Pocock et al., 2011b). Time barriers caused special problems for parents, both men and women. Women often had responsibilities of caring for children, husbands and parents, while some men worked two jobs to meet the needs of their family.

**Community context.** Beyond the home and family, communities affect participation in learning and outcomes in complex ways. Communities may provide support through peers and friends, or may discourage learning. Research shows how community cultural values shape aspirations, career choices and attitudes towards education and training (summarized by Keep, 2009). American research has found that perspectives on literacy are connected to culture. Many adults with literacy difficulties lived in “local” social locations, homogeneous in terms of class or ethnicity, not geographically mobile, with a high proportion of adults with restricted literacies (Fingeret, 1983). Contrary to dominant beliefs that literacy learning is universally positive, in such contexts, “[t]he development of literacy skills may disrupt social relationships and risk ‘losing’ one’s place in the fabric of social life” (Fingeret, 1982, p. 8).

**Work environments.** Previous education and credentials affect individuals' work environments which, in turn, affect the likelihood that they participate in training and have opportunities to engage in literacy practices on the job. “Individual employees (at all levels) bring their own experiences of life and learning into the workplace and thus contribute to the shaping and development of the learning environment” (Unwin et al., 2004, p. 4).

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In the U.K., Schuller and Watson (2009, p. 67) suggest that “adult education holds up a mirror to society's inequalities.” In most companies across the world, managerial and professional workers have the most access to training, routine occupations have the least, and people with no qualifications who are likely to have the lowest basic skills have the least of all (Keep and James, 2010). In Canada, the AETS found that the highest rate of participation in workplace training was 35% for professional and managerial workers but only 16% for blue collar manual workers (Roberts and Gowan, 2007). IALS research found that employees with higher skills are most likely to receive workplace training (Canadian Labour and Business Centre, 2005).

Access to training is paralleled by opportunities to engage in literacy and numeracy practices at work. The work environments of people with good qualifications are much more likely to be “rich” in literacy and numeracy practices (Schuller and Watson, 2009, p. 37). Low-wage, low-skill jobs are often found in “restricted” environments where there are fewer opportunities to engage in literacy practices or to learn (Keep and James, 2010, p. 6).

### MOTIVATORS AND DEMOTIVATORS FOR LEARNING

Research in New Zealand on the transfer of LLN skills from learning programs into the workplace suggest that motivation is one of four key learner characteristics, along with having skills and knowledge to participate, perception that the training will be useful and manageable life circumstances (Cameron et al., 2011).

*Intrinsic motivators* relate to learning itself—people may want to complete something left incomplete at school, develop themselves through learning and/or fulfill personal aspirations. The U.K. workplace Skills for Life study found that employees were motivated by a range of factors including “curiosity”, wanting to make up for missed earlier educational opportunities, self-improvement and helping children with homework (Evans et al., 2009, p. 248).

*Intrinsic demotivators* relate to cultural, attitudinal and dispositional barriers that may discourage people from participating in adult learning (Keep, 2009). A Canadian study found unskilled workers often saw formal learning and credentials as having only minor intrinsic value (Canadian Labour and Business Centre, 2005).

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*Extrinsic motivators* relate to rewards such as career progression and better pay. Employees may want to move out of manual work, apply for higher positions or feel more secure in their jobs. These motivators change with circumstances. The U.K. Learner Study found learners' motivation to learn diminished when their promotion goals or their job changed, or if they became unemployed (Warner and Vorhaus, 2008). Research on transfer of LLN skills in New Zealand found that some workers did not see any career paths or work motivators, although they were motivated to improve their English and/or to complete certificates (Cameron et al., 2011).

*Extrinsic demotivators* for learning include lack of reward for learning (e.g., older workers are especially likely to see few career rewards for training) and lack of support and encouragement for learning. Lack of opportunities in the local labour market may shape aspirations and career goals and, therefore, participation in workplace training.

Life-course changes may increase motivation to learn or create new barriers: they may expose skills limitations, disrupt coping patterns and/or open up new possibilities. Life-course changes may set in motion a "spiral of change" (Fingeret and Drennon, 1997, p. 67). The Oregon Longitudinal Study of Adult Learning (LSAL) found that starting a job after being unemployed or having a child both had a positive effect on reading practices (Reder, 2010).

### SUMMARY

Individual history and current context affects readiness to engage in learning. Age, class, gender and ethnicity all shape participation in learning in particular employment contexts. Practical issues in daily lives may make it difficult to take part in learning programs, while cultural and workplace contexts shape motivators and demotivators for learning.

### WORKPLACE CONTEXTS

A growing body of research highlights the impact of the nature of the workplace on outcomes of learning programs. The Measures of Success research framework notes that "the training intervention is only one part of a larger system where other factors play a role in influencing worker behaviour, performance and business outcomes" (SRDC, 2011, p. 7). Contextual factors such as the nature of the low-wage, low-skill labour market, work environment and learning culture, and the presence of unions or other support structures for learning all influence how likely workers are to participate in WLES training and the resulting outcomes.

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### THE LOW-WAGE, LOW-SKILL LABOUR MARKET

Opportunities for workers to learn at work, whether formal or informal, are shaped in part by the labour market. While for some years it was argued that all jobs would eventually require higher literacy skills (e.g., Ontario Literacy Coalition, n.d.), it now appears that routine and manual employment persists in the economies of most developed countries. In the Australian labour market there has been significant growth in casual and part-time work over the past 25 years, and research indicates that “many workers in lower-paid occupations experience long-term low earnings and their workplace structures are flat ... Rates of return on higher skills or qualifications are often low or non-existent in lower-paid occupations” (Pocock et al., 2011b, p. 36). Women, ethnic minorities and aboriginal people are often concentrated in low-paid jobs and excluded from learning opportunities.

While not all low-wage jobs are low-skilled, labour market research in the U.K. suggests that the proportion of low-paid jobs in 2010 was around 22% and unlikely to fall over the next 10 years (Keep and James, 2010). It is also becoming clear that many of these jobs entail few literacy or numeracy practices and few opportunities to learn informally. A substantial proportion of U.K. workers say their jobs require little in the way of reading and writing (Ananiadou et al., 2003). The majority of learners in workplace Skills for Life programs in England were in occupations that required very little use of literacy or numeracy (Waite et al., 2011). A study comparing skill requirements and use at work over 10 years in four countries—Australia, New Zealand, Canada, and the U.S.—revealed results that did not fit the expectations of increasing demand for skills in the new work order (Ryan and Sinning, 2011). In Canada, the Canadian Labour and Business Centre's overview (2005) suggests that workers tend to be under-employed in their jobs rather than under-qualified.

### THE NATURE OF LEARNING IN THE WORKPLACE

***The culture of work.*** The culture of the work environment shapes opportunities to learn and use learning, both of which have an impact on outcomes. Unwin suggests that “workplaces have always been sites of learning and every workplace creates its own unique version of a learning environment” (p. 1) but also that “some organisations are much more effective than others at both facilitating and capitalising on the learning they engender” (p. 3).

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In the last decade or more there has been a lot of discussion about the workplace “learning culture”. For example, the National Centre for Vocational Education Research (NCVER) in Australia suggests that workplace learning cultures have common features that include open communication styles, innovative systems, a broad role for workplace trainers, informal learning built into organizational systems, and a variety of forms of training and learning made available. They also foster generic skills, not just tasks, and encourage learned skills to be applied to work at hand (NCVER, 2003).

It is useful to think about the culture of learning in the workplace as a continuum rather than either-or. British researchers (Unwin and Fuller, 2003) proposed the “expansive-restrictive continuum” identifying the characteristics that encourage or discourage learning. Expansive cultures include: “recognition that people learn in the workplace; mechanisms to facilitate sharing of knowledge and skill; boundary crossing across job lines; commitment to passing on skills from one generation to the next; and workforce development policies for all grades” (Unwin et al., 2004). Workplaces towards the “restricted” end of the continuum are more likely to view learning as “ad hoc” episodes, restricted to specific tasks, skills and knowledge, reacting to particular organizational needs (TLRP, 2004). The usefulness of the continuum was confirmed in the evaluation of the U.K. workplace Skills for Life program (TLRP, 2008b; Waite et al., 2011).

**Support structures.** Support structures, which are often present in expansive learning cultures, have an important impact on outcomes. Unions, mentors, buddies and sympathetic supervisors may support informal, on-the-job learning. New Zealand research on successful workplace learning found “helping others learn can occur ‘naturally’ between workers, but is more likely to become integral to workplace learning when the workplace climate tangibly supports learning and promotes supportive relationships between workers” (Vaughan et al., 2011, p. 22).

**Size.** The size of a company does not affect its position on the expansive-restrictive continuum, but does affect how likely it is to offer training. U.K. and U.S. research suggests that larger firms are more likely to provide training and establish longer-term programs (Waite et al., 2011). Australian data show almost all large enterprises provided structured training but 20% of small employers did not provide any training. This research suggests that smaller enterprises are more likely to do informal training (NCVER, 2003). In Canada, the lowest rates of participation in workplace training were also in the smallest organizations (Roberts and Gowan, 2007).

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Employer size also matters for literacy and numeracy practices at work. Analysis of two cross-sections of international data surveyed 10 years apart by Statistics Canada and the Organisation for Economic Co-operation and Development (OECD) enabled comparisons between workers' skills and their self-reports of literacy and numeracy use at work. "Employment in larger establishments is positively associated with increased literacy use, suggesting that large companies tend to require workers to undertake more complex tasks in their jobs" (Ryan and Sinning, 2011, p. 8). Employer size has a significant negative effect on numeracy use in all countries (i.e., larger companies are associated with lower numeracy use, perhaps because there is more specialization).

**Champions.** The influence of company "champions", from top management to frontline managers, is a part of "what works" for successful workplace learning (The Conference Board of Canada, 2005, p. 7, and 2009, p. 21; Australian Industry Group, 2012, p. iii; Vaughan et al., 2011, p. 19). Line managers are important because they have "the power to create social climates that support learning" (Unwin et al., 2004, p. 6). U.K. research found longer-term workplace learning programs had "an internal champion who had decision-making power or knew how to influence those who did" (Waite et al., 2011, p. 20; Evans et al., 2005, p. 9). The National Research and Development Centre for adult literacy and numeracy (NRDC) Learner Study found that successful learning happened when "the company involved was committed to Skills for Life at the highest level of management, and managers at all levels were involved with the activity" (Warner and Vorhaus, 2008, p. 35).

**An identifiable and recognizable employer "need".** The trigger for establishing a WLES program is often an internal or external change that affects the employer, such as new regulations or standards, credential requirements, or new technologies or procedures (see for example Plett, 2007, p. 58; NCVET, 2003).

Employers who engage in WLES training identify a range of different expectations, mostly related to employee development. In a Canadian project testing collaborative approaches to workplace models, employers' expectations of the project were "that participating workers would gain confidence through the program, learn new skills they could apply at work and home as well as gain an interest in continuous learning" (CODA, 2011, p. 22). Research from England suggests that employers' reasons for delivering Skills for Life were more about the general development of employees than a need to address LLN issues specifically (Waite et al., 2011; Newton et al., 2006). Managers' goals included boosting staff morale, fostering a positive ethos and enhancing corporate solidarity.



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### UNION INVOLVEMENT IN LEARNING

Union involvement in WLES in Canada and elsewhere has been long-standing. There is evidence that union involvement affects the program approach and its outcomes (CODA, 2011). Union membership in Canada appears to lead to more participation in employer-paid and formal courses, although there is variation between workplaces (Canadian Labour and Business Centre, 2005). A report on Canadian work-related general learning (not just essential skills) argues that “experience has shown that workplace education training is successful when: the union is an equal partner with management in decision-making; [and] union involvement is highly visible to learners” (Centre for Workplace Skills, 2011, p. 3).

In the U.K., union involvement in vocational education and training, and workplace Skills for Life has had an impact on participation and outcomes. One study found that “union learning representatives were an important factor in enrolling and being supported on work-based courses” (Warner and Vorhaus, 2008, p. 7). However, Union Learning Representatives (ULRs) are present in only 13% of U.K. workplaces. “In those areas of the economy where skills and training problems are often at their most acute—notably in private sector services such as hotels, hospitality and retailing—trade unions and, therefore ULRs, are conspicuous mainly through their absence” (Lloyd and Payne, 2006, p. 2).

### LLN PRACTICES IN THE WORKPLACE

Ethnographic studies have provided a deeper understanding of literacy practices in the complexities of workplace settings (Belfiore et al., 2004; Hull, 1997). There is a growing body of evidence from research in New Zealand and the U.K. that workplace essential skills programs are most successful when there are opportunities for participants to use literacy and numeracy skills at work. The learners who made the most progress in U.K. workplace Skills for Life programs were those who had continued to practice skills in the workplace and beyond (Waite et al., 2011). Tracking participants over time, the longitudinal evaluation of workplace Skills for Life found that “whether people increase their proficiency or lose ground depends on whether the job itself requires the learning and use of literacy skills” (TLRP, 2008c, p. 1). English for Speakers of Other Languages (ESOL) learners made stronger skill gains over the two years they were tracked, which is perhaps related to increased opportunity to practice speaking and listening even in jobs with few literacy practices.

A New Zealand study on the transfer of literacy, language and numeracy skills from learning programs into the workplace notes “more transfer of learning occurred and was more likely to be sustained and extended when

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tutors, learners, and workplaces collaborated in seeking out situations where learners could practice new learning and receive feedback at work” (Cameron et al., 2011, p. 40).

### SUMMARY

The nature of the labour market and the workplace both shape opportunities for individual employees to learn at work. Workplaces with “expansive” learning environments provide the most support for learning and make good use of the learning that takes place. More “restrictive” environments tend to see learning as short-term and ad hoc—a side issue to business performance. Companies that have a strong culture of learning, management champions, and a recognized need for learning are more likely to offer and support WLES. Additionally, large companies are more often supportive of workplace learning than smaller ones. The workplace also shapes whether there are opportunities to engage in LLN practices at work. When workers have opportunities to engage in literacy and numeracy practices at work they are more likely to transfer skills and increase proficiency over time.

### MACRO-LEVEL CONTEXTS: SOCIAL, ECONOMIC AND POLITICAL

Although each country's social and economic history has led to a particular skills profile and configuration of the labour market, in an increasingly globalized world no country exists alone or makes its policies in isolation. The nature of work and technology are changing, with organizational restructuring and different demands on workers. These have impacts on investment in training and policies for workplace learning.

### THE CHANGING NATURE OF WORK

Since the 1990s there has been widespread consensus about the changing nature of work. Business gurus like Peters, Senge and others described a future for capitalism in which hierarchies flatten and decentralize, problem solving is moved to the front-line, and the focus is on quality, responsiveness to customers and flexibility (see Jackson, 2004). A shift to the “knowledge economy” for developed countries was expected to require workers with different skill-sets: higher literacy and numeracy, computer skills, and a stronger ability to work in teams, solve problems and take initiatives. Indeed, rapid technological change has increased demand for workers with computer skills. In the U.K. transport sector, computers were essential for 26% of workers in 1997 and 45% in 2001 (CIPD, 2005). The Ontario report Menial No More suggested that “jobs perceived as low skill are undergoing massive changes driven by emerging technology, the pressures of productivity and legislative changes to health

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and safety standards” (Ontario Literacy Coalition, n.d., p. 1). While the nature of work is undoubtedly changing, it has not changed for all workers. In most developed countries, there remains a substantial percentage of low-paid workers who have few basic skills demands (Keep and James, 2010).

***Increasing standardization of work.*** Part of the shift in the nature of work has been a focus on quality assurance, with increasing certification requirements by international bodies such as ISO (International Organization for Standardization) or HACCP (Hazard Analysis and Critical Control Point). As Jackson (2004, p. 9) suggests, “such certifications are increasingly essential to doing business in the international marketplace.” This has had widespread impact on many sectors of the economy, especially manufacturing, transport and care-giving (CIPD, 2005).

New standards for quality, health and safety increase requirements for paperwork (e.g., written care plans and agreements) and data (CIPD, 2005). This places new literacy and numeracy demands on front-line workers. Canadian Council on Social Development case studies in three provinces showed new health and safety standards and new credentialing requirements were cited by the employers as important conditions for offering WLES training to employees (Plett, 2007). An Australian study found that “compliance is an important driver in many lower-paid occupations” (Pocock, 2011b, p. 46). While literacy and numeracy requirements may encourage employers to offer more WLES training, they may also lead to narrow training focused on minimal compliance with regulatory requirements.

***Government investment in education and training.*** In parallel with changes in thinking about work, most OECD countries have invested heavily in education over the past thirty years, believing that “high-value, high-skill economies” demand new skills from their workforce (CIPD, 2005, p. 5). The focus has been on “deficiencies in the stocks of human capital held by those in lower end work.” Policies have focused on skills and training “rather than structural and institutional factors such as the shape of product markets, competitive pressures and the lack or weakness of trade unions and collective bargaining institutions” (Keep and James, 2010, p. 2). Critics of this approach argue “you can train away low-skilled (or more often lowly qualified) stocks of labour, but you cannot train away the often low-paid, dead end work environments that such workers often inhabit” (Keep and James, 2010, p. 24).

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The OECD's global Skills Strategy acknowledges that skills mismatches have emerged in a number of countries: "up to one-third of workers consider themselves over-skilled for their current job", while "13% believe that they have some skills deficit" (OECD, 2011, p. 10). Over 40% of workers in the U.K. and 46% in France say they are over-skilled for their present job (OECD, 2011). Finland, like other Scandinavian countries, has focused more on skills utilization and only 22% of workers there say they are over-skilled. A U.K. analysis of demand and supply of qualifications found 6.5 million jobs for which no qualifications are required, and only 3 million workers with no qualifications (Wolf, 2004).

Given concerns about the relationship between growth and skills development, OECD's new Skills Strategy uses policy to optimize use of skills in the workplace, not just to train more workers. Policies in New Zealand and Scotland are beginning to look at skills' utilization (Warhurst and Findlay, 2012). Scotland's policy addresses "the way in which jobs are designed, filled and subsequently executed" (Payne, 2008, p. 2). The New Zealand Skills Strategy goal is to "use and retain skills in the workplace"; it aims to support managers and workers to use and develop their skills (New Zealand Government, 2008).

### POLICY IMPACT ON WLES PROGRAMS

Relatively few countries have a comprehensive national literacy strategy that includes workplace learning, but most have some policy for adult literacy at a regional, state, provincial or national level (see detailed reviews of adult literacy policies, including workplace programs, in 8 countries in NALA, 2011).

In most developed countries, WLES policies focus on individual skills rather than practices, human capital (skills and credentials) rather than social capital or social change, and education as a tool for economic growth. Wolf argued that the paradigm of increasing education levels to increase economic outputs "rests on assumptions and interpretations of data that are highly questionable" (Wolf, 2004, p. 325). But the paradigm remains strong, leading to short-term "interventions" in which accountability requirements lead to extensive record-keeping and testing and outcomes are defined as skills gains and/or productivity (which are not always the outcomes that employers or WLES participants prioritize). Key policy elements seem to be preferred program models, funding arrangements, assessment regimes and reporting requirements.

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**The program model.** Short, classroom-based programs are typical in many countries, commonly 20–40 hours. U.K. workplace Skills for Life programs were typically 30 hours, and despite high levels of satisfaction from both learners and employers the evaluation found that courses were too short to have impact in terms of skills gains and productivity (TLRP, 2008c). An international review of adult literacy policies also suggests that short courses, while leading to increased confidence and social engagement, are not long enough to yield literacy proficiency (NALA, 2011).

**Funding arrangements.** In many countries policies for WLES undergo frequent changes. Major changes during the U.K. workplace Skills for Life initiative created what evaluators called a “byzantine and shifting funding landscape, with its concomitant bureaucracy and strong emphasis on credentialism” (Waite et al., 2011, p. 30). These funding arrangements destabilized the workplace programs (Waite et al., 2011). The cost of setting up the programs was not covered and funds were received only on completion of an output, resulting in unsustainable programming (Wolf et al., 2010).

**Assessment and evaluation requirements.** In Canada, the CODA project raised concerns about assessment approaches required by funders as part of WLES accountability frameworks. Stakeholders in the project identified problems with the mandatory pre- and post-testing using IALS-related test instruments, suggesting they took time away from teaching in already short-term programs, were not aligned with program content and caused test anxiety among participants (CODA, 2011). They questioned the assumption that pre- and post-skills testing of any kind could capture skills gains for such a short-term program.

**Reporting and accountability requirements.** Paperwork was raised as an issue in the CODA project: “many participants, instructors and Learning Advisors all tended to agree that there were too many administrative requirements that cut into class time” (CODA, 2011, p. 20). Comments suggested that the programs were too short for so much paperwork, including intake forms, evaluation check-ins, and exit data forms. Similarly the voluminous record-keeping and bureaucracy required by workplace Skills for Life (14 forms per new learner, taking about 2 hours to complete) meant that education providers found running courses unprofitable (Waite et al., 2011).

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### SUMMARY

Beyond the workplace itself there are many social, economic and policy influences that have an effect on WLES programs and outcomes. Changes in the nature of work are influencing how employers see the need for literacy skills. In particular, the growing importance of international standardization of work processes are shaping literacy and numeracy practices for many workers. Policies that set up and fund WLES-type programs in many countries are based on a concept of “high-value, high-skill” economies in which increasing individual workers' skills is the main focus. Nevertheless, there is evidence of widespread mismatches between skill levels and utilization in the workplace. There are indications of a shift of interest in some countries from policies for skill acquisition to skill utilization in the workplace.

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Section 1 discussed the effects of context and culture on WLES by considering separately the learners, workplaces and policies. In reality, none of these exist in isolation. Research recognizes that they are interrelated and that these relationships also have an impact on outcomes (in addition to the influence each individual aspect has on outcomes). “[L]earning in the workplace is not just something that happens, but is part of a wider system ... of the enterprise and its managers, the individual, the external training provider, and other organizations such as government and community bodies” (NCVER, 2003, p. 8).

The concept of “social ecology” offers a way to explore the complexity and inter-dependence of workplace relationships. Ecology originally described the interactive relationships between living organisms within their environment, but has been used for social systems to convey “an open, complex adaptive system comprising elements that are dynamic and interdependent” (Richardson, 2002, p. 48). The four categories of actors, relationships, environments and processes lie at the heart of social ecological analysis (Waite et al., 2011). Social ecologies are both self-sustaining and inter-dependent, and individuals and groups have the capacity to act within them. In a workplace environment, workers, managers, unions, trainers and educators, policy-makers and other partners all create and recreate the social ecology over time, interacting within wider social, economic and political environments.

### ECOLOGY OF WORKPLACE LEARNING

Intensive research on the ecology of successful workplace learning was carried out in New Zealand at six workplaces in four industry sectors (Vaughan et al., 2011). The aim was to understand “how learning happens at work” and the research covered not only formal training programs (none of these were WLES) but also informal learning supported through mentoring, buddy systems, “working alongside” and team work (Vaughan et al., 2011, p. 27). Researchers found “there is critical interplay between workplace structures and workplace (teaching and learning) practices” (Vaughan et al., 2011, p. 7). They noted that opportunities are only as good as the chance to put them into practice. Case studies gave examples of workplaces “affording opportunity by aligning learning priorities at a policy level with practices that supported learners to perceive opportunity, undertake training towards qualifications, and complete the qualifications” (Vaughan et al., 2011, p. 7). Two case studies highlighted at the 2012 Summer Institute illustrate these opportunities in WLES programs (see Sidebars 1 and 2, Hardy Industries and Thames Timber).

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It is important to see actors in social ecologies as having capacity to act. Structures can be reworked, selectively appropriated, resisted or adopted. "Individuals' beliefs in their ability to change their situation by their own efforts, individually or collectively, are significant for the development of skills at work" (Waite et al., 2011, p. 7). These beliefs change over time, and are related to experiences both at work and outside.

The concept of learning ecologies implies that WLES should not ask how to get workers or employers to "buy into" the programs as conceived by policy-makers or educators. Instead it should ask how each member of the ecology sees the situation and the issues, and look for ways to engage with organizational structures and workplace practices, including literacy and numeracy practices but also the formal and informal arrangements that support learning. Literacy and essential skills are just one part of a bigger picture that may include a range of other learning needs and opportunities, which need to be aligned to provide the most effective approach.

### CASE STUDY 1: HARDY INDUSTRIES

Hardy Industries (an invented name to provide anonymity) was an American company that initiated a sustained program in which WLES was embedded within a "pay for knowledge" (PFK) scheme as part of a high-performance organizational restructuring (Reder, 2012b). It took place in the context of manufacturing in the U.S. in the early 1990s when many companies were re-making themselves as high-performance work organizations (Hart-Lansberg and Reder, 1995).

Hardy was owned by a visionary entrepreneur. The restructuring process at Hardy Industries created a high demand for new skills, and the PFK compensation scheme was designed to reward workers for these. Unusually, the skill sets were developed collaboratively with the workforce, and skill certifications were based on written and oral exams, hands-on demonstrations and other assessments. The researchers mapped the complex literacy practices involved in three main categories of work activities: production, meetings and PFK activities. The company itself took on many of the functions of an educational institution, providing a range of ways for workers to learn, support for learning and financial incentives. The shift to team production provided the need for new skills, and also a supportive environment for collaborative learning.

Hardy was, at that time, a workplace with a strong culture of learning, going through a significant change process, in which workers were encouraged to both accept and also construct learning opportunities (Reder, 2012b). The social ecology changed some years later when the company was sold. The owner-champion was gone and the larger corporation that bought the company did not adopt the high-performance work approach.



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### CASE STUDY 2: THAMES TIMBER

Thames Timber is a small New Zealand company with 50 employees. Thames Timber worked with its educational partner, Valley Education and Training, in a program funded by the New Zealand government's Workplace Literacy Fund. The initial driver for the company was to get employees to understand key performance indicators (KPIs) and why they are important.

To do so, workers needed high levels of literacy and numeracy understanding. Like Hardy Industries, Thames Timber had staff briefings at the start of every shift and weekly staff meetings, at which production figures were a key feature.

Part way through the learning program, the company started to move toward lean manufacturing, with worker participation in development processes. Like Hardy, the company operates in a particular context, both local and global, and was responding to international changes in the organization of work.

Thames Timber's partners also had their own contexts and drivers. Under New Zealand government funding there was no requirement for a fixed curriculum or achievement of credentials, and the content of training could be flexibly adapted to both workers' interests in their outside life and to the workplace. Their WLES program has been documented in a short video "Branching out into lean manufacturing" (Thames Timber, 2012).

### SUMMARY

Social ecologies are interrelated systems of independent and interdependent actors (in WLES these include employees, employers, unions and governments, as well as potential other partners). The focus is on relationships between the actors, wider environments and processes. Each of the actors has their own interests but achieving these may require the interests of others to be taken into account. Each has some degree of capacity to act, which may include resistance as well as finding spaces to meet their own needs.

## SECTION 3: CONCLUSION

### IMPLICATIONS OF LEARNING ECOLOGIES ON WLES POLICIES AND PROGRAMS

This brief review of international research on the impact of culture and context on outcomes of WLES programs suggests some key factors. First, there is no “right” way to structure a WLES program that works in all workplaces for all learners. Second, learning ecologies are complex, involving actors and organizations, their environments, relationships and learning processes. These complex dynamics should be considered during program planning stages and be monitored throughout the life of a program.

#### THE ACTORS

Workers, managers, union leaders, trainers, policy-makers and partners all bring their own histories, experiences and aspirations to workplace learning. This paper has outlined research about worker contexts, in particular, how their purposes and motivations for learning are affected by individual histories, present lives, communities and life-course changes. Managers and union representatives, trainers and others are also actors in the ecology. Further research could explore these actors' contexts and how they influence the relationships and processes of learning.

Organizations are actors in the ecology, and have their own structures and cultures that shape how workplace learning takes place. This paper has explored research on employer organizations; in particular their cultures of learning (the expansive-restrictive continuum), needs or drivers for learning, and the effect of company size on learning. Other organizations including unions, training providers, non-governmental organizations (NGOs), and governments may be involved in the learning ecology, each with their own dynamics. Organizations in the ecology at a greater distance from the learning program include the supply-chain and customers, trade bodies and standards organizations. These will also have some influence on the nature of workplace learning.

#### THE ENVIRONMENT

The macro-level context—social, economic, and political—provides the wider environment in which organizations and individuals operate. Changes in the nature of work, new imperatives for employers in the form of international standards for quality and health and safety, and changes in styles of work organization and processes are all part of the learning ecology. Government policies are influenced by this wider environment and are also part of the context within which employers operate. There have been critiques of WLES funding models in a number of countries, especially relating to very short program models, narrowly defined targets that did not match employer or employee concerns and a heavy burden of

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assessment and record-keeping (Wolf et al., 2010; Waite et al., 2011). The additional issues of government budget cuts and fiscal constraints also have an impact on WLES programs.

#### THE RELATIONSHIPS

While these elements of the ecology (actors and environments) are understood, the challenges lie in understanding their relationships, developing appropriate processes and navigating the ever-changing environment. Research consistently suggests that it is the complex interplay between different elements of the system that shapes the outcomes. WLES practitioners often find themselves managing a change process in the workplaces they enter. No WLES program design can be expected to produce consistent and positive results in all settings. Programs need to respond flexibly to the different backgrounds and goals of the employees; the structures, cultures and needs of employers; and to unions and policy-makers. Relationships between different players need to be developed, so that (1) managers understand that getting results is not a quick-fix process, (2) employees understand the support available and how their needs will be assessed, and (3) policy-makers understand the complexity of the relationships required and the flexibility needed to achieve results.

Within the ecology, institutions of power create “strategies” to define structures and processes. But the players in the ecology have the capacity to act. They can subvert these strategies in a variety of ways, using “tactics” to create space for themselves to pursue their own goals (Waite et al., 2011, p. 7). Both employers and employees use tactics: managers may use WLES courses to boost the general development of employees rather than literacy and numeracy, while workers may pursue learning for their own purposes, in which job-relevant skills are only a small part. Case studies in workplaces suggest that strategies created by institutions of power to define structures and environments are almost always incomplete. The distance between corporate headquarters and front-line managers (i.e., between policy and its implementation) means that there is often space for tactics to be used by players to pursue their own goals. Structures may be re-worked to make them more favourable, and spaces may be created to achieve some goals even within unfavourable structures.

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#### THE PROCESSES

Processes within the ecology provide support for learning. WLES is only one part of the learning and training processes in the workplace; there are others going on. Historically, WLES has been separate from these, but Derrick's recent paper (2012) suggests it is time to end the isolation and approach WLES as an integral part of workplace learning.

The most successful workplace learning ecologies seem to offer many opportunities for putting learning into practice, a diversity of learning options, and learning from experience and informal "on the job" learning alongside more formal WLES programs.

Recognition of the importance of literacy and numeracy practices in the workplace is beginning to widen the focus of attention from skills proficiency alone to use of skills. Recent research and policy developments are reinforcing what is emerging from longitudinal studies such as the LSAL study in Oregon—that literacy and numeracy proficiency is related to, and follows from, engagement in practices (Reder, 2012a). Workplace studies from the U.K. and New Zealand indicate that employees who engage in literacy and numeracy practices in the workplace are most likely to improve their skills, in and out of programs, and over time. Workers in low-wage, low-skill jobs and in part-time work are less likely to have opportunities to engage in practices on the job. Getting "the right learners" in "the right program" means identifying people who have opportunities to use literacy, language and numeracy in the workplace, and then supporting them to do so.

Most successful workplace learning takes place where there is a culture of learning, with people at all levels of the company seen to be learning, and support structures and processes for informal and on the job learning as well as formal training. Mentors, buddies, "working alongside" more experienced workers and team-working can provide a "scaffolding" approach to learning, in which a less experienced person is given support by a more experienced person to accomplish tasks that they could not do on their own. This informal learning support can be a crucial element in engagement in literacy, language and numeracy practices in the workplace.

When the learning environment is restrictive, WLES practitioners have to look for different ways to support learning. Braddell (2012) describes familiar problems with running conventional weekly basic skills classes in workplaces. The response was to create different ways of structuring learning using on-the-job basic skills, linked to the management of work

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activity. To play the most effective role in learning ecologies, WLES programs have to become learning organizations themselves. A great deal of effort has been expended on identifying “what works” in WLES, but while broad approaches to program development can be outlined, the variability of the contexts means that there can be no detailed recipe for what works. The Centre for Literacy’s 2009 Summer Institute suggested that rather than learning only or primarily from “best practice” we could learn from “good practices,” “promising practices” and “innovative practices.” We can also learn from mistakes, or things that did not work as planned, as they can provide insights into what needs to change.

Above all, WLES has to engage workers, employers and other partners in the dynamics of change. One presentation at the Summer Institute was about a three-year research project in British Columbia that explored ways to engage people at all levels in shifting the culture of learning in workplaces. The researchers outlined three disarmingly simple steps, which embody a learning approach to change:

- listen and learn
- engage people—ask about their problems and how they could be solved
- “embed every which way”—weave literacy, language and numeracy into as many aspects of the workplace as possible

(Twiss and Defoe, 2012)

WLES cannot be thought of in isolation. Programs work within the contexts, cultures and purposes of learners, employers and policy-makers. There is a critical interplay between structures and practices across the ecologies of learning. Successful outcomes require an understanding of the actors, relationships, environments and processes of the ecologies. Such an understanding can create a greater commitment to work together to meet common goals, and to support learning in flexible ways. Through these commitments, the goals and purposes of the actors can be met and wider social contexts enhanced.

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