

UP SKILL

ESSENTIALS TO EXCEL

UPSKILL: A Credible Test of Workplace Literacy and Essential Skills Training



Summary report
August 2014

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UPSKILL Partners



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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.

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Introduction

The challenge of low literacy among working-aged Canadians appears to persist. Results from the latest round of international literacy assessments released in 2013 reveal that while Canada ranks about average in literacy scores, it also has a higher proportion of its population with both low and high levels of literacy (Statistics Canada, 2013). The results further show that while one in seven Canadian adults functions with very high levels of literacy (14 per cent at Level 4 or above), nearly half of the working-age population is ranked at less than Level 3, the level that workers in many Canadian occupations have been deemed to need for successful performance.¹

Over the last decade, a large volume of research has demonstrated that literacy is unequivocally associated with large differences in employability, wage rates, income and reliance on income support programs. Adults with higher literacy skills earn more, experience less unemployment, and are less reliant on government transfers than those with low literacy (Osberg, 2000; Green & Riddell, 2001; Green & Riddell, 2002; Green & Riddell, 2007; Raudenbush & Kasim, 2002; and Statistics Canada & OECD, 2005). Moreover, in addition to low literacy leading to increased costs for firms from injuries and absenteeism, research suggests that productivity declines substantially with lower literacy increasing labour costs and reducing firm profitability (Coulombe and Tremblay, 2004).

Encouraging employer investments in Literacy and Essential Skills training

Over 75 per cent of those with low literacy are employed during the year – as such, the workplace is a vital avenue for training in order to raise literacy levels of Canadians (Canadian Council on Learning, 2008). There is a growing body of anecdotal evidence on the effectiveness of workplace Literacy and Essential Skills (LES) training including a number of best practices in training design and delivery. In spite of this, there remain significant challenges in take-up and delivery of LES training among firms and low-skilled workers. Workers who are most in need of learning to enhance their skills and literacy are often least likely to receive it, particularly “frontline” workers where the incidence of training is significantly lower than the size of the apparent need (Gyarmati, Leckie, Dowie, Myers & Conte, 2010).

Is there a business case for workplace Literacy and Essential Skills training?

A firm’s decision to invest in training, though complex, ultimately relates to the expected return on investment (ROI). This is part of the challenge for employers: there are few high quality studies that have reliably measured the effects of literacy training or adequately measured its ROI. Indeed, an

international review of empirical studies of the effectiveness of literacy education found that the few studies of workplace training that have been completed do not rate highly in terms of research quality (Gray, 2006).

In an effort to fill this knowledge gap, the Office of Literacy and Essential Skills (OLES), a branch of Employment and Social Development Canada (ESDC), decided to sponsor a large-scale research project to evaluate workplace LES training using the most rigorous methods. Directed by the Social Research and Demonstration Corporation (SRDC), the UPSKILL project was launched in 2010 as a pan-Canadian research and demonstration project. UPSKILL utilized a randomized control trial (RCT) to provide the most reliable measures of the impacts of LES training in the workplace. Over 100 firms and nearly 1,500 workers in the Accommodations sector of the Tourism industry participated in eight provinces.

The findings from this study indicate that workplace LES training does, indeed, have large positive impacts on workers’ skills, job performance, and a range of economic and social outcomes for workers and firms. A benefit-cost analysis also reveals a significant positive return on investment for firms. Importantly, the study also finds that the pattern of impacts varies among firms and workers in ways that have important implications for the design and delivery of effective training programs. Understanding these factors can lead to policies that facilitate both larger employer investments in training and higher return on investment.

The results of UPSKILL provide clear evidence and insights into the value of workplace LES training, which can support small to medium-sized enterprises (SMEs) in their training decisions and make workplace training more accessible for lower-skilled Canadians.

Objectives and research questions

The objective of the UPSKILL demonstration project is to provide a credible test of the effectiveness of workplace LES training by measuring its impacts on workers and firms and estimating the return on investment for all those engaged.

¹ Based on the Essential Skills Profiles <http://www.hrsdc.gc.ca/eng/jobs/les/profiles/guide.shtml>

The overriding policy question for this project can be stated as follows:

Is workplace Literacy and Essential Skills training effective in raising the skills of workers and does it lead to improved job performance in ways that support individuals while meeting firm business needs and providing a positive return on investment?

This central policy question embodies a series of sub-questions and hypotheses about the decision to participate in LES training; the extent of engagement in learning activities; its effects on workers' skills, job performance and business outcomes; and ultimately, its cost-effectiveness for firms and governments. The overriding policy question can be broken down into a series of research questions, presented in the text box below, and to be addressed in the remainder of this report.

UPSKILL research questions

1. **The decision to invest:** Will employers accept an offer of LES training, if they have to bear some of the costs, and will their staff voluntarily choose to participate?
2. **LES training delivery:** How much release time will employers provide for training given their business constraints? Will workers engage in the training activities to the extent offered?
3. **Effects on workers:** Does LES training improve workers' skills, job performance and employment conditions, such as job stability or wages? Are there also non-financial benefits such as improved health or well-being of workers?
4. **Effects on firms:** Does workplace LES training produce gains for firms in terms of increased revenue, improved productivity, worker retention, or better health and safety outcomes?
5. **Return on investment:** Does workplace LES training produce a positive return on investment for firms and governments?
6. **Conditions for success:** How do the effects of LES training vary among workers and firms? What are some of the conditions for positive effects and a positive return on investment?

Target population

In coordination with the project funder, a broad population of interest was identified at the outset of the study: lower skilled working-age adults employed in SMEs in occupations and a sector where there is evidence of an Essential Skills gap. The

focus was on occupations for which workers would need a relatively small amount of LES training, from 10 to 40 hours, to advance their skills to the level required for their job.

A range of Canadian sectors and occupations were reviewed to determine which would best support a successful study in terms of the infrastructure to facilitate a Canada-wide implementation and a high-quality evaluation.

In consultation with the project funder, the **Accommodations and Food Services** sector was selected as the primary industry of focus for the UPSKILL demonstration project.

The sector is represented by a strong national sector council in the Canadian Tourism Human Resource Council (CTHRC) and has existing training and assessment infrastructure, which was adapted for UPSKILL, along with strong ties to industry, both nationally and regionally in the form of provincial partnerships. The conditions in this sector that would support a successful pan-Canadian evaluation were very strong and a sufficient size workforce with relevant skill gaps exists in four occupational groups:

- Accommodation services: Front desk agents, guest services agents;
- Custodial services: Housekeeping room attendants;
- Food and beverage: Banquet servers, food and beverage servers; and
- Kitchen services: Line cooks, kitchen help

In addition to offering good conditions for a successful *internally* valid study – one where effects of training can be measured reliably without error – the Accommodations sector provides a significant degree of *external* validity, meaning that the results will be relevant to firms and workers in other sectors. The targeted occupations are not only present in the Food Services and wider Tourism sectors but also are similar to many in the broader Retail sector, which has one of the largest workforces in Canada.

Program model

The UPSKILL program model was built on best practices in workplace training identified through a review of promising models and through extensive consultation with workplace LES practitioners. Central features of the program design include the key role played by partnerships – with industry, unions and the government – in the implementation, the

alignment of the training with identified learner and business needs, and the use of transferable learning strategies and flexible delivery models that emphasize a service orientation.²

These best practices were implemented through a multi-stage process and partnership model, recognizing that training is not simply an event or exercise in instruction by trainers alone. Rather, it is a process that requires collaboration among stakeholders and must be sensitive to an organization's specific context if it is to deliver lasting value. At the same time, it should maximize efficiency in delivery by drawing on sector-based resources where they are available such as performance standards, core curricula, and training tools.

What follows is a brief overview of this process along with highlights of the key partners and their roles in the project.

- **Sector engagement:** The first stage of the implementation involved engagement of the target industry at both a national and regional level through lead organizations who acted as the liaison with firms. In this initial stage, the lead organization in each jurisdiction recruited a number of “exemplar” firms, one or two in each province, to participate in a performance and training needs analysis to support the development of the LES training core curricula.
- **Sector needs analysis:** In the second stage, a sector needs analysis was performed to better understand the relationship between Essential Skills and performance gaps of workers and the business needs of firms in the Accommodations sector. This was accomplished through the analysis of national industry standards for the target occupations and the development of a performance framework that linked workers' Essential Skills, their job tasks, and firms' business outcomes. This was combined with an analysis of skills, performance gaps, and training needs within the exemplar firms to provide a rich understanding of how gains in Essential Skills could generate positive business outcomes in this sector.
- **Core curricula design – LES within a performance framework:** In the third stage, core curricula were designed for each of the target occupations, based on the findings of the sector needs analysis. In parallel, Train-the-trainer workshops were designed along with other tools to prepare and support the workplace educators to deliver the training intervention.
- **Firm recruitment and organizational needs assessments:** In parallel with the design of the core curricula, individual firms were recruited to participate in the project. The offer included up to 40 hours of Essential Skills training for each employee with wage compensation to employers for half of the release time, up to a maximum of 20 hours. The offer included a detailed organizational needs assessment (ONA)

to help identify firm-specific performance gaps and business objectives, which would inform the customization of the curricula.

- **Worker recruitment and assessment:** Workers were then recruited from within each participating firm through information sessions, at which the objectives, benefits and administrative aspects of the project and the training were explained to potential participants. Participation in UPSKILL was voluntary. Employees who agreed to participate in the project were asked to sign a consent form that allowed SRDC to use the collected data for research and training customization purposes. Assessments of individual participants' Essential Skills and job performances were conducted following the information sessions.
- **Customization and training delivery:** Workplace educators then used the results of the ONA and baseline skills and performance assessments of participants to customize the core curricula to develop a training solution for each firm and its participating employees. The training solution was then delivered to participants within the workplace, consisting of up to a maximum of 40 hours of training per participant, through a flexible and blended approach, using a combination of group, one-to-one, and self-paced learning modules customized to the specific needs of the firm and learners. Post-training assessments of skills and job performance were also conducted in order to measure gains in conjunction with the participant surveys.



² See the design report for the UPSKILL project Gyarmati, et. al. (2010).

Key Partnerships

Canadian Tourism Human Resource Council (CTHRC) was the lead partner selected to support the engagement of the Accommodations sector at the national level, given their key role as the sector council responsible for the broader Tourism industry. In most provinces, their provincial counterparts, known as Tourism Human Resource Organizations (THRO) led the engagement of the sector in their respective provinces and helped coordinate UPSKILL training delivery with other local partners. Participating THROs included the Saskatchewan Tourism Education Council (STEC), Manitoba Tourism Education Council (MTEC), Ontario Tourism Education Corporation (OTEC), Nova Scotia Tourism Human Resource Council (NSTHRC), Tourism Industry Association of New Brunswick (TIANB), and Hospitality Newfoundland and Labrador (HNL). CTHRC and the provincial THROs also conducted the emerit© assessments for measuring job performance.

The Training Group at Douglas College was the lead partner responsible for sector engagement, firm recruitment, and training delivery in the province of British Columbia. The Training Group also collaborated on the sector needs analysis and the design of the core UPSKILL curricula.

SkillPlan led the development of the UPSKILL core curricula and sector needs analysis. SkillPlan also provided ongoing support to UPSKILL instructors and collaborated with DataAngel and Bow Valley College on the design of the Skills Snapshot.

Additional partners included Workplace Education Manitoba (WEM), the Nova Scotia Department of Labour and Advanced Education, and Literacy Alberta who each provided UPSKILL training in their respective provinces. Bow Valley College and DataAngel collaborated on the design and scoring of the Skills Snapshot – the TOWES-based Essential Skills assessment used for the UPSKILL project.

Research design

A firm-level randomized control trial

It is not a simple matter to identify the impacts of training programs on workers and firms. Individual outcomes are dependent on many factors and it is not sufficient to simply compare workers' competencies or performance before and after training as a measure of the effectiveness of that training.

For instance, changes in workers' personal circumstances or economic conditions facing the firm can lead to differences in performance over time, independent of the effects of training.

What is required to isolate the effects of the training from all other factors is a counterfactual – a measure of what would have occurred in the absence of the training. Comparing participants' performance after the training with this counterfactual gives a true measure of the incremental impact of the training. It is widely accepted that the best way to construct a counterfactual and measure program impacts is through the use of a randomized control trial (RCT) design. Under an RCT, individuals who volunteer for an intervention are assigned, randomly, to either a program group that receives the intervention or to a control (or comparison) group that does not receive it. The randomness of the assignment ensures that two groups are the same in terms of all their pre-training characteristics, even those that are unobserved, immeasurable or totally unknown to researchers. As a result, any differences in outcomes of the two groups that are observed after the training can be attributed with confidence to the effect of the program.

For the UPSKILL demonstration project, random assignment occurred immediately following the recruitment of firms and workers. A cluster random assignment design was used whereby firms were randomly assigned rather than individual participants, each with a 50-50 chance of receiving training. All participating workers within each firm were assigned to the same group – either the program group that were eligible for UPSKILL training, or the control group, that were not.

Research strategy and data collection

The UPSKILL research design has three main components: implementation research to study the process of LES training delivery in the workplace; an impact study to measure the effects of LES training on workers and firms; and a benefit-cost analysis to measure its return on investment. The primary data collection instruments included participant and employer surveys, the Test of Workplace Essential Skills (TOWES), and job performance assessments – based on the emerit© industry certification program. All instruments were administered at baseline, and approximately nine months after enrolment. Essential Skills assessments were completed three times: at baseline, immediately after training and about nine months after enrolment. Administrative data on firm outcomes were also collected along with data on training delivery through a participant management information system (PMIS).

Figure 1 illustrates the research framework highlighting each of the central variables for which data were collected before and after training. It begins with the Essential Skills training intervention and the learning process itself (at the top) and

ends with the longer term outcomes and the estimation of return on investment for workers, firms, and government (at the bottom). In between, are the expected intermediate outcomes of training, many of which are both outcomes themselves and mediating conditions that influence the magnitude of the effects of training on other outcomes.

Surrounding the model are the contextual factors at both the learner and firm level, which can moderate the effects of training and are important variables to help in the interpretation of the results.

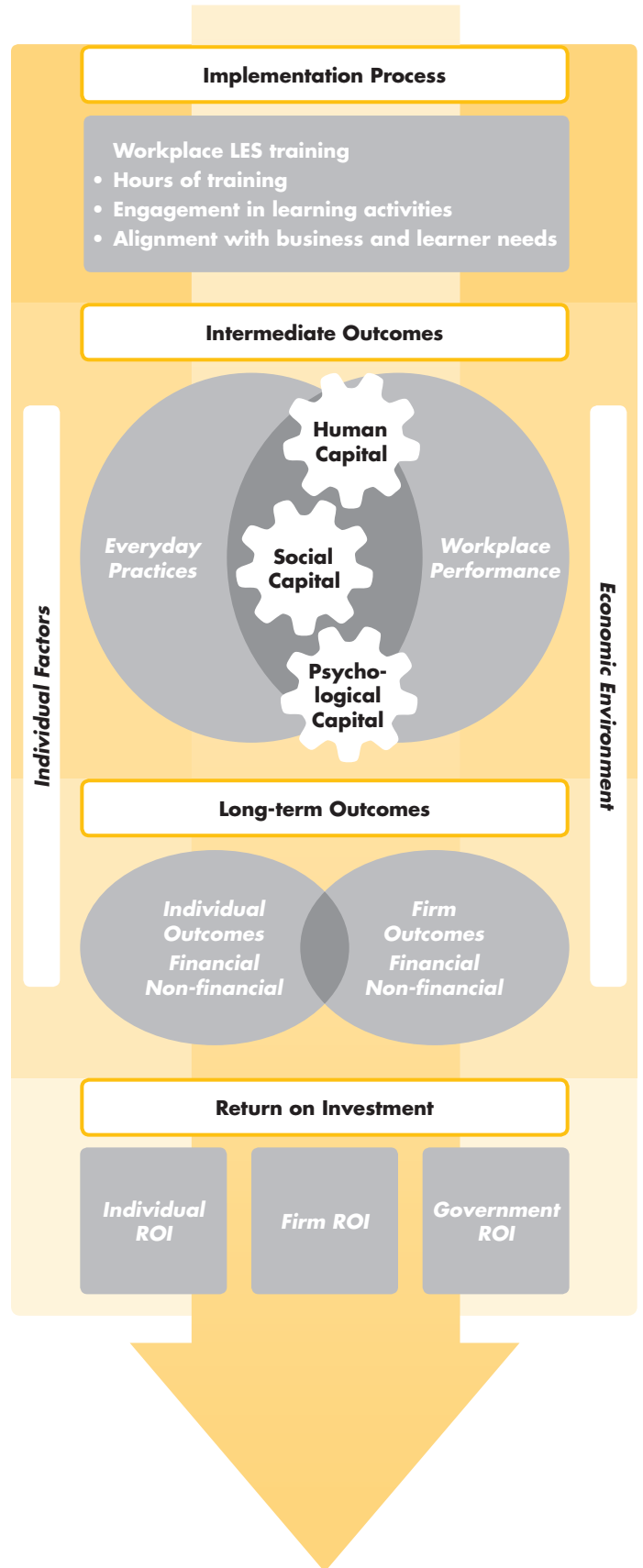
Workplace LES training: the process

The logic model begins with the process of implementing workplace LES training. The research team monitored a series of factors that are hypothesized to influence training effectiveness including the degree of alignment of the training with both learner and business needs, the duration and intensity of the training, the instructor’s choices around customization and delivery of the training, the learners’ and firms’ readiness for training, and the extent of their active engagement in learning activities.

Contextual factors

A training program is only one part of a larger system that leads to expected outcomes where other factors play a role in influencing worker behaviour, worker performance, and business outcomes. Thus, the impacts of workplace LES training are influenced by a host of contextual factors, at the level of learners, the workplace, and externally in terms of the economic and policy environment. Measuring the contribution of these additional variables enables us to identify the conditions that can either support or impede positive outcomes of training.

Figure 1 UPSKILL research framework



Short-term outcomes of training

Essential Skills, human capital: The primary immediate training outcomes of interest are improvements in the Essential Skills of participants including document use, numeracy, oral communication, problem solving/thinking skills, and working with others. This may lead to increased participation and success in other forms of skills development including occupational training.

Job performance: Improved job task performance is another primary outcome of interest, which is the crucial link between Essential Skills and business outcomes. For example, in a service setting, how employees relate to customers is typically a key performance outcome that is enhanced through training in oral communication and problem-solving, which can lead to greater guest satisfaction, customer loyalty, and sales, among other business outcomes. Similarly, better document use and numeracy skills are expected to lead to more accurate and efficient completion of core job tasks, with lower error rates and faster times to completion. This leads fairly directly to higher standards of service, thereby supporting customer satisfaction and repeat sales, as well as increased productivity with lower error rates, thereby reducing costs.

Psychological capital: Another fairly immediate outcome of training may be changes in the psychological capital of learners, which includes a range of attitudinal measures related to learner's self-efficacy, self-esteem, and resilience. Research has shown that, regardless of job complexity, training can improve self-efficacy and, moreover, improve performance (Orpen, 1999). It has also been argued that adult learning contributes to the development of resilience, which can lead to persistence both with further training, job performance, and one's career development (Hammond, 2003).

Social capital: Another theme in the training literature is the positive effect that adult learning can have on the creation and development of social capital, which refers to the resources, or forms of support, that are accessible in one's social networks. Those with larger and more diverse networks may have access to further channels and opportunities to enhance their skills (Balatti, Black & Falk, 2006).

Everyday practices: The research framework also includes outcomes relating to the literacy practices of learners outside of the workplace, such as reading books and other non-work documents and writing letters or emails, as well as participation in additional channels of learning such as volunteering.

Measuring Essential Skills

Participants' document use and numeracy skills were assessed with the Test of Workplace Essential Skills (TOWES), administered at baseline, immediately following training, and about nine months after enrolment. A brief explanation of the TOWES levels is provided below, reproduced from the Conference Board of Canada (2006).

Level 1 0-225: Persons with very poor skills.

Level 2 226-275: Marginally-skilled individuals who can deal only with simple, clearly laid out materials and tasks. Reading level is poor and skill level may be masked by coping abilities to manage everyday demands, but may have difficulty learning new job skills, for instance.

Level 3 276-325: Skill level approximates level required for successful secondary school completion and college entry. Requires ability to integrate several sources of information and solve more complex problems.

Levels 4 and 5 326-375 and 376-500: Ability to perform higher-order information processing.

Measuring Job Performance

Job performance was measured using the emerit© performance assessment and industry certification program. Minor updates and additions were made to the original assessments in order to align them with the UPSKILL employer needs analyses and to sufficiently cover the Essential Skills of oral communication, thinking skills, and working with others. The assessments were both observational and interview-based protocols that were conducted by CTHRC certified assessors at each workplace. They were administered at baseline, prior to training, and again at about nine months after enrolment. Participants received an overall score along with an indication of whether they passed or failed, which is based on their score and performance in a set of mandatory job tasks. Industry standards are fairly high, requiring 80-85 per cent for success depending on the occupation.

Longer-term outcomes of training

Individual financial outcomes refer to longer-term outcomes of enhanced skills that relate to an individual’s income or wealth and include higher employment rates, increased job stability, the potential for career advancement, and higher wages.

Individual non-financial outcomes are those experienced by workers that do not *directly* affect their wealth or income, but may do so over time indirectly, and/or are important indicators of broader well-being, including increased life satisfaction, improved physical and mental health, lower stress, and increased social participation or reduced isolation.

Firm financial outcomes include increases in sales revenue, higher productivity and lower costs, improved health and safety, reduced injuries and absenteeism, and increased worker retention leading to lower hiring costs. The effects of LES training on these outcomes are generated through gains in learners’ Essential Skills and job performance. For instance, improvements in individual workers’ oral communication and problem-solving skills can lead to better engagement of customers, producing, in turn, gains in customer satisfaction and sales.

Firm non-financial outcomes include improved morale, cohesion among co-workers, improved trust between management and employees, and an enhanced culture of learning. These are associated closely with financial outcomes. For instance, improved worker morale and trust in management may increase productivity and job retention thereby reducing costs.

Results

The decision to invest: firm and worker recruitment

A two-stage process was used for recruitment, where employers were initially engaged followed by an offer to workers within each firm. The training offer was voluntary – and its take-up remained an open question: will employers invest in workplace LES training and will their staff voluntarily participate?

The offer of LES training was attractive to a large number of firms and workers, with high take-up and low rates of withdrawal.

In total, 110 firms and 1,438 workers joined the project in eight provinces (all but Quebec and Prince Edward Island). In all, 104 firms received organizational needs assessments and 88 firms with clear business and training needs continued in the project. Only one firm withdrew after being assigned to the program group eligible for training (and only two firms

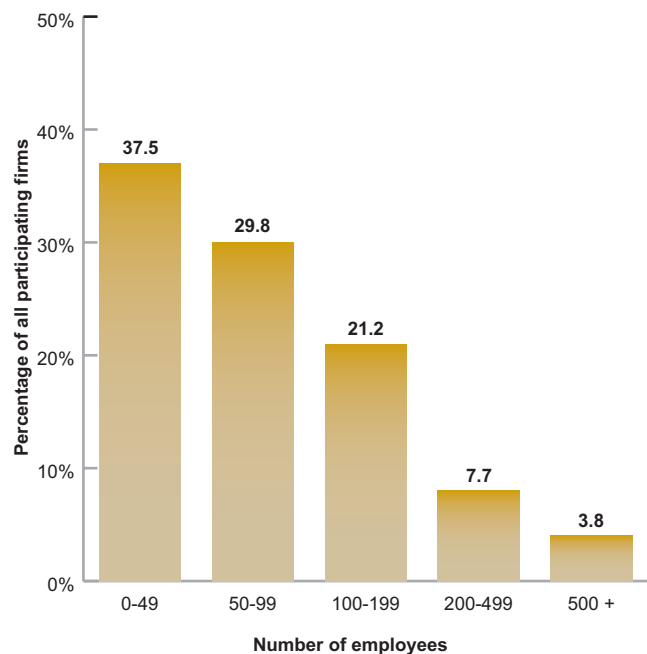
withdrew from the control group). A critical feature of the model that supported high take-up rates and low withdrawal was the embedding of LES training in a highly-relevant performance and business needs framework, where employers could easily see the applicability of training to their context.

Firm profile: who was interested in the offer?

The large majority of participating firms were small and medium-sized enterprises (SMEs) in the Accommodations sector.

Figure 2 illustrates that the large majority of participating firms were SMEs, consistent with the desired target group. About 37 per cent of firms were small hotels with fewer than 50 employees. Another 51 per cent were medium-sized hotels with between 50 and 199 employees. Only 12 per cent of firms had 200 or more employees, and less than 4 per cent had 500 or more.

Figure 2 Distribution of firms, by size



Unionization rates varied as did prior investments in training among firms. Very few participating firms or unions had offered Essential Skills training to their workers in the past.

About 36 per cent of participating hotels had unionized workforces though this varied across provinces from about 30 per cent in British Columbia, the Prairies and the Atlantic

regions, to 61 per cent in Ontario. Nearly half of the hotels (48 per cent) spent less than \$5,000 on training in the prior year and very few offered Essential Skills training.

The most common business needs identified by a majority (91 per cent) of participating employers were higher service quality and improved customer relations, which are key drivers of increased revenue.

An equally high proportion identified productivity concerns, specifically in terms of task efficiency to lower labour costs (90 per cent). A lower percentage identified the need for productivity gains in terms of reducing errors and wastage (75 per cent) and improved health and safety outcomes (68 per cent). The least common business need identified was for reduced absenteeism (32 per cent).

Participant profile: worker characteristics

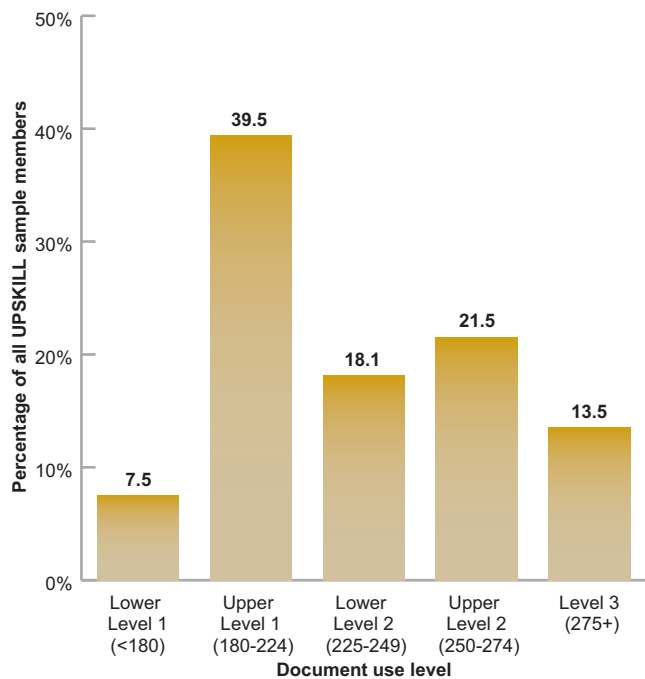
Underlying these business needs were low levels of Essential Skills and substantial gaps in job performance among UPSKILL participants at the time of enrolment.

Average baseline scores among UPSKILL participants at enrolment were 227 for document use and slightly higher for numeracy at 246, both in the lower Level 2 range. Figure 3 further illustrates that over 85 per cent of participants scored below Level 3 on document use with more than half in the upper Level 1 to lower Level 2 range (180 to 250).

At the same time, over 40 per cent of participants failed to meet industry performance standards for their occupations based on industry assessments, with significant gaps in oral communication, problem solving, and teamwork. Only three in five participants successfully passed the performance component of industry certification at the time of their enrolment.



Figure 3 Distribution of UPSKILL participants, by baseline literacy level (Document Use)



Most participants were permanent full-time employees of their hotel and worked in one of the four primary service occupations of the Accommodations sector.

Over 90 per cent of participants were permanent full-time employees of their hotel, working year-round, an average of 37.2 hours per week. The average hourly wage after taxes and deductions was \$11.69. The average tenure was 5.6 years with a same hotel.

Housekeeping room attendants made up the largest group of participants (43 per cent), followed by front desk agents (25 per cent), food and beverage servers (21 per cent) and kitchen staff (11 per cent).

UPSKILL participants were predominantly women, middle-aged, and had at least a high school diploma. A significant percentage were immigrants.

Nearly three quarters of UPSKILL participants were women (72 per cent), most of whom were housekeeping room attendants. On average, participants were 38 years of age with two thirds of the sample under 45 years of age.

About 85 per cent had at least a high school diploma and about half had obtained a post-secondary credential. Just over 42 per cent of participants were immigrants.

LES training delivery: take-up rates and level of participation

After receiving results of their organizational needs assessments, 88 firms with clear training needs decided to continue in the project. Approximately half were randomly assigned to the program group – in total, 45 firms with 787 participants among them – and were eligible to receive the LES training program, while the other half served as the control group.

The UPSKILL training offer to these 45 program group firms and their employees was for a *maximum of 40 hours of LES training, per participant, delivered on-site during work hours.* One of the key objectives of the study was to monitor the degree to which eligible firms and workers would follow through on the offer and actively engage in the learning activities. While a workplace training model has its clear advantages in reaching workers with low literacy, it can be challenging to deliver training in a dynamic business environment where daily work demands often dictate the availability of staff for training. Even among firms that initially accepted the training offer, there were open questions about the level of their subsequent participation: would employers follow through on the offer and allow training at their site? How many hours of release time would they grant their workers to participate? Would workers follow through and engage in the training?

Training take-up rates

Training take-up among eligible firms was high with 98 per cent of program group firms receiving some training. However, only 71 per cent of eligible participant workers within those firms received training.

Among the 45 firms randomly assigned to the program group, 44 completed at least an hour or more of training. However, among employees who enrolled, only 71 per cent completed any training. The most frequent reasons for not completing training were either their departure from the hotel, or not being granted the release time from their employer due to current work demands in their workplace or department.

Training take-up appears lowest among young workers, under 25 years of age, those who are Canadian-born, those with less job tenure, and those working in temporary positions.

Comparing participants who engaged in training with the minority who did not, reveals that trainees were more likely to be middle-aged (45 years or older) longer-tenure workers, in more permanent positions, and with a higher percentage having immigrated to Canada. Those who did not participate in any training were more likely to be under 25 years of age, Canadian-born, shorter-tenured workers, and in temporary positions.

Level of participation: hours of training

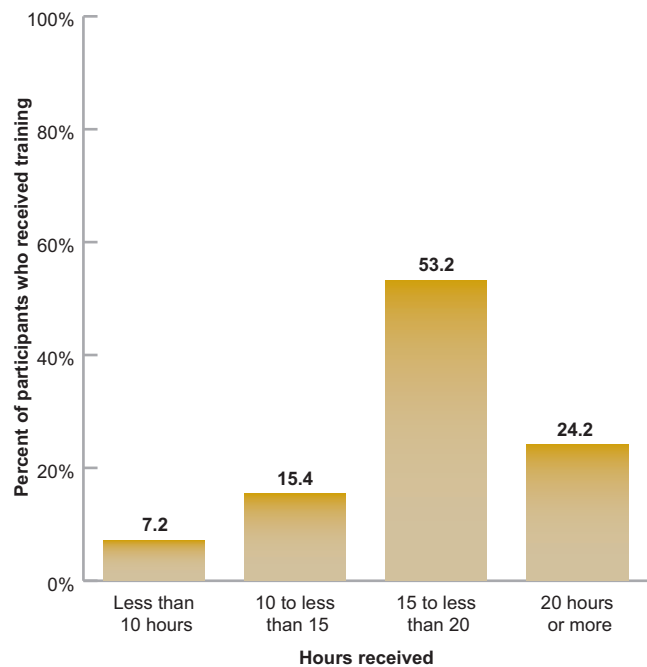
While each program group hotel was offered up to 40 hours of LES training for each participant, employers on average provided only about half that in release time for them to attend training.

The amount of release time made available to participants to engage in LES training was, on average, just under 20 hours per participant. This was less than expected, at only about half of what was offered. However, once participants began the training, there were very high attendance rates and participants missed only a small fraction of what was offered, receiving on average 18 hours per participant. The primary constraint on training hours was the amount of release time employers allowed, as opposed to the attendance rate of participants.

Figure 4 shows the distribution of UPSKILL participants by the number of training hours received. About half of participants (53 per cent) received between 15 and 20 hours of training while another quarter (24 per cent) had 20 hours or more. One in seven participants (15 per cent) received between 10 and 15 hours and only about one in twenty participants received less than 10 hours.

In terms of regional and occupational differences, training hours received were generally highest among housekeeping room attendants (HRAs) in British Columbia at about 20 hours and lowest among line cooks in the Prairies at about 11 hours.

Figure 4 Distribution of participants, by training hours received



LES training: business alignment

UPSKILL instructors covered the curricula in a comprehensive fashion, training participants in targeted Essential Skills in the relevant performance and business areas of interest to employers.

While instructors could customize elements of the curricula, they covered its key components with considerable consistency. Most participants received the core modules for their occupation, covering the targeted Essential Skills of oral communication, thinking skills/problem solving, document use, numeracy, and working with others. Regarding business and performance areas covered, the most prominent with respect to total hours received was guest relations, followed by productivity, then health and safety.

The degree of alignment between the training and the specific needs of participants and the business needs of firms appears quite high.

When one compares the performance and business needs identified by employers during their ONA with those targeted by the training, there was alignment in a large percentage of firms. Nonetheless, there was a minority of firms for which business alignment was more difficult to achieve, largely because these employers had more difficulty articulating their needs.

While the number of contact hours for classroom-based modular training was in line with expectations, the use of self-directed learning activities was much lower than anticipated.

Each of the four occupation-specific curricula contains a series of self-directed activities, which could be used to supplement the core training modules. These exercises would allow participants to practice their Essential Skills, particularly document use and numeracy.

While most instructors assigned at least some self-directed activities that were available in the UPSKILL curricula, additional release time was generally not provided by employers for these activities due to business demands within the workplace. Overall, only 36.2 per cent of participants spent time on the self-directed activities. Among those who used the self-directed activities, average time spent ranged from only about 1 hour for line cooks to 2.2 hours for food and beverage servers.

Participant impacts: effects of LES training on workers

The starting point in analyzing the impacts of LES training is in measuring its effects on Essential Skills and job performance of participants. The magnitude and timing of the effects of training on Essential Skills has been the subject of

some debate, with several open questions: Does LES training produce gains in Essential Skills quickly, or only over time through literacy practice? How large are Essential Skills gains from modest training of less than 40 hours? Are skills gains accompanied by better job performance?

Essential Skills and job performance

This section presents the impacts of UPSKILL training on the Essential Skills of participants including their document use and numeracy skills, as assessed through the TOWES. Effects of the training on participants' oral communication, thinking skills, and ability to work with others are also presented, as measured through the emerit© industry performance assessments, along with other aspects of job performance including customer relations, productivity, and health and safety practice.

Document use

Essential Skills training produced significant increases in average document use scores of program participants compared to those receiving no training in the control group.

UPSKILL training increased average document use scores of program group members by about a quarter of a level, or 11 points, at the first follow-up assessment immediately after training and up to 18 points at the second follow-up after about nine months, relative to the changes of the control group.

The impact of LES training on average document use scores was 23 points, or nearly half a level, among those with longer term assessments of more than a year, suggesting that skill gains can both occur quickly and rise over time.

Among those with fairly immediate assessments, less than 6 months after their enrolment, average gains for program participants were about a quarter level, or 12 points, compared to the control group. Impacts were significantly higher among those with assessments that were completed more than 12 months after enrolment, up to 23 points, or nearly a half a level. This provides some evidence that Essential Skills gains can not only occur fairly quickly after training, but can also increase subsequent to training, as individuals have time to further use their skills and engage in literacy practice.

The proportion of program participants with document use skills at Level 3 increased substantially, by over 20 percentage points, compared to those in the control group.

Figure 5 illustrates that the increase in average scores was accompanied by a significant positive shift up the distribution. Among those assessed within six months after enrolment,

there was a 21.5 percentage point increase in the proportion of participants with document use scores at or above Level 3. For the average employer with 15 participants, this represents three additional employees who have the required level of literacy for their job after training.

UPSKILL led to a sustainable shift in literacy levels: over a year after enrolment, nearly one in four in the program group were functioning at Level 3 compared to less than one in ten in the control group.

Among those assessed more than 12 months after enrolment, there was a similar percentage increase (21.6 percentage points) in program participants who were in the upper Level 2 and Level 3 range combined, when compared to the control group. This represents a sustained positive effect of LES training on the distribution of literacy scores.

Numeracy

Positive impacts on numeracy skills were also observed, though with more modest gains than document use.

For those with assessments up to six months after enrolment, there was a short-term positive impact on numeracy scores of about 10 points (an 11.7 point increase for the program group compared to 2 points for the control group).

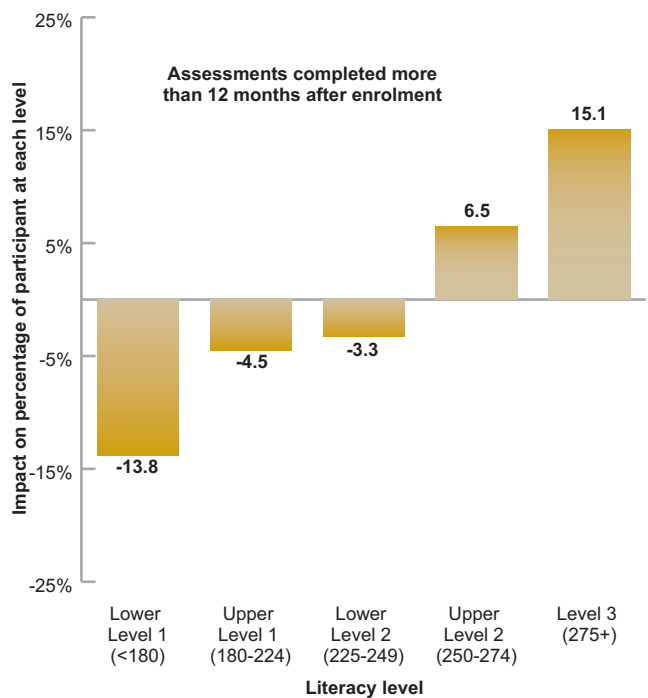
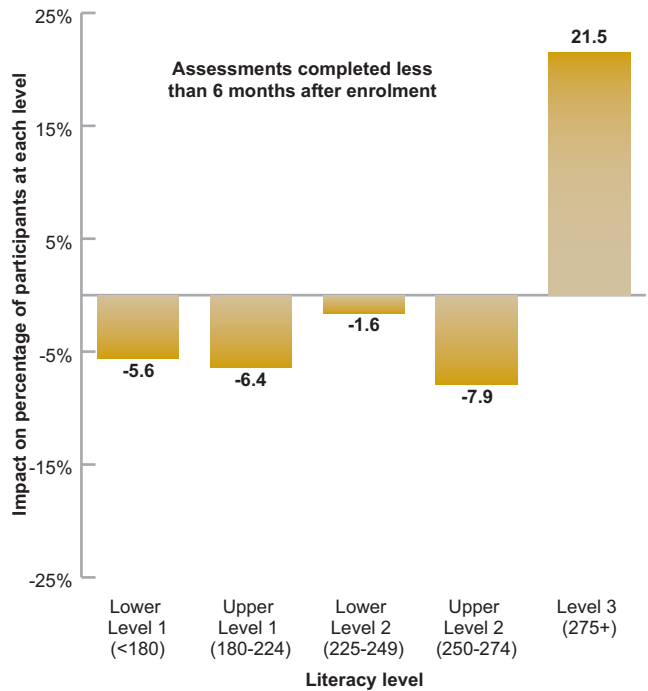
However, there were no statistically significant impacts on numeracy assessments beyond six months after enrolment. This was not entirely unanticipated, as numeracy was not a primary focus of training in most UPSKILL workplaces.

Oral communication, customer relations

Large positive impacts were observed on participants' oral communication and problem-solving abilities, which are crucial for maintaining customer satisfaction.

Program group members had an increase of over 20 percentage points in the likelihood of meeting industry standards of communication with customers compared to the control group. Only two thirds of participants were meeting communication standards at the time of enrolment. After training, over 90 per cent of program group members were meeting industry standards. For the average employer with 15 participants, this translates into three additional employees performing at high standards who would otherwise have failed without training.

Figure 5 Effects of UPSKILL training on the distribution of participants at each literacy level (document use)



Productivity, task efficiency

Significant gains in productivity were observed through more effective teamwork and improved organization, which are two factors contributing to reductions in labour costs.

UPSKILL training led to an increase of nearly 15 percentage points in the proportion of program group members surpassing industry standards for productivity compared to the control group. This was driven largely by improvements in teamwork and gains in organizational skills, time management, and task efficiency. For the average firm, with 15 participants enrolled, this translates into two additional employees exceeding high standards of productivity after Essential Skills training.

Industry certification, overall performance

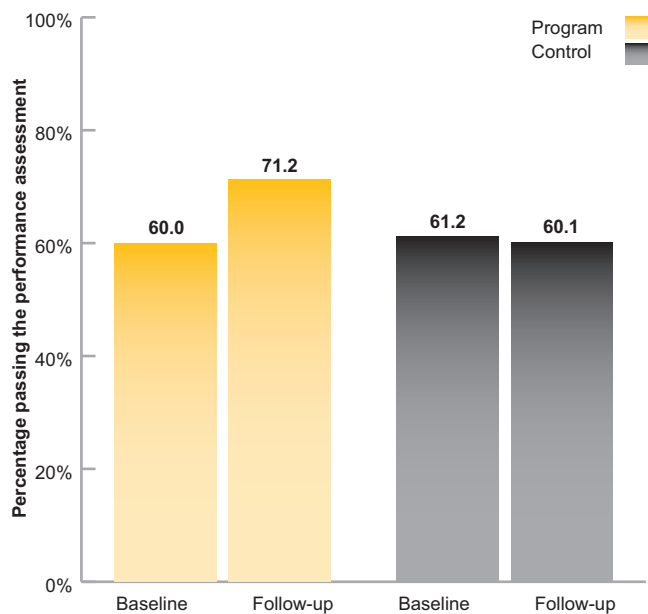
Essential Skills training led to significantly higher success rates for participants on the performance component of industry certification.

After participating in Essential Skills training, program group members were 12 percentage points more likely to successfully pass the overall performance component of industry certification when compared to the control group. This may reinforce not only their performance on the job but also their future training goals, career paths, and employment prospects. Figure 6 illustrates that the percentage of the program group who passed performance standards at a certification level rose from 60 per cent at baseline to 71.2 per cent nine months later for a gain of 11.2 percentage points. At the same time, the proportion of the control group who achieved the standards remained about the same, down from 61.2 to 60.1 per cent.

Significant gains in job performance were observed in nearly all business areas of interest to employers – and were reflected in a greater breadth of service quality provided by program group members.

When assessed on a very high standard of performance, where employees must successfully meet *all* items in a set of service quality standards for their occupation, LES training led to a 10 percentage point increase for the program compared to the control group. This indicates that while many employees showed improvements in *some* service quality areas (even the control group, due to in-house training or mentoring) those who also received Essential Skills training were more likely to experience gains in the *full scope* of service. This is likely due to the fact that in-house training is generally targeted at *specific* areas of service. In contrast, Essential Skills training produces gains that are *transferable* across *all* areas of service.

Figure 6 Percentage of participants passing the performance component of industry certification



Impacts on employment and earnings

This section explores the labour market impacts of Essential Skills training on UPSKILL participants. While higher literacy has been linked in previous research with many potential labour market outcomes, the explicit effects of Essential Skills training on employment outcomes has been an open question. Does Essential Skills training lead to improved job retention, a key business interest of employers? Do participants experience less unemployment as a result? Do improved skills and job performance lead to higher earnings, career opportunities, or wage growth?

Job retention, employment

Essential Skills training led to significantly higher rates of job retention among program group members compared to the control group.

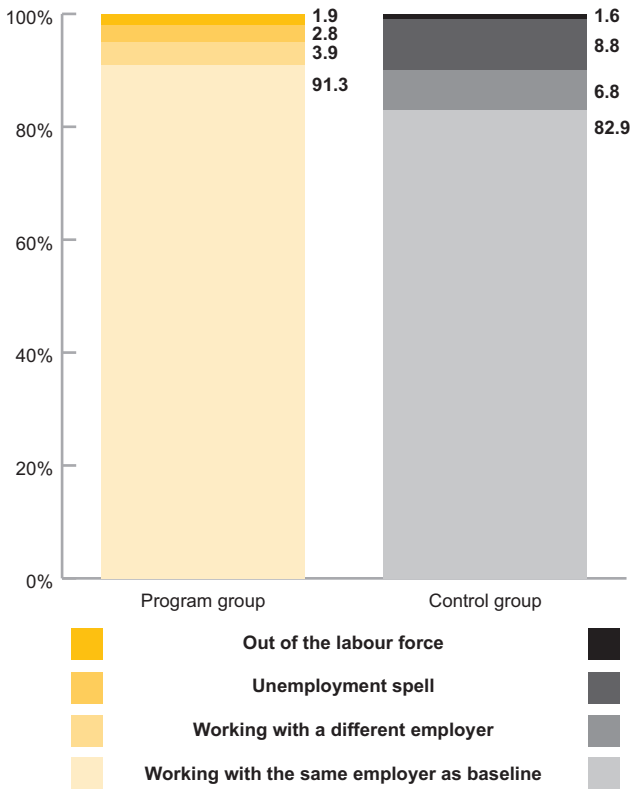
Figure 7 illustrates that over 91 per cent of program group members continued to work with their baseline employer up to a year after enrolment compared to only 83 per cent in the control group. This represents an 8.5 percentage point increase in job retention attributable to the Essential Skills training.

Program group members were less likely to have been unemployed within the year after enrolment, with only 3 per cent experiencing an unemployment spell compared to 9 per cent in the control group.

While control group members were only slightly more likely to have worked for a different employer (7 per cent compared to 4 per cent of the program group), they were also significantly

more likely to have experienced an unemployment spell than program group members (9 vs. 3 per cent). An equal proportion of both groups left the labour force (approximately 2 per cent) for school, retirement, or travel abroad.

Figure 7 Impacts on job retention and employment



be pursuing self-employment options than the control group (1.5 versus 4.3 per cent) given their higher rates of success in securing and maintaining positions with employers.

Program group members relied less on Employment Insurance benefits than the control group in the 9 months after enrolment; however, they also expected to receive more benefits in the following year.

A slightly higher percentage of program group members reported an increased likelihood of reductions in their hours of work and in their need for future Employment Insurance (EI) benefits. About 8 per cent of the program group expected to receive EI benefits in the next 12 months compared to only 3 per cent in the control group. This is not unexpected in that many participants in this sector experience a period of seasonal layoff. The increased retention in primary jobs and higher rates of employment in secondary positions provided participants increased entitlement to EI for seasonal layoffs compared to the control group.

Impacts on psychosocial outcomes, and health and well-being

In addition to improving labour market outcomes, literacy has been linked with a number of non-financial outcomes such as attitudes, confidence, social capital, and health and well-being. The UPSKILL research design included a number of key measures to answer these and related questions: Does LES training improve self-confidence and attitudes towards further learning? Does this in turn influence actual “literacy practice” and engagement in further learning? Does LES training affect social networks and availability of social supports? More broadly, does it improve health and well-being of participants?

Earnings, wages, other income

Improved job retention and reduced unemployment were accompanied by increased earnings of UPSKILL program group members.

On average, program group members worked nearly 4 weeks more per year compared to the control group (40.8 vs. 37.0 weeks) translating into about \$1,900 more in earnings per year. However, there were no statistically significant effects on average wages. Earnings gains were driven largely from increased employment arising from higher rates of job retention among participants.

Increased job retention was accompanied by a reduction in self-employment and an increase in second jobs held by the program group.

In their primary job, program group members worked slightly fewer hours per week than control group members (35.7 compared to 37.8) and were more likely to supplement this with employment in second jobs (13.3 vs. 8.9 per cent). At the same time, program group members were also less likely to

Attitudes, confidence, continuous learning

LES training led to improvements in attitudes of participants that are indicative of gains in psychological capital including increased self-confidence, trust, and receptivity to continuous learning.

UPSKILL program group members were 10 percentage points more likely than the control group to experience simultaneous gains in multiple psychosocial indicators of confidence, self-efficacy, trust, and future orientation. These were accompanied by significant increases in receptivity to continuous learning.

Literacy practice, engagement in learning

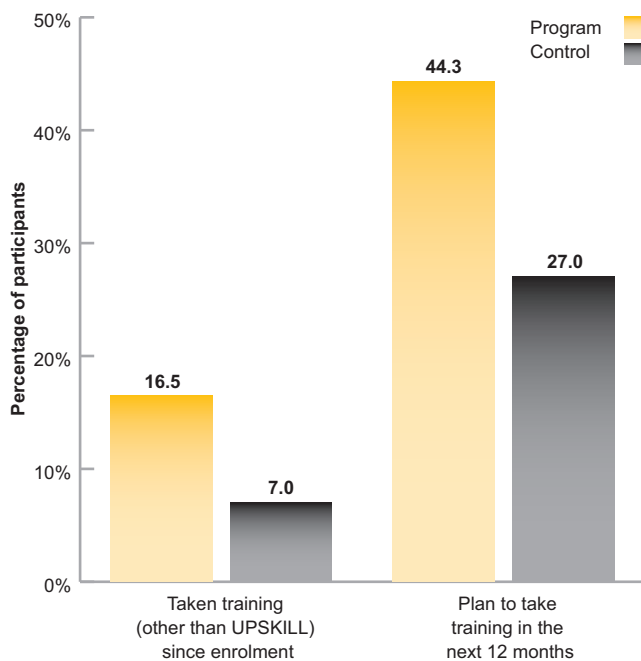
UPSKILL also led to gains in several indicators of improved literacy practice including the use of Essential Skills in everyday life and engagement in one’s workplace and community.

Program participants were over 20 percentage points more likely than the control group to have experienced gains in multiple indicators of literacy practice and engagement in channels for further skill development. These include indicators of increasing use of Essential Skills in everyday life, motivation and engagement in the workplace, and volunteering for groups in one’s community.

Importantly, gains in receptivity to continuous learning were accompanied by significant increases in actual engagement in further learning.

Figure 8 illustrates that when asked if they had taken any training, aside from UPSKILL, since the beginning of the project, 17 per cent of the program group reported that they were currently pursuing training compared to only 7 per cent of the control group. When asked about their plans to pursue training within the next 12 months, the impact was even larger, with 44 per cent of program group members indicating they would be pursuing training within the next year compared to 27 per cent of the control group.

Figure 8 Engagement in further learning



Social capital, social supports

UPSKILL training also produced gains in the social capital of participants including having more diverse networks, with greater access and use of social support.

Small positive impacts were observed on several indicators of social capital including the breadth and diversity of the supports available from their networks, as well as the use of supports in important areas such as household help and emotional support.

Health and well-being

In terms of mental health, Essential Skills training led to large reductions in perceived levels of stress on the job.

Figure 9 illustrates that program group members were nearly 25 percentage points more likely than the control group to have reported a reduction in their levels of stress experienced in the workplace since enrolling in UPSKILL.

Participants also made the connection quite directly between their reduced stress and their involvement in the project. When asked if their stress would have decreased as much had they not been involved in UPSKILL, very few participants said yes.

While there were no impacts on perceived physical health, program group members did report higher levels of bodily pain.

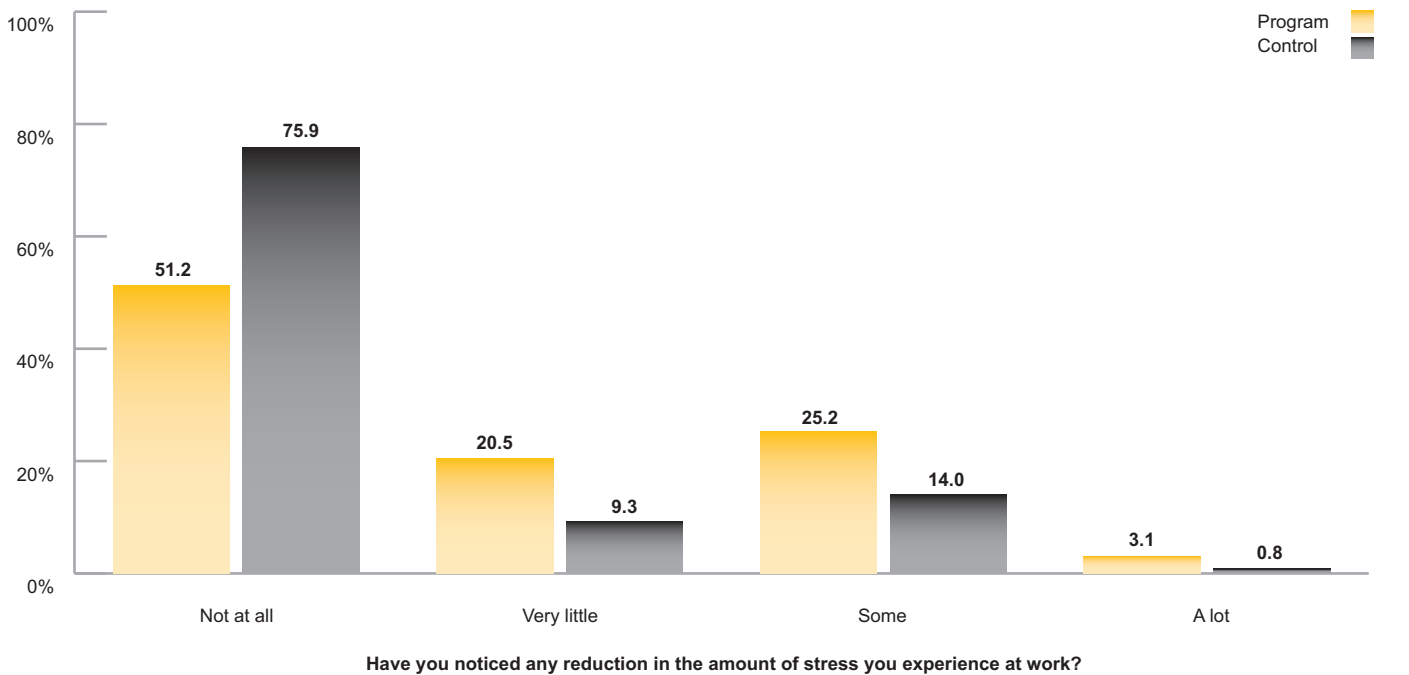
Several components of self-reported health were measured using a validated scale (the SF-12).³ While there were no impacts on overall perceived health, results indicate that UPSKILL had a small negative impact on the incidence of bodily pain, which increased by an average of 3 percentage points for the program compared to the control group. While this may relate to increased hours of work it may also arise from small positive impacts on health literacy. UPSKILL participants experienced significant increases in confidence in using health information, which may have increased their awareness of their own physical health issues and a willingness to report on them.

Firm impacts: effects of LES training on business outcomes

The previous section illustrated that LES training produces significant improvements in participants’ lives, including their skills and performance on the job. But do these gains translate into an improved “bottom line” for their employers? Specifically, does LES training improve key drivers of firm *revenue*, such as customer satisfaction and repeat sales? Does LES training reduce *costs* from increased productivity or reduced waste and inefficiency?

3 Gandek, B.; Ware, J.E., Jr.; Aaronson, N. K., et al. (1998); Ware, J. E. Jr.; Kosinski, M; & Keller, S. D. (1996).

Figure 9 Reduction in work-related stress



Revenue drivers: customer satisfaction, occupancy rates, and repeat sales

This section presents impacts of UPSKILL on key drivers of firm revenue including customer satisfaction and guest complaints, followed by its impacts on key revenue sources such as occupancy rates and food and beverage sales.

Customer satisfaction ratings

Essential Skills training led to significant improvements in customer satisfaction both for departmental service quality and ratings of staff courtesy and reliability.

Program group firms were over 30 percentage points more likely to report improvements in customer satisfaction over the course of the follow-up than those in the control group. Over 70 per cent of program group firms reported significant increases in satisfaction of hotel guests compared to less than 40 per cent of the control group. Notably, about 20 per cent of program group firms reported large gains compared to only 2 per cent of control group firms experiencing this magnitude of change.

Customer complaints

Significant reductions in customer complaints were observed among program group firms – a key driver of customer loyalty, return visits, and repeat sales.

Another significant indicator of interest to employers is the incidence of customer complaints, as these have a strong relationship with return visits to the hotel and ancillary spending. Figure 10 illustrates that most firms in the control group who

did not receive LES training experienced no changes in the incidence of customer complaints over time (77.7 per cent). Only about one in four control group firms reported changes in complaints, most of which were small reductions (estimated at 1-2 per week). In contrast, over three quarters of firms in the program group (75.6 per cent) reported reductions in the incidence of customer complaints after LES training. Over a third of program group firms reported medium-scale reduction (of 3-5 fewer per week) while just under 20 per cent reported large scale reductions in customer complaints (of more than 5 fewer per week).

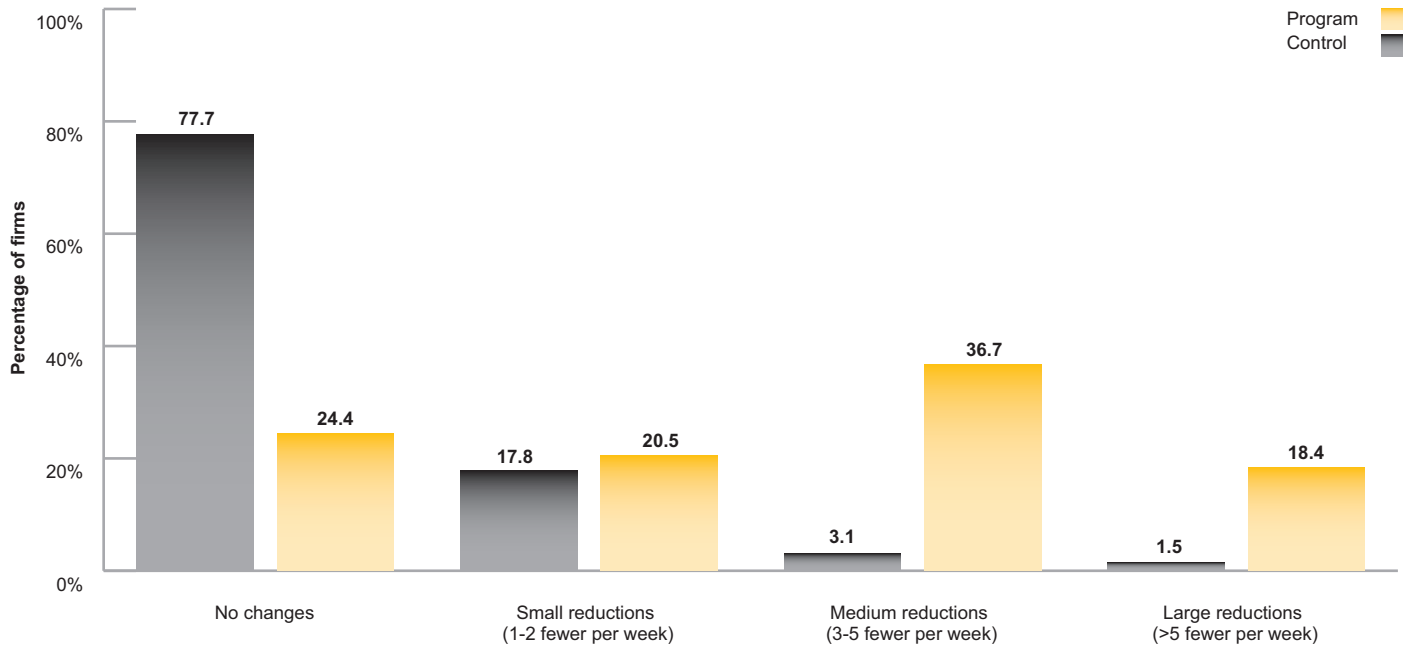
Revenue: occupancy rates, ancillary sales

Program group firms reported larger increases in customer loyalty and in revenue compared to the control group.

Program group firms were 22 percentage points more likely to report an increase in customer loyalty on a measure of the likelihood that guests will return to their hotel. This is accompanied by an increase in average occupancy rates, with half of program group firms (50.5 per cent) experiencing an increase compared to only about a third in the control group (35.8 per cent). Notably, about 11 per cent of program group firms reported large increases in occupancy (estimated at more than 3 points in the year-over-year occupancy rate) while no firms in the control group reported changes of this magnitude.

Gains in occupancy rates were accompanied by small increases in reported food and beverage spending. Given daily room rates, the impacts on occupancy and ancillary spending

Figure 10 Reduction in customer complaints per week



translated into approximately \$2,200 in incremental revenue for firms, per participant, in their workplace over the follow-up period.

Cost savings: staff, supervisory, hiring

This section presents the impacts of LES training on firm costs where savings arise from reductions in labour costs (from increased productivity of staff), lower supervisory costs (from reduced monitoring and required revisions of work), and fewer recruitment and hiring expenses (from increased job retention).

Labour costs: increased productivity

LES training reduced error rates and increased the efficiency of workers within several departments, leading to significant cost savings for firms.

Employers reported significant reductions in wastage and errors experienced in both core job tasks as well as administrative (non-service) activities. Nearly half of program group firms reported significant reductions in error rates, compared to only one in five firms in the control group. This is accompanied by increases in the efficiency of staff in completing job tasks. Given difficulties monetizing the value of reduced errors directly, cost savings are estimated through the accompanying task efficiency it generates in each department. Reductions in time to complete core job tasks were reported by management in guest services (time to process check-ins/check-outs), food and beverage service (time to seat, order and serve), and in housekeeping (time to clean and process rooms). Program group firms were nearly 30 percentage points more likely than control group firms to experience these increases in efficiency

in guest services, 20 percentage points more likely in food and beverage, and about 10 percentage points more in housekeeping. Given average time saved and wage rates, this translated into cost savings for firms of about \$645 per participant, over the course of the follow-up period. Savings from reductions in administrative time (non-service activities) accounted for an additional \$335, per participant, in the year after enrolment.

Reduction in supervisory costs

LES training increased the productivity of supervisors in several departments, reducing the time required for monitoring and work revisions for their staff.

Accompanying increased efficiency and accuracy of staff performance, are gains in productivity of supervisors. Significant increases in the confidence that supervisors have in their staff were observed among program group firms compared to their control group counterparts. At the same time, reductions in the amount of time supervisors spend monitoring and correcting work of their staff were also reported. Program group firms were over 30 percentage points more likely than control group firms to experience reductions in required supervisory time in guest services, 19 percentage points in housekeeping, and about 10 percentage points in food and beverage. This translated into average cost savings for firms of about \$1,200 per participant over the follow-up period.

Reduction in hiring costs

Firms in the program group also experienced a reduction in hiring costs arising from increased job retention.

Program group members were 8.5 percentage points more likely to be working with the same employer up to a year after enrolment compared to control group members. This translates into about one less hire for the average employer with 15 participants. Management surveys indicate this is valued at about \$4,400 in cost savings, or an average of \$293 per participant enrolled.

Return on investment (ROI): a cost-benefit analysis

UPSKILL results have shown that workplace LES training leads to a wide range of significant positive impacts on workers and firms. But do these positive effects justify the costs incurred? Specifically, how much does it cost firms and government to deliver LES training and to provide release time for workers? When combined with all other benefits and costs, what is the return on investment (ROI)? How are returns different for workers, firms, and government who each bear part of the costs?

This section addresses these fundamental questions related to ROI by combining all benefits and costs of LES training for participants, firms, and government. These represent *incremental* benefits and costs as they are calculated from differences between program and control groups. Results are presented in comparable terms on a *per participant* basis over the year following enrolment in the project.

Program delivery costs

UPSKILL program delivery costs were about \$2,250 per participant including practitioner fees and ancillary costs for recruitment, needs assessments, curriculum customization, and training delivery.

Table 1 presents the total costs of UPSKILL program components. The first panel illustrates the costs for one-time program activities that occur at the onset of the project including costs to engage the sector, conduct a performance gap analysis, and design the core curricula. These costs are incurred by government and/or other central associations representing the sector rather than individual firms.

Table 1 UPSKILL program costs, per participant

Program element	Costs (\$)	
	Sector	Firm
One-time activities, at sector level		
Sector engagement, performance gap analysis	\$46.03	
Core curricula development	281.28	
Recurring activities, for each firm		
Recruitment, needs assessments		\$359.00
Worker skills and performance assessments		224.96
Customization and training delivery		1,447.52
Travel, supplies, other		215.91
Total program costs	\$327.30	\$2,247.39
Worker release time		288.42
Total program costs and release time	\$327.30	\$2,535.81

If performance gaps are already well understood and suitable LES curricula exist these activities may be fairly streamlined and available at lower cost. Program activities that occur at the firm level are listed in the second panel of Table 1. These include firm and worker recruitment, organizational needs assessments, skills and performance assessments for workers, and the customization and delivery of LES training. The total cost for program activities at the firm-level was about \$2,250 per participant.

Costs to release participants from work to engage in LES training activities were an additional \$288 per participant.

UPSKILL training was delivered in the workplace during work hours. As a result, participants needed to be “released” from their core job activities to attend the training. The average participant received just under 20 hours of LES training, adding an additional \$288 in release time, per participant, in cost to the program. For the UPSKILL demonstration project, half of these costs were reimbursed to firms by government. However, for purpose of the “benchmark” ROI study below, costs for all workplace training and full release time for workers are assumed to be paid by employers.

Benefits and costs, by stakeholder

Participants experienced a substantial positive return on investment from LES training, as they incurred very little cost under this model.

Table 2 presents the combined benefits and costs of UPSKILL from the perspectives of participants, firms, and government. The first column illustrates that UPSKILL participants

Table 2 Benefits and costs, by stakeholder

Benefit or cost (\$)	Stakeholder			
	Participants	Firms	Government budgets	Total combined
Participant impacts				
Employment and earnings	1413	-1286		127
Taxes and social transfers	-558		558	
Firm effects				
Sales revenue		2124		2124
Productivity: cost savings		2174		2174
Hiring costs, other expenses		293		293
Taxes: corporate, sales		-193	448	255
Program delivery costs				
UPSKILL program delivery		-2247	-327	-2574
UPSKILL release time	-27	-288		-315
Net benefit or cost per participant (\$)	828	577	679	2084
Return on investment (%)	3067%	23%	208%	72%

received just over \$1,400 in earnings gains during the 12-month follow-up period, but with few additional costs. The primary costs were indirect, arising from income taxes and foregone EI benefits in the amount of \$558. In terms of direct costs, while participants did not pay for LES training under the UPSKILL model, some did engage in learning activities on their own time (an average of 1.9 hours) which represents an equivalent cost of \$27 at their current wage rate. As a result, with substantial earnings gains and trivial training costs, participants have a substantial positive return on investment.

Firms experienced a significant positive ROI from LES training, even when assumed to bear the full costs of delivery. Increased revenue and higher productivity more than offset the costs of the program.

The second column of Table 2 lists the benefits and costs of UPSKILL training for participating firms. In terms of benefits, firms experienced gains in revenue, cost savings from increased productivity, and reductions in hiring costs that amounted to nearly \$4,600 per participant. In terms of costs, firms paid the increased earnings to participants (the amount that arises from improved retention), along with increased corporate taxes. When firms are assumed to bear full costs of training (\$2247) and release time (\$288), their net benefit is \$577 per participant, for an average return on investment of 23 per cent.

Governments also experience a positive ROI, assuming they cover only costs of program launch for sector-level activities including the sector engagement, needs analysis and curricula design.

Governments experienced gains in terms of increased income, corporate, and sales tax revenue, as well as a small reduction in transfers (EI benefits). These gains more than offset the costs of sector-level activities to support the launch of workplace LES training including the initial engagement, sector needs analysis, and the design of the core curricula. The net impact on government budgets is positive at \$679 per participant, for an average return on investment of over 200 per cent, under the assumption that governments cover only start-up costs. Of course, this positive return is contingent on the employers making investments in LES training and the increased tax revenues that these investments bring about. When governments cover full or partial costs of the training, as was the case in the UPSKILL project, they experience a net cost rather than a positive return (this scenario is discussed in the next section).

LES training produced a large net benefit and overall positive ROI when considering all outcomes of stakeholders combined.

The combined benefits of LES training for all stakeholders was \$4,973, per participant, through the first year after enrolment. This more than offsets the full costs of the program including all sector-level components and firm-level delivery costs, which amounted to \$2,889 per participant, for a net benefit of \$2,084 and an overall return on investment of 72 per cent.

There are two important caveats to this cost-benefit analysis. First, it provides a fairly conservative estimate of the benefits and costs to participating firms and workers that can be considered a likely lower bound: it includes only direct financial benefits and ignores less tangible ones such as improved social and psychological capital or reductions in stress. Extending this “benchmark” cost-benefit analysis to include

Table 3 ROI under cost-sharing alternatives

Scenarios for cost-sharing	Net benefit before Program costs	Total Program costs	Total Net benefit	Return on Investment
Benchmark: 100% employer-sponsored				
Firms (100% of workplace delivery costs)	\$3,112	\$2,535	\$577	23%
Government (sector-level design costs only)	\$1,006	\$327	\$679	208%
Canada Job Grant scenario				
Firms (1/3 delivery + release time)	\$2,738	\$1,037	\$1,701	164%
Government (2/3 delivery + sector design costs)	\$1,380	\$1,825	-\$445	-24%
Break-even for government				
Firms (60% delivery + release time)	\$2,886	\$1,630	\$1,256	77%
Government (40% delivery + sector design costs)	\$1,232	\$1,232	\$0	0%

some of these less tangible benefits may increase combined returns by as much as 80 per cent.⁴ On the other hand, the estimates of the benefits to government as well as the overall combined return on investment should be considered with caution as they do not take account of general equilibrium effects. Indeed, the analysis ignores the effect that increased revenue and productivity of participating firms may have on other non-participating firms and workers in the industry. For instance, in highly competitive local markets, increased occupancy at one hotel may drive down occupancy in another. As such, the resulting aggregate revenue gains and increases in corporate taxes would be offset to a degree. Similarly, if productivity gains among participating workers within a firm lead to layoffs for non-participating workers, this would offset overall gains in earnings and tax revenue for government. While there was little indication of layoffs of non-participants, this effect may extend beyond the follow-up period. The scope of the current analysis is referred to as *partial equilibrium*: it is limited to the effects on participating stakeholders and ignores the effects on non-participants.

ROI under cost-sharing alternatives

The ROI of LES training for firms would be significantly higher under cost-sharing arrangements with government, such as that proposed under the Canada Job Grant.

In 2013, the Federal Government of Canada announced the Canada Job Grant, which has replaced a set of existing Labour Market Agreements (LMA) with the provinces that were signed in 2008 (Canada, 2013). While details are still being negotiated for its implementation in mid-2014, one key component will be a matching grant for employers who have a plan to train Canadians for an existing or better job. The proposed formula would have employer contributions matched by the Federal and Provincial Governments up to a maximum of \$5,000 per trainee.

UPSKILL results can be used to estimate the return on investment from workplace LES training under various cost-sharing scenarios including those in the Canada Job Grant. Table 3 presents the return on investment from UPSKILL for participating firms and government under different distributions of the \$2,247 in program delivery costs.

The first panel presents the scenario where employers bear the full costs resulting in the “benchmark” of 23 per cent ROI for firms. The second panel presents a cost-sharing alternative similar to that under the proposed Canada Job Grant, where governments bear 2/3 of the cost of workplace training and employers cover 1/3. Under this scenario, the ROI from the LES training for an average firm is over 160 per cent, more than seven times the benchmark scenario. However, governments are in this case clearly making an investment to encourage employers to train and generate these returns, with a net cost to government of \$445 per participant.

The final panel presents an interesting scenario, where employers cover 60 per cent of delivery costs and governments cover 40 per cent. This cost-sharing arrangement represents the short-term *break-even point* for government budgets and yet still results in a substantial ROI for firms of about 77 per cent from their investments in LES training.

Understanding success factors: who benefits and in what context

UPSKILL results have shown that investments in workplace LES training can generate positive returns for both workers and firms, where benefits significantly outweigh the costs of training. These financial benefits arise from a number of positive impacts observed on UPSKILL participants including increases in their skills and improvements in job performance. However, not all workers and firms may experience the same degree of benefits from LES training. This raises the natural question: for whom and under what conditions does LES

⁴ See the technical report Gyarmati, et. al. (2014) for more details on monetizing intangibles.

training produce significant positive impacts? What are some of the “success factors” to consider when delivering workplace LES training in order to maximize its benefits?

This section addresses these questions by looking at key differences in the impacts of LES training across various subgroups of workers, the context of the workplace where training occurs, and other factors related to how training is conducted. These results have important implications for how practitioners conduct organizational needs assessments and customize the LES training solutions for employers and learners.

Worker characteristics

Differences in the impacts of LES training were assessed across a range of sociodemographic characteristics of workers. An important set of findings emerged from the analysis with respect to the demographics of workers and the key role that their starting skill levels and receptivity to learning plays in the impacts of LES training.

Demographics: most subgroups benefit

The positive effects of LES training on skills, performance, and psychosocial outcomes were felt by most participants in various demographic subgroups.

Results of subgroup analyses suggest that while some differences in the magnitude of impacts were found, most participants benefited from LES training in terms of gains in skills, job performance, or other psychosocial outcomes. Positive impacts were observed among most subgroups including those based on gender, age, household income, and immigrant status. For instance, both men and women experienced gains in literacy scores and job performance, though gains for women were somewhat larger on document use and for men on numeracy. While non-immigrants experienced a range of positive impacts, effects were even greater for immigrants on document use, oral communication, and particular areas of job performance.

Depth of need: starting skill levels matter

LES training had larger impacts on job performance for participants who had lower pre-training Essential Skills.

While skills and performance gains were experienced by most UPSKILL participants, those with lower pre-training skills experienced larger impacts, notably, on job performance. For instance, participants with pre-training literacy at Level 1 experienced the largest impact on performance, an increase of approximately 15 percentage points in the proportion who successfully passed industry certification, which is a strict measure of job performance gains. By comparison, those with pre-training literacy at Level 2, particularly those

in the mid- to upper-Level 2 range, with scores of 250-274, experienced no significant impacts in their ability to meet certification-level performance.

Importantly, this occurs because many of those with higher literacy skills are able to improve their job performance without LES training i.e. performance gains were achieved in both program and control groups among those with pre-training skills at upper Level 2. In contrast, those with lower starting literacy levels will not achieve the same breadth of job performance gains without receiving LES training, as measured by the percentage who can successfully pass industry certification. In fact, job performance among control group members with pre-training literacy at Level 1 deteriorated even further over time in the absence of LES training (decreasing 4 percentage points compared to an increase of 11 percentage points for program group members at Level 1).

Receptivity to learning: trust is critical

LES training had larger impacts when participants were receptive to learning and had higher levels of trust. While those in low trust environments experienced skill gains from LES training, this did not translate into improved job performance.

While positive impacts of LES training can occur even when motivation in the workplace is low, a positive receptivity to learning is critical, as it can influence both the degree of learning engagement and the use of new skills in the workplace. Factors that compromise participants’ receptivity to an LES training program and/or to its application in the workplace will reduce the likelihood of seeing skills and performance gains. For instance, workers who placed less importance on training at baseline experienced lower post-training skills gains. Similarly, the degree to which workers are *trusting*⁵ of others, before training begins, has a significant influence on post-training impacts on performance. While impacts on literacy skills were observed among UPSKILL participants with both low and high levels of trust, impacts on job performance were found only among workers with a high degree of pre-training trust. It seems that for participants with low levels of trust, skills gains produced from LES training do not “transfer” to the workplace. Lower levels of trust can diminish the *application* of newly developed skills to work-related tasks. Situations within the workplace that may diminish trust, for instance, management and union disagreements or recent layoffs, may compromise the impacts of training interventions by reducing the likelihood of learning transfer.

⁵ Measures of generalized trust were used in UPSKILL, assessing the degree of trust one has in both close contacts (e.g. friends and neighbours) and those at more social distance (e.g. strangers). Generalized measures are correlated with trust in the workplace, yet they avoid the difficulty of asking about trust in management and supervisors directly, while the participant is completing a survey within that very workplace.

Firm and workplace conditions

Differences in the impacts of LES training were also assessed across a range of firm characteristics and workplace conditions. Results suggest that impacts of LES training vary in important ways based on firm characteristics and in particular the breadth of their business needs and existing culture of learning.

Firm characteristics: size and unionization

LES training had positive effects in various types of firms, though performance impacts were larger in small firms and in those with larger unionized workforces.

Positive impacts of LES training were observed in firms of varying types, sizes, and structures. Nonetheless, impacts on job performance were found to be larger in small firms (those with less than 50 employees), in larger firms (those with more than 200 employees), and in unionized workplaces. Importantly, the impacts were larger in these types of firms because the performance of workers in these environments, without LES training, appears to deteriorate in quality over time (i.e. performance of workers in the control group worsens over time in these firms compared to others). In other words, workers in these firms generally have more to gain from LES training.

Breadth of business needs articulated

LES training had larger impacts on skills and job performance in firms where the employer identified a greater breadth of business needs prior to training.

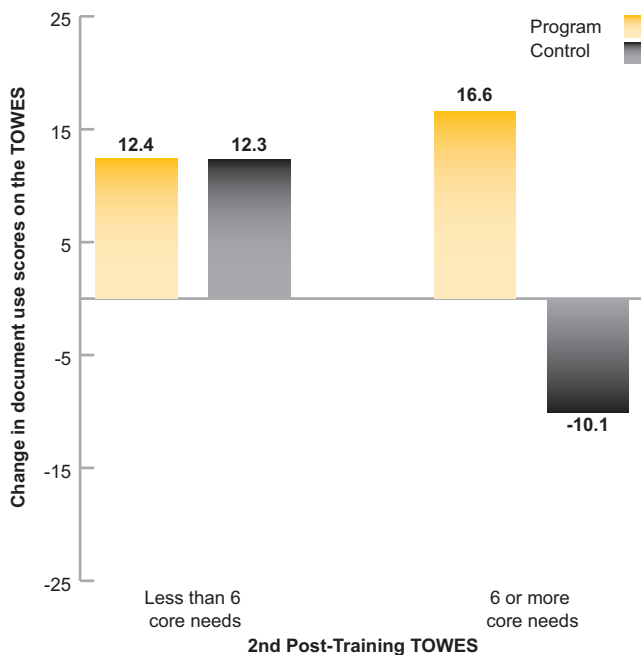
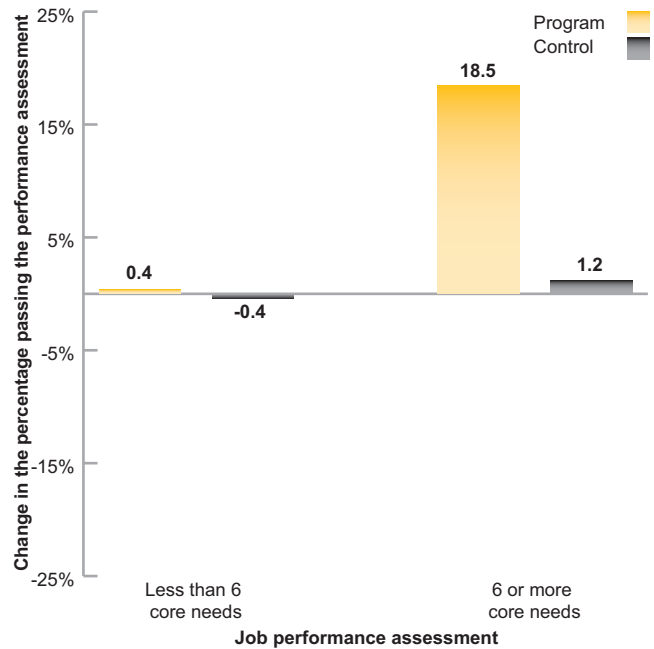
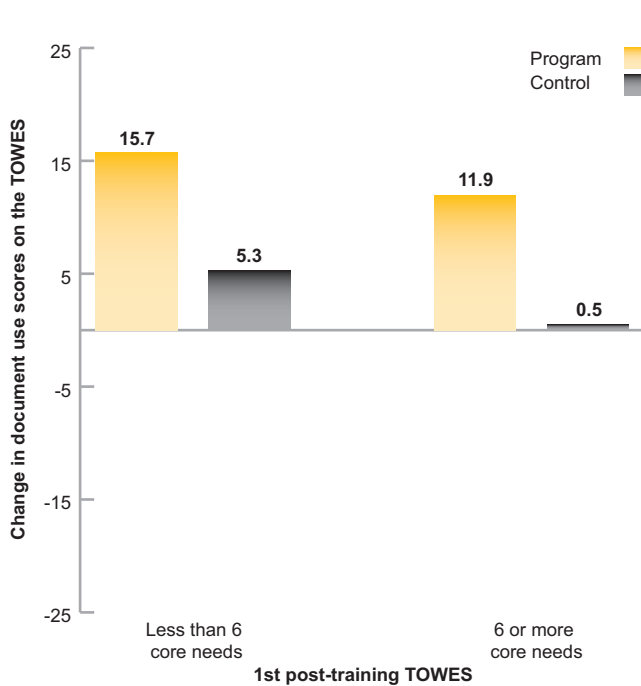
The analysis considered the importance of business needs in a more direct way by considering the employer's perspective on performance gaps and business priorities. As part of the needs assessments completed at the onset of the project, employers were asked in some detail about their business needs and motivations for participating in the training. They were asked specifically about their needs in over a dozen business areas relating to sales and customer service, productivity and costs, health and safety and human resource issues. The importance of business needs can be analyzed by looking at differences in the impacts of LES training between groups of employers based on the breadth of pre-training business needs identified. Results of this analysis indicate that the impacts of LES training were largest in firms that had reported a wider breadth of business needs before training. Figure 11 illustrates that program group members who were working in firms that reported a high degree of need in six or more core business areas experienced substantially larger impacts on literacy scores and job performance than the control group. While workers in firms with fewer than 6 core business needs did experience short term skills gains at the 1st follow-up (15.7 points vs. 5.3 points increase in program vs. control group), this group experienced no longer-term impacts on skills (12.4

points vs. 12.3 points increase in program vs. control groups) nor performance (0.4 vs. -0.4 per cent change in certification rates in program vs. control groups).

In contrast, those workers in firms with 6 or more business needs experienced large sustainable impacts not only on immediate skills but also longer-term skills and job performance. At the 2nd post-training follow-up, impacts were more than half a level (a gain of 16.6 points vs. a loss of 10.1 points in program vs. control on TOWES scores) and performance impacts were nearly 17 percentage points (18.5 vs. 1.2 per cent increase in success rates in program vs. control).



Figure 11 Changes in literacy and job performance, based on breadth of business needs



Culture of learning, training readiness

LES training had larger impacts in firms with a prior culture of learning and demonstrated commitment to training.

The analysis also considered the importance of a firm’s learning culture and commitment to training. While there are various measures of learning culture, two important sets of indicators in a workplace setting relate to the extent of financial resources that a firm makes available for training and the degree of non-financial support they provide for its implementation and its application to work tasks of their employees.

UPSKILL results suggest that a firm’s prior investments in training, through either direct expenditures and/or incentives for workers, are important indicators of future impacts of LES training. Impacts on job performance and skills of workers were larger in firms that had prior investments in training, of any kind, within the prior six months. Most interestingly, there were no impacts on workers’ skills or job performance in firms where employers could not say what their recent training expenditures had been, likely indicating a low commitment to training.

Training process: alignment is key

Various implementation factors related to the training process were also analyzed to determine their influence on the impacts of LES training. Results suggest that impacts vary based on at least two important features of training delivery.

Short-term skills gains were larger with increased hours of LES training. However, longer-term skills gains and job performance did not improve significantly more with increased training hours.

UPSKILL results suggest that the number of training hours had a significant effect on literacy scores gains, with more hours producing larger gains, but the effect is largely observed in short-term assessments completed immediately after training. For instance, participants receiving between 4 and 12 hours of LES training had an average increase of about 12 points on document use scores when measured immediately after training, compared to about 18 points for those receiving between 13 and 20 hours of training.

However, both groups achieved gains of 20 or more points in longer-term assessments conducted more than a year after training. Similarly, longer-term improvements in job performance, measured at more than six months after training, do not appear to be highly correlated with the amount of LES training.

The degree of alignment between the business needs of employers and the focus of the curriculum is a significant determinant of gains in job performance.

Impacts of LES training depend in part on the ability of instructors to customize curricula in a way to ensure it is aligned with the business needs of the firm. The more clearly that employers can articulate tangible business needs, rather than intangible interests, the easier alignment is to achieve and the more likely it will be to produce performance gains. UPSKILL results confirm that gains in job performance were significantly correlated with the number of tangible business needs that employers articulate. Furthermore, when training appeared focused and customized to meet these business needs, notably in the area of oral communication and customer relations, performance gains were significantly larger. Importantly, an absence of training customization in an area where business needs were identified, had a significant negative effect on performance, as employer expectations were seemingly not met.

Concluding summary

The objective of the UPSKILL demonstration project was to provide a credible test of the effectiveness of LES training. This was achieved by measuring the impacts of workplace LES training on workers and firms and estimating the return on investment for participants, firms and governments.

The study addressed a series of complex issues about the decision of firms to participate in LES training, the extent of worker engagement in LES learning, its effects on workers' skills, job performance and business outcomes – and ultimately, the ROI for firms and the cost-effectiveness for government. The findings from UPSKILL have provided rich answers to each of these fundamental policy questions and provide a compelling business case that, indeed, LES training can be attractive to firms and generate significant impacts and a positive return on investment.

The decision to train

UPSKILL results demonstrated that an offer of workplace LES training can be attractive to a large number of firms and workers. A critical feature of the training model that supported high levels of interest and take-up was the embedding of LES training in a highly-relevant performance and business needs framework. This framework was developed through the initial analysis of needs at a sector level, which were then customized to the needs of the firm through the organizational needs analysis. This approach helped facilitate communications with employers and generate and maintain high levels of buy-in from firms.

While the subsidy for half of the release time to cover participant wages was welcomed by most firms, it was not a primary motivator for engagement in UPSKILL, compared to the perceived relevance and value of the training.

Engagement in learning activities

While a workplace training model has its clear advantages in reaching those currently employed with low literacy, it can be challenging to deliver training in a dynamic business environment. Daily work demands often dictate availability of staff for training.

The amount of release time that UPSKILL employers made available to participants to engage in LES training was less than expected, on average, about half of that offered. The provision of release time for self-directed learning activities was particularly low. However, once participants began group training sessions, there were very high attendance rates.

This confirms that the primary constraint on LES training hours will often be the amount of release time that employers allow, as opposed to the attendance rate of participants. LES practitioners need to be realistic about the hours of workplace training they will be able to deliver, through a careful assessment of the business demands facing the firm during the planned delivery period.

Effects of LES training on workers

In terms of literacy skills, average impacts on document use scores were about a quarter of a level, or 11 points, at the first follow-up assessment immediately after training and up to 18 points at the second follow-up about four to six months later. Among those with longer-term assessments of more than a year, a 23-point impact was observed, or nearly half a level. This provides evidence that improvements in Essential Skills can occur fairly quickly after training, and increase subsequent to training, as individuals further utilize their skills and engage in literacy practice.

Beyond average impacts, the percentage of program group members with document use skills at Level 3 increased substantially, by over 20 percentage points, compared to the control group. This represents a sustained longer-term positive effect of LES training on the distribution of literacy scores among workers.

Significant improvements in job performance were also observed in nearly all areas of interest to employers – reflected in a greater breadth of service quality, improved relations with customers, and increased task efficiency. At the same time, LES training led to significantly higher success rates in industry certification. This may reinforce not only workers' job performance but also their future training goals, career paths, and employment prospects.

Essential Skills training led to significantly higher rates of job retention among program group members. They were also less likely to be unemployed within the year after enrolment. Though there were no significant impacts on wage rates, the increased employment levels provided higher earnings of approximately \$1,900 per year.

Effects of LES training on firms

Essential Skills training led to significant improvements in both drivers of firm revenue and reductions in costs. Program group firms experienced larger increases in customer satisfaction, customer loyalty and, ultimately, higher revenue compared to the control group, arising from both higher occupancy rates and increased ancillary spending.

LES training also reduced error rates and increased the efficiency of workers within several departments, leading to significant cost savings for firms. Accompanying increased efficiency and accuracy of staff performance, were gains in the productivity of supervisors, as they reduced the time they spent on monitoring and correcting the work of employees. Other costs savings included reductions in hiring costs associated with the increased job retention.

Return on investment

UPSKILL results demonstrate that firms can experience a significant positive ROI from LES training, even when they bear the full costs of training delivery. Increased revenue and higher productivity more than offset the costs of the program. Under cost-sharing arrangements with government, such as those under the Canada Job Grant, return on investment for firms would be even higher.

Governments also realize a positive return on investment, when they cover only the costs of the program launch for sector-level activities including the sector engagement, needs analysis and curricula design. Governments experience gains in terms of increased income, corporate, and sales taxes, as well as a small reduction in transfers for EI benefits. These gains more than offset the costs of sector-level activities to support the launch of the training.

Conditions for success

UPSKILL results indicate that the effects of LES training on skills and job performance vary in several important ways based on learner and firm characteristics as well as the process of training delivery. In terms of learner characteristics, LES training has larger effects on job performance, for participants who have lower pre-training levels of Essential Skills. This reinforces the fact that LES training can benefit a whole spectrum of workers, not just those at the upper end of the skill distribution. Impacts are also larger for those with greater receptivity to learning and higher levels of trust. Low levels of trust can diminish the application of newly developed skills to work-related tasks. Situations within the workplace that may diminish trust, for instance, management and union disagreements or recent layoffs, may compromise the impacts of training by reducing the likelihood of learning transfer.

In terms of firm characteristics, UPSKILL results suggest that impacts of LES training vary based on the breadth of a firm's business needs and their pre-existing culture of learning. Participants who were working in firms that reported a high degree of needs experienced substantially larger impacts on their literacy scores and job performance than firms with fewer core business needs. UPSKILL results also suggest that a firm's

commitment to training, either through direct expenditures and/or other incentives for workers, are important indicators of future impacts of LES training.

UPSKILL results also suggest that the degree of alignment that instructors are able to achieve between the training curricula and the business needs of employers, through effective customization, bears a significant influence on the size of job performance improvement. Furthermore, the more clearly that employers can articulate *tangible business needs*, the easier alignment will be achieved and the more likely the training will produce performance gains. UPSKILL results confirm that gains in job performance are significantly correlated with the number of *tangible* business needs that employers articulate. Moreover, when training appears focused and customized to meet these business needs, notably in the area of oral communication and customer relations, performance gains are significantly larger.

Policy implications

UPSKILL results provide compelling evidence that should support government policies and industry initiatives aiming to communicate the value of workplace LES training and encourage employer investment. The project also provides many insights on how to effectively engage employers, how best to implement such training, and on the conditions that are more likely to lead to success.

UPSKILL provides a clear and compelling business case for workplace LES training that can support the engagement of employers and encourage their training investment.

The strong positive results from UPSKILL's impact study and associated cost-benefit analysis demonstrate that workplace LES training can generate a positive return on investment for firms. A significant positive ROI was measured in the short run – after only one year – and with employers bearing the full costs of training delivery. These results will support government policies and industry initiatives that aim to communicate the business case for workplace LES training and encourage employer investments. Results also suggest that cost-sharing arrangements such as those under the Canada Job Grant could lead to substantially higher ROI for firms, which should further facilitate employer investments.

Effective targeting and alignment of LES training with worker needs and business priorities is critical to maximizing ROI and providing a long-term business case for employer investments.

The degree of need among both learners and businesses are key considerations for practitioners and employers in determining whether or not to provide LES training and how best to deliver it in order to produce positive effects in a given workplace context.

The corollary is that firms that do not have or cannot articulate clear business needs may not be ready for LES training. Similarly, workers that do not have explicit and unaddressed gaps in job performance that are linked with low literacy skills, may not be well suited for LES training. A strong business case for workplace LES training is dependent on an understanding of these underlying needs of workers and firms.

One of the keys to its effectiveness is curricula that embeds LES training in a performance and business needs framework that is highly relevant to learners' job tasks and employers' business priorities.

Employers can more easily see the applicability of LES training to their context within a performance and business needs framework, compared to an approach that is less occupationally-relevant. It is also easier for practitioners to customize training solutions within a performance and business needs framework that employers understand.

Customization is not simply an exercise in using authentic workplace materials. Rather, it is about ensuring the training will meet the precise business needs of the employer and the learning needs of participants in ways that improve their job task performance. A highly-relevant occupational and business needs framework helps achieve this while also maintaining high levels of engagement in LES training activities among learners.

A comprehensive organizational needs analysis (ONA) is critical to understanding both needs and training context in order to customize and communicate a training solution that can best achieve positive ROI.

An ONA is critical not only to understanding business needs but also the influence of workplace context and it should be used to inform both training design and communication with employers. The ONA is more than an informational gathering exercise. Rather, practitioners can use it to help educate employers about the conditions in their firm that support a positive ROI from their investment. This can help mitigate uncertainty or other concerns that employers have and further encourage them to make the investments in LES training.

A sector-based approach is an efficient way to establish a performance framework, design core curricula, and build partnerships to effectively engage employers in LES training.

The challenge for the design of a curriculum for workplace LES training is that it needs to effectively link the underlying Essential Skills with relevant job performance tasks in a way that is responsive to business outcomes. This can be challenging when there is no existing performance framework for the given occupations, or few training tools and assessment instruments. A sector-based approach can be a particularly effective and efficient way to design a skills and performance framework along with a core LES training curriculum for given occupations, which will help training practitioners achieve business alignment in a cost-effective way. The goal is to design a well-aligned core curriculum that addresses a specific set of skills and performance gaps that are predominant in a sector. This curriculum can then be customized for the needs of individual firms saving practitioners considerable time and resources while maximizing its relevance.

A sector-based approach also allows training practitioners to communicate with employers in terms that resonate with their underlying business goals rather than using the language of Essential Skills. It also facilitates the use of existing industry networks that often build on long-established trusting relationships with employers.

Government can play a key role in developing an overall strategy for engaging employers in workplace training, particularly when adopting a sector-based approach.

A sector-based approach can be an important part of an overriding strategy to facilitate wider engagement of employers in workplace training. Governments can play a key role in developing this strategy and facilitating its implementation through support for the logistics of sector needs analyses and design of core training curricula. These fundamental processes involve initial costs that no single firm will choose to bear.

By supporting the “start-up costs” specifically for a targeted sector needs analysis and the design of occupation-specific core curricula, governments can absorb some of the common costs that individual firms are reluctant to bear. For projects of similar scale to that of UPSKILL, these costs would represent only about 13 per cent of the total unit costs for LES training delivery. Absorbing these initial costs should facilitate the subsequent engagement of employers in LES training in any given sector.

Workplace delivery models should include efforts to build employers’ capacity for training, support the transfer of learning to work, and enhance the learning culture within firms.

Workplace training is not an *event* but rather a *process*. Employers will benefit from ongoing support for workplace training – before, during, and after the training intervention – in order to maximize and maintain their return on investment.

This should include efforts to build internal training capacity through “Train-the-trainer” workshops where supervisors are instructed in the delivery of LES curricula in an occupational context. Support for a firm’s learning culture can also be achieved through engagement of management in a broader dialogue and review of their learning policies and practices beyond their training expenditures.

Practitioners should consider LES training within a broader package of complementary programs for employers that respond to alternative needs and workplace constraints.

For employers with low training readiness, related challenges with worker receptivity, or difficulty in needs identification, practitioners should be prepared to postpone, or precede, an LES training intervention with alternative or supplementary offerings that aim to improve training readiness and business needs clarity. Governments should continue to explore programs that can best supplement workplace training models to enhance their effectiveness through increasing training readiness.

While workplace LES training can be highly effective, business constraints will often limit available training hours and make implementation difficult for very small firms.

The primary constraint on the amount of LES training that is provided is often not the degree of participant interest but rather the amount of release time that employers can make available, given their current business demands. In the UPSKILL project, higher than expected occupancy and/or unplanned staff absences were a primary and ongoing constraint on training hours. Very few employers were able to provide near the maximum of 40 hours. Furthermore, a workplace training model can be particularly challenging for very small firms, with less than 20 employees, as they simply do not have capacity to support on-site training or allow release time for multiple workers that are needed for efficient delivery of group sessions.

A workplace LES training model should be supplemented with alternative approaches that better address workplace constraints, such as LES training through mentorship or with off site cluster-based delivery models.

Governments should explore alternative training delivery models for particular sectors where firms face significant constraints on their ability to train using outside educators within the workplace. For instance, firms in the construction sector could benefit from mentorship-based training models, where over 85 per cent of training is provided through mentoring relationships between journeypersons and apprentices.

Similarly, in sectors and regions where very small firms are predominant, cluster-based training models could supplement traditional workplace approaches such as UPSKILL to effectively address constraints of small businesses. In this approach, LES training is still embedded within highly-relevant

occupation-specific tasks, but instruction occurs offsite, with workers pooled from multiple firms, effectively lowering the barriers to traditional LES training and increasing access among low skilled workers in very small firms.

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