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All Signs Point to Yes Literacy's Impact on Workplace Health and Safety



All Signs Point to Yes: Literacy's Impact on Workplace Health and Safety

by *Alison Campbell*

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Preface

This report summarizes the results of the first phase of a two-year research project funded by Human Resources and Social Development Canada. Entitled *What You Don't Know Can Hurt You*, the study is exploring the connections between employee literacy skills and workplace health and safety records as reported in current literature. By demonstrating, in cost-benefit terms, the connections between employee literacy levels and workplace health and safety, the study will encourage more employers to invest in workplace literacy development programs in Canada.

Later research phases of the project will build on the literature review presented here. They will analyze in-depth quantitative and qualitative information surrounding workplace health and safety issues and how these issues are affected by literacy skills.

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CONTENTS

Executive Summary—All Signs Point to Yes: Literacy’s Impact on Workplace Health and Safety	i
Chapter 1—Introduction	1
Chapter 2—Reality Check: Literacy Skills and Workplace Health and Safety	3
Literacy Skills in Canada.	4
Workplace Health and Safety in Canada.	5
Investment in Workplace Health and Safety	6
Chapter 3—Challenges: Perceptions and Awareness	8
Employee Attitudes	8
Employer Attitudes	9
Chapter 4—Health and Safety Measures and Literacy Requirements	11
Chapter 5—Sector-Specific Literacy Needs	14
Chapter 6—Benefits of Closing the Literacy Skills Gap	16
Next Steps	17
Appendix A—Bibliography	18
Appendix B—Related Products and Services	20

EXECUTIVE SUMMARY

All Signs Point to Yes Literacy's Impact on Workplace Health and Safety

At a Glance

- ◆ Health and safety, and consequently productivity, can be improved by raising literacy levels in the workplace.
- ◆ Many employers are not aware of the impact of literacy skills on workplace health and safety or on productivity.
- ◆ Awareness of the connections between literacy skills and workplace health and safety will encourage more employers to invest in developing workplace literacy.

Low literacy skills can threaten health and safety in the workplace according to preliminary results from a two-year research project, *What You Don't Know Can Hurt You*. Improving literacy in the workplace is an actionable solution for employers seeking to reduce accidents, injuries, and absenteeism. Organizations that invest in workplace literacy can minimize workers' compensation board premiums, claims, and fines. In addition, fewer health and safety incidents mean reduced work stoppages and slowdowns, leading to higher productivity and organizational performance overall.

A low level of literacy can jeopardize workers' safety if they cannot understand the health and safety regulations provided to them. Furthermore, low literacy skills can prevent workers from obtaining information about their rights to a safe workplace. Without an understanding of their rights or the ability to assert them, workers with low literacy skills will continue to operate in unsafe work environments.

Many organizations do invest heavily in workplace health and safety through capital expenditures in modern, safe equipment. In addition, employers report spending an average of 10 per cent of their training budgets on occupational health and safety training, according to previous Conference Board research.¹ On average, however, only 2 per cent of organizational training, learning, and development budgets is spent on literacy and basic skills upgrading.²

Disturbingly, there is an inverse relationship between investment in literacy skills and industries requiring a high level of health and safety. With the exception of the wholesale and retail industries, the primary and construction industries spend the least per employee on developing literacy and basic skills. Transportation and utility sector spending on literacy and basic skills training is also

1 Hughes and Grant, *Learning and Development*, p. 22.

2 Ibid.

a fraction of that spent in other industries such as information and communications technology and financial services (\$4 versus \$32 and \$13, respectively, per employee in 2006).³ This lack of investment, coupled with the relatively low levels of literacy in these industries, increases the risk of safety incidents and injuries.

By offering opportunities to build literacy skills in the workplace, organizations can raise health and safety standards and ensure that they are maintained.

Efforts to raise literacy skills are beginning to pay off in some sectors. For example, the Construction Sector Council's Essential Skills Strategy seeks to ensure that workers thoroughly understand the common hazards encountered on the job and the basic safety practices needed to mitigate these hazards. Similar initiatives are being championed by the Canadian Trucking Human Resources Council and the Wood Manufacturing Council.

By offering opportunities to build these skills in the workplace, organizations can raise health and safety standards and ensure that they are maintained.

In later stages of this research project, sectoral experiences relating to workplace safety and literacy skills development programs will help make the business case for investing in such programs. Sectoral best practices in workplace literacy programs that affect health and safety will be studied and detailed in stand-alone case study reports.

The research project is using a variety of research methodologies—including surveys, interviews, and case studies—to obtain in-depth quantitative and qualitative information on workplace health and safety issues and how these issues are influenced by literacy skills. By demonstrating in cost-benefit terms the connections between employee literacy skills levels and workplace health and safety records, the study will encourage more employers to invest in workplace literacy development programs.

³ Derek P. Hughes, E-mail message to the author, Feb. 10, 2008. The message contained results from further analysis of data in the *Learning and Development Outlook 2007*.

CHAPTER 1

Introduction

Chapter Summary

- ◆ Improving literacy skills is an actionable solution to improving health and safety in the workplace.
- ◆ This report demonstrates, in cost–benefit terms, the connections between employee literacy skills and workplace health and safety records.
- ◆ *Literacy, workplace literacy development, and essential skills* are defined for the purposes of this report.

The Conference Board recently embarked on a two-year research project to explore the connections between literacy skills and workplace health and safety in Canada. Entitled *What You Don't Know Can Hurt You: Literacy's Impact on Workplace Health and Safety*, the study is examining the direct and indirect health and safety impacts and benefits of investment in literacy skills development for employers and workers.

This report, aimed at a national audience of employers, unions, individual workers, and governments, presents results from the first phase of the study in order to improve understanding of and stimulate interest and investment in

workplace literacy skills development. By demonstrating the connections between employee literacy skills and workplace health and safety records—and doing so in cost–benefit terms—the results will encourage organizations to invest more in workplace literacy development programs. In turn, these organizations will achieve higher levels of health and safety in the workplace and, ultimately, higher productivity and performance.

This report presents results from the first phase of the study in order to improve understanding of and stimulate interest and investment in workplace literacy skills development.

A central finding of the study is that a low level of literacy “can be dangerous—to the extent that it precludes access to health and safety information.”¹ Consequently, this report maintains that improving employee literacy skills is an actionable solution for employers seeking to address health and safety concerns in the workplace. By improving employees’ literacy skills, employers can reduce accidents, injuries, and downtime, as well as minimize the insurance premiums, claims, and fines associated with workers’ compensation boards. Employers will be able to maximize productivity while maintaining a more stable, healthy, and contented workforce.

1 Perrin, *Literacy and Health*, p. 1.

Key Definitions

Literacy—“The ability to understand and employ printed information in daily activities, at home, at work and in the community—to achieve one’s goals, and to develop one’s knowledge and potential.”¹ This definition was created by the International Adult Literacy Survey (IALS).

IALS measures literacy competencies across the following broad domains.²

Prose literacy—“The knowledge and skills needed to understand and use information from texts including editorials, news stories, brochures and instruction manuals.”

Document literacy—“The knowledge and skills required to locate and use information contained in various formats, including job applications, payroll forms, transportation schedules, maps, tables and charts.”

Quantitative literacy—“The knowledge and skills required to apply arithmetic operations, either alone or sequentially, to numbers embedded in printed materials, such as balancing a chequebook, figuring out a tip, completing an order form or determining the amount of interest on a loan from an advertisement.”

IALS categorizes national test results into five levels of literacy skills, with level 1 being the lowest skill level and level 5 the highest skill level. IALS level 3 is “considered a suitable minimum for coping with the demands of everyday life and work in a complex, advanced society.”³ As such, it is the minimum level of literacy competency required to be successful in most jobs. Level 3 can then be considered the “job standard” for literacy skills and is the minimum level needed to perform most jobs well.

Workplace literacy development—As used in this research project, this term refers to the ways in which literacy skills are upgraded in the workplace through a variety of adult education practices (including learner-centred programs, integrated literacy training, and job-specific skills training), as well as to the integration of literacy into all training, enhanced by efforts to improve communication in the workplace, recognize prior learning, and create literacy-rich jobs.

Essential skills—As used in this research project, this term refers to the nine skills identified and measured by the Essential Skills Research Project of Human Resources and Social Development Canada. These skills are reading text, working with others, thinking skills, continuous learning, writing, oral communications, document use, numeracy, and computer use.⁴

1 OECD and Statistics Canada, *Literacy in the Information Age*, p. x.

2 Ibid.

3 Ibid., p. xi.

4 Human Resources and Social Development Canada, *Essential Skills*.

CHAPTER 2

Reality Check

Literacy Skills and Workplace Health and Safety

Chapter Summary

- ◆ Many employers are unaware of the impact of low literacy levels in the workplace.
- ◆ International survey results show that 42 per cent of Canadians have literacy skills at levels too low to perform most jobs well.
- ◆ Some industries that require a high level of health and safety invest relatively little in literacy skills.

Faced with ever more complex technologies, higher quality standards, and intensifying global competition, Canadian employers need to ensure that their workers have the literacy skills they need to perform their jobs well. Literacy skills are essential for a multitude of specific job tasks (e.g., writing memos and reports), communicating with others (e.g., co-workers, supervisors, and customers), and understanding job expectations (e.g., deadlines and quality standards). In addition, literacy skills form the foundation for other workplace training. Employees cannot be expected to succeed in advanced training if they are not able to read, calculate, or write to the level required by the training program.

Coupled with these strong inducements to address low literacy skills in the workplace is another, critically important business reason to invest in workplace literacy: to reduce the numbers of workers who suffer injury or become ill through unsafe workplace practices. Workers who are injured or ill may not be able to perform their job tasks effectively. Thus, an organization that does not make workplace health and safety a top priority compromises its productivity and viability, as well as its reputation as a good corporate citizen and an employer of choice.

Employees cannot be expected to succeed in advanced training if they are not able to read, calculate, or write to the level required by the training program.

Some jobs demand higher literacy skills than others for effective performance. However, there is often a threshold of literacy skills required for safe job performance. For example, many potentially dangerous jobs require a minimum level of literacy skills for safe performance. These include jobs involving complex machinery and tools or hazardous substances and processes. The stage is set for injuries and illness when these jobs are performed by workers with low literacy skills.

LITERACY SKILLS IN CANADA

The International Adult Literacy Survey (IALS) and its follow-up survey, the Adult Literacy and Life Skills Survey, have assessed literacy skills in Canada and other countries and ranked them on a five-point scale (where level 1 is low and level 5 is high). The box “Literacy Levels of Canadians Aged 16 to 65” shows how Canadians’ literacy skills levels stack up. Although 58 per cent of the working-age population have literacy skills at level 3 or higher, 42 per cent have literacy skills at the lower two levels—skills too low to perform most jobs well. Individuals with low literacy skills have less to offer the labour market and may not be able to follow their preferred career paths.¹

The original IALS survey went on to clarify the literacy skills of workers employed in specific types of jobs. Table 1 shows that between 48 and 60 per cent of skilled craft workers, machine operators/assemblers, and agriculture/primary workers in Canada have literacy levels below the threshold level 3 minimum for coping with the demands of everyday life and work. These workers are potentially at risk because they are unable to read and understand machinery operating instructions, safety precautions, equipment and repair manuals, first-aid instructions, or organizational policies on workplace health and safety. They may be unable to leave a warning note for the next shift worker regarding a damaged machine or part. And they may be reluctant to inform a supervisor that they cannot understand written work area or end-of-shift clean-up procedures. Low literacy skills potentially put workers and their co-workers in harm’s way and increase the likelihood of work stoppages due to accidents or errors.

Low literacy skills are only part of the problem. Workers with lower literacy skills who are happy in their jobs and are coping well are unlikely to see the need to upgrade their skills. Their skills are currently matching the needs of their jobs. However, any change to their jobs may threaten their ability to perform. Moreover, as time goes on, their skills are increasingly less likely to meet the needs of an ever-changing workplace. Thus, personal

Literacy Levels of Canadians Aged 16 to 65

LEVEL 1—14.6 PER CENT OF CANADIANS

This level comprises persons with very poor skills. Individuals may, for example, be unable to determine the correct amount of medicine to give to a child from information printed on a label.

LEVEL 2—27.3 PER CENT OF CANADIANS

Persons at this level can deal only with material that is simple and clearly laid out, and where the tasks involved are not too complex. These people can read but test poorly. Their lack of skill may be less obvious than that at level 1, since they may have developed coping skills to manage everyday literacy demands. However, their low level of proficiency makes it difficult for them to face novel demands, such as learning new job skills.

LEVEL 3—38.6 PER CENT OF CANADIANS

Level 3 is considered a suitable minimum for coping with the demands of everyday life and work in a complex, advanced society. It approximates the skill level required for successful secondary school completion and college entry. Like higher levels, it requires the ability to integrate several sources of information and solve more complex problems.

LEVELS 4 AND 5—19.5 PER CENT OF CANADIANS

These levels describe people who demonstrate command of higher-order information-processing skills

Source: OECD and Statistics Canada, *Learning a Living*, p. 50. Results are for the Prose Scale, one of three measures of literacy used in the International Adult Literacy Survey.

Table 1
Proportion of Occupational Category
at Each Literacy Level
(per cent)

	Level 1	Level 2	Level 3	Level 4/5
Skilled crafts	24.7	30.5	28.8	16.1
Machine operation/ Assembly	27.7	31.3	26.4	14.6
Agriculture/Primary	17.5	31.4	32.7	18.4

Source: OECD and Statistics Canada, *Literacy in the Information Age*, p. 168. Results are for the Document Scale, one of three measures of literacy used in the International Adult Literacy Survey.

1 Campbell, *Profiting From Literacy*, p. 2.

attitudes toward literacy and denial of deficiencies are also significant contributors to stagnating literacy skill levels. Findings from the International Adult Literacy Survey indicate that well over half of working-age adults with the lowest level of literacy skills believe that their skills are good or excellent. Almost 90 per cent of level 2 working-age adults said the same. (See Table 2.) These individuals are unlikely to seek out opportunities to develop their literacy skills or to take advantage of these opportunities, even when they are offered at a convenient place or time and at little or no cost.

The number of work-related fatalities in Canada has increased over the years, from 758 in 1993 to 1,097 in 2005.

In the face of skilled labour shortages, Canadian employers are increasingly turning to Aboriginals and immigrants as part of their strategy to remain competitive. Based on current immigration rates, it is estimated that by 2011 all of Canada's net labour force growth will be attributable to immigration.² However, lack of literacy skills in English or French is often a key barrier that prevents Aboriginals and immigrants from achieving their potential in Canadian workplaces. Although individuals may have the job knowledge and experience needed by employers, they are often unable to overcome the literacy barrier and develop their skills to "job standard" levels (IALS level 3 or above) without assistance.

Table 2
Self-Rating of Literacy Skills
(per cent, population aged 16 to 65)

Actual level of literacy skills	Self-rated as poor/moderate	Self-rated as good/excellent
Level 1	42.6	57.4
Level 2	10.4	89.6
Level 3	5.6	94.4
Level 4/5	0.7	99.3

Source: OECD and Statistics Canada, *Literacy in the Information Age*, p. 161. Results are for the Prose Scale, one of three measures of literacy used in the International Adult Literacy Survey.

WORKPLACE HEALTH AND SAFETY IN CANADA

Statistics show that some industries are more dangerous than others. Between 2003 and 2005, the manufacturing sector saw annual acceptance of over 80,000 workers' compensation claims for time lost due to injury—this from a manufacturing workforce of just over 2.2 million. In the same period, construction industries counted over 30,000 claims accepted each year (from a workforce of just over 900,000), while the transportation and storage sector had over 24,000 claims accepted annually (from a workforce of just under 800,000). In contrast, the finance and insurance sector, with a workforce of over 900,000, recorded a little more than 600 claims accepted each year.³ Clearly, the nature of work and the potential for injury varies considerably across industrial environments.

Even within the manufacturing, construction, and transportation sectors, some jobs are more dangerous than others to perform. Recent statistics show an average of over 45,000 time-loss injury workers' compensation claims accepted annually for trades and skilled transport and equipment operators in Canada. Similarly, there were over 35,000 time-loss injury workers' compensation claims accepted annually in recent years for labourers in processing, manufacturing, and utilities. At the other end of the spectrum, there were about 290 time-loss injury workers' compensation claims accepted annually for professional occupations in business and finance.⁴

The number of work-related fatalities in Canada has increased over the years, from 758 in 1993 to 1,097 in 2005.⁵ However, Canada's population growth rate during this time (approximately 1 per cent annually) does not account for this increase.⁶ Recent efforts to protect youth on the job, such as the Passport to

3 Association of Workers' Compensation Boards of Canada, *National Work Injury*, pp. 46–48. Sector workforce size data from Statistics Canada, CANSIM Table 282-0008 and Catalogue no. 71F0004XCB.

4 Association of Workers' Compensation Boards of Canada, *National Work Injury*, pp. 43–45.

5 *Ibid.*, p. 157.

6 Statistics Canada, CANSIM Table 051-0001.

2 Statistics Canada, *Immigration: An Overview*.

Safety,⁷ might suggest that youth and inexperience play a big part in workplace fatalities. However, fatality numbers are higher for mature workers than for younger ones.⁸ This may be because older workers are more prone to be overconfident, to take shortcuts to save time or money, to have slower reaction times, or to possess lower literacy skills.⁹

INVESTMENT IN WORKPLACE HEALTH AND SAFETY

Employers in Canada already invest a significant amount of their budgets on building and maintaining high occupational health and safety standards. The drive to support safety policies and procedures in the workplace is motivated by the high cost of workplace safety incidents for businesses and sectors, as well as for individual workers and their families. The costs of injuries that result in lost workplace time potentially include property damage, lost production, lost manager and supervisor time (from dealing with accidents and injured workers), the costs of complying with ministry orders, higher insurance premiums, and lower productivity of the injured employees while on light duty.¹⁰ According to the Association of Workers' Compensation Boards of Canada, 995,891 claims were made in 2006 alone.¹¹ The real costs of workplace safety incidents reflect damaging and far-reaching economic, social, and community impacts.

Workplace Health and Safety: The Business Case

Workplace health and safety are increasingly recognized as a factor in sustainable business success and have become an integral part of sound management practices. The business case for high levels of safety in the workplace includes:

- ◆ compliance with the law;
- ◆ reduced premiums paid to workers' compensation boards;
- ◆ protection against business interruption;
- ◆ better employee relations;
- ◆ increased productivity;
- ◆ increased public trust; and
- ◆ stronger organizational capability.

Source: Canadian Manufacturers & Exporters (Ontario Division) and Workplace Safety and Insurance Board, *Business Results Through Safety Guidebook*, p. 2.

Providing a safe work environment requires capital investments to ensure equipment is modern and safe to use. In addition, employers need to invest in safety training so that individual employees understand mandated safety policies and procedures. In a recent national study by the Conference Board of organizational training, learning, and development efforts, employers reported spending an average of 10 per cent of their training budgets on occupational health and safety training.¹² In addition, when it comes to the content of organizational training, occupational health and safety issues are at or near the top of the list for primary and construction industries, as well as for transportation and utilities industries.¹³

Although employee literacy is essential to maximize the benefits of a safer working environment, the Conference Board study also revealed that, on average, only 2 per cent of organizational training, learning, and development budgets are spent on literacy and basic skills upgrading. As well, there is an inverse relationship between industries requiring a high level of health and safety and investment in literacy skills. With the exception of the wholesale and retail industries, the primary and construction industries spend the least per employee on developing literacy and basic skills. Spending by the transportation and utility

7 Safe Communities Foundation, *Passport to Safety*. This cross-Canada initiative is intended to help eliminate needless injuries and preventable deaths of young Canadians aged 24 and under. Successful participants are awarded a "transcript" that can be attached to resumes to demonstrate their basic awareness of health and safety issues.

8 Association of Workers' Compensation Boards of Canada, *National Work Injury*, pp. 159–161.

9 OECD and Statistics Canada, *Learning a Living*, p. 43. Compared with older age cohorts, younger cohorts tend to score higher and demonstrate higher levels of skill on the IALS Document Scale. The findings are similar for the Prose, Numeracy, and Problem-Solving scales.

10 Canadian Manufacturers & Exporters (Ontario Division) and Workplace Safety and Insurance Board, *Business Results Through Safety Guidebook*, p. vii.

11 Association of Workers' Compensation Boards of Canada, *Key Statistical Measures*.

12 Hughes and Grant, *Learning and Development*, p. 22.

13 *Ibid.*, p. 23.

sectors on literacy and basic skills training is also a fraction of that spent by other industries such as information and communications technology and financial services (\$4 versus \$32 and \$13, respectively, per employee in 2006).¹⁴ This lack of investment, coupled with the relatively low levels of literacy in many industries, increases the risk of safety incidents and injuries.

Enhancing and maintaining a healthy and safe workplace will require concerted action and commitment on the part of employers to allocate the resources needed to develop

employees' skills and to realize their organization's health and safety strategy in the context of other workplace strategies and commitments.¹⁵ Literacy and basic skills are among the skills that employees often need help in developing in order to comply with health and safety regulations and practices. By offering opportunities to build these skills in the workplace, organizations will help to ensure that high standards of health and safety are maintained.

14 Derek P. Hughes, E-mail message to the author, Feb. 10, 2008. The message contained results from further analysis of data in the *Learning and Development Outlook 2007*.

15 *Ibid.*, p. 24.

CHAPTER 3

Challenges Perceptions and Awareness

Chapter Summary

- ◆ Lack of employee awareness and motivation continues to challenge participation in workplace literacy programs.
- ◆ The overconfidence of some adults, coupled with low literacy skills, poses a barrier to raising skill levels.
- ◆ Employers typically need assistance on a variety of fronts to raise literacy levels in the workplace.

Despite years of effort and initiatives to raise the literacy levels of Canadians, not much has changed. Too many adults lack the literacy skills needed to perform their jobs well. As noted earlier, 42 per cent of the working-age population have literacy skills at the lowest two levels defined by the International Adult Literacy Survey.¹

Both employers and employees remain largely unaware of the extent of the literacy skills issue and of the consequences to businesses and individuals. The relative stagnation in literacy skills in recent years, combined with a general lack of awareness of the issue, acts as a one-two punch to Canada. Low literacy skills hinder

economic growth and our ability to compete and be productive. Unless it is acknowledged, the problem of low literacy skills will remain unresolved.

The tendency to ignore literacy skills issues in the workplace is compounded by the overall scarcity of research in the area. Many employers that have undertaken literacy skills development initiatives will acknowledge their positive impact on workplace health and safety. However, the evidence remains largely anecdotal. Other employers that are not yet involved in literacy skills programs will require concrete evidence of the benefits before deciding to invest.

EMPLOYEE ATTITUDES

The overconfidence of some adults with low literacy skills poses a barrier to raising skill levels. As reported in Chapter 2, almost 60 per cent of adults at the lowest IALS literacy level rate their own reading skills as good or excellent. Furthermore, almost 90 per cent of adults at IALS level 2 rate their own reading skills as good or excellent.² The findings indicate that these individuals are content with their literacy skills and are not likely to be aware of the personal economic and social disadvantages of low literacy skills.

1 OECD and Statistics Canada, *Learning a Living*, p. 50. Results are for the Prose Scale, one of three measures of literacy used in the International Adult Literacy Survey.

2 OECD and Statistics Canada, *Literacy in the Information Age*, p. 161.

Some Facts About Literacy

LITERACY OUTCOMES

Four in 10 Canadians in the labour market (aged 16 to 65) have literacy skills at the lowest two levels on the five-level International Adult Literacy Survey (IALS) scale.¹

LABOUR MARKET PARTICIPATION AND LITERACY OUTCOMES

Only 66 per cent of working-age Canadians at IALS levels 1 and 2 participate in the labour market compared with 83 per cent of those at levels 4 and 5.²

PARTICIPATION IN ADULT EDUCATION AND TRAINING

Only 22 per cent of level 1 and 42 per cent of level 2 workers participated in adult education and training, as opposed to 56 per cent of level 3 and 67 per cent of levels 4 and 5 workers. The total participation rate in Canada is 49 per cent.³

1 OECD and Statistics Canada, *Learning a Living*, p. 50. Results are for the Prose Scale.

2 OECD and Statistics Canada, *Literacy in the Information Age*, p. 148. Results are for the Prose Scale.

3 OECD and Statistics Canada, *Learning a Living*, p. 99. Results are for the Document Scale.

The IALS results also show that almost 60 per cent of adults at level 1 and over 80 per cent of adults at level 2 feel that their reading skills do not limit their opportunities at work in any way. (See Table 3.) Since they are satisfied with their literacy skills, these individuals are unlikely to volunteer to participate in workplace or other literacy skills improvement initiatives.

Employees who overrate their own literacy skills are not likely to care about their employers' views on low literacy skills and the harmful impacts on their businesses. In a 2003 Conference Board survey of employers, respondents reported gaps between the importance of workplace literacy skills and their confidence that their employees possessed such skills. Communications issues—including reading, using numbers, and data and comprehension skills—were at the forefront of employers' concerns.³ In addition, improving productivity, communications, and health and safety were cited as top reasons for making

Table 3

Reading Skills and Perception of Work Opportunities
(per cent, population aged 16 to 65)

Actual IALS literacy level	Reading skills not at all limiting	Reading skills greatly or moderately limiting
Level 1	59.5	40.5
Level 2	83.6	16.4
Level 3	92.3	7.7
Level 4/5	98.9	1.2

Source: OECD and Statistics Canada. *Literacy in the Information Age*, p. 163. Results are for the Document Scale, one of three measures of literacy used in the International Adult Literacy Survey.

use of workplace literacy programs.⁴ If employees knew the extent to which many employers valued literacy and basic skills, they might be more eager to improve their skills and take advantage of offered programming.

EMPLOYER ATTITUDES

On the other hand, many employers are oblivious to the need for literacy skills upgrading in their organization. Yet, simply persuading employers that a literacy issue exists in their organization is not enough. Employers may not know how to begin addressing literacy issues, even if they see value in improving workers' literacy skills. They need information on a variety of fronts, including information on how to:

- ♦ assess literacy skills needs;
- ♦ develop appropriate programming;
- ♦ find expert help;
- ♦ establish budgets and resource programming; and
- ♦ schedule training alongside workplace activities.

Employers typically need help finding the expertise they need when they need it. Literacy skills development is often a new area of training for them. The time and effort required to develop and deliver a program are daunting, especially for smaller businesses with limited resources. They do not have the in-house expertise to assess the literacy skills needs of employees; design,

3 Campbell, *Strength From Within*, p. 3.

4 Ibid., p. 7.

develop, and deliver a program; budget and resource the program; or evaluate the results. As a result, organizations tend to focus resources on their core business and put off making long-term investments in unfamiliar territory such as literacy skills development.

However, some stakeholders—including sector councils—are taking steps to raise awareness among employers of the value of literacy and basic skills development. For example, the Construction Sector Council has developed an Essential Skills Strategy in part to address “the lack of awareness of what Essential Skills are and the importance of these skills to individuals and employers.”⁵ The Wood Manufacturing Council has also recently launched a research project to examine literacy and essential skills issues in its sector. The objectives of the study are to foster greater understanding and

awareness among decision makers in three areas: the shared nature of essential skills issues across the sector, progress in the essential skills field, and developments and best practices in essential skills training within the sector.⁶ Through initiatives such as these, more information and resources are being made available to support literacy skills development in the workplace.

If employers are to appreciate the significance of literacy skills issues, they must understand the negative consequences of failing to act. Tying literacy skills to workplace health and safety issues is one way to spark employers’ interest in the subject. Employers that work to improve health and safety in the workplace by addressing low literacy skills can avoid the serious risks and consequences of failing to act—and generate benefits for their businesses.

5 Construction Sector Council, “Essential Skills Strategy.”

6 Wood Manufacturing Council, *Advanced Wood Processing*, p. 2.

CHAPTER 4

Health and Safety Measures and Literacy Requirements

Chapter Summary

- ◆ Low literacy skills may jeopardize employees' ability to understand their rights concerning health and safety in the workplace.
- ◆ National standards for workplace health and safety often require a high degree of literacy to understand them.
- ◆ Workers with low literacy skills risk working in dangerous situations without the ability to comprehend the health and safety warnings provided.

Recent legislation requires employers to ensure that their employees are aware of and able to adequately comprehend the health and safety risks they face in their workplaces. However, low literacy skills can limit the capacity of individual employees to fully grasp these risks, which in turn may jeopardize an organization's employee health and safety record. The good news is that workplace literacy and essential skills training has been shown to improve health and safety in the workplace. According to a report from ABC CANADA, 82 per cent of respondents to a survey on the impacts of literacy and basic skills programs on Canadian workplaces associated increased health and safety with their workplace's literacy and basic skills training program.¹

The federal *Hazardous Products Act* established a national standard for chemical classification and hazard communication in Canada and is the foundation of workers' "right to know" legislation enacted in every province and territory. This legislation is complemented by the Workplace Hazardous Materials Information System (WHMIS)—Canada's national hazard communication standard. The key elements of the system are cautionary labelling of containers of WHMIS "controlled products," the provision of material safety data sheets, and worker education and training programs.²

The *Hazardous Products Act* established a national standard for chemical classification and hazard communication in Canada and is the foundation of workers' "right to know" legislation enacted in every province and territory.

WHMIS is implemented through coordinated federal, provincial, and territorial legislation. Supplier labelling and material safety data sheet requirements are set out under the federal *Hazardous Products Act* and associated Controlled Products Regulations. All of the provincial, territorial, and federal agencies responsible for occupational safety and health have established WHMIS employer requirements within their respective jurisdictions. These requirements oblige employers to ensure that controlled products that are used, stored, handled, or disposed of in the workplace are properly labelled; that material safety data sheets are made available to workers; and

1 Long, *The Impact of Basic Skills Programs*.

2 Health Canada, *Workplace Hazardous Materials*.

that workers receive education and training to ensure the safe storage, handling, use, and disposal of controlled products in the workplace.³

It is clear that WHMIS has been instrumental in setting consistent hazard communication standards across the country. In addition, WHMIS documents such as material safety data sheets are written in plain language, which further enhances clear communication of standards. Even so, the comprehension and proper use of WHMIS documents requires users to have a high degree of literacy. The comprehension of some documents requires literacy skills equivalent to IALS level 4 or 5—the highest degree of literacy, possessed by only 19.5 per cent of working-age Canadians.⁴ The difficulty of the documents is such that the Canadian Centre for Occupational Health and Safety issues a glossary of terms commonly used in material safety data sheets.⁵ Examples from the glossary are presented in the box “Commonly Used Terms and Their Definitions.”

Clearly, the risks of not properly comprehending instructions in WHMIS materials are very high and potentially life-threatening. These risks soar when users’ literacy skills are low. A study for the Ontario Public Health Association concluded that “much information about occupational health and safety is available only in written form, and consequently workers who cannot read are less likely than others to be aware of the existence of dangers in the workplace.”⁶ Workers with low literacy skills must then rely on oral or other types of instruction from supervisors or co-workers for their job-related health and safety information. However, the stigma of low literacy skills is more likely to prompt workers to keep quiet and “figure things out for themselves,” exposing themselves and others to unnecessary danger.

3 Ibid.

4 OECD and Statistics Canada, *Learning a Living*, p. 50. Results are for the Prose Scale, one of three measures of literacy used in the International Adult Literacy Survey.

5 Canadian Centre for Occupational Health and Safety, “Glossary of Common Terms.”

6 Perrin, *Literacy and Health*, p. 22.

The complexity of health and safety information is often due to the nature of the materials and the hazard. For example, some scientific or chemical properties cannot be explained without using internationally recognized terms and concepts. Attempting to convey this information through simple pictures or words—whether written or spoken—is simply not sufficient. Moreover, oral directions and explanations regarding health and safety are frequently not understood by persons with low literacy skills. This is because literacy implies comprehension

Commonly Used Terms and Their Definitions

Auto-ignition Temperature—The auto-ignition temperature is the lowest temperature at which a material begins to burn in air in the absence of a spark or flame. . . . Auto-ignition temperatures for a specific material can vary by one hundred degrees Celsius or more, depending on the test method used. . . . To avoid the risk of fire or explosion, materials must be stored and handled at temperatures well below the auto-ignition temperature.

Combustible Liquid—Under the Canadian Controlled Products Regulations (CPR), a combustible liquid has a flash point from 37.8 to 93.3 degrees C (100 to 200 degrees F) using a closed cup test. . . . If there is a possibility that a combustible liquid will be heated to a temperature near its flash point, appropriate precautions must be taken to prevent a fire or explosion.

Dangerously Reactive Material—A dangerously reactive material can react vigorously:

- ◆ with water to produce a very toxic gas;
- ◆ on its own by polymerization or decomposition; or
- ◆ under conditions of shock, or an increase in pressure or temperature.

Local Exhaust Ventilation—Local exhaust ventilation is the removal of contaminated air directly at its source. This type of ventilation can help reduce worker exposure to airborne materials more effectively than general ventilation.

Very Toxic—Under the Canadian Controlled Products Regulations, there are specific technical criteria for identifying a very toxic material. There are specific criteria for short-term lethality, long-term lethality, teratogenicity and embryotoxicity, reproductive toxicity, carcinogenicity, respiratory sensitization and mutagenicity.

Source: Canadian Centre for Occupational Health and Safety, “Glossary of Common Terms.”

based on vocabulary and prior knowledge of the subject.⁷ Even where oral explanations might be of benefit, research shows that such explanations are often not provided to supplement written health and safety instructions.⁸ As a result, workers with low literacy skills run the risk of proceeding with dangerous job tasks without the ability to comprehend the health and safety warnings provided.

Low literacy levels do more than compromise workers' ability to understand health and safety information. They also limit workers' ability to understand their rights to a

safe workplace. The Ontario Public Health Administration study reported that "people with limited literacy skills are less likely to be aware . . . of their rights under occupational health and safety legislation. And even if they are, due to their limited advocacy skills and the lack of 'job purchasing power' these workers are unlikely to be in a position to assert their rights."⁹ Without awareness of their rights or the ability to assert them, workers with low literacy skills will continue to operate in unsafe work environments.

7 Ibid., p. 24.

8 Ibid., p. 22.

9 Ibid.

CHAPTER 5

Sector-Specific Literacy Needs

Chapter Summary

- ♦ Many industries are working in partnership with their respective sector councils to address low levels of literacy and basic skills.
- ♦ Previous sectoral studies support the case for improving workplace health and safety through literacy and basic skills development.

Previous research indicates that certain high-risk industries—such as construction, agriculture, manufacturing, and transportation—report low employee literacy levels.¹ Individuals with low literacy levels working in these industries represent a potential safety risk to their organizations, themselves, their co-workers, and the public. The Construction Sector Council asserts that “learning by trial and error just isn’t good enough or safe enough in today’s worksite environment. Workers must thoroughly understand the common hazards and basic safety practices associated with . . . construction.”² This sentiment can be expanded beyond the construction sector: workplace safety is not negotiable in any industry.

A study for the Ontario Public Health Association looked at the connections between literacy and dangerous work environments. It found that “workers with limited literacy skills appear to have a higher than average rate of occupational injuries. This seems to be because the types of jobs open to them are more likely to be hazardous.”³ The study report goes on to state that “a disproportionate number of persons [with very low literacy skills] are employed in primary, resource and construction industries. Accident rates in these industries are well above average across all workplace settings.”⁴ The connection between literacy levels, accident rates, and industry sectors underscores the need for literacy development opportunities in high-risk work environments.

A study for the Ontario Public Health Association found that “workers with limited literacy skills appear to have a higher than average rate of occupational injuries.”

In response to these kinds of research conclusions, many industries are working in partnership with their respective sector councils to address the issue of low levels of literacy and basic skills. Initiatives such as the Construction Sector Council’s Essential Skills Strategy are proactive solutions to raising the literacy and basic skills levels of employees

1 Standing Committee on Human Resources Development, *Raising Adult Literacy Skills*, p. 64.

2 Construction Sector Council, *Mobile Learning*.

3 Perrin, *Literacy and Health*, p. 22.

4 Ibid.

in that industry. The Council's Essential Skills Strategy works to increase awareness among employers and the workforce of the importance of essential skills. It is also helping to raise the construction industry's awareness of the essential skills resources and tools already available and how to access these materials. In addition, the Essential Skills Strategy emphasizes the need to upgrade workers' skills in response to increasingly stringent health and safety standards.⁵

Another sector council, the Canadian Trucking Human Resources Sector Council, asserts that essential skills training improves safety. In a recent study, the Council found a correlation between the basic skills levels of employees and the likelihood of their being involved in safety incidents. Drivers who had greater proficiency in reading text and using documents and numbers were less likely to have safety incidents en route to or at any location. Age and level of education were also seen as potential predictors of safety incidents: greater age and fewer years of formal education signified lower basic skills levels. As a result of the study, the trucking industry is reconsidering its approach to training and to the design of workplace documents.⁶ Results from the study led the Council to conclude that "given the costs associated with safety incidents, there is a business case for industry investment in Essential Skills assessment and upgrading."⁷ The study thus provides supportive evidence of the benefits of literacy and basic skills development.

5 Construction Sector Council, "Essential Skills Strategy."

6 MacLeod and Kline, *Essential Skills as a Predictor*, p. ii.

7 *Ibid.*, p. iv.

A study by the Wood Manufacturing Council has also investigated the issue of literacy and essential skills use within its sector. An interim report noted that within the sector, the content of employee learning programs "typically relates to health and safety and to new equipment, products, or processes."⁸ The results of the study showed clearly that employers felt there were essential skills deficits among those employed in the industry. The study's final report offers recommendations to employers on several fronts aimed at improving employee literacy and essential skills.

The Construction Sector Council's Essential Skills Strategy works to increase awareness among employers and the workforce of the importance of essential skills.

Later stages of this Conference Board research project will explore in greater depth how various industry sectors view the impacts of literacy and essential skills training on workplace health and safety. Evidence from sectoral experiences with workplace safety and literacy skills development programs will help make the business case for investing in such programs. Sectoral best practices in workplace literacy programs that affect health and safety will be studied and detailed in stand-alone case study reports.

8 Wood Manufacturing Council, *Advanced Wood Processing*, p. 9.

CHAPTER 6

Benefits of Closing the Literacy Skills Gap

Chapter Summary

- ◆ Literacy skills form the basis for more advanced training and increased productivity and performance in the workplace.
- ◆ Previous research emphasizes that improving the literacy skills of the workforce results in tangible results, including improved health and safety records.

The benefits of increasing the literacy skills of workers have been well documented. Literacy skills equip employees to take better advantage of existing accident prevention measures in the workplace. They form the foundation on which advanced training, including safety training, is built and are key to increasing employees' capacity to acquire the "technical and job-specific skills they need to be high performers."¹ Moreover, they have been shown to improve employees' self-confidence, communication skills, and ability to understand their job tasks. These qualities in turn lead to an increased capacity to work collaboratively in teams, solve problems, and comply with health and safety measures and regulations.² Literacy skills developed in tandem with other fundamental skills, attitudes, and behaviours lead the way to increased productivity and performance in the workplace.

Previous Conference Board research concluded that improving the literacy skills of the workforce results in tangible benefits, including improved health and safety records.³ Employees with higher literacy skills are better able to access and understand instructions for using equipment and materials. They are also more likely to comprehend and practice workplace health and safety procedures. Further, "these employees have a greater ability to process information, are more confident in their ability to communicate and are more likely to question new or existing procedures, leading to the development of better health and safety practices."⁴

Literacy skills developed in tandem with other fundamental skills, attitudes, and behaviours lead the way to increased productivity and performance in the workplace.

In research conducted in the United States for the U.S. Department of Education, the Conference Board found that training also "gives employees a better grasp of workplace dangers and safety issues," leading them to appreciate the health- and safety-related consequences of their actions. The result of workplace education programs, the study concluded, is fewer accidents, less lost work time due to injuries, reduced workers' compensation payments, and better compliance with Occupational

1 Bloom and Lafleur, *Turning Skills Into Profit*, p. 3.

2 Ibid.

3 Bloom et al., *The Economic Benefits*, p. 8.

4 Ibid.

Safety and Health Administration requirements.⁵ In fact, half of the employers interviewed in this national study attributed improved health and safety records in the workplace to their workplace education programs.⁶

Intangible benefits include better problem solving and increased use by staff of performance measures and standards, benchmarking, and quality control measures.

Results from research carried out by other organizations complement Conference Board findings. In a national study for ABC CANADA, employers were asked to comment on the impacts of basic skills training in Canadian workplaces. The results indicate that basic skills development programs result in significant improvements in employees' reading, writing, and oral communication skills, as well as in their ability to solve problems, work independently, or work as part of a team. Furthermore, participation in basic skills development programs was shown to increase productivity, increase quality of work, and reduce error rates. In turn, these skills gains contributed to increased health and safety in the workplace. According to the ABC CANADA study, "eighty-two percent of respondents report increased health and safety, either because employees are more equipped to read signs and labels, or because they are better able to absorb standard WHMIS training, including the right to refuse unsafe work."⁷ The study's findings clearly indicate positive employer views regarding the impact of literacy and basic skills programs on health and safety in the workplace.

5 Bloom and Lafleur, *Turning Skills Into Profit*, p. 8.

6 *Ibid.*, p. 65.

7 Long, *The Impact of Basic Skills Programs*.

Another study, published by the Open Learning Agency, provides advice to employers on how to assess the return on their training investment. To help employers identify the costs and benefits of training, the report lists various tangible and intangible benefits that were observed through real business case studies. Tangible benefits include improved safety records and compliance with regulations,⁸ while intangible benefits include better problem solving and increased use by staff of performance measures and standards, benchmarking, and quality control measures.⁹ These intangible benefits point to the potential to reduce workplace accidents and injury through improved understanding of job tasks and employers' expectations of acceptable job performance.

NEXT STEPS

To achieve its objectives, this research project is using blended-method research to obtain in-depth quantitative and qualitative information on workplace health and safety issues and how workplace health and safety are affected by literacy skills. Following this review of relevant literature, targeted audiences will be surveyed for their views on and experiences with workplace health and safety issues as they relate to literacy skills. Follow-up telephone interviews with selected questionnaire respondents will add depth to our knowledge of the impacts of low literacy skills on workplace health and safety. They will also provide information on the impacts of literacy skills development programs on workplace health and safety records. The results of the research project will be summarized in a report that will be widely disseminated to national target audiences.

8 Open Learning Agency, *Why Train?* p. 22.

9 *Ibid.*, p. 23.

APPENDIX A

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APPENDIX B

Related Products and Services

Profiting From Literacy: Creating a Sustainable Workplace Literacy Program

This report provides information to help employers of all sizes create, improve, and evaluate workplace literacy programs. It is also aimed at government policy makers, unions, communities, and other learning partners.

The Economic Benefits of Improving Literacy Skills in the Workplace

Solving the problem of inadequate literacy skills requires concerted action from business, educators, communities, individuals, and government. This study helps raise awareness of the importance of investing in literacy.

Literacy, Life and Employment: An Analysis of Canadian International Adult Literacy Survey (IALS) Microdata

This report identifies patterns of literacy and labour market behaviour among working-age Canadians with marginal literacy skills. It provides employers with concrete strategies for designing successful literacy skills enhancement initiatives.

Learning and Development Outlook 2007: Are We Learning Enough?

This report examines the results of The Conference Board of Canada's biannual survey of Canadian organizations on their approaches to training, learning, and development

(TLD). It finds that TLD spending is stagnant and that fewer organizations consider themselves a "learning organization" than in the past.

Canadian Centre for Learning and Development

This network of learning and development leaders provides a unique opportunity for members from across the country to share their experience and insight and to learn from current thought leaders and innovators in learning and development strategy and performance.

Roundtable on Socio-Economic Determinants of Health

The purpose of the Roundtable is to stimulate collaborative approaches to achieving better health outcomes for Canadians. The Roundtable makes the case that businesses that care about their bottom lines should care about the comprehensive well-being of their workforce and their communities.

Skills and Productivity Forum

This member-driven Executive Network concentrates on three key priorities: creating a pan-Canadian skills and productivity action plan, identifying best practices in managing human capital more strategically, and identifying best practices in capacity building through learning and skills development.

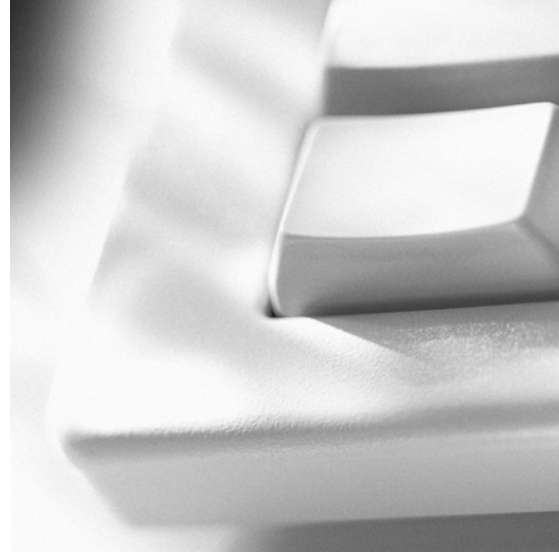
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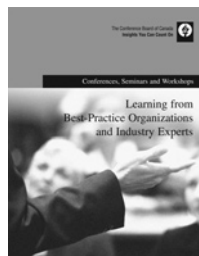
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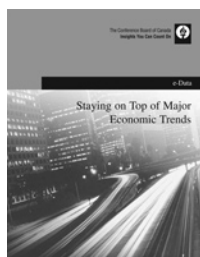
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