

Reading the Future

PLANNING TO MEET
CANADA'S FUTURE
LITERACY NEEDS



This research synthesis is based on research and analysis from:

T. Scott Murray, DataAngel Policy Research Inc.

Stan Jones, Literacy Researcher

Doug Willms, KSI Research International Inc.

Richard Shillington, Tristat

Mike McCracken, Informetrica

Victor Glickman, Edudata Canada

The projections research was funded by the Canadian Council on Learning and the British Columbia Ministry of Advanced Education.

The market segmentation research has been supported by funding from the Canadian Council on Learning (CCL), ABC CANADA Literacy Foundation, Canadian Language and Literacy Research Network (CLLRNet), the National Collaborating Centre for Determinants of Health (NCCDH), and the Canadian Public Health Association (CPHA).

It is available electronically on the Canadian Council on Learning's website at www.ccl-cca.ca.

For additional information, please contact:

Communications
Canadian Council on Learning
215-50 O'Connor Street, Ottawa ON K1P 6L2
Tel.: 613.782.2959
Fax: 613.782.2956
E-mail: info@ccl-cca.ca

© 2008 Canadian Council on Learning

All rights reserved. This publication can be reproduced in whole or in part with the written permission of the Canadian Council on Learning. To gain this permission, please contact: info@ccl-cca.ca. These materials are to be used solely for non-commercial purposes.

Cite this publication in the following format:

Reading the Future: Planning to meet Canada's future literacy needs (Ottawa: 2008).
page(s).


Published in June 2008.
Ottawa, Ontario

ISBN 978-0-9809042-5-3

Aussi disponible en français sous :

Lire l'avenir : pour répondre aux besoins futurs du Canada en matière de littératie.

The Canadian Council on Learning is an independent, not-for-profit corporation funded through an agreement with Human Resources and Social Development Canada. Its mandate is to promote and support evidence-based decisions about learning throughout all stages of life, from early childhood through to the senior years.



« **READING THE FUTURE**
Planning to meet Canada's
future literacy needs »

TABLE OF CONTENTS

GLOSSARY OF TERMS AND ABBREVIATIONS	3
EXECUTIVE SUMMARY	4
INTRODUCTION	7
CHAPTER 1: LITERACY PROJECTIONS	11
CHAPTER 2: THE "FACE" OF LOW LITERACY IN CANADA	23
CHAPTER 3: EFFECTIVE PRACTICES AND PROGRAM RESPONSES	46
CHAPTER 4: SUMMARY AND FUTURE DIRECTIONS.....	71
ENDNOTES.....	75
BIBLIOGRAPHY	77

GLOSSARY OF TERMS AND ABBREVIATIONS

ALL	Adult literacy and life-skills
CBT	Computer-based training
ESL	English as a second language
FSL	French as a second language
GDP	Gross domestic product per capita
IALS	International Adult Literacy Survey
IALSS	International Adult Literacy and Skills Survey
ICT	Information communication technologies
IEP	Individual education plan
ISRS	International Survey of Reading Skills
LCA	Latent class analysis
OECD	Organisation for Economic Co-operation and Development
PSE	Post-secondary education
TOWRE-A	Test of Word Reading Efficiency—Real Words
TOWRE-B	Test of Word Reading Efficiency—Pseudo-words

Computer-based training (CBT)

An interactive instructional method that primarily uses computers to deliver course instruction.

Decoding skills

Skills required to identify spoken or written letters and words, and to understand their meaning in the context in which they are used.

Document literacy

The ability to find and use information in forms, charts, graphs and other tables.

Individual education plan (IEP)

A plan that identifies a student's learning goals, and maps how the school or program will meet these specific goals.

Information communication technologies (ICT)

Education tools including computers, software and the internet.

International Adult Literacy Survey (IALS)—1994

The world's first internationally comparative survey of adult literacy, which created comparable literacy profiles across national, linguistic and cultural boundaries.

International Adult Literacy and Skills Survey (IALSS)—2003

The IALSS built on its predecessor, the 1994 International Adult Literacy Survey (IALS). It measured Canadian adults' knowledge and skills in four domains: prose literacy, document literacy, numeracy, and problem solving. Proficiencies were rated and reported on the basis of five levels: Levels 1 through 5.

International Survey of Reading Skills (ISRS)—2005

Additional clinical reading tests administered to a sample of adults who had participated in the 2003 IALSS.

Latent class analysis (LCA)

A process by which individuals are organized into groups based on their patterns of response to a set of background questions.

Prose literacy

The knowledge and skills required to understand and appropriately use information from print materials.

« READING THE FUTURE

Planning to meet Canada's
future literacy needs »

EXECUTIVE SUMMARY

For tomorrow belongs to the people who prepare for it today.
- African proverb

In 2007, the Canadian Council on Learning's *State of Learning in Canada* report drew attention to the current state of adult literacy. Based on results of the International Adult Literacy and Skills Survey (IALSS), almost half (42%) of all "working-age" adults (16–65) have low literacy skills. The proportion of low-skilled adults grows to 48% when seniors aged 66 and over are included. These figures have not changed over the last decade.

State of Learning acknowledged that improving the future of adult literacy required further research in a number of areas. It determined a need for a better understanding of the social and economic factors behind Canada's adult literacy rates. It also recommended acquiring a deeper understanding of the key characteristics of different groups of adults with low literacy skills, in order to identify any potential barriers to their learning and to determine what these characteristics could imply for the content of any literacy instruction.

These key issues are addressed in *Reading the Future: Planning to meet Canada's future literacy needs*, a synthesis and analysis of research on literacy projections and the characteristics and needs of adults with low literacy skills—developed to assist policy-makers, planners and adult educators in their efforts to improve adult literacy in Canada.

In *Reading the Future*, the Canadian Council on Learning (CCL) projects that there will be little to no progress in our population's level of literacy. In fact, by 2031, 47% of adults aged 16 and over—totaling more than 15 million—will continue to have low literacy skills below IALSS Level 3, or the internationally-accepted level of literacy required to cope in a modern society.

In five-year intervals between 2001 and 2031, *Reading the Future* sketches a picture of adult literacy across all IALSS literacy levels. The report also shows projections for key population groups. Among these findings:

- The number of senior citizens (aged 66 and over) with low literacy skills will double to more than 6.2 million
- The number of immigrants with low-level literacy skills will increase by more than 61%, to a total of more than 5.7 million; however, the number of those with higher literacy skills will more than double from 1.8 million to 3.7 million
- The number and proportion of young adults (aged 16–25) with low literacy skills will remain about the same

CCL has also developed PALMM (Projections of Adult Literacy—Measuring Movement), an interactive on-line tool that allows visitors to calculate adult literacy rates into the future. To use this tool, visit www.ccl-cca.ca/readingthefuture.

Reading the Future also furthers our current understanding of adults who have low levels of literacy. The report divides these individuals into six distinct groups (A1, A2, B1, B2, C and D) based on mother tongue, immigrant status and other key characteristics including age, gender, education and employment status. The result is a comprehensive overview of similarities and differences between each group. It finds that:

- Most adults with low literacy skills feel that their skills are “adequate” for their work
- Many have not completed high school, although some have pursued some post-secondary education and some may have university degrees
- A large proportion is employed
- Many have negative attitudes toward computers

The individual needs of these six groups are addressed by literacy experts from across Canada, who joined together to develop customized and effective program recommendations. These promising practices acknowledge and respond to the potential learning barriers facing each group. The goal of these recommendations is to raise the level of these adults' literacy skills from IALSS Levels 1 and 2 to Level 3—thereby improving their quality of life as well as raising Canada's competitiveness on a global scale.

Reading the Future acknowledges the role that governments, employers, unions and individuals can play in advancing literacy in Canada and encourages all sectors to take immediate action, to secure a brighter literacy future.

« READING THE FUTURE Planning to meet Canada's future literacy needs »»

INTRODUCTION

Twenty-year-old Michael works as a construction labourer and wishes to apprentice as a pipe-fitter—but because he has trouble reading and understanding the application form, he decides not to apply.

Pari, an immigrant from India, depends on her English-speaking sister-in-law and teenaged children to translate important medical information to her and her elderly parents. She worries what will happen if her brother and his family move away and her children leave home.

Maria left high school at age 15 to help support her family. Now a 66-year-old grandmother, she wishes she could read to her grandchildren.

Many people find it hard to believe that there is a literacy problem in Canada.

It is important to note that adults with low literacy skills are not *illiterate*; in fact, only a very small number of Canadians are truly illiterate. However, the fictional profiles above are reflective of a very large number of all adults living in Canada.

In fact, 48%—almost half—of all Canadian adults over the age of 16 experience some degree of difficulty in their ability to read, write and understand effectively in English and/or French.

Between the 1994 International Adult Literacy Survey (IALS) and the 2003 International Adult Literacy and Skills Survey (IALSS), Canada's rate of literacy saw little change. Now, new projections show a continuing trend: in fact, the proportion of Canadians with low literacy skills is predicted to remain virtually unchanged through 2031.

Moreover, due to population growth, Canada is going to see many more adults with literacy difficulties over the next two decades: adults like Michael, Pari and Maria, who are impeded personally and professionally—and in some cases isolated—because of their low literacy skills.

What does all of this mean for Canadians, and for our country? Simply put, individuals are limited in their ability to access and understand information critical to their well-being; and our country is limited in its ability to access skilled workers needed to support economic growth and a strong society.

Low literacy has social and economic impacts for both the individual and for our country. Differences in literacy skills are associated with large differences in employability, wage rates, income and reliance on social transfers, such as social assistance. Adults with higher literacy skills work more, experience less unemployment, earn more, and rely less on government transfers.^{1,2,3,4}

Low literacy has also been linked to poorer health outcomes including the probability of experiencing illness, the length of recovery, and the cost of treatment. Individuals with low literacy skills are ill more often, experience more workplace illnesses and accidents, take longer to recover, experience more mis-mediations and die younger.⁵ Moreover, low levels of literacy are linked to lower community engagement and civic participation.

On a grander scale, adult literacy levels have been shown to have a profound influence on the growth or decline of a country's economy. Specifically, as the proportion of adults with low literacy skills increases, the overall rate of long-term GDP growth slows.

The Canadian Council on Learning (CCL) recognizes the challenges that policy-makers and planners have faced in their efforts to improve adult literacy. The case for investing in literacy depends critically upon assumptions about the size of the literacy problem and how it is likely to evolve; and without a better understanding of adults with low literacy skills, policy-makers and planners will not be able to address fully the literacy problem.

While Canada's literacy future does not look promising, CCL believes that—with the right tools and knowledge—Canada could improve its literacy future.

Reading the Future is both a report and a reference tool for policy-makers, planners and adult educators. The first of its kind in Canada, this comprehensive analysis helps to fill specific "knowledge gaps" related to literacy by providing:

- detailed estimates of Canadian adult literacy levels below IALSS Level 3 (see page 10) through 2031 on a national basis, as well as by province/territory and population group;
- a glimpse, more in-depth than ever before, at the "face" of Canadians with low literacy levels—their home life, attitudes, learning needs and other demographic characteristics; and
- effective practices identified by an expert panel and customized to meet the specific needs of these adults with low literacy skills.

Reading the Future combines and analyzes data and statistics from a variety of partner organizations, so that policy-makers and planners can act with more certainty and efficacy as they work to improve adult literacy in Canada.

CCL's goal is to provide a useful toolkit that will promote discussion of literacy, inform planning, and support action by governments—so more Canadians can confidently apply for the jobs they desire, learn to understand medical instructions, and even read nighttime stories to their grandchildren.

**PROJECTIONS
OF ADULT
LITERACY—
MEASURING
MOVEMENT**

As an added value, CCL has also developed **PALMM**, an interactive on-line tool to assist policy-makers and planners with literacy planning by allowing visitors to calculate adult literacy rates through 2031 according to specific variables including jurisdiction and population group. To use **PALMM**, please visit www.ccl-cca.ca/readingthefuture.

IALSS Literacy Levels

The Organisation for Economic Co-operation and Development (OECD) defines the following five levels of literacy:⁶

LEVEL 1—Very poor literacy skills.

An individual at this level may, for example, be unable to determine from a package label the correct amount of medicine to give a child.

LEVEL 2—A capacity to deal only with simple, clear material involving uncomplicated tasks. People at this level may develop everyday coping skills, but their poor literacy skills make it hard to conquer challenges such as learning new job skills.

LEVEL 3—Adequate for coping with the demands of everyday life and work in an advanced society. This roughly denotes the skill level required for successful high school completion and college entry.

LEVELS 4 AND 5—Strong skills. Individuals at these levels can process information of a complex and demanding nature.

Literacy levels are assessed on a scale of 500 and based on the completion of specific tasks. Some of these tasks are described in the table below.

Level	Score Range	Required Literacy Tasks
1	176 – 225	Tasks at Level 1 require the ability to read relatively short text; to locate or enter a piece of information into that text; and to complete simple, one-step tasks such as counting, sorting dates or performing simple arithmetic.
2	226 – 275	Tasks at this level require the ability to sort through “distractors” (plausible but incorrect pieces of information), to integrate two or more pieces of information, to compare and contrast information, and to interpret simple graphs.
3	276 – 325	These tasks require the ability to integrate information from dense or lengthy text, to integrate multiple pieces of information, and to demonstrate an understanding of mathematical information represented in a range of different forms. Level 3 tasks typically involve a number of steps or processes in order to solve problems.
4	326 – 375	Tasks at this level involve multiple steps to find solutions to abstract problems. Tasks require the ability to integrate and synthesize multiple pieces of information from lengthy or complex passages, and to make inferences from the information.
5	376 – 500	Tasks at Level 5 require the ability to search for information in dense text that has a number of distractors, to make high-level inferences or use specialized background knowledge, and to understand complex representations of abstract formal and informal mathematical ideas.

«READING THE FUTURE Planning to meet Canada's future literacy needs »»

LITERACY PROJECTIONS

The quality and quantity of post-secondary education (PSE) in Canada and average years of schooling and participation in PSE have been rising steadily over the past decade, contributing to a common—but incorrect—assumption that literacy rates will improve over the coming years.

This assumption can be disproved by looking at the relationship between literacy levels and personal characteristics observed in:

- the 2003 Adult Literacy and Life Skills Survey (IALSS), which measured how well adults used print information to function in society; and
- a set of detailed population projections produced by Statistics Canada for the period of 2001–2031.

The result is a set of estimates of the number of adults at each literacy level in Canada.

Separate projections have also been derived for each province and territory for the timeframe of 2001–2031. These data allow for an analysis of how literacy levels are likely to change on a local level. Projections have also been made for key population groups such as youth and immigrants.

PROJECTIONS OF ADULT LITERACY— MEASURING MOVEMENT (PALMM)

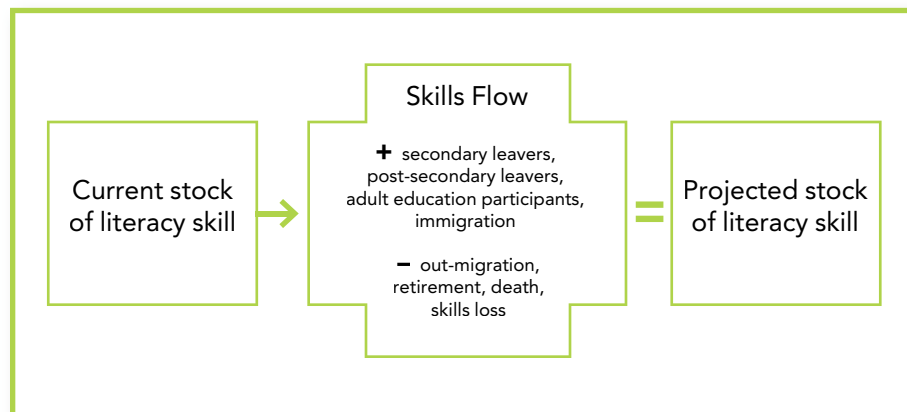
PALMM is an on-line interactive tool that calculates projected literacy levels in Canada through 2031. Policy-makers and planners can use the tool to automatically generate graphs according to province or territory, and based on variables including age group and education level. PALMM projections can also be incorporated into planning for literacy policy and program interventions.

To access PALMM, visit www.ccl-cca.ca/readingthefuture

STOCK AND FLOW: WHAT WILL CHANGE CANADA'S LITERACY PROFILE OVER TIME?

Understanding the predicted evolution of Canada's literacy levels is a matter of understanding the "skills flow" expected to transform literacy levels over time. The skills flow stems from:

- demographic shifts;
- immigration trends;
- younger adults leaving the secondary and post-secondary system and entering the labour market;
- older workers leaving the labour force through retirement; and
- skills loss with age.



METHODOLOGY AND LIMITATIONS

Data from the 2003 IALSS assessment were used to analyze the relationship between individual characteristics (age, gender, education, and immigrant status) and literacy skill level.

The analysis produced a set of probabilities: estimates of the likelihood of an individual being at prose literacy Level 1, 2, 3, 4 or 5, given their characteristics.

For *Reading the Future*, these sets of probabilities have been multiplied using a set of Statistics Canada's population projections for the period of 2001–2031. The result is an estimate at five-year intervals of the population at each of the five IALSS literacy levels.

There are several variables that have been shown to have an impact on literacy. Not all of these variables are available in the Statistics Canada demographic projections. While the most relevant variables were used in the regression analysis, not all of the variances in the projections models can be explained.

While the sample sizes used to estimate the probabilities are relatively large, the resulting regression parameters are themselves subject to error. Larger sample sizes, or different samples of adults, might yield slightly different estimates.

The reliability of the literacy projections depends upon the reliability of demographic projections to which they have been applied. Statistics Canada produces several variants of these projections, each of which introduces a slightly different set of assumptions and gets slightly different results. It is important to note that the current sets of projections are based upon a set of assumptions that most closely reflects what has happened historically with immigration and education trends. Should these trends shift, the assumptions upon which the projections are made will become less accurate.

The projections, restricted as they are to estimating proportions of the adult population at each proficiency level, may not capture improvements in average skills occurring within levels (e.g., from low-Level 2 to high-Level 2). These gains may be large enough to be socially and economically important without being large enough to push people over the threshold into the next level (e.g., from literacy Level 2 to Level 3).

ABORIGINAL PEOPLES IN CANADA

The sample sizes available in the *International Survey of Reading Skills* (ISRS) are not large enough to support a detailed analysis of the literacy (reading) skills of relatively small population groups, such as Aboriginal Peoples in Canada. However, the overall Canadian and provincial/territorial figures do include reading test results from Aboriginal Peoples in Canada and other population groups.

In 2003, the report *Building on our Competencies: Canadian Results of the International Adult Literacy and Skills Survey* found that a significant proportion of Aboriginal people (aged 16-65, living in urban areas in Manitoba and Saskatchewan and in selected communities in the territories)⁷ were at Levels 1 and 2 on the IALSS scale.

LITERACY PROJECTIONS 2001–2031

Reading the Future is a research analysis based on literacy estimates and evidence from a number of external sources; therefore its objective is not to make assumptions based on projections and trends, but to present this information in an objective manner.

The models used to project overall literacy in Canada between 2001 and 2031 appear to predict little change over the coming decades. However, there does appear to be considerable variation among provinces/territories and population groups.

Literacy Projections Summary: Changes in population, proportion and total numbers of adults in Canada with low literacy skills (below Level 3), 2001–2031

Group	Predicted percent population growth 2001–2031	Predicted percentage increase (decrease) in <u>proportion</u> of adults with prose literacy skills below Level 3, 2001–2031	Predicted percentage increase (decrease) in <u>total number</u> of adults with prose literacy skills below Level 3, 2001–2031
Canada	33	(3)	25
Provinces / Territories			
Newfoundland and Labrador	(11)	–	(12)
PEI	15	(4)	4
Nova Scotia	6	(2)	2
New Brunswick	3	(3)	(2)
Quebec	13	(3)	7
Ontario	50	(3)	42
Manitoba	10	(5)	–
Saskatchewan	(5)	(3)	(11)
Alberta	48	(2)	41
British Columbia	39	–	38
Yukon	(17)	4	(11)
NWT	13	1	16
Nunavut	70	(6)	50
Population groups			
Young adults aged 16–25	2	(1)	0.8
Seniors aged 66+	135	(12)	103
Immigrants	77	(6)	61
Less than high school diploma	(33)	3	(31)
University graduate	148	5	212

Canada

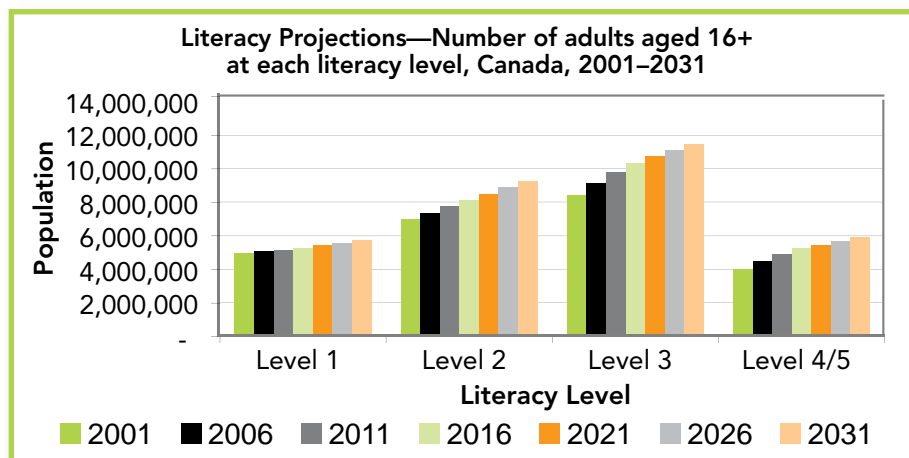
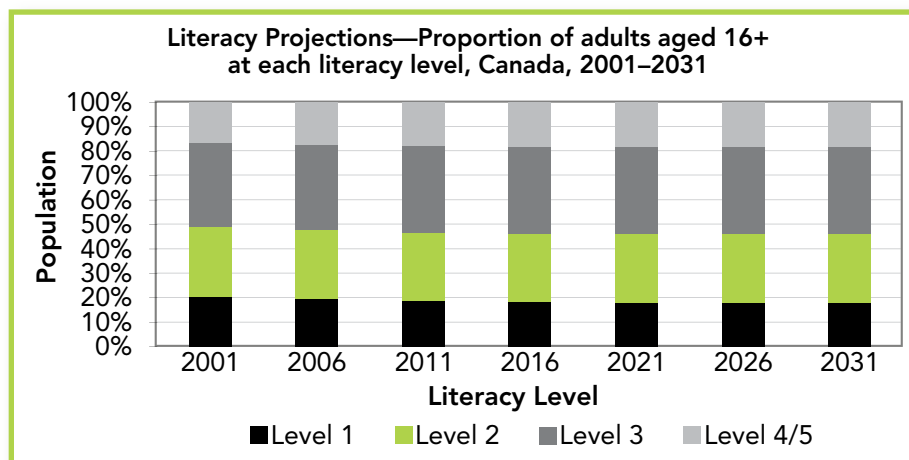
The Literacy Projections Summary table helps refute the common misconception that Canada’s literacy rates are improving as more people have access to quality education.

Lower Literacy Skills: Levels 1 and 2

By 2031, Canada is expected to experience a 33% growth in population. During the same timeframe, there will be a decline (3%) in the *proportion* (percentage) of Canadian adults with literacy skills below Level 3. However, this will not necessarily translate into a decline in the total number of adults at low literacy levels. In fact, Canada is predicted to experience a 25% increase (due to population growth and demographic trends) in the *absolute* or *total number* of adults with literacy skills below Level 3—to a total of 15,029,000 adults by 2031.

These results suggest that the proportion of adults with low literacy skills will remain virtually unchanged throughout Canada over the coming decades.

Projected proportions and numbers at each prose literacy level, Canada, 2001–2031



Higher Literacy Skills: Levels 3, 4 and 5

Meanwhile, the proportion of adults in Canada with high literacy skills—those at prose literacy Levels 3, 4 and 5—is projected to increase by 2031, growing by an estimated three percentage points (from 50% to 53%). The absolute number of adults with higher prose literacy skills (Level 3 and above) is also predicted to grow to 17,404,000—a 40% increase over the period. However, this increase will not offset either the predicted proportion or number of adults at literacy Levels 1 and 2.

Provinces and Territories

Except for Newfoundland, Saskatchewan and Yukon, most provinces and territories are projected to experience population growth through 2031, ranging from 3% in New Brunswick to 70% in Nunavut. During the same timeframe and in almost all cases, there will be a decline in each region's proportion of adults with literacy skills below Level 3. However, due to population growth, this will not necessarily translate into a decline in the total number of adults at low literacy levels; in fact, most provinces and territories are predicted to experience an increase.

For example:

- **Population growth:** Ontario is expected to experience a 50% population growth by 2031.
- **Proportion/percentage of adults below literacy Level 3:** The percentage of Ontario adults with low prose literacy skills is expected to decrease three percentage points between 2001 and 2031 (from 48% to 45%).
- **Total number of adults below literacy Level 3:** Despite the decrease in proportion, the total number of Ontario adults below Level 3 will actually increase (due to population growth, as noted above) over the same timeframe—from 4,448,000 people in 2001 to 6,319,000 people in 2031.

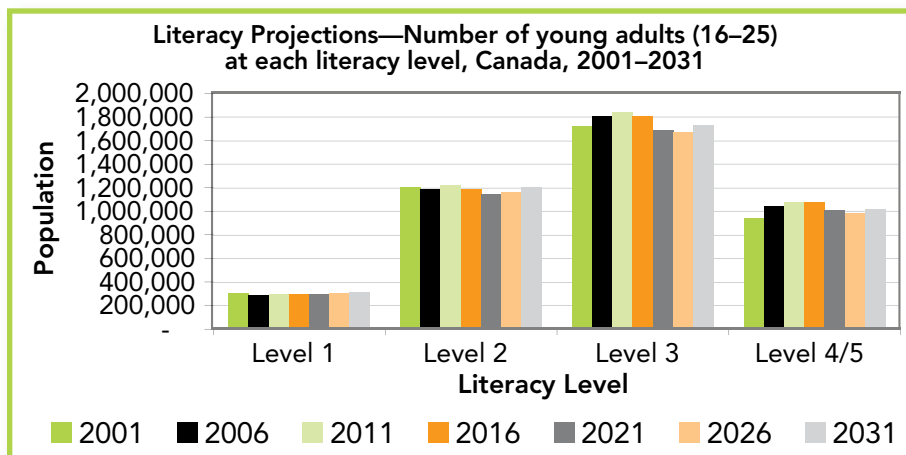
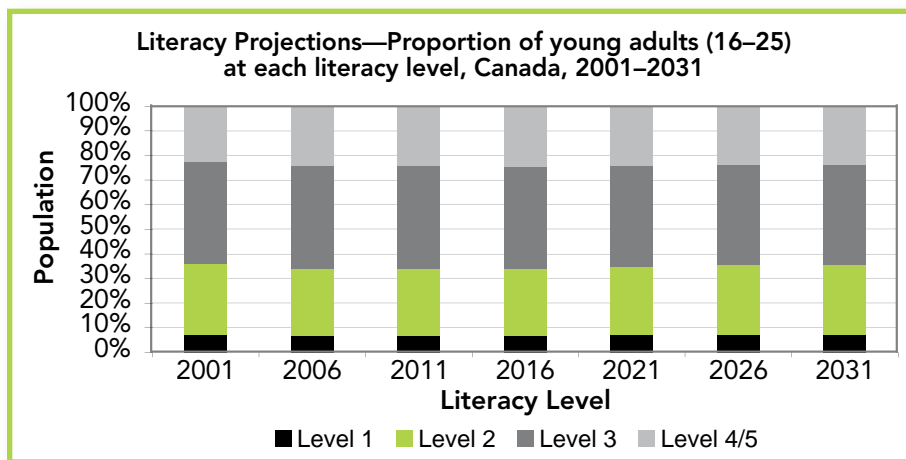
Population Groups

Young Adults

The young adult population aged 16 to 25 is predicted to rise only slightly through 2031, by two percentage points.

The proportion and absolute number of young adults aged 16 to 25 with skills below prose literacy Level 3 will change little over the coming decades, dropping 1% from 36% (in 2001) to 35% in 2031. The proportion of those with high literacy skills (Levels 3, 4 and 5) is projected to remain unchanged at 64%.

Projected proportions and numbers at each prose literacy level, for young adults aged 16–25, Canada, 2001–2031

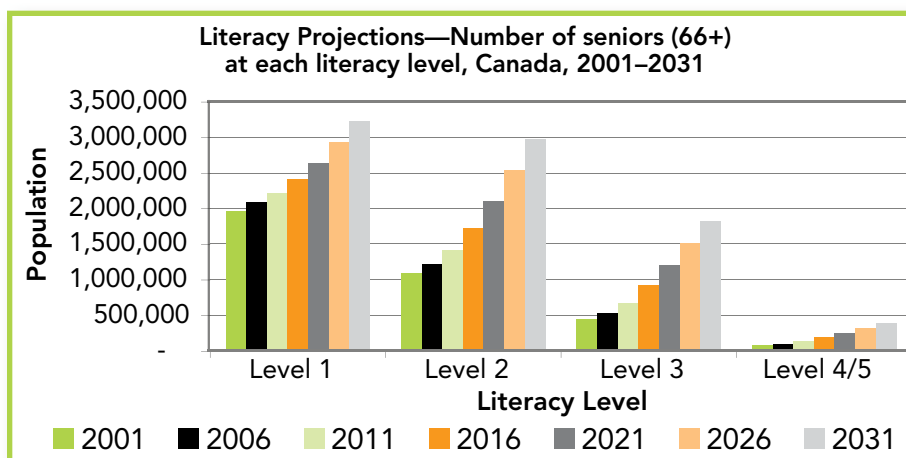
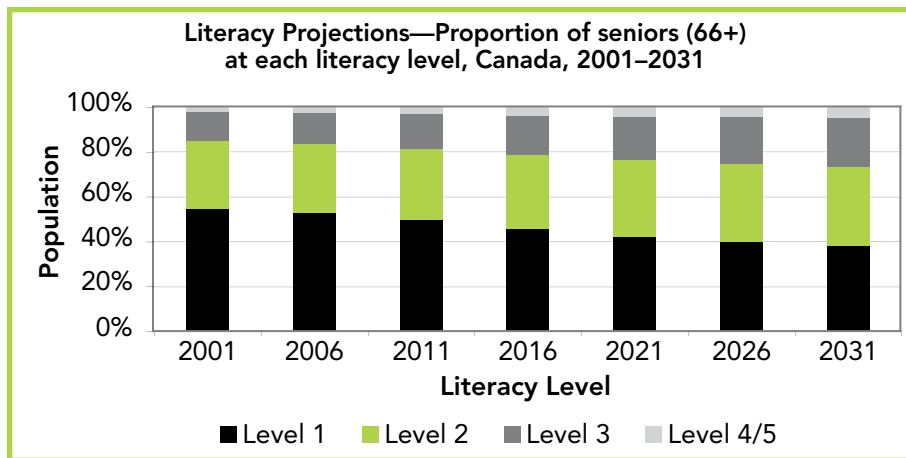


Seniors

Canada’s senior citizen population (aged 66 and over) is forecast to grow rapidly between 2001 and 2031, by a total of 4,838,000 or 135%. Meanwhile, the percentage of this population with low literacy skills will fall 12%, from 85% in 2001 to 73% in 2031.

Despite this decrease, the absolute number of seniors with low literacy skills (below Level 3) will actually double from 3,059,000 in 2001 to 6,204,000 low-skilled seniors in 2031.

Projected proportions and numbers at each prose literacy level, for seniors 66 and over, Canada, 2001–2031

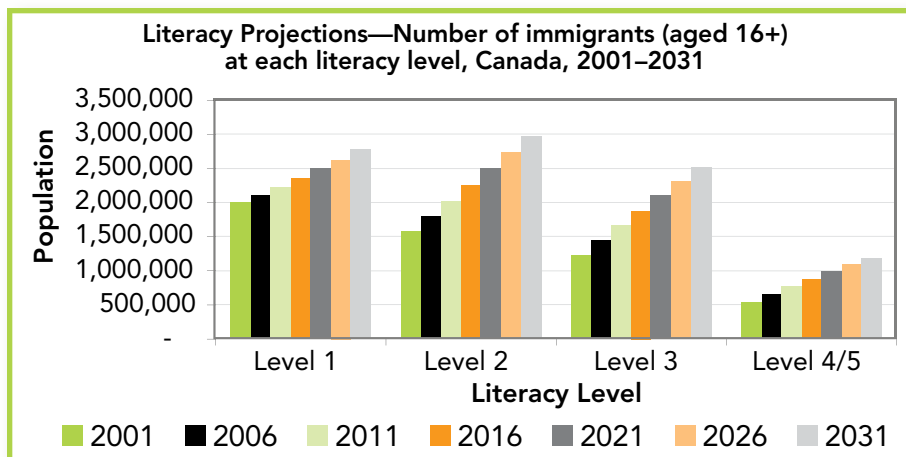
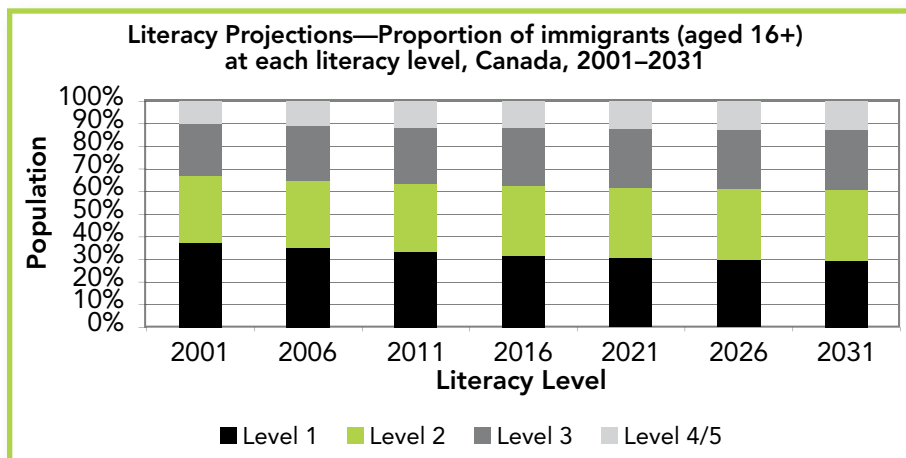


Immigrants

Assuming Canadian immigration policies remain stable, the number of immigrants in the population is predicted to grow by 4,126,000 (77%) between 2001 and 2031.

The proportion of immigrants with literacy skills below Level 3 will decrease from 67% in 2001 to 61% in 2031, yet the absolute number of immigrants with low-level literacy skills will continue to rise in the coming decades, increasing by 2,179,000 to 5,754,000 people by 2031 (a 61% increase).

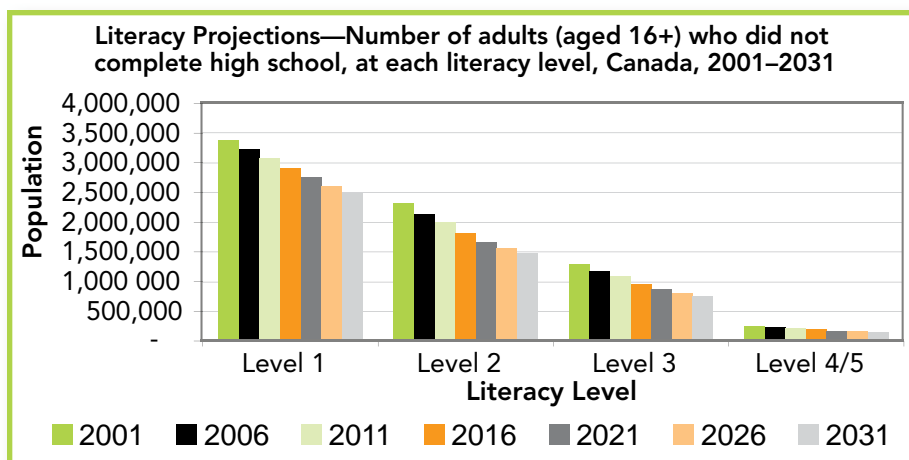
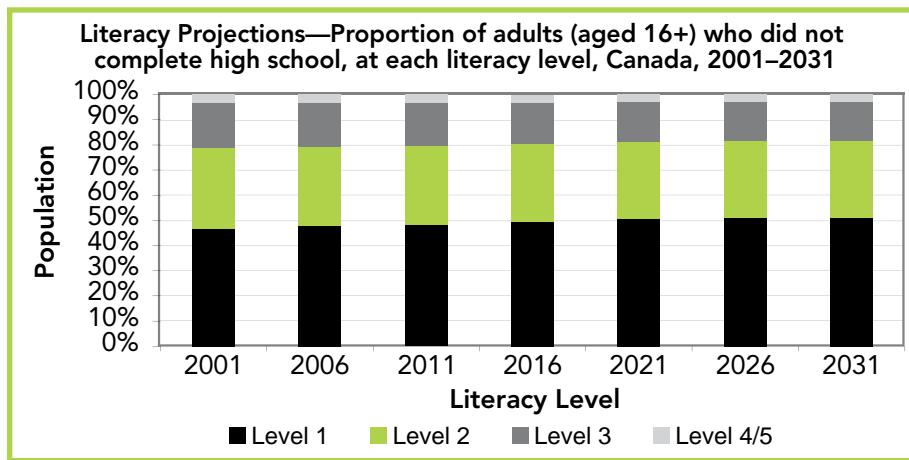
Projected proportions and numbers at each prose literacy level by immigrant status, Canada, 2001–2031



Adults who have not completed high school

The absolute number of adults who have not completed high school is forecast to decrease by 33%, from 5,694,000 in 2001 to 3,945,000 in 2031. However, the proportion of adults (without a high-school diploma) below Level 3 is predicted to rise by 3%, from 79% to 82% in 2031.

Projected proportions and numbers at each prose literacy level by education level, Canada, 2001–2031

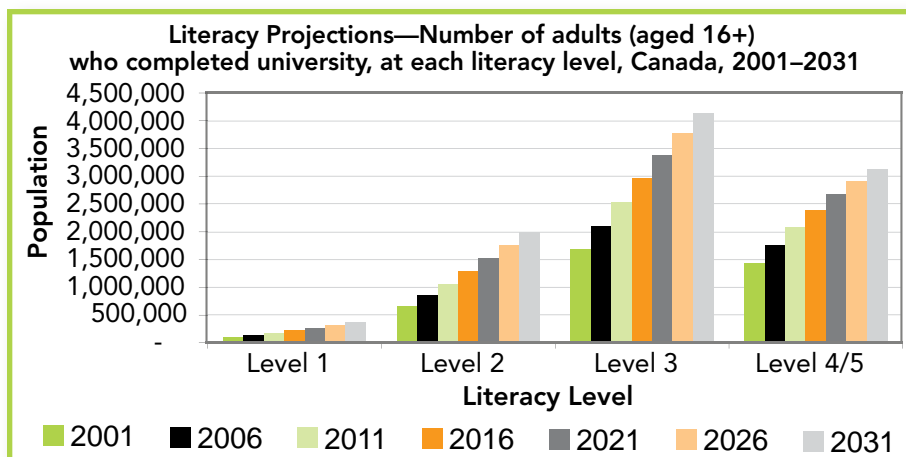
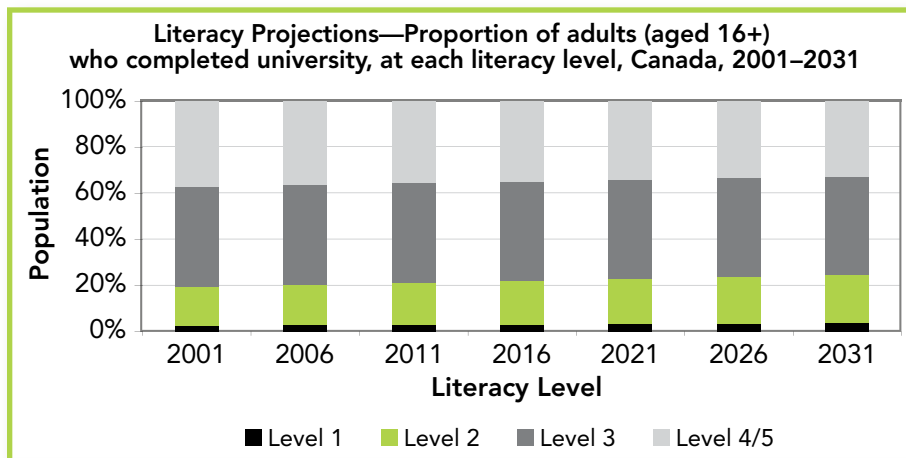


Adults who have completed university

These sub-population projections include individuals of all ages (not just recent graduates) who have attained a university degree at some point in their lives.

The number of adults living in Canada with a university degree (attained inside or outside Canada) is projected to more than double from a total of 3,882,000 in 2001 to 9,618,000 in 2031.

However, the proportion and total number of adults from the university graduate population with literacy skills below Level 3 will also increase over the coming decades: from 20% in 2001 to 25% in 2031 for a total of roughly 2,356,000 adults in 2031 (up from 756,000 in 2001). Because these projections reflect individuals of all ages, the projected increase is likely due to the aging population and “skills loss” that can occur during the later stages of life.



« READING THE FUTURE Planning to meet Canada's future literacy needs »»

THE “FACE” OF LOW LITERACY IN CANADA

Adults at Level 3 and above on the IALSS prose literacy scale can apply fluid and automatic reading skill to help to solve unfamiliar problems. They have higher levels of comprehension and sufficient literacy skills in order to determine meaning when faced with unknown words or contexts—in short, they have reached the level of “reading to learn.”

Adults at Levels 1 and 2 do not have the same fluid and automatic reading skills with unfamiliar texts and tasks, and thus need to devote a good part of their cognitive energy to “learning to read.”

In order to understand what is needed for adults to make the shift from “learning to read” to “reading to learn,” it is necessary to develop a more complete picture of adults at literacy Levels 1 and 2—not only by assessing their skills, but also understanding them on a more personal level.

SKILLS ASSESSMENT: INTERNATIONAL SURVEY OF READING SKILLS

In 2005, the *International Survey of Reading Skills* (ISRS)—part of an international survey undertaken by Statistics Canada in partnership with Human Resources and Social Development Canada (HRSDC), National Centre for Education Statistics (NCES), and Education Testing and Service (ETS)—was conducted to assess the component reading skills (see textbox on page 24) of Canadian adults at literacy Levels 1 and 2.

This was done in order to identify more fully the reading abilities, demographic characteristics and learning needs of those with low literacy skills.

There are certain limitations to the ISRS survey: for example, in some cases the sample sizes are too small to produce reliable estimates of the learning needs of different groups of adults. However, the ISRS still provides useful information for understanding the skills gaps of people at Levels 1 and 2.

Many current models of reading development recognize that it is necessary to acquire basic reading skills before reading becomes more effortless and automatic.^{8,9,10} Higher-skilled individuals can perform routine processes more rapidly—while maintaining high accuracy—than individuals who are less skilled. Simply put, it is easier (and quicker) to do what one knows how to do, and easier yet (and quicker yet) if one knows how to do something well.

Reading-related component skills such as “print” components (word recognition and alphanumeric knowledge/familiarity) and “comprehension”—or “meaning”—components (such as word knowledge/vocabulary, sentence processing and passage fluency) can be used to predict the emergence of fluid and automatic reading.¹¹

In skilled reading, print and comprehension components are combined to support literacy performance—and although the emergence of fluid and automatic reading skill depends on a variety of other factors, research has shown that few learners manage to reach Level 3 without having mastered these component skills.

The ISRS used clinical reading tests to measure different components of reading—each of which is needed in order to be able to read more fluently and automatically. These tests included:

1. the abridged Peabody Picture Vocabulary Test (PPVT-m): requiring respondents to identify which of four different images correspond to a word spoken by the interviewer;

2. the Rapid Automated Naming (RAN) test: in which respondents are asked to read a series of random letters as quickly as possible;
3. the Test of Word Recognition Efficiency: requiring respondents to read a list of real words (TOWRE-A), followed by a list of pseudo-words (TOWRE-B), as quickly as possible. The time limit for each word list was 60 seconds;
4. the PhonePass test, which contains three different tasks: repetition of simple sentences, a set of short-answer questions, and reading of simple sentences;
5. repeating a series of digits in order and another series of digits out of order; and
6. a spelling test.

More detail about the theory and evidence underlying the reading components assessed in the ISRS is presented in Chapter 3 of *Learning Literacy in Canada: Evidence from the International Survey of Reading Skills* available at www.statcan.ca.

LEARNING LITERACY IN CANADA: EVIDENCE FROM THE ISRS

Initial results from the ISRS were published in January 2008 by Statistics Canada and Human Resources and Social Development Canada. *Learning Literacy in Canada: Evidence from the International Survey of Reading Skills* identified the reading profiles of Canadian adults at literacy Levels 1 and 2 and grouped them together according to their common learning needs through a statistical procedure known as "latent class analysis."

HOW DOES LATENT CLASS ANALYSIS (LCA) WORK?

Individuals are organized into groups based on their patterns of performance on the component reading skills tests. This is done using a statistical tool, known as "latent class analysis" (LCA), for clustering survey participants. LCA identifies relatively homogeneous groups of adults who share common sets of characteristics and learning needs.

Latent Class	Print skills (ISRS)	Comprehension skills (ISRS)	Literacy Level (IALSS)
A	Very limited	Limited	1
B	Limited	Limited	1
C	Limited	Adequate	2
D	Adequate	Adequate	2

The analysis of patterns of strengths and weaknesses in the ISRS print and comprehension component measures reveals the existence of four distinct groups of low-skilled individuals: latent classes A, B, C and D, in both English and in French.

Overall, results from English and French testing reveal the following:

- adults in latent class A score relatively poorly on all the component measures;
- adults in latent class B are limited primarily by their lack of vocabulary;
- adults in latent class C do relatively well on the vocabulary measures and on the spelling test, but are still below the standard required for Level 3 attainment; and
- adults in latent class D outperform adults in other classes on every component reading measure, but are still below the standard required for Level 3 attainment.

Although *Learning Literacy in Canada* referred to segments of adults below literacy Level 3 as "latent classes," *Reading the Future* will refer to them as "groups" (e.g., group A1, group B2, etc.).

PORTRAIT OF LOW LITERACY SKILLS: LEARNING NEEDS, HOME LIFE, ATTITUDES AND WORK

Reading the Future builds on the ISRS analysis by further analyzing each "latent class," using a combination of factors and categorizing them into groups for English- and French-language study participants.

Findings from this analysis indicate that English and French "latent classes" A and B can be divided into two distinct groups based on whether or not the individual's mother tongue matches the language the test was conducted in; and whether there are indications of a reading disability (such as dyslexia). The findings resulted in the creation of six distinct groups of the population with low levels of literacy: A1, A2, B1, B2, C and D.

In addition, this report assessed each group using variables known to influence literacy program design and implementation:

- educational attainment: the level of education attained affects the level of effort required to raise literacy levels. Adults who are educated and literate in their own language require only second-language instruction, whereas adults who have yet to master literacy in their mother tongue require much more intensive training;
- age group: average age will influence recruitment and retention costs and the return on investment because the older the participant, the shorter the period over which the costs can be amortized;
- the presence of children in the home: this may impede participation in programs, but could also open up the possibility of applying cost-effective family literacy approaches;
- information on income and employment status: these are potential indicators of who could fund the cost of literacy upgrading (e.g., individuals and/or employers);

- firm size: employed adults may be able to access training at their worksite, especially if they are working for a larger firm (over 100 employees) with the infrastructure and resources to finance programs;
- attitudes toward information and communication technologies: to gauge the degree to which upgrading might rely on computer-aided instruction;
- self-perception of adequacy of skill levels: self-perception can negatively impact recruitment and retention efforts if adults feel their current skill levels are adequate; and
- oral language proficiency: weak oral language skills will reduce the efficiency and effectiveness of literacy instruction.

Oral language proficiency was assessed through the PhonePass Test. Scores are based on a weighted combination of sub-scores in pronunciation, fluency, vocabulary and sentence mastery for a total score of 80. For example, a score of 37–45 indicates the ability to speak only in short sentences using common words and simple structures. A score of 72–80 indicates the ability to speak and understand fluently and effortlessly.

Adults Requiring English Instruction

This group of adults represents those who took the ISRS tests and who require instruction in the English language. In Canada, this group is composed of an estimated 6,172,000 adults.

Groups C and D are the largest groups, representing a combined 5,075,000 people or 82% of the adults at literacy Levels 1 and 2.

Most adults in English groups A1 through C exhibit some degree of weakness in component scores and can be thought of as still being in the process of "learning to read." Only those in English group D appear to have no discernible reading component deficit.

Adults requiring English-language instruction, aged 16 and over—Overview of literacy skills as per ISRS (Statistics Canada) and IALSS (OECD) assessments

Group	Brief Description	Print Skills (ISRS)	Comprehension Skills (ISRS)	Oral Language Score (ISRS)	Average Prose Literacy Score (IALSS)
A1	Canadian-born, English mother tongue (potential reading disability)	Very Limited	Limited	58.6	High-Level 1 (201)
A2	Majority immigrants, non-English (and non-French) mother tongue	Very Limited	Limited	41.8	Low-Level 1 (165)
B1	Majority born in Canada, English mother tongue (potential reading disability)	Limited	Limited	47.9	Mid-Level 1 (193)
B2	Majority immigrants, non-English (and non-French) mother tongue	Limited	Limited	48.9	High-Level 1 (204)
C	Majority born in Canada, majority with English mother tongue	Limited	Adequate*	64.3	Mid-Level 2 (233)
D	Majority born in Canada, majority with English mother tongue	Adequate*	Adequate*	74.6	High-Level 2 (259)

Source: International Adult Literacy and Skills Survey (IALSS), 2003, and the International Survey of Reading Skills (ISRS), 2005

* A person who has "adequate" skills is on the threshold of acquiring the skills necessary to attain Level 3. For example, a person in group C would require less training to move up to Level 3 in comprehension skills than in print skills.

Characteristics of Adults Below Literacy Level 3—Groups A1 and A2 (requiring English-language instruction)

Factors	A1	A2
Population	240,000	379,000
Mother Tongue	English	Non-English
Birthplace	100% born in Canada	4% born in Canada 96% born outside of Canada
Education	53% did not complete high school 4% have pursued PSE; may or may not have a degree	35% did not complete high school 28% have pursued PSE; may or may not have a degree
Age	Majority younger: 27%—16 to 25 45%—26 to 35	Majority older: 72%—46 and older
Gender	Majority male (92%)	Majority female (64%)
Children	37% have children living at home	43% have children living at home
Income	1.6%— \$8,000 and less 27%— \$8,000–\$25,000 25%— \$25,000–\$50,000 0.3%—\$50,000+ Didn't respond—46%	13%— \$8,000 and less 47%— \$8,000–\$25,000 23%— \$25,000–\$50,000 17%—\$50,000+ Didn't respond—0.6%
Employment	70% employed	78% employed
Firm Size (Small, Medium or Large Employers)	9.5% work in a firm of fewer than 100 employees Didn't respond—20%	30% work in a firm of fewer than 100 employees Didn't respond—8.5%
Attitudes toward computers	Positive attitudes toward computer use	Slightly less positive attitudes toward using computers than A1
Self-perception	84.2% report that their reading is adequate for work Didn't respond—13%	72% report that their reading is adequate for their work Didn't respond—11%

Note: many of the figures above have been rounded up or down to the next whole number. As a result, not all totals may equal 100%.

Characteristics of Adults Below Literacy Level 3—Groups B1 and B2 (requiring English-language instruction)

Factors	B1	B2
Population	48,000	430,000
Mother Tongue	English	Non-English
Birthplace	74% born in Canada 26% born outside of Canada	12% born in Canada 88% born outside of Canada
Education	30% did not complete high school None have pursued PSE	32% did not complete high school 19% have pursued PSE; may or may not have a degree
Age	Majority younger: 38%—16 to 25	Majority older: 70%—46 and older
Gender	Majority female (68%)	Majority female (69%)
Children	27% have children living at home	37% have children living at home
Income	12%— \$8,000 and less 44%— \$8,000–\$25,000 6%— \$25,000–\$50,000 0—\$50,000+ Didn't respond—38%	33%— \$8,000 and less 42%— \$8,000–\$25,000 20%— \$25,000–\$50,000 5%—\$50,000+
Employment	23% employed	82% employed
Firm Size (Small, Medium or Large Employers)	32% work in a firm of fewer than 100 employees Didn't respond—4%	31% work in a firm of fewer than 100 employees Didn't respond—19%
Attitudes toward computers	Very negative attitudes toward using computers	Very negative attitudes toward using computers
Self-perception	87% report that their reading is adequate for work Didn't respond—5%	84% report that their reading is adequate for their work Didn't respond—15%

Note: many of the figures above have been rounded up or down to the next whole number. As a result, not all totals may equal 100%.

Characteristics of Adults Below Literacy Level 3—Groups C and D (requiring English-language instruction)

Factors	C	D
Population	1,914,000	3,161,000
Mother Tongue	Majority English	Majority English
Birthplace	73% born in Canada 27% born outside of Canada	76% born in Canada 24% born outside of Canada
Education	38% did not complete high school 34% have pursued PSE; may or may not have a degree	34% did not complete high school 39% have pursued PSE; may or may not have a degree
Age	Relatively evenly distributed	Majority younger: 63%—45 and younger
Gender	Majority male (61%)	Evenly distributed
Children	27% have children living at home	38% have children living at home (49% of immigrants and 34% of Canadian born)
Income	37%— \$8,000 and less 27%— \$8,000–\$25,000 27%— \$25,000–\$50,000 4%—\$50,000+ Didn't respond—5%	25%— \$8,000 and less 32%— \$8,000–\$25,000 32%— \$25,000–\$50,000 6%—\$50,000+ Didn't respond—5%
Employment	64% employed: 80% of immigrants and 55% of Canadian-born	66% employed: 82% of immigrants and 60% of Canadian-born
Firm Size (Small, Medium or Large Employers)	33% work in a firm of fewer than 100 employees Didn't respond—22%	39% work in a firm of fewer than 100 employees Didn't respond—17%
Attitudes toward computers	Just over half of this group report negative attitudes toward computers	Very negative attitudes toward using computers
Self-perception	65.7% report that their reading is adequate for work Didn't respond—30%	78.2% report that their reading is adequate for work Didn't respond—18%

Note: many of the figures above have been rounded up or down to the next whole number. As a result, not all totals may equal 100%.

STORIES OF LOW LITERACY

For *Reading the Future*, fictional characters and scenarios of individuals with low literacy skills were created based upon the learning, demographic and personal characteristics for many of the groups, and using the data and information from the chart and summaries of each group.

English Groups A1 and A2

There are approximately 619,000 adults categorized as group A, representing roughly 10% of the total number of Canadian adults below Level 3 on the IALSS prose literacy scale.

In general, these adults have such limited literacy skills that it is very difficult for them to gain new information from print, whether that information is in the form of government bulletins, advertisements, medicine labels or doctors' directions.

Group A1 (IALSS high-Level 1)

Approximately 240,000 adult Canadians are categorized as English group A1. They are Canadian-born and have English as a mother tongue. Almost all adults in A1 are male. Most members of this group are under the age of 35.

More than half of group A1 adults (53%) have not completed high school. The majority are employed and most feel that their reading skills are adequate for the work they do. Most have a positive attitude toward computer use.

These adults have very limited print and limited vocabulary skills, as well as poor spelling skills. Their vocabulary can support very basic day-to-day interactions with print such as grocery shopping or watching television. However, this group's Real Word and Pseudo Word Reading average scores (as tested for the ISRS report) are in the Grade 2 to 4 equivalent range—so low that it is likely that many of them are reading disabled to various degrees.

MICHAEL'S STORY

Michael Johnson was born in 1988 in a relatively small town in Newfoundland. He always struggled in school, particularly with reading and writing. Michael likely has a learning disability that went undiagnosed.

In the primary grades, Michael took more than twice as long to read the same books as his friends; he had trouble recognizing and sounding out words, reading and understanding new vocabulary. However, because he has a phenomenal memory, Michael found that he was always able to "pretend to read" after hearing a story once or twice. This became more and more difficult as he progressed through school. After a number of frustrating years trying to keep up with his peers, Michael dropped out of high school in Grade 11 and decided to move in with some friends, who had settled in Alberta.

Now 20 years old, Michael lives in Fort McMurray, Alta., and has a job in the oil sands as a construction worker. He is earning \$16 per hour and works an average of 40 hours per week.

Michael feels his literacy skills are adequate for work. His job involves some mechanical ability, lifting and carrying, and requires very little reading and writing. He has a positive attitude toward computers (he grew up playing computer games) but he doesn't need to use them for his current position.

Recently, Michael became interested in apprenticing as a pipefitter, but he had trouble reading and understanding the application form. He eventually decided not to pursue the apprenticeship after hearing that the position required some college, vocational or technical training.

N.B. — Michael's story was created using data describing group A1. His story continues in Chapter 3.

Group A2 (IALSS mid-Level 1)

This group consists of approximately 379,000 adults. Although they have non-English mother tongues, they are classified in the "English" group because this is the language they took the tests in, and would therefore require any literacy training in the English language.

Most of these adults were born outside Canada and are older. Many have had very limited or no exposure to formal education in their own language.

Most A2 adults feel that their reading skills are adequate for the work they do, which is often in entry-level service jobs that do not demand high levels of English (or French) literacy. They have a slightly less positive attitude toward using computers than do adults in A1.

PARI'S STORY

Fifteen years ago, Pari Kaul emigrated from India to Canada with her husband Dhillon and their three young children. The family settled in Surrey, B.C., close to distant relatives and friends of friends from home. Since arriving in Canada, the family was joined by Pari's parents and her two brothers.

Today Pari's husband, brothers and one of her sons (now 18 years old) all work outside the home. The older men have been farm workers in Chilliwack since their arrival in Canada, and her son has a part-time job at the local grocery store. While not affluent, the family has been able to purchase a modest home and can meet their needs.

Pari, who does not know English very well, spends her days looking after the home, her elderly parents and her children. Without a driver's licence, she walks to local stores for incidentals, relying on her husband and brothers to drive her when they can. Pari escorts her parents on visits to the doctor, but is often frustrated that she cannot understand the physicians nor get her questions answered. She relies completely on her English-speaking sister-in-law or her children to communicate instructions and dispense medications.

The older children have computers, which they use extensively for school work and for games. While Pari does not know how to use one, she is proud of her children's competence and has a generally positive attitude about computers.

Pari enjoys her life and family today, but worries about what may happen if her brother and his family move further away and her children leave home. She is dependent on her immediate family because of her limited English and sometimes wonders if she should try to improve her literacy skills. She is also embarrassed that, despite having been in Canada for 15 years, her English has not improved.

N.B. — *Pari's story was created using data describing group A2. Her story continues in Chapter 3.*

English Groups B1 and B2

There are approximately 478,000 adults categorized as English group B, comprising roughly 7.7% of the total number of adults in Canada below literacy Level 3.

Group B adults have limited print and comprehension skills and generally need to develop the literacy skills associated with secondary-school completion and college entry. They require the language and literacy skills necessary to integrate various sources of information and to solve more complex problems.

These adults have a very negative attitude toward computers.

Group B1 (IALSS mid-Level 2)

Approximately 48,000 adults make up English group B1. Most were born in Canada and have English as a mother tongue. Most members of this group are younger, with more than one-third of them aged between 16 and 25.

The majority of these adults has completed high school but have not pursued post-secondary education. Only 23% of them are employed.

ANDREA'S STORY

Andrea Benoit is 19 years old and lives in Windsor, Ont., with her boyfriend, Stephen.

Andrea has always had difficulty with reading and likely has a learning disability. As a young child, she was slow to learn her letters. She struggled to keep up with her schoolmates and complete class assignments. As a result, Andrea often had homework when her friends did not. As she got older, she stopped doing her homework, preferring to join her friends in after-school activities and just "hang out."

Andrea's parents, who moved to Windsor when she was a baby, work at an auto parts manufacturing plant, her father in maintenance and her mother as a food services worker. Challenged with low levels of literacy themselves and working long days, they were unable to provide Andrea with a lot of support in her school work and thought that she just needed to "try harder."

As a result of many difficult years at school and feeling that her teachers treated her as if she was "slow," Andrea developed very negative attitudes toward reading and school. She began skipping high-school classes, and consistently failed or did poorly in many of them. Andrea was often in trouble because of poor attendance. Tensions at school and home increased to the point where Andrea decided to leave school in Grade 10.

Today, Andrea works part time at a clothing store for \$8.50 an hour. Her boyfriend has been unable to find a permanent job but occasionally picks up work in construction.

After so many years of learning difficulties, Andrea has developed a very negative attitude toward computers and reading, and avoids activities that require either. She is generally happy to be free of the constant stress that school created in her life. She knows that she does not want to remain in retail forever and thinks she'd enjoy working with children, but does not want to go back to school.

N.B. — Andrea's story was created using data describing group B1.

Group B2 (IALSS high-Level 1)

This group of adults is significantly larger than the B1 group. There are approximately 430,000 adults in group B2 in Canada. Most have non-English mother tongues and were born outside Canada. Almost three-quarters of these adults are over the age of 46.

The majority of B2 adults have either completed high school or have some high-school education. In sharp contrast to adults in B1, most B2 adults (82%) are employed. Most believe that their reading skills are adequate for work.

LIAN'S STORY

Lian Li and her husband, Wei Ping, immigrated to Canada from a rural city in northern China, to join Wei's cousin who had moved to Canada five years earlier. They had both completed their schooling in China and came to Canada, hoping to make a better life and start a family. After arriving in Toronto, they lived with Wei's cousin in Brampton, Ont., for two years, during which time they had their first child. Shortly thereafter, they moved into their own small apartment. Since then, they have had two more children.

While her children were young, Lian remained at home. The children attended English-speaking school and Lian, with her limited language skills, had little involvement with their daily education. She often felt that her children lived in another world, and worried that she and Wei were unable to help with their school work or to understand their problems or challenges.

For years, Wei worked at a number of jobs in the service industry. At his last job at a large downtown hotel, he suffered an accident that left him unable to continue working. Through some friends, Lian soon found work at a residential cleaning company in Brampton. Most of her co-workers didn't speak Chinese, so over time Lian gained some confidence in her ability to engage in basic conversation—particularly over coffee in the morning, before they began work.

Lian feels that her current level of literacy is adequate for her work. However, because of the physical demands of her job, she worries that, as she gets older, she may not be able to continue her work with the cleaning company. She feels very uncomfortable with computers, given her limited exposure to English and her lack of typing skills; and at this point in her life, she does not feel that she has time to work on them. It is not a priority for her, nor does any kind of language training fit into her routine.

Lian thinks that she would like to work in a retail setting where the work is less physically demanding. However, she knows that she must first improve her literacy skills to be able to engage with customers and deal with cash and the telephone.

N.B. — Lian's story was created using data describing group B2.

English Group C (IALSS mid-Level 2)

Group C is the second-largest group below literacy Level 3, consisting of approximately 1,914,000 adults. Unlike English groups A and B, no clear sub-categories can be distinguished in group C.

Most C adults (73%) were born in Canada and have English as a mother tongue. The ages of these adults are relatively evenly distributed.

Approximately one-third has pursued some post-secondary education and may or may not have a degree, while 28% of the group have completed high school and 38% have not.

Most of these adults are employed. Those born outside Canada are more likely to be employed (80%) than those born in Canada (55%). Most believe their reading skills are adequate for work. Just over half of this group reports having negative feelings about computers.

BRAD'S STORY

Brad Fisher is 29 and lives in Winnipeg, Man. Brad is married with one young child. His wife is at home looking after their son right now, but before the birth she worked as a shift supervisor at a local drive-through restaurant on the highway. Brad enjoys repairing and restoring cars in his spare time.

Brad always had difficulty keeping up in school, particularly in areas that required reading and writing. He had a natural affinity for and enjoyed math and science in elementary school, but always lagged behind in English. Brad was a good athlete and throughout high school focussed on sports, which kept him in school and in touch with his friends. While Brad did not have a learning disability, he spent less and less time on school work and saw himself as "not very good" at school. Brad left high school at the end of Grade 12, without earning his diploma.

Without a high school diploma, Brad was unable to move forward with many of his friends to community college, where they entered apprenticeship programs to train as mechanics and other skilled trades.

Nonetheless, Brad soon found a job with a large aviation company as a general machinist. He currently works with precision machines and is responsible for setting them up, checking for potential defects and monitoring their operation. Brad's employer has been very impressed with his math skills, ability to read blueprints and his intuitive understanding of machines.

Brad wants to progress with the company but, because he does not have his high-school diploma, he feels "stuck." He is interested in taking some college courses, but feels overwhelmed just thinking about the required reading and writing.

N.B. — Brad's story was created using data describing group C. His story continues in Chapter 3.

English Group D (IALSS high-Level 2)

This is the largest English-language group below Level 3. It is composed of an estimated 3,161,000 adults.

Most were born in Canada and have English as a mother tongue. The majority are under the age of 45, making D the “youngest” group. Where age and gender are concerned, both are evenly distributed throughout this group.

More than one-third (39%) have pursued some post-secondary education and may or may not have a degree. The majority have either a high school diploma or less. Two-thirds are employed and—as with group C—immigrants are more likely to be employed (82%) than those born in Canada (60%). This group has very negative attitudes toward using computers and the majority feel that their reading skills are adequate for work.

Most adults in group D have the primary reading component skills needed to help them become successful, independent, lifelong learners.

CRAIG’S STORY

Craig Marshall is 22 and currently lives in Halifax, N.S. He graduated from high school in North Vancouver. Craig was a diligent student throughout elementary and high school, but he never achieved strong grades in English, Social Studies, or other reading-intensive subjects.

Craig likes to read the newspaper every day and follows sports and business news avidly. He finds the articles in the business section a bit challenging to read but knows that—if he takes the time to read them slowly and carefully—he can get a good general understanding of the topic.

Craig worked throughout high school in a variety of retail jobs and always enjoyed the business side of his work. Today he works with a tour company in Halifax. Craig is very interested in the promotions and marketing side of the tourism industry and has always wanted to study Business Administration, but he never had the marks he needed to get into university.

Craig would like to improve his writing skills and has seen pamphlets on Continuing Studies at the local college, but does not know where to look for help. He is not sure what he would need to take, or if any courses would help to improve his reading and writing skills. He worries that, without improving his skills in reading and writing, he would find some of the Business Administration courses too difficult.

Craig is comfortable with computers and uses them at home for work and leisure.

N.B. — *Craig’s story was created using data describing group D. His story continues in Chapter 3.*

Adults Requiring French Instruction

This section of the report represents adults who took the ISRS tests—and who require literacy training—in the French language. In Canada, an estimated 1,920,000 adults below Level 3 require literacy instruction in French. Groups C and D are the largest, representing a combined 87% of these adults.

Among the French test takers as a whole, 81% did not complete secondary education. This is probably the main contributing factor to their limited vocabulary.

Adults requiring French-language instruction, aged 16 and over—Overview of literacy skills as per ISRS (Statistics Canada) and IALSS (OECD) assessments

Group	Brief Description	Print Skills (ISRS)	Comprehension Skills (ISRS)	Oral Language Score (ISRS)	Average Prose Literacy Score (IALSS)
A1	Majority born in Canada, majority with French mother tongue (potential reading disability)	Very Limited	Limited	59	Mid-Level 1 (175)
B1	Canadian-born, majority with French mother tongue (potential reading disability)	Limited	Limited	66.6	High-Level 1 (200)
C	Majority born in Canada, majority with French mother tongue	Limited	Adequate	72	Low-Level 2 (234)
D	Majority born in Canada, majority with French mother tongue	Adequate	Adequate	72	High-Level 2 (257)

Source: International Adult Literacy and Skills Survey (IALSS), 2003, and the International Survey of Reading Skills (ISRS), 2005

While the French and English component tests were designed to be comparable in that they assess the same skills at approximately the same levels, they were not designed to be equivalent to each other. Therefore, it must be stressed that we cannot conclude from the French and English scores on a given component that one group is more or less proficient than the other.

Characteristics of Adults Below Literacy Level 3—Groups A1, B1, C and D (requiring French-language instruction)

Factors	A1	B1	C	D
Population	87,000	103,000	522,000	1,158,000
Mother Tongue	French	French	Majority French (89%)	Majority French (98%)
Birthplace	90% born in Canada	100% born in Canada	99% born in Canada	98% born in Canada
Education	71% did not complete high school 10% have some PSE; may or may not have a degree	91% did not complete high school 3% have some PSE; may or may not have a degree	67% did not complete high school 11% have some PSE; may or may not have a degree	37% did not complete high school 40% have some PSE; may or may not have a degree
Age	Majority older: 54% over age 46	Majority older: 67% over age 46	Majority older: 53% over age 46	Majority older: 61% over age 46
Gender	Evenly distributed	Slightly higher proportion female	Majority male (57%)	Evenly distributed
Children	24% have children living at home	40% have children living at home	35% have children living at home	31% have children living in the home
Income	8%—\$8,000 and less 64%—\$8,000–\$25,000 28%—\$25,000–\$50,000	30%—\$8,000 and less 49%—\$8,000–\$25,000 21%—\$25,000–\$50,000 0.08%—\$50,000+	26%—\$8,000 and less 35%—\$8,000–\$25,000 29%—\$25,000–\$50,000 9%—\$50,000+	21%—\$8,000 and less 34%—\$8,000–\$25,000 36%—\$25,000–\$50,000 9%—\$50,000+
Employment	65% employed	53% employed	55% employed	67% employed
Firm Size (Small, Medium or Large Employers)	47% work in a firm of fewer than 100 employees Didn't respond—30%	52% work in a firm of fewer than 100 employees	44% work in a firm of fewer than 100 employees	40% work in a firm of fewer than 100 employees Didn't respond—19%
Attitudes toward computers	Appear to have very positive attitudes toward computers	Very negative attitudes toward using computers	Very negative attitudes toward computers	Just over half of this group report negative attitudes toward computers
Self-perception	59% report that their reading is adequate for work Didn't respond—34.5%	65% report that their reading is adequate for work Didn't respond—33%	67% report that their reading is adequate for work Didn't respond—30%	74% report that their reading is adequate for work Didn't respond—24%

Note: many of the figures above have been rounded up or down to the next whole number. As a result, not all totals may equal 100%.

French Group A1 (IALSS mid-Level 1)

There are 103,000 adults who could be categorized as French group A. The overwhelming majority of group A adults report French as their mother tongue (87,000, or 85% including immigrants). This leaves a group of 16,000 adults (group A2) with mother tongues other than French. This sample size is too small to identify characteristics that would warrant “splitting” group A into two distinct sub-categories (as this report has done with the English-language groups). Only those with French as their mother tongue can be characterized in more detail.

Of group A1, 90% are born in Canada. The majority of these adults is over the age of 46.

This group has very low levels of educational attainment, with 71% not having completed high school.

Almost two-thirds (65%) of group A1 members are employed. Most appear to have very positive attitudes toward computer use and most feel that their reading skills are adequate for their work.

ABDEL’S STORY

Abdel Abdoun left Algeria in 1992 when he was 26 years old. Since French is his mother tongue, he chose to settle in Quebec, and he now lives in Montréal. Abdel also speaks Arabic and has been very active within the Algerian community in Montréal, planning community and cultural events.

Abdel did not complete general secondary school (high school) in Algeria. While he has no problems communicating verbally, he struggles with reading and writing in French. He now works as a data entry clerk for a large bulk mailing company and earns \$13 an hour. Abdel feels that his reading level is adequate for his work, especially since much of it involves updating addresses in the company database.

Abdel is very comfortable with computers and while he does well in his job, he gets the most enjoyment from his volunteer work. This recently sparked his interest in moving toward work in community development. Not long ago, he came into contact with a Montréal-based community organization that provides a wide range of programs and services to people from many cultures and all ages—including an Adult Learning Support Centre. The centre supports individuals with low literacy skills to help them with their training and learning goals.

Through his contact with the centre, Abdel recently decided to start working toward a diploma in community support work at a *Collège d’enseignement général et professionnel* (CEGEP).

N.B. — Abdel’s story was created using data describing French group A1.

French Group B1 (IALSS high-Level 1)

There are more than 137,000 adults who can be categorized as French group B. Similar to French group A, most of group B report having French as their mother tongue. This leaves a group of 34,000 adults (B2) with mother tongues other than French. This sample size is too small to identify characteristics that would warrant “splitting” group B into two distinct sub-categories. Therefore, only one distinct group (B1, consisting of 103,000 adults) can be described extensively.

All B1 adults were born in Canada. Two-thirds of this group is over the age of 46, and 40% of group B1 adults have children living at home.

This group has very low levels of educational attainment, with 91% not having completed high school. Just over half (53%) of this group is employed. Most feel that their reading skills are adequate for the work they do. This group has very negative attitudes toward using computers.

MARIE’S STORY

Marie Lajeunesse is a 66-year-old grandmother living in Saguenay, Que.

Marie was the second oldest of five children growing up in rural Quebec. She was always shy and more reserved than her older sister, Bernadette, and had difficulty joining in and participating at school. She hated being called upon to answer questions in front of her classmates and as a result would try to “fade into the background”—even if it meant she was not always keeping up with her learning.

Marie decided to leave high school at age 15 in order to help to support her family. When she wasn’t working, she would help to care for her younger siblings.

At age 20, Marie married her long-time sweetheart, Jean-Paul, and they started a family right away. They had three children and while there were always books in the house, Marie never had much cause for reading—she knew recipes from memory, she did not read for pleasure and Jean-Paul would usually be the one to help with their children’s homework. Marie was also very active in her church and played bridge every week with a group of friends.

More than 40 years later, Marie is now helping to care for her two grandchildren while her daughter Claire works part time. Luc and Josée love nothing better than to listen to stories. Marie has told them every fairy tale she has ever known but would really like to be able to read stories to them.

N.B. — Marie’s story was created using data describing French group B1. Her story continues in Chapter 3.

French Group C

This is the second-largest French market group, consisting of 522,000 adults.

The majority of this group (89%) has French as their mother tongue. Most members of group C (53%) are over the age of 46. This group has a slightly higher proportion of males to females. Over one-third (35%) have children living at home.

Group C adults have very low levels of education. In fact, 85% have a high-school diploma or less, and 67% did not complete high school. Over half (55%) are employed.

Collectively, these adults have a very negative attitude toward computers and most feel that their reading skills are adequate for the work they do.

French Group D

This is the largest French market group, comprising 1,158,000 adults, or 60% of the total number of adults requiring French instruction below literacy Level 3.

Most adults (98%) in group D report having French as their mother tongue. Of these adults, most (98%) were born in Canada. Males and females are roughly equal in gender distribution. Most (61%) are over the age of 46. Just under one-third (31%) have children living in the home.

Group D members with a French mother tongue have relatively low levels of education. Although 40% have some post-secondary education, 37% did not complete high school.

As well, 67% are employed. Just over half of this group report having negative attitudes toward computers and most feel that their reading skills are adequate for work.

« READING THE FUTURE Planning to meet Canada's future literacy needs »

EFFECTIVE PRACTICES AND PROGRAM RESPONSES

The findings outlined in Chapter 2 suggest that in order to raise competencies for adults at Levels 1 and 2 on the IALSS literacy scale, program interventions must match the particular reading and learning needs and characteristics of each of the six groups (A1, A2, B1, B2, C and D).

This chapter sets out the structure of a proposed educational response for each of these groups identified in the preceding analysis.

For the purpose of this report, a group of adult literacy experts from across Canada was consulted on current effective practices in literacy and essential skills instruction. These experts have extensive backgrounds in literacy instruction, workplace instruction and essential skills, literacy research, and immigrant literacy programming.

The panel's recommendations for the most potentially effective practices (for each group) considered a variety of factors including strategies for recruitment and retention; the content, mode and location of instruction; the average duration of instruction required to move up from one literacy level to the next; and the average duration required to attain IALSS literacy Level 3.

Despite similar characteristics within each group, it should be noted that the learning needs of individual adults will vary considerably depending upon their personal circumstances and prior life experiences. Nevertheless, there is great value in developing interventions that meet the general needs of groups A through D. Therefore, the proposed interventions listed below are meant to be indicative rather than definitive.

For *Reading the Future*, Canadian literacy experts suggested effective practices and strategies for improving the skills of adults at literacy Levels 1 and 2. These experts combined their experience and knowledge in literacy programming, workplace instruction and the learning needs of immigrants to develop the following program response guidelines:

<i>Kyle Downie:</i>	Literacy instructor—Douglas College, British Columbia
<i>Lynda Fownes:</i>	Workplace instruction and essential skills—SkillPlan, BC Construction Industry Skills Improvement Council
<i>Melissa Gardner:</i>	Workplace instruction and essential skills—Bow Valley College, Alberta
<i>Ester Geva:</i>	Literacy researcher—University of Toronto
<i>Stan Jones:</i>	Literacy researcher—Yarmouth, Nova Scotia
<i>Bob McConkey:</i>	College and workplace essential skills—Douglas College, British Columbia
<i>Linda Siegel:</i>	Immigrant literacy programming—University of British Columbia

OVERVIEW OF EFFECTIVE PRACTICES

Above all else, program offerings for improving literacy need to be flexible, accessible and affordable. The following demonstrated successful practices can be applied to all groups.

Recruitment

Adults in groups A through D may be difficult to recruit into literacy programs. As demonstrated in Chapter 2, most feel that their literacy skills are adequate for functioning at work. As well, many of them may have had difficulty during their initial schooling. Moreover, a negative attitude toward computers (e.g., as with English- and French-language group B1) implies that any technology would have to be introduced very carefully, and with a good deal of support for program participants.

Therefore, recruitment/promotional materials or liaison with target audiences must deliver key messages that address the reluctance these adults may have for improving their literacy skills.

Marketing/Promotion

Experts suggest a multi-channel marketing campaign—including print and on-line materials—that is focussed on organizations and agencies that serve as distributors. Recommendations for distribution include:

- employment resource centres;
- employment-related service providers and government bodies;
- libraries;
- local coffee shops;
- food banks;
- children's schools;
- parenting groups;
- health-care providers; and
- others who come in contact with these individuals—for example, hospital workers, social workers and religious leaders.

Cultural organizations, community and family reception centres can provide “Welcome” information packages (e.g., at point of entry into the country) to recruit new immigrants to language and literacy programs in Canada. Whenever possible, materials should be provided in the individual's mother tongue.

Other recommendations for program recruitment include:

- placing a limited number of newspaper advertisements in various local newspapers, running the ads during “peak times” when people generally seek training or assistance with job searches;
- liaising with employment resource centres that facilitate literacy and essential skills information-sharing sessions in person, through the internet or e-mail;
- offering program information sessions to health-care providers, government and community organizations that offer employment assistance; and
- promoting through displays and presentations—or by attending—career fairs, job fairs and similar events related to employment assistance.

Location

Promising practices indicate that the shorter the commuting distance, the more likely a person is to remain in a program. Therefore, the institution should be located in close proximity to the majority of participants’ homes or workplaces. Programs could be conducted at colleges (through basic adult education programs), vocational training institutes, at private and public companies (through partnerships with human resources departments) and community centres.

Program Intake

Panel members suggest a two-step approach to program intake: an intake interview and a cognitive needs assessment.

The intake interview can gather information from the client for administrative purposes, as well as to help place the individual in the appropriate literacy program. Information collected should include contact information, work history, highest level of education, language history, long- and short-term goals, and any potential barriers to learning (e.g., disability, transportation, daycare, housing, etc.).

Examples of possible assessment tools for identifying potential participants' current literacy levels include:

- the Educational Testing Service (ETS) Prose, Document and Qualitative (PDQ) assessment;
- the Test of Workplace Essential Skills (TOWES); and/or
- access to a learning specialist, to properly diagnose clients' learning disabilities.

Diagnosis of dyslexia and other reading problems may require testing in the individual's mother tongue. However, it is important to note that no research exists regarding the assessment of dyslexia and other learning disabilities among immigrants with minimal schooling in their home country. Moreover, diagnosis of dyslexia and other reading problems may be more complex when:

- there has been minimal or disrupted education in the home country;
- assessment tools in the client's home language are not available; or
- individuals speak a different dialect.

Diagnosing dyslexia may necessitate access to an experienced clinical psychologist with the training and tools in multiple languages, and/or access to trained "cultural interpreters" who can work collaboratively with trained clinical psychologists or trained special education specialists.

Support and Retention

All groups require a range of supports as they work to improve their literacy skills. Specifically, effective practices need to be flexible for employed and unemployed individuals, and provide a wider range of support to those learning English or French as a second (or subsequent) language.

Resources and support services that have proven to be effective in increasing retention in literacy programs include:

- access to financial support to help reduce the cost of the training—including tax relief, student loans, funded training seats and assistance for computer purchases or tutoring;

- possible access to daycare;
- a centrally located drop-in learning centre, to provide optional counselling and other support for clients' emotional and intellectual needs;
- a resource library;
- at-home computers, with access to phone support;
- individually tailored programs, tied to individuals' academic or career goals;
- a long-term action plan to support continuous learning;
- the opportunity to be screened for reading disabilities;
- special reading activities to assist with correction of reading disability; and
- more instructor one-on-one support if required by the individual.

To further support individuals learning English or French as a second or subsequent language, programs may wish to provide an ESL/FSL resource centre, reading strategies to address ESL/FSL needs, and interactive classes.

Professional Development for Literacy Practitioners

Program practitioners require a number of supports including professional development in literacy education, assessment, curriculum development, strategies for facilitating the integration of workplace applications, awareness of IALS and the associated complexity levels, cultural awareness, and specifics about reading processes.

Experts suggest that a national certification on "Effective Instruction of Essential Skills" would also help to establish a community of practice and to improve instructional practice.

Ongoing Evaluation/Assessment

A person's literacy outcomes can be measured by implementing summative, formative and diagnostic evaluations to monitor success and, if necessary, by altering their individual education plan (IEP). The evaluation could include:

- pre- and post-TOWES, national test or Pre- and Post-Woodcock-Johnson reading—Word Identification, Word Attack, Reading Comprehension;
- daily and weekly progress reviews that address any challenges or participant concern(s);
- evaluations of individuals' progress at targeted intervals; and
- a monthly activity report to monitor whether the participants are still working toward their academic and/or career goals through continuous learning and any "next recommendations" plans.

Overview: Program Response Recommendations

Group	Average Contact Hours of Instruction to reach Level 3*	Average Class Size	Usage of Individual Education Plans	Information Communication Technologies (ICT)-supported Instruction
English				
A1	375	5–15	Yes	No
A2	375	5–15	Yes	No
B1	350	5–15	Yes	No
B2	350	5–15	Yes	No
C	75	20	No	Yes
D	40	20	No	Yes
French				
A1	375	5–15	Yes	No
B1	350	5–15	Yes	No
C	75	20	No	Yes
D	40	20	No	Yes

*The average number of contact hours of instruction is a rough average of the number of hours adults in each group would need of instructor-led training to reach Level 3. These average hours could vary greatly depending on country of origin, educational attainment and mother tongue.

SPECIFIC PROGRAM RESPONSES: ADULTS IN GROUP A

Successful practices suggest that, for members of group A, the literacy program should be customized to the individual. Participants can meet with instructor(s) to develop an individual education plan (IEP) that outlines literacy activities designed to address their respective skill gaps in literacy.

Group A1

Goals and Objectives

The ultimate goals for all adults in group A—both A1 and A2—are to develop:

- the knowledge and skills needed to understand and use information in texts—including the skills needed to locate, comprehend and use information found in various formats, (e.g., stories and other text types that their children bring home, job applications, payroll forms, transportation schedules, maps, tables, charts, newspapers, etc.);
- mastery of all literacy components (as articulated by comprehensive and research-based frameworks);¹² and
- reading comprehension and literacy skills: well-developed word level skills (reading, decoding, spelling, fluency) as well as language comprehension skills (phonetics, syntax, semantics).

Program Guidelines

Effective practices suggest that this group needs literacy programs that concentrate on print skills first. Program materials should be relevant to the general interests and career goals of each student—for example, authentic workplace materials or other items such as restaurant menus, notices from schools, television guides and newspapers.

The most effective primary mode of instruction for this group is classroom instruction. Most participants in this group will likely require intensive small group instruction by teachers who are trained in “structured language” approaches to reading. Such instruction often extends over several years.

Classrooms should be set up to facilitate an emphasis on reading exercises and vocabulary-building, teacher-assisted learning, group and independent work, and the delivery of self-directed learning modules. In addition, some of these adults may be able to improve their background knowledge, vocabulary and quality of life by using assistive technology such as text-to-speech devices and books on tape.

The computer can be a very cost-effective and efficient way to teach basic skills to this group. Whenever possible, classrooms should facilitate instruction in computer usage. This will be required before students begin using computer-learning modules. Participants may choose to use the computer to work independently off-site.

An average of 200 hours of instruction time is required in order to move adults classified in group A1 (high-Level 1 in English, and mid-Level 1 in French) to group B (mid- to high-Level 1).

MICHAEL'S STORY (continued from page 34)

Michael's foreman encouraged him to pursue the pipefitter apprenticeship position but Michael still was not sure about it. Besides, he did not even know where to start, and he certainly was not going to go back to high school.

One day, while stopping to get a coffee on the way to the job site, Michael noticed a flyer:

Didn't Finish High School? Want to Get Ahead?

Find out your options.

Join us 1–3 p.m. on Saturday for free coffee and information.

Adult Education Program, Fort McMurray Community College

Figuring "what the heck," Michael showed up at the information session to find out what the program was all about. He learned that classes were being offered at the local community college, that they would discuss his career goals, and he could have a formal assessment done to figure out which program would be best for him. The courses were affordable and tuition assistance was available if needed. As well, courses were being offered at various times and were also held at a facility within walking distance from his apartment.

Michael met with one of the college program counsellors to complete an intake interview, discuss the pipefitter apprenticeship program he was interested in and to do some diagnostic testing. The tests showed that Michael did indeed have a learning disability; so, even before starting his program, he was provided with some assistive technology and training on how to use it. The course instructor also developed an individual education plan (IEP) for Michael, aligned with his career goals and learning needs.

Michael attended an evening class once a week for three hours at a time. The 10 other people in his class were also adults working in various trades, so they used trades-related materials in class (such as operator and safety manuals) in order to learn related vocabulary and to practise their reading skills. Because of his interest in the pipefitter apprenticeship program, Michael also spent time working on his numeracy skills, usually at the resource centre on campus.

The tools and tips that Michael acquired for managing his reading disability and decoding skills not only improved his reading abilities, but his confidence as well.

After just over a year-and-a-half in the program (more than 300 hours of class time), Michael began working toward his high school completion (GED) and, after completing a qualifying course in mathematics, applied for the apprenticeship program.

Group A2

Goals and Objectives

The literacy goals and objectives for A2 adults are the same as those for A1 adults.

Program Guidelines

Immigrants with low levels of education and literacy in their native language tend to acquire English or French oral language skills more slowly than people with higher levels of native language education.

In addition to the practices listed for group A1 adults, some other successful practices in adult ESL and FSL language and literacy instruction include:¹³

- displaying maps, pictures of people and customs from various cultures on classroom walls;
- displaying and labelling local community visuals and maps;
- using props to engage students' interest and stimulate discussion (e.g., food, clothing, holiday items from students' background);
- using authentic and adult-adapted reading materials and activities such as reading stories from their own culture, receipts, reading food labels, understanding cartoons, pictures;
- applying routines and repetition—students expect dictations, spelling and quizzes to happen on a regular basis;
- using radio, newspaper and television material as teaching tools; and
- going on class trips to learn how to use local transit, the supermarket, the post office, etc.

To address culture and cultural differences, programs may wish to:

- integrate intercultural issues in the ESL/FSL classroom and the workplace;
- address cultural values concerning relationships and communicating in various modes (e.g., telephone, face-to-face);
- enhance individuals' familiarity with cultural values of the receiving culture;
- encourage sensitivity to the cultures of other program participants; and
- convey the importance of improving language and literacy in order to be able to understand government documents and materials associated with health, education, obtaining and maintaining a job, communicating with children's teachers, etc.

There are some adults in group A2 who have extremely low Level 1 literacy scores and minimal language and reading skills in their first language. No studies are currently available that provide information about the amount of time they would need to achieve mid-Level 1 skills. However, on the basis of discussions with expert adult ESL/FSL instructors, it is estimated that participants would need on average the equivalent of three years of ongoing instruction—at three hours per day, five days per week—to achieve mid-Level 1 skills. This translates into an estimated 1,500 hours of instruction.

Since most adults cannot attend school on a daily basis for three years, instruction to improve skills toward mid-Level 1 will need to be spread over a longer time span, with different flexible models. Disruptions are likely, but encouraging ongoing attendance is recommended to ensure participants' progress and to minimize loss of skills already acquired.

PARI'S STORY (CONTINUED FROM PAGE 35)

While taking her mother to their community health centre one day, Pari noticed a set of multilingual posters in the waiting area, including one in Hindi:

Would you like to improve your English skills?

We offer classes in your community.

Everyone welcome—come and learn in a relaxed, comfortable setting.

Pari decided to ask a friend from her neighbourhood, who also struggles with English, to come with her to the open house. Once there, they found out that they would be assessed before starting the program so the instructors could determine their learning needs and goals. Pari was nervous about taking the tests; she worried that the instructors would make her feel embarrassed for knowing so little English after already living so long in Canada. However, she found that everyone was very helpful and understanding. When she explained that she wanted to feel more confident when dealing with health-care professionals on her own, the instructor said that they would create an education plan just for her, which would take her goals into account.

Pari attended a class twice a week (two hours at a time) at the community health centre, which was within easy walking distance from her house. The room was decorated with pictures from the community and a large map of the world, which the instructor used to have each student indicate where they were born. There were only nine other people in the class, who came from five different countries. Occasionally, everyone was asked to bring in something unique from their culture and share it with the class. They also read the local newspaper together and identified words with which they were not familiar. Pari's instructor helped her to review health-related pamphlets and to find health information on the internet for her to review at home.

Pari was excited to be learning new vocabulary and did well in her dictations, spelling and quizzes. Even though she was not able to attend every class, she worked on her reading at home with resources borrowed from the program, and also practised with her children. She liked the fact that she had become friends with a number of people in her class whom she wouldn't have met otherwise.

After attending the program for a year, Pari was able to move into the "Intermediate Class." She is extremely proud of her efforts to improve her English language skills.

PROGRAM RESPONSES FOR GROUP B

Goals and Objectives

The ultimate goal for all group B adults—both B1 and B2—is to function more easily and independently in a wider variety of familiar situations of daily social, educational and work-related life experience, and in less predictable contexts. This includes:

- communicating effectively in most daily practical and social situations, and in familiar/ routine work situations;
- responding appropriately in social interaction situations to the formality level;
- reducing grammar and pronunciation errors;
- developing an adequate vocabulary, including technical vocabulary, and be able to use a variety of grammatical structures varying in complexity;
- speaking with adequate fluency and intelligibility; and
- following discussions about abstract and complex ideas on familiar topics (e.g., through news on the radio and television).

Program Guidelines

Despite the different profiles of the members of this group, experts suggest that the ideal program response is similar for all group B members. The proposed response would assist B1 and B2 adults by developing and implementing individual educational plans (IEPs).

The focus of the program would be on providing skills enhancement activities to address gaps in literacy, as identified during a pre-screening diagnosis stage. Raising language and literacy levels of this group will enable them to learn more quickly from print information. Program content should offer both teacher-assisted and self-directed learning modules, with an emphasis on reading exercises and vocabulary-building.

Promising practices demonstrate that oral language instruction is most effective when it focusses on conversational skills, language development and vocabulary that:

- are more abstract, technical and conceptual;
- can be used to discuss personal and factual information; and
- can express ideas, opinions and feelings.

Furthermore, reading instruction is most effective for this group when it focusses on:

- developing a larger reading vocabulary;
- increasing the ability to guess the meaning of an unknown word from the context of the phrase;
- finding specific information and following instructions in prose texts or charts and understanding the purpose; and
- reading for pleasure.

Finally, the development of effective writing skills for group B should focus on:

- increasing participants' ability to convey ideas, opinions or experiences in writing in texts of increasing length;
- completing forms and applications; and
- writing in various genres such as routine business letters, personal and formal social messages, and instructions.

Literacy skills development in this group should include preparation for employment, developing communication skills for job interviews, and meeting with teachers or health-care professionals.

The fact that both B1 and B2 groups have negative attitudes toward computers implies that technology may have to be introduced very carefully to them and with a good deal of support to facilitate its usage.

When teaching literacy skills to individuals who have some reading skills in their first language, program responses should consider the possible effects of differences in the type of first-language background. Individuals who have some literacy skills in a Latin-based language (e.g., Portuguese, Romanian, Spanish) and even with other alphabetic languages (e.g., Arabic, Persian) may find learning easier than those whose first language is non-Latin-based and non-alphabetic (e.g., Chinese). Despite their literacy skills, program participants may be overwhelmed by the differences between English or French and their first-language writing system.

For employed adults in group B, the literacy program might arrange for employer support (e.g., time off for learning). However, doing so may depend on the state of the local labour market and whether the employers believe that they will benefit economically from the investment. Meanwhile, unemployed adults may require financial support for basic living, and for transportation to and from the learning centre.

B1 adults should be able to increase their literacy skills (mid-Level 1 for English, and high-Level 1 for French) to Level 2 through 175 hours of instruction. The adults in group B2 (those with non-English and non-French mother tongues) will also take approximately 175 hours, with the understanding that there is likely to be more variability in this group depending on their language skills in their first language.

MARIE'S STORY (CONTINUED FROM PAGE 44)

Marie meets her friends every week at the local Seniors Centre for bridge club. While speaking with her friend Agathe before bridge one day, Marie shyly admitted that she could not read very well and wished that she could so that she could enjoy reading stories to her grandchildren. Agathe encouraged her to learn to read, informing her that the Centre had just the program.

The education programs at the Seniors Centre range from formal classroom learning to coordinated tours, peer-led groups and self-directed sessions through their resource centre. The literacy program offers seniors help with reading, writing and basic math as well as computers.

The trained program staff assessed Marie's reading level, helped her to set her learning goal ("to be able to read any book, any time that my grandchildren want me to read to them") and created a training plan.

In addition to her bridge club, Marie began going to the Seniors Centre once a week for literacy instruction that included work on her vocabulary and the ability to figure out the pronunciation and meaning of words she did not know.

Marie's grandchildren, Luc and Josée, were pleased to help their grandmother with her "homework" each time they went to her house. After one year in the program, Marie could not only read any book her grandchildren wanted to hear, she had begun reading some more difficult books for herself. She has now changed her learning goal: "to be able to read any book that I'm interested in."

PROGRAM RESPONSES FOR GROUP C

Goals and Objectives

The ultimate goals for all group C adults are to build on existing skills to further develop:

- the knowledge and skills needed to understand and use information in texts at Level 3—including the skills needed to locate, comprehend and use information found in various formats (e.g., stories and other text types that their children bring home, job applications, payroll forms, transportation schedules, maps, tables, charts, newspapers, etc.);
- mastery of all literacy components (at the word and text level) as articulated by comprehensive and research-based frameworks;¹⁴ and
- reading comprehension and literacy skills: well developed word-level skills (reading, decoding, spelling, fluency) as well as language-comprehension skills (phonetics, syntax, semantics).

Program Guidelines

Expert opinion suggests multiple program responses for group C adults, depending on their employment status and hours worked.

Unemployed Individuals and Part-time Workers

The following three intervention strategies are recommended for instructing unemployed individuals and part-time workers. For these people, there is a need to blend academic content with authentic workplace materials.

1. Blended vocational and GED and/or high-school completion

This group requires training that is related to finding and keeping a job. Programs designed to serve this group should have flexible intake, be competency-based and offer convenient scheduling that allows learning to be integrated with complex work schedules.

Partnerships involving industry (labour and management) associations are recommended for facilitating the delivery of services to this group. The need to link reading instruction to work may also necessitate a partnership between a reading specialist (essential skills instructor) and a content expert who is familiar with the occupation and its reading demands.

Any intervention should attempt to be a seamless extension of other required training. To meet the needs of these adults, the program should be short in duration, relevant and varied in format and delivery mode.

Motivation to attend any type of intervention is a significant issue for this group. Because most members of this group function adequately at work and in the community, they describe their own skills as adequate. Participants will only be attracted to upgrading for personally compelling reasons. Therefore, programs seeking to attract this group need to focus on instrumental objectives. Program ideas that are proven to attract this group include:

- high-school/GED completion attached to a vocational goal and other training (e.g., practical nurse); and
- high-school/GED completion attached to sector interests or high labour-market needs (e.g., occupations that require high-school completion such as entry-level mining and occupations, such as line cook, that are in high demand).

Meeting the learning needs of the blended vocational/GED group involves:

- using reading materials that are balanced between traditional academic sources and the target workplace context;
- increasing context-related and academic vocabulary, fine-tuning decoding, improving spelling;
- improving writing, especially in appropriate work-related genres such as e-mail, memos, logbooks, reports, etc.;
- improving study skills and imparting “learning to learn” strategies; and
- teaching the reading strategies that underlie performance at Level 3 on the IALSS proficiency scale (e.g., locate, combine multiple pieces of information, compare, contrast, integrate, explain, evaluate).

2. Structured support associated with career training

This type of program could be structured as a “homework” or study group, facilitated by an educator or as structured classroom delivery. Self-directed study in this type of program may require tutors (volunteer or paid) and/or telephone support.

Distance delivery of instruction may be challenging but possible given adequate resources and/or partnerships with stakeholder groups. The development of pre-course materials could be the focus of this intervention—for example, packages or computer-based training (CBT) could be delivered to participants prior to attending a career-focussed program.

Participants may or may not have a high-school credential. They are likely to benefit from upgrading either as preparation for, or concurrent with, career/vocational training.

The recommendations and approach listed for meeting the needs of the blended vocational/GED group (see #1 above) may also be applied to this group.

Intervention can be expected to precipitate three positive outcomes:

- improved retention in career training;
- improved success rates in career training; and
- improved scores on standard measures, such as Bow Valley College’s TOWES (Test of Workplace Essential Skills).

3. Stand-alone intervention, focussed on workplace reading applications

To be effective, this intervention should take the form of a course, designed to focus on reading applications framed as “Reading for Work.” It would be offered to Employment Insurance recipients and other interested parties as part of a job club or college/continuing education course. The focus of this structured course is to provide practice opportunities that lead to increased employability. Effective programs should last six weeks and involve roughly 15 hours of instruction per week.

This type of program would be classroom-structured, more or less customized for individual participants. It places a heavy emphasis on the use of authentic workplace materials, including:

- reading materials in work-related formats (trade journals, reports, regulations, work orders, instructions, etc.), with the potential to customize context to meet the employment goals of participants;
- reading tasks that simulate work-related tasks requiring the processing of information;
- reading strategies that form the base for proficiency at Level 3 (locate, combine multiple pieces of information, compare, contrast, integrate, explain, evaluate);
- increasing context-related and academic vocabulary, fine-tuning decoding, improving spelling;
- improving writing, especially in appropriate work-related genres such as e-mail, memos, logbooks, reports, etc.; and
- developing study skills and “learning to learn” strategies.

Managed on-line delivery of this program is possible. Delivery may also include opportunities for interaction among participants.

Employed Adults

For employed workers, two interventions are recommended:

- workplace training extensions; and
- workplace support.

These types of programs are best offered in a classroom setting, either at the workplace or off-site. Such “embedded” instruction suggestions include:

- reading materials that are based on the training topic;
- increasing vocabulary, fine-tuning decoding and improving spelling of context-related words;
- improving writing skills if appropriate (e.g., completing a safety incident report); and
- using reading strategies that form the basis for Level 3 proficiency (locate, combine multiple pieces of information, compare, contrast, integrate, explain, evaluate).

Learning styles and study skills could also be included—for example, encouraging the use of “Post-It” notes or coloured highlighters to emphasize important points that may be tested. Both adult education and content expertise is required.

1. Workplace training extensions

Workplace training extensions could build on courses already offered or mandated, such as safety training (e.g., First Aid, Workplace Hazardous Materials Information System/WHMIS, use of fire extinguishers, fall protection, safe food handling, etc.). Many participants could benefit from a pre-course or an expanded, integrated version of training that includes a focus on the reading aspects of the training topic. For example, much of safety vocabulary is unfamiliar and often the available text requires interpretation. Codes and manuals can provide opportunities for teaching reading strategies.

Although safety is one example of a topic that could be enhanced with reading training, this principle could be used for all front-line worker training. This intervention strategy is particularly applicable for worker populations that include recent immigrants.

Distance delivery using ICTs may be challenging but possible with adequate resources. Training could be developed for independent study using CBT with development, focussing first on popular topics that are commonly delivered in the workplace (e.g., occupational health and safety).

Reaching workers currently employed at this literacy skill level poses a particular challenge, as they are likely to perceive that their current skill levels are adequate. They are likely to have completed high school, probably have less time to spare and are unlikely to see value in upgrading their literacy skills. These candidates need a compelling reason to attend. Successful recruitment of this group will likely depend upon the upgrading being a seamless extension of other required training. The most successful interventions will be customized to fit the application and perceived value of the participants.

2. Workplace support

The intervention is specific to a single employer. Some employers offer on-site learning centres that include work-related upgrading opportunities and education enhancements. Workplace educators are seen as part of the training department and can be hired directly by an employer, union, government agency, association or college.

Many learning centres offer a combination of computer-based learning, tutoring, team teaching and small group delivery. Much of the delivery responds to immediate applications and industry issues. Independent learning can be facilitated with content-related materials. Learning could take place in multiple venues—for example, at work sites, union facilities, community libraries or public spaces.

Workplace educators will be more likely to develop custom materials that respond to workplace and worker needs, and less likely to deliver set academic courses. Without enrolment requirements, these programs can respond to immediate needs and opportunities. Participation in upgrading is encouraged by convenience, relevance and social influence.

If reading materials are more accessible, this group may read more and improve skills as an outcome. Other potential outcomes for group C adults receiving workplace support include:

- improved confidence for front-line workers in performing work-related tasks;
- credit for various courses;
- acquiring transferable reading skills; and
- improved scores on standard measures.

BRAD'S STORY (CONTINUED FROM PAGE 39)

Brad's manager told him about a program offered by the company, through which employees could earn their high school diploma on-site at the workplace. Brad registered and began taking courses closely connected with his work and learning needs (computers, math and technical writing). In addition to his academic course work, the program used custom materials and trade magazines to develop Brad's language comprehension skills and work-related vocabulary.

The employer offered flexible hours so that Brad could easily accommodate his class time during the day, without having to take his time away from his family and young child. Brad's employer also subsidized the program so that he did not have to cover instructor costs or pay for course materials.

The company also has a Learning Centre that offers individual instruction, career counselling and support for employees who want to improve their literacy, numeracy and critical thinking skills.

After about 75 hours of classroom instruction, Brad was able to achieve his goals of improving his literacy levels and completing high school. He continued his professional development through the Learning Centre by borrowing courseware including textbooks, audiocassettes, videotapes, computer disks, CD-ROMs, and the internet—allowing Brad to choose the ones that best fit his work and home schedule.

Brad has recently enrolled in another company-supported training program and is working through an instruction course on aviation and mechanics. His literacy levels and motivation to learn have improved so dramatically that Brad is also considering applying to university for mechanical engineering.

PROGRAM RESPONSES FOR GROUP D

Group D members have high decoding and vocabulary skills. It is likely that they are able to cope with most texts and tasks, provided that they have a chance to become familiar with them. Members of this group have difficulty coping with unfamiliar texts and tasks, and have not yet mastered the skills that would place them at Level 3 on the overall prose literacy scale. They are not yet able to meet the standards expected at Level 3 on the following tasks:

- making literal or synonymous matches between the text and information given in the task;
- making matches that require low levels of inference;
- integrating information from dense or lengthy texts that contain no organizational aids such as headings; and
- generating a response based on information that can be easily identified in the text.

Most adults in group D have the primary components needed to support them becoming successful, independent and lifelong learners, and they may be able to take full advantage of distance learning and self-study opportunities offered on-line. Like adults in group C, these adults need to address their skills gaps in writing and academic vocabulary to have the best chance of succeeding in post-secondary education opportunities. However, they have the foundational skills to undertake such learning themselves.

CRAIG'S STORY (CONTINUED FROM PAGE 40)

One evening while surfing on-line and looking at education options, Craig stumbled upon a distance education university degree program offered in Business Management.

Despite his reservations about his reading and writing skills in an academic setting, Craig decided to register. The university had a prior learning assessment centre and Craig was pleased to discover that he would be granted some course credits for his work with his employer.

The program was designed to support distance and on-line learners, so Craig was able to schedule his own study times and remain employed during the course of his studies. The program also offered personalized one-on-one tutoring, so Craig was able to work on his writing skills and academic vocabulary. He soon was able to read more quickly and fluently, and understand and synthesize more lengthy and unfamiliar texts.

Craig's courses were focussed on market research, promotions, consumer behaviour and e-marketing. He was able to apply his marketing and management skills immediately to his work and helped to lead a significant e-marketing promotions campaign for the tour company. After four years of distance learning, Craig earned his Bachelor of Management degree with a minor in marketing.

« READING THE FUTURE Planning to meet Canada's future literacy needs »»

SUMMARY AND FUTURE DIRECTIONS

As noted in the CCL's 2007 report, *State of Learning in Canada: Unlocking Canada's Potential*, lifelong learning enables individuals to face the challenges of increased globalization, including rapid advancements in new technologies and a demand for innovation and higher productivity.

Not only is literacy an essential ingredient of lifelong learning, it is economically and socially important to individuals. Literacy is also vital to the country's economy and likely to become even more important as the global knowledge economy continues to grow. However, despite a high level of educational attainment in Canada, nearly half of Canadians lack the skills deemed necessary to participate fully in today's complex society.

The good news is that—with more knowledge and tools available to address this challenge, such as *Reading the Future*—change is possible.

We now know the “what”—the essence—of the literacy problem in Canada today and in the future. We know the “who”—the key characteristics that differentiate adults with low literacy skills from those with higher literacy skills. To some extent, we can also speculate “why” low literacy continues to exist in Canada, particularly when we look at the key barriers that may interfere with the ability (or motivation) of these adults to improve their literacy skills. With this information, we can now begin addressing—as demonstrated in Chapter 3—“how” to improve adult literacy levels in Canada.

The optimal mix of policy remedies is a matter for public discussion and debate. Yet, no matter the route that is eventually taken to get there, there can be little question that investments in literacy are needed if Canadians are to realize their full economic potential.

At this time, the cost to take action is still not fully known. What we do know is the following:

- those with the lowest levels of literacy skills (IALSS Level 1 and 2, or groups A and B), who constitute a smaller number of low-literacy adults in Canada, will require many more hours of training to attain Level 3 skills, at a much higher cost;
- given that the largest learning groups (C and D) are at low-to high-Level 2 on the IALSS scale, the total investment costs needed to raise their skills to Level 3 in print and comprehension may be lower than previously thought; and
- the cost of inaction is high.

There are still many questions and “knowledge gaps” that must be addressed. Despite this, we cannot put change on hold until all knowledge gaps are filled. Moreover, improving literacy rates requires cooperation; no one group can address this issue alone.

WHAT GOVERNMENTS CAN DO

All levels of government can have a significant impact on literacy by:

- providing the financial means to increase the quantity, quality, efficiency or equity of teaching and learning;
- instituting policies and programs (such as those recommended in Chapter 3) to increase the economic and social demand for literacy skill;
- clearly communicate to the public the employment, wage and other benefits associated with higher literacy; and
- ensure access to high-quality literacy training.

WHAT EMPLOYERS CAN DO

Employers have the ability to influence demand and increase supply of literacy skills in the workplace.

To influence demand, they can select technologies and work processes that require employees to use literacy skills. This will also help to address Canada's "stock and flow" challenge, in that it could help to reduce the level of skills loss associated with low levels of use.

To assist workers in meeting demand, employers should also visibly support learning. Within the work environment, they can help employees assess their learning needs and provide for follow-up literacy training programs to improve their skill levels.

WHAT UNIONS AND THE LABOUR MOVEMENT CAN DO

Unions can help to create the conditions that will allow Canadian workers to reach their full potential as literate, informed and active citizens.

Unions can promote literacy to workers as a means for fulfilling various roles—not just in the workplace, but also in the home, the community and the union. To assist with the latter, unions should use clear language in all communications and programming, allowing union members to participate more fully in the organization.

Similar to a technique used in the United Kingdom, Germany and Sweden, unions may designate a person to act as a learning advocate, to ensure that employees' training needs are identified and met.

WHAT INDIVIDUALS CAN DO

Individuals can reflect on their learning needs and their family's learning needs, and identify how improving their literacy skills would improve their lives. They can seek out and participate in literacy instruction, adopting a modified lifestyle approach that values and uses reading skills on a regular basis. At the very least, they can work toward retaining the level of skill previously acquired through formal schooling.

By increasing demand for literacy programs in the home, workplace and community, individuals can help to create the very programs they desire.

"Many a time the reading of a book has made the future of a man."
- Ralph Waldo Emerson

WHAT CCL WILL DO NEXT

The Canadian Council on Learning exists to improve lifelong learning across Canada by—as demonstrated by this report—fostering quality research on learning and facilitating evidence-based decisions about learning.

Because it is one of CCL's five crosscutting themes, literacy continues to be the focus of many CCL initiatives, each one designed to provide Canadians with a greater understanding of literacy's impact on individuals, their communities, and Canada. CCL remains committed to exploring and sharing effective literacy practices and developments, both Canadian and international, through existing and new communications channels. Moreover, CCL's other crosscutting themes—gender, culture, e-learning and French minority-language settings—will continue to be reflected in related initiatives and research.

Above all, CCL will continue to effect change by acting as a catalyst for lifelong learning in Canada. It recognizes the impact that all sectors of society can have on advancing literacy, and aims to expand its outreach by empowering policy-makers, educators, employers, unions and non-governmental organizations with the knowledge and tools to develop and implement effective solutions.

« READING THE FUTURE Planning to meet Canada's future literacy needs »»

ENDNOTES

- 1 L. Osberg, *Schooling, Literacy and Individual Earnings*. (Ottawa and Hull: Statistics Canada and Human Resources and Social Development Canada, 2000).
- 2 D. A. Green and W. C. Ridell, *Literacy and the Labour Market: The Generation of Literacy and Its Impact on Earnings for Native-born Canadians* (Statistics Canada and Human Resources and Social Development Canada, 2007).
- 3 S. W. Raudenbush and R. M. Kasim, *Adult Literacy, Social Inequality, and the Information Economy: Findings from the National Adult Literacy Survey* (Ottawa and Hull: Statistics Canada and Human Resources and Social Development Canada, 2002).
- 4 Statistics Canada and Organisation for Economic Co-operation and Development, *Learning a Living: First Results of the Adult Literacy and Life Skills Survey* (Ottawa and Paris: 2005).
- 5 R. Rudd, I. Kirsch and K. Yamamoto, *Health Literacy in America* (Princeton: Educational Testing Service, 2004).
- 6 Statistics Canada and Organisation for Economic Co-operation and Development, *Literacy in the Information Age: Final Report of the International Adult Literacy Survey* (Ottawa and Paris: 2000).
- 7 Statistics Canada and Human Resources and Social Development Canada, *Building on Our Competencies: Canadian Results of the International Adult Literacy and Skills Survey 2003* (Ottawa and Hull: 2005). Catalogue no. 89-617-XIE.
- 8 H. Abadzi. *Improving Adult Literacy Outcomes: Lessons from Cognitive Research for Developing Countries* (Washington, D.C.: World Bank, 2003).
- 9 C. A. Perfetti, "The representation problem in reading acquisition," in P.B. Gough, L. C. Ehri and R. Treiman, *Reading Acquisition* (Hillsdale, N.J.: Erlbaum, 1992), pp.145–174.
- 10 C. A. Perfetti, "The universal grammar of reading," *Scientific Studies of Reading* 7, no. 1: 3–24.
- 11 C. Tamassia, et al., *Adult Literacy in America: A First Look at Results from the Adult Education Program and Learner Surveys* (Princeton, N.J.: Educational Testing Service, 2007).
- 12 Wesley A. Hoover and Philip B. Gough, *The Cognitive Foundations of Learning to Read: A Framework* (Austin, Tex.: The Southwest Educational Development Laboratory, 2001).

- 13 J. Cummings, M. Jacot and S. Folinsbee, *Best Practices and Recommendations for LINC Literacy Instruction: Ontario Language Instruction for Newcomers to Canada (LINC) Literacy Project* (Toronto: Citizenship and Immigration Ontario Region, 2006).
- 14 Hoover and Gough. *The Cognitive Foundations of Learning to Read*.

« READING THE FUTURE Planning to meet Canada's future literacy needs »»

BIBLIOGRAPHY

Abadzi, H. *Improving Adult Literacy Outcomes: Lessons from Cognitive Research for Developing Countries*. Washington, D.C.: World Bank, 2003.

Battiste, Marie, and Sheelagh McLean. *State of First Nations Learning*. Ottawa: Canadian Council on Learning, 2005. Available at www.ccl-cca.ca.

Beck I., M. McKeown and L. Kucan. *Bringing Words to Life: Robust Vocabulary Instruction*. New York: The Guilford Press, 2002.

Birnbaum, A. "Some latent trait models and their use in inferring an examinee's ability." *Statistical Theories of Mental Test Scores*, edited by F. M. Lord and M. R. Novick. Reading, Mass.: Addison-Wesley Publishing, 1968.

Canadian Council on Learning. *The State of Learning in Canada: No Time for Complacency*. Ottawa: 2007.

Cartwright, Fernando, Diane Lalancette, Jerry Mussio and Dehui Xingo. *Linking Provincial Student Assessments with National and International Assessments*. Ottawa: Statistics Canada and British Columbia Ministry of Education, 2003. Catalogue no. 81-595-MIE, no. 005.

Coulombe, S., and J. F. Tremblay. *Human Capital and Canadian Provincial Standards of Living*. Ottawa: Statistics Canada, 2006. Catalogue no. 89-552-MIE2006014.

Coulombe, S., and J. F. Tremblay. *Migration, Human Capital, and Skills Redistribution across the Canadian provinces*. Working paper 2006 D-07. Ottawa: Industry Canada, 2006.

Coulombe, S., J. F. Tremblay and S. Marchand. *Literacy Scores, Human Capital and Growth across Fourteen OECD Countries*. Ottawa: Statistics Canada, 2004. Catalogue no. 89-552-MIE2004011.

Cummings, J., M. Jacot and S. Folinsbee. *Best Practices and Recommendations for LINC Literacy Instruction: Ontario Language Instruction for Newcomers to Canada (LINC) Literacy Project*. Toronto: Citizenship and Immigration Ontario Region, 2006.

Educational Testing Service. *Digital Transformation: A Framework for ICT Literacy*. Princeton, N.J.: 2003.

Educational Testing Service. *Adult Education in America: A First Look at Results from the Adult Education Program and Learners Surveys*. Princeton, N.J.: 2007.

Educational Testing Service. *The Perfect Storm: Three Forces Changing our Nation's Future*. Princeton, N.J.: 2007.

Green, D. A., and W. C. Riddell. *Literacy, Numeracy and Labour Market Outcomes in Canada*. Ottawa and Hull: Statistics Canada and Human Resources and Social Development Canada, 2001.

Green, D. A., and W. C. Riddell. "Literacy and earnings: an investigation of the interaction of cognitive and unobserved skills in earnings generation." *Labour Economics* 10, issue 2 (April 2003): 165–184.

Green, D. A., and W. C. Riddell. *Literacy and the Labour Market: The Generation of Literacy and Its Impact on Earnings for Native-born Canadians*. Ottawa and Hull: Statistics Canada and Human Resources and Social Development Canada, 2007.

Grenier, S., S. Jones, J. Strucker, T. S. Murray, G. Gervais and S. Brink. *Learning Literacy in Canada: Evidence from the International Survey of Reading Skills*. Ottawa and Hull: Statistics Canada, and Human Resources and Social Development Canada, 2008. Catalogue no. 89-552-MIE, no. 19.

Hoover, W. A., and W. E. Tunmer. "The components of reading." *Reading Acquisition Processes*, edited by G. Brian Thompson, William E. Tunmer and Tom Nicholson. Philadelphia: Multilingual Matters, 1993. pp.1–19.

Hoover, Wesley A., and Philip B. Gough. *The Cognitive Foundations of Learning to Read: A Framework*. Austin, Tex.: The Southwest Educational Development Laboratory, 2001. Available at www.sedl.org.

Human Resources and Social Development Canada and Organisation for Economic Co-operation and Development, *Literacy Skills for the Knowledge Society: Further results of the International Adult Literacy Survey*. Paris and Ottawa: 2000.

Lord, F. M. *Applications of Item Response Theory to Practical Testing Problems*. Hillsdale, N.J.: Erlbaum, 1980.

Murray, Scott, Rima Rudd, Irwin Kirsch, Kentaro Yamamoto. *Health Literacy in Canada: Initial Results from the International Adult Literacy and Skills Survey*. Ottawa: Canadian Council on Learning, 2007.

Murray, T. S. *The Assessment of Literacy, Numeracy and Language at the International Level: A Review*. Washington, D.C.: National Academies of Science, 2003.

Murray, T. S., Y. Clermont and M. Binkley. *The International Adult Literacy and Life Skills Survey: New Frameworks for Assessment*. Ottawa: Statistics Canada, 2005.

Murray, T. S., I. Kirsch and L. Jenkins. *Adult Literacy in OECD Countries: Technical Report on the First International Adult Literacy Survey*. Washington, D.C.: National Centre for Education Statistics, 1998.

Murray, T. S., and M. McCracken. *The Economic Benefits of Literacy: Theory, Evidence and Implications for Public Policy*. Ottawa and London, Ont. Canadian Council on Learning and the Canadian Language and Literacy Research Network, 2008.

Osberg, L. *Schooling, Literacy and Individual Earnings*. Ottawa and Hull: Statistics Canada and Human Resources and Social Development Canada, 2000.

Perfetti, C. A. "The representation problem in reading acquisition." *Reading Acquisition*, edited by P. B. Gough, L. C. Ehri and R. Treiman. Hillsdale, N.J.: Erlbaum, 1992, pp.145–174.

Perfetti, C. A. "The universal grammar of reading." *Scientific Studies of Reading*, Vol. 7 no.1: 3–24.

Perfetti, C. A. *Reading Ability*. New York: Oxford University Press, 1985.

R. A. Malatest and Associates. *Best Practices in Increasing Aboriginal Postsecondary Enrolment Rates*. Toronto: Council of Ministers of Education, 2000.

Raudenbush, S. W., and R. M. Kasim. *Adult Literacy, Social Inequality, and the Information Economy: Findings from the National Adult Literacy Survey*. Ottawa and Hull: Statistics Canada and Human Resources and Social Development Canada, 2002.

Rubenson, K., and R. Desjardins. *Adult Learning in Canada: A Comparative Perspective*. Ottawa and Hull: Statistics Canada and Human Resources and Social Development Canada, 2007.

Rudd, R., I. Kirsch and K. Yamamoto. *Health Literacy in America*. Princeton: Educational Testing Service, 2004.

Sabatini, J. *Framework for the Assessment of Reading Component Skills*. Princeton, N.J.: Educational Testing Service, 2006.

Statistics Canada. *Aboriginal Peoples Survey*. Ottawa: 2001.

Statistics Canada. *The Adult Literacy and Life Skills Survey: New Frameworks for Assessment*. Ottawa: 2005.

Statistics Canada and Human Resources and Social Development Canada. *Building on Our Competencies: Canadian Results of the International Adult Literacy and Skills Survey 2003*. Ottawa and Hull: 2005. Catalogue no. 89-617-XIE.

Statistics Canada and Human Resources and Social Development Canada. *Learning Literacy in Canada: Evidence from the International Survey of Reading Skills*. Ottawa and Hull: 2008.

Statistics Canada and Organisation for Economic Co-operation and Development. *Literacy, Economy and Society: Results of the First International Adult Literacy Survey*. Ottawa and Paris: 1995.

Statistics Canada and Organisation for Economic Co-operation and Development. *Literacy in the Information Age: Final Report of the International Adult Literacy Survey*. Ottawa and Paris: 2000.

Statistics Canada and Organisation for Economic Co-operation and Development. *Learning a Living: First Results of the Adult Literacy and Life Skills Survey*. Ottawa and Paris: 2005.

Strucker, J. "Theory and rationale for the reading components assessments in the ISRS." *Learning Literacy in Canada: Evidence from the International Survey of Reading Skills*, edited by S. Grenier et al. Ottawa: Statistics Canada and Human Resources and Social Development Canada, 2007.

Tamassia, C., M. L. Lennon, K. Yamamoto and I. Kirsch. *Adult Literacy in America: A First Look at Results from the Adult Education Program and Learner Surveys*. Princeton, N.J.: Educational Testing Service, 2007.

Tuijnman, A., and E. Boudard. *Adult Education Participation in North America: International Perspectives*. Ottawa: Statistics Canada and Human Resources and Social Development Canada, 2001.

Willms, J. D. "Literacy proficiency of youth: evidence of converging socioeconomic gradients." *International Journal of Educational Research* 39 (2003): 247–252.

Willms, J. D. *Learning Divides: Ten Policy Questions about the Performance and Equity of Schools and Schooling Systems*. Montreal: UNESCO Institute for Statistics, 2006.

Willms, J. D., and T. S. Murray. *Gaining and Losing Literacy Skills Over the Lifecourse*. Ottawa: Statistics Canada, 2007.



www.ccl-cca.ca

Ottawa Office

215-50 O'Connor Street
Ottawa ON Canada
K1P 6L2

Tel.: 613.782.2959
Fax: 613.782.2956

Vancouver Office

1805-701 West Georgia Street
P.O. Box 10132
Vancouver BC Canada V7Y 1C6

Tel.: 604.662.3101
Fax: 604.662.3168