



Adult Literacy

in

*Canada,
the United States
and Germany*

by Warren Clark



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Modern society is increasingly dependent on information processing and communication technologies. The emerging information economy places greater demands on individuals to locate, read, understand and process complex information in various forms both on the job and in everyday life. Literacy skills are an important component of learning and keeping pace with change. Without them, skills in other areas are difficult to acquire because so much of modern communication depends on printed and written documents. Thus, literacy skills often define an individual's social and economic opportunities.

The International Adult Literacy Survey (IALS) is the first survey to measure literacy skills of adults across diverse sub-groups in several industrialized countries. Unlike past measures of literacy, which used highest level of schooling to separate the literate from the illiterate, the IALS measured literacy as a continuum of successive skills categorized into five levels. The lowest skill level was called "Level 1" and the highest, "Level 5."

The IALS defined literacy as the ability to understand and use printed and written documents in daily activities to achieve goals, and to develop knowledge and potential. The survey assessed adult literacy in three separate areas: prose, document and quantitative skills. All three measure the information-processing skills of respondents - the ability to locate, integrate, construct and generate information - but the emphasis is somewhat different for each type.

- *Prose literacy tasks* assessed the ability to understand and use information from texts that included product labels, owner's manuals, pamphlets, newspaper articles and written announcements. These tasks may ask the reader to find information, match it, make an inference, integrate two or more pieces of information or generate a written response after processing information in the text.
- *Document literacy tasks* assessed the ability to locate and use information in a variety of displays including tables, graphs, maps, order forms, application forms and transportation schedules. Sometimes, familiarity with applications or forms was required for success at document literacy tasks.
- *Quantitative literacy tasks* assessed the ability to locate and extract numbers from different types of printed documents and perform arithmetic operations that are inferred from printed directions. For example, quantitative tasks required respondents to adjust quantities in a recipe, figure out how much to tip for a restaurant meal, balance a cheque book or calculate interest on a loan based on a compound interest table.

This article compares some of the first findings of the IALS for Canada, the United States, our largest trading partner, and Germany, the principal economic power of Europe. Overall, Canada and the United States had similar distributions of literacy skill levels, with the United States having a slightly larger proportion at the lowest literacy level. In all three literacy areas, prose, document and quantitative, Germany had a higher percentage of respondents with mid-level literacy scores and smaller proportions at the extremes than North Americans.

The literacy skills of Canadian and American adults differed little between prose, document and quantitative scales. Germans, however, scored higher in quantitative literacy than they did in prose or document literacy.

CANADIAN SOCIAL TRENDS BACKGROUNDER (CST)

International Adult Literacy Survey

Seven countries - Canada, Germany, the Netherlands, Poland, Sweden, Switzerland (French and German speaking areas only) and the United States - participated in the International Adult Literacy Survey (IALS). The United Nations Educational, Scientific and Cultural Organization (UNESCO), Statistical Office of the European Communities (EUROSTAT), and the Organization for Economic Cooperation and Development (OECD) assisted in the development of the survey. In addition to Statistics Canada, Canadian collaborators were the National Literacy Secretariat and the Applied Research Branch of Human Resources Development Canada.

The civilian, non-institutional population aged 16 to 65 was surveyed in the autumn of 1994. Some countries, including Canada, added older adults to their samples. For international comparisons, only the 16- to 65-year-old population is reported in this article. In Canada, about 4,000 people responded in English and 1,700 in French. In other countries, the number of respondents varied from 2,100 (Germany) to 3,100 (United States).

Testing of literacy tasks ensured no bias favored one particular country or language group, thereby allowing comparisons among the seven participating countries. However, each country differs in many ways including: demographics, formal education system, geographic distribution, industrial composition, immigration patterns and cultural traditions. It is difficult, therefore, to rank countries on the basis of literacy scores without understanding this context.

The majority of Canadians have adequate literacy skills. Almost three out of five Canadians aged 16 to 65 had sufficient prose, document and quantitative literacy skills to meet most everyday requirements in dealing with printed documents (Level 3 or higher). One in four Canadians had Level 2 skills. While these people generally believed they had good or excellent reading, writing and numeracy skills, their test scores were weak. About one in six Canadians had Level 1 prose, document and quantitative literacy skills, which meant they had serious difficulty in dealing with printed materials.

American adults had slightly lower literacy skills than Canadians. In the United States, about half of the adult population had prose, document and quantitative skills at the top three literacy levels, meaning that they met a wide range of reading demands. About one in four Americans had Level 2 literacy skills. One in five had prose and quantitative literacy skills at Level 1, while one in four had document literacy skills at that level.

CANADIAN SOCIAL TRENDS BACKGROUNDER

Literacy Levels

The survey measured prose, document and quantitative literacy skills on scales from 0 to 500. These scales were categorized into five broad literacy levels, with Level 1 being the lowest and Level 5 being the highest. Levels 4 and 5 are combined in many places throughout this article to ensure data reliability.

The population assessed at Level 1 literacy possessed very limited literacy skills. Some at this level showed the ability to find a single piece of information from a written text or graphic form, or perform simple arithmetic operations using numbers that were presented simply. Others at this level demonstrated such limited skills that they could perform only some Level 1 literacy tasks, while others were unsuccessful at all tasks.

Level 2 of prose literacy required respondents to locate information in a text which may contain several distracters, make low level inferences, integrate two or more pieces of information, or compare and contrast information. Respondents assessed at this level could deal with simple printed material which was clearly laid out, but had difficulty with more complex documents such as reading a bicycle owner's manual to check if the seat was in the proper position. People in this category may have adapted their lower literacy skills to their everyday life, but might have difficulty learning new job skills involving more complex literacy skills.

Levels 3, 4 and 5 required increasingly higher literacy skills. Literacy tasks at these levels required the ability to integrate several sources of information, solve more complex problems and extract information from more complex texts. Text often contained more distracting information and was in a more abstract form.

Sample literacy tasks

Level	Prose	Document	Quantitative
1	Use the instructions on a medicine bottle to identify the maximum duration recommended for taking aspirin.	Identify the percentage of Greek teachers who are women by looking at a simple pictorial graph.	Fill in the figure on the last line of an order form, 'Total with Handling,' by adding the ticket price of \$50 to a handling charge of \$2.

2

Identify a short piece of information about the characteristics of a garden plant, from a written article.

Identify the year in which fireworks injured the fewest Dutch people, when presented with two simple graphs.

Work out the temperature difference in today's forecast high temperature in Bangkok and Seoul, using a table accompanying a weather chart.

3

State which of a set of four movie reviews was the least favorable.

Identify the arrival time of the last bus on a Saturday night, using a bus schedule.

Work out how much more energy Canada produces than it consumes, by comparing figures on two bar charts.

4

Answer a brief question on how to conduct a job interview, requiring the reader to read a pamphlet on recruitment interviews and integrate two pieces of information into a single statement.

Summarize how the percentages of oil used for different purposes changed over a specific period, by comparing two pie charts.

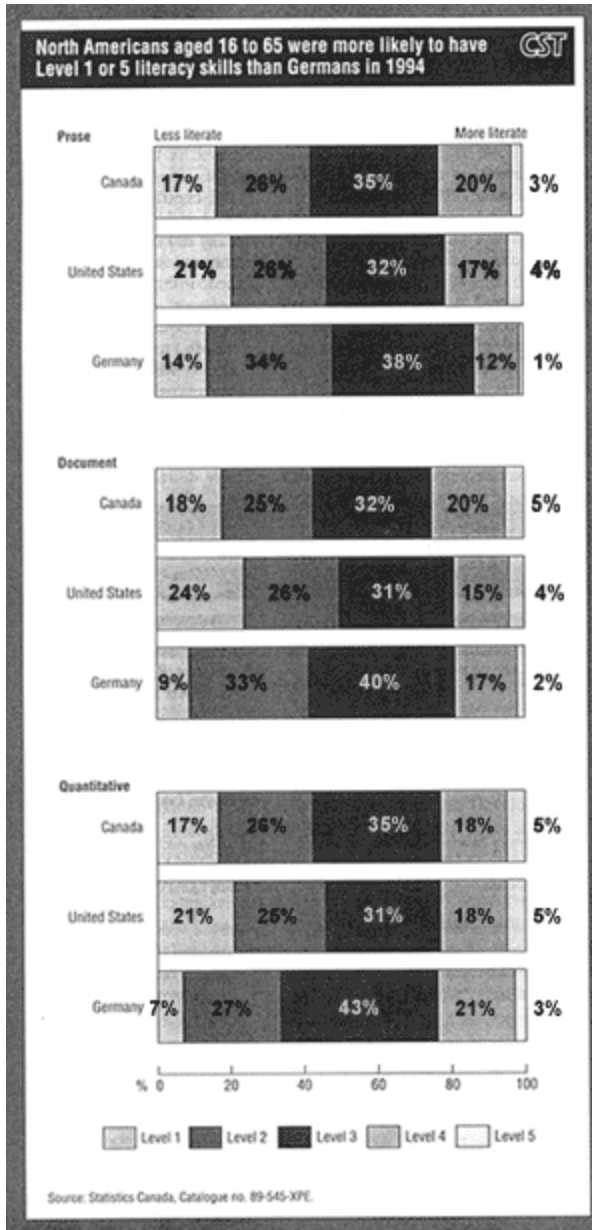
Calculate how much money you will have if you invest \$100 at a rate of 6 percent over 10 years, using a compound interest table.

5

Use an announcement from a personnel department to answer a question that uses different phrasing from that used in the text.

Identify the average advertised price for the best-rated basic clock radio in a consumer survey, requiring the assimilation of several pieces of information.

Use information from a table of nutritional analysis to calculate the percentage of calories in a Big Mac® that comes from the total fat.



Germans excelled in quantitative skills

On average, Germans had higher quantitative literacy skills than North Americans. Two-thirds scored in the top three levels on the quantitative scale. Half of Germans had prose literacy skills in the top three levels and 58% scored high in document literacy. About a third of Germans were at Level 2 on the prose and document scale, and one-quarter scored at this level on the quantitative scale. About one in fifteen had Level I quantitative literacy skills compared with one in six Canadians and one in five Americans. One in eleven Germans had Level 1 document skills, while one in seven had Level 1 prose literacy.

Literacy differences between genders varied

Gender differences were small in some countries, large in others and varied from one literacy scale to another. In North America, women out-scored men in prose literacy. Sixty-one percent of Canadian women scored at Level 3 or higher in prose literacy, compared with 54% of men. In the United States, 57% of women and 50% of men had prose literacy at the top three levels. Document literacy scores for men and women were nearly equal in Canada and the United States.

In every country, men out-scored women in quantitative literacy. In Canada, the gender difference was very small where 58% of men and 56% of women had Level 3 or higher quantitative skills. The difference in quantitative skills was greater in the United States and Germany where 57% of American men and 72% of German men had level 3 or higher quantitative skills, compared with 51% of American women and 62% of German women.

In Germany, men out-scored women on all three literacy scales. In prose literacy, the difference was small with 53% of men and 50% of women having skills at the top three levels. The literacy advantage of German men over women increased to six percentage points for document literacy and to ten percentage points for quantitative literacy. The lower literacy scores among German women may be because German women have historically been less likely than men to pursue post-secondary education.

Older adults have lower literacy skills than younger adults In the three countries, people aged 56 to 65 were the most likely to have Level 1 skills on all three literacy scales. Thirty-eight percent of Canadians, 22% of Germans and 24% of Americans in this age group had Level 1 prose literacy skills. In contrast, 12% of Canadians and Germans, and 20% of Americans aged 26 to 35 had Level 1 prose literacy skills.

On average, older Canadians, Americans and Germans had less formal education than younger adults. This, in part, explains why older adults have lower literacy levels than younger adults. Literacy skills are first developed in primary and secondary school. For many older adults, formal education ended a long time ago. The literacy skills of older adults also may have declined if their job and daily activities made infrequent use of them. In contrast, younger adults' formal schooling is a more recent experience and they would have had less time to lose unused skills.

Literacy contributes to economic success literacy skills influence the types of jobs people hold, their earnings and their likelihood of unemployment. Workers with poor literacy skills are vulnerable to lay-off and displacement, and once unemployed may have difficulty finding new jobs. In all countries, and across the three types of literacy skills, the employed had higher literacy skill levels than those who were unemployed or outside the labour force. In Canada, 11% of the employed had Level I prose literacy skills, compared with 33% of the unemployed.

Jobs differ in the level of literacy skills required. Canadians, Germans and Americans in managerial or professional jobs were more likely than other workers to have literacy skills at Level 4/5. In Canada, 43% of managerial or professional workers had Level 4/5 prose skills, compared with 11% of machine operators and assemblers. Still, 3% of managers or professionals in Canada, and 4% in Germany and the United States had Level I prose literacy. The reason for some managers or professionals having low literacy levels may lie in the heterogeneity of the



management and professional occupation group. This group includes supervisors, foremen, store managers, administrative assistants, doctors, engineers and high-level managers.

High levels of literacy also offered monetary rewards. Those with higher literacy skills worked in higher paying jobs and their literacy skills may have allowed them greater ability to understand and take advantage of other income-producing opportunities. In Canada, 39% of those who had Level 4/5 prose skills were in the top personal income quintile.¹

¹**The top personal income quintile refers to the 20% of income earners with the highest personal income.**

In contrast, 46% of those with Level 1 prose literacy and 30% of those with Level 2 had no personal income from wages or salaries.



Growth industries employed workers with higher literacy skills In Canada, the United States and Germany, workers in industries where employment has grown over the last twenty years, such as finance and personal services, had higher literacy scores. Those in declining industries, such as agriculture and manufacturing, had lower prose literacy scores.

Literacy skills - use them or lose them Schooling nurtures the initial development of literacy skills. It is not surprising that those who had low levels of education exhibited low literacy skills and those with more education had higher literacy skills.

Literacy skills, however, can decline if left unused and can improve through extensive use in everyday life.

The IALS found that about one in ten Canadians and Americans, and about one in six Germans, who had no more than primary schooling, had Level 3 or higher prose literacy skills. In contrast, 0.2% of Canadian, 5% of American and 4% of German university degree-holders had Level 1 prose literacy skills. Why such large proportions of university graduates had relatively low prose literacy skills may partly be explained by the nature of the IALS. The IALS assessed the skills of respondents in the national language of the country in which they resided. Some university graduates were immigrants who still may have been unfamiliar with the nuances of the language of their new home country. Others may have lost some literacy skills through lack of use.

Many of those with low levels of education may have improved and maintained their literacy skills through regular use. Book reading, letter writing, library use and participation in adult education and community organizations increased with higher literacy levels. Those with literacy difficulties read less, watched television more and engaged less frequently in activities requiring the use of literacy skills. Without daily use, literacy skills are at risk of deterioration.

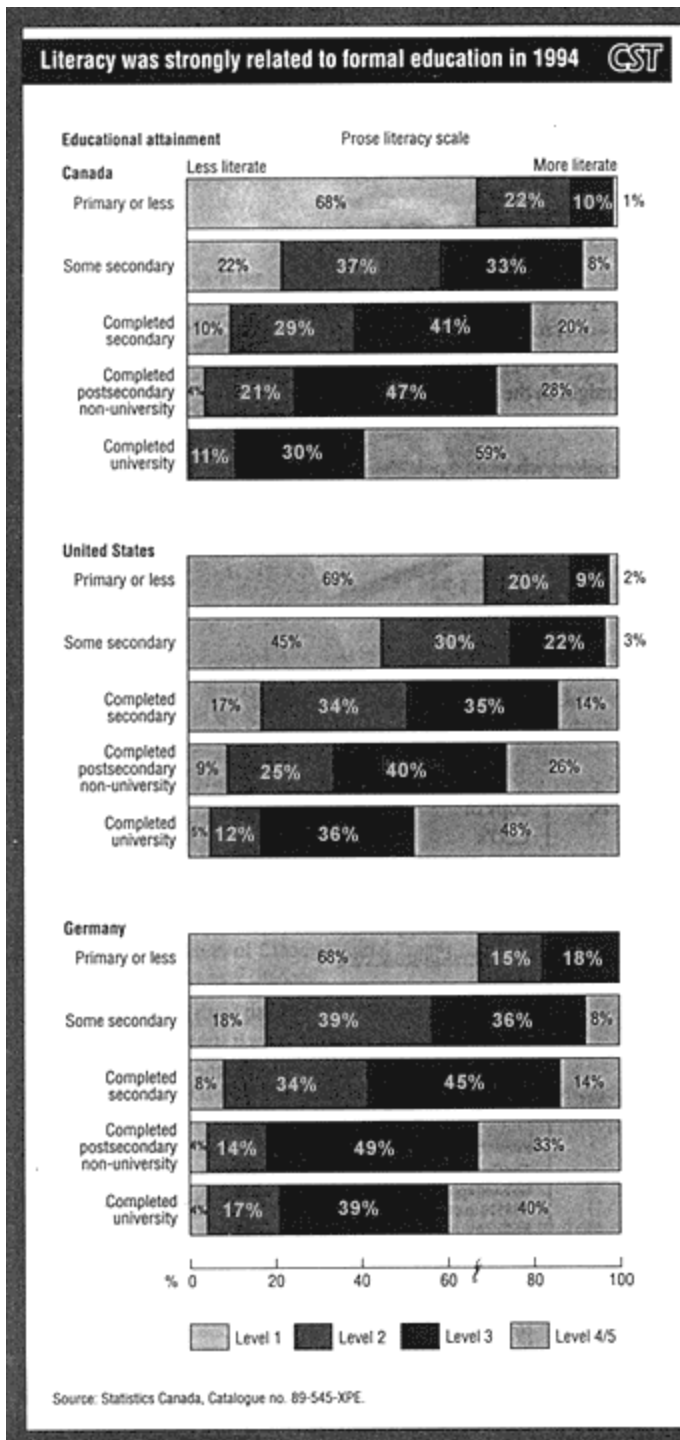
Many with low level literacy skills were satisfied with their skill levels Those assessed at Level 1 in prose literacy had very limited reading abilities, yet 46% of Canadians, 78% of Germans and 60% of Americans at this level believed their reading skills on the job were "good" or excellent." They also gave high ratings to their writing abilities on the job. Those with Level I quantitative skills may have had difficulty adding two numbers on an order form, yet over 60% of them believed their numeracy skills were "good" or "excellent" on the job. Despite very limited literacy skills, most Canadians and Americans, and over 40% of Germans with Level 1 literacy skills, regardless of the measure of literacy, felt their reading, writing and numeracy skills were not limiting their job opportunities at all.

Unemployed adults had low literacy skills



Country	Employment status	Prose	Document	Quantitative
% with Level 1 literacy skills				
Canada	Employed	11	12	11
	Unemployed	33	30	33
	Student	11	8	8
	Other out of labour force	29	38	33
United States	Employed	15	18	16
	Unemployed	32	36	37
	Student	--	--	--
	Other out of labour force	32	37	31
Germany	Employed	11	5	4
	Unemployed	26	18	10
	Student	5	5	4
	Other out of labour force	20	15	11

-- Data not reliable enough to publish.
 Source: Statistics Canada, Catalogue no. 89-545-XPE.



Implications of low literacy skills

Low literacy skills exact a toll not only on an individual's economic and social opportunities, but also on economic productivity and national competitiveness in a global economy. Changes in the workplace and in society will require higher levels of literacy as low-skilled jobs disappear. The volume, variety and complexity of written information has grown as society becomes increasingly information-oriented. More and more adults are now expected to read, understand and use printed materials in a variety of formats.

A large percentage of adults have Level 1 literacy skills, yet many do not perceive that they have a literacy problem, perhaps because they sought situations which did not tax their literacy skills. This may present a barrier for them to seek skill-improvement programs. Those who need to upgrade their basic skills may be reluctant to disclose their needs. Doing so may be an admission of failure in a society that expects people to read and use printed documents effectively.

Many with low literacy skills will be in the labor market for a long time to come. If high-skilled jobs are the wave of the future, many people with low literacy skills

may have difficulty pursuing their employment goals. Individuals, communities, employers and governments all have a role to play in improving literacy skills to meet the demands of a modern society.

For more information, see **Literacy, Economy and Society: Results of the first International Adult Literacy Survey**, Organization for Economic Cooperation and Development, and Statistics Canada, Statistics Canada, Catalogue no. 89-545-XPE; **Reading the Future: A Portrait of Literacy In Canada**, Statistics Canada, Human Resources Development Canada and National Literacy Secretariat, Statistics Canada, Catalogue no. 89-551-XPE; and "International survey on adult literacy," and "The marginally literate workforce," **Perspectives on Labour and Income**, Summer 1996, Statistics Canada, Catalogue no. 75-001-XPE, Vol. 8, No. 2.

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