



Reading the Future: A Portrait of Literacy in Canada



Backgrounder on the International Adult Literacy Survey (IALS)

IALS: The first of its kind

The 1994 International Adult Literacy Survey (IALS) was the first multi-country and multi-language assessment of adult literacy. Conducted in eight industrialized countries—Canada, Ireland, Germany, the Netherlands, Poland, Sweden, Switzerland, and the United States—the survey's goals were to develop scales for comparisons of literacy performance among people with a wide range of abilities, and to compare literacy across cultures and languages.

The results of the survey shed light on the social and economic impacts of different levels of literacy, the underlying factors which cause them and how they might be amenable to policy intervention.

The survey was sponsored by the National Literacy Secretariat and the Applied Research Branch of Human Resources Development Canada and was managed by Statistics Canada in cooperation with the OECD, Eurostat, and UNESCO. Key support was given by the U.S. Educational Testing Service, the U.S. National Center for Education Statistics, and survey and educational researchers in all the participating countries. The international results of the IALS were published in December 1995; the Canadian results are now being released. Each participating country will be publishing their own data.

Reading the Future: A detailed picture

The Canadian report entitled *Reading the Future: A portrait of literacy in Canada* is a detailed study derived from the IALS results. The data are broken down by language, age, gender, and region. Most importantly, the report provides new information with which to judge Canadian policy on literacy, education and social and economic development. By opening a window on the life of Canadians at home, in the community, and in the workplace, the report gives Canadians a glimpse of their possible future.



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Redefining literacy: Canada's pioneering role

The choice of Statistics Canada to design and manage the survey was a recognition of Canada's pioneering role in redefining literacy and its linkage to human resource development. In 1989, Statistics Canada was commissioned by the National Literacy Secretariat to produce the first Canadian profile of *Literacy Skills Used in Daily Activities (LSUDA)*. This survey dispelled the old notion that individuals are either literate or illiterate and introduced a new concept of literacy as a continuum of skills ranging from quite limited to very high. The IALS built on this new view of literacy, defining it as:

the ability to understand and employ printed information in daily activities, at home, at work and in the community, to achieve one's goals and to develop one's knowledge and potential.

The international dimension: Reading the results

The goal of this survey was not to rank countries from the most literate to the least literate. Rather, its aim was to compare, across cultures and languages, literacy performance among people with a wide range of abilities. Consequently, any direct comparisons across countries must incorporate an understanding of the social and economic characteristics of each country that underlie the observed literacy skill profiles. With this caveat, IALS makes it possible to place Canada in the international literacy continuum.

Literacy: A national and an international issue

The reintegration of the Central and Eastern European countries into the world economy, and the continuing rapid advance of industrialized countries in Asia and Latin America, have altered the economic status quo. The economies of the OECD countries now face large, well-educated and relatively low-wage labour forces in emerging competitive nations. While new forms of co-operation across borders have emerged, competition for investment capital has also intensified. New opportunities—as well as uncertainties and risks—are inherent in this situation. Certain countries, firms and individuals are well positioned to compete successfully in global markets; others may have difficulty taking advantage of the opportunities.

The emerging global economy is characterized by greatly increased flows of information and financial capital within, and among nations. The best way to exploit this new economic environment is to strengthen the capacity of firms and labour markets to adjust to change, improve their productivity and capitalize on innovation. But this capacity depends first and foremost on the knowledge and skills of the population. IALS shows that the literacy skills of individual citizens are a powerful determinant of a country's innovative and adaptive capacity.

Measuring literacy: More than one gauge

Literacy cannot be narrowly defined as a single skill that enables people to deal with all types of text. People in industrialized countries face many different kinds of written material every day, and they require different skills to understand and use the information. To reflect this complexity, IALS developed three categories of literacy:

1. **Prose literacy:** the ability to understand and use information from texts such as editorials, news stories, poems and fiction.
2. **Document literacy:** the ability to locate and use information from documents such as job applications, payroll forms, transportation schedules, maps, tables and graphs.
3. **Quantitative literacy:** the ability to perform arithmetic functions such as balancing a chequebook, calculating a tip, or completing an order form.

The specific literacy tasks designed for IALS were scaled by difficulty from 0 to 500 points. This range was subsequently divided into five broad literacy levels.

Level 1 indicates very low literacy skills, where the individual may, for example, have difficulty identifying the correct amount of medicine to give to a child from the information found on the package.

Level 2 respondents can deal only with material that is simple, clearly laid out and in which the tasks involved are not too complex. This is a significant category, because it identifies people who may have adapted their lower literacy skills to everyday life, but would have difficulty learning new job skills requiring a higher level of literacy.

Level 3 is considered as the minimum desirable threshold in many countries but some occupations require higher skills.

Levels 4 and 5 show increasingly higher literacy skills requiring the ability to integrate several sources of information or solve more complex problems. It appears to be a necessary requirement for some jobs.

Between 2,000 and 3,000 adults (5,660 in Canada) in each of the eight countries—Canada, Ireland, Germany, the Netherlands, Poland, Sweden, Switzerland, and the United States—took part. All the respondents were tested in their national language and in their own homes. The prose and document literacy scales each comprised of 34 tasks and the quantitative literacy scale included 33 tasks. All the tasks were of varying difficulty. The attached sheets show some sample tasks, the levels and scores.

The IALS results in a changing world: A broad perspective

If economies require increasing numbers of highly skilled workers to expand, then growth will be affected by existing practices of employers, individuals and governments: IALS has shown that instead of enlarging the pool of highly skilled workers, the tendency is to increase the skills of the already skilled. The reserve employment pool, made up of the unemployed and those working in declining industrial sectors, is low-skilled. Policies directed towards providing more educational opportunities and increasing skills in that pool must be a necessary part of any industrial growth strategy.

The distribution of literacy is also a good predictor of the magnitude of differences between social groups, making literacy an essential element for promoting social cohesion. Therefore, any view of literacy which is focussed on economic objectives alone is untenable.

IALS and LSUDA compared: Little change where change was expected

At the broadest national level, the IALS findings are consistent with those of its predecessor, LSUDA, conducted in 1989. There is considerable variation among Canadians in their literacy skill and the pattern of these variations shifts according to the different yardsticks used (region, language, age, educational attainment, occupation, and so on). Indeed, the differences between the two studies are not large. On the one hand, there appears to be little to support earlier predictions and present concern of a rapid erosion of either educational quality or of the adult skills base. On the other hand, some improvement was expected. Since LSUDA was conducted in 1989, those leaving the labour force have been replaced by an incoming cohort of young people who are collectively much better educated and more literate. The fact that no appreciable overall improvement was detected by IALS suggests that skills are being affected by other processes—processes that are of policy concern and need to be better understood.

Prose Level 1

Score range: 0 to 225

Most of the tasks at this level require the reader to locate one piece of information in the text that is identical or synonymous to the information given in the directive. If a plausible incorrect answer is present in the text, it tends not to be near the correct information.

Tasks at this level require the reader to locate and match a single piece of information in the text. Typically the match between the task and the text is literal, although sometimes a low-level inference may be necessary. The text is usually brief or has organizational aids such as paragraph headings or italics that suggest where in the text the reader should search for the specified information. Generally, the target word or phrase appears only once in the text.

The easiest task in Level 1 (difficulty value of 188) directs respondents to look at a medicine label to determine the “maximum number of days you should take this medicine.” The label contains only one reference to number of days and this information is located under the heading “DOSAGE.” The reader must go to this part of the label and locate the phrase “not longer than 7 days.”

In Canada, 22% of adults are at this level.

MEDCO ASPIRIN

500

INDICATIONS: Headaches, muscle pains, rheumatic pains, toothaches, earaches.
RELIEVES COMMON COLD SYMPTOMS.

DOSAGE: ORAL. 1 or 2 tablets every 6 hours, preferably accompanied by food, for not longer than 7 days. Store in a cool, dry place.

CAUTION: Do not use for gastritis or peptic ulcer. Do not use if taking anticoagulant drugs. Do not use for serious liver illness or bronchial asthma. If taken in large doses and for an extended period, may cause harm to kidneys. Before using this medication for chicken pox or influenza in children, consult with a doctor about Reyes Syndrome, a rare but serious illness. During lactation and pregnancy, consult with a doctor before using this product, especially in the last trimester of pregnancy. If symptoms persist, or in case of an accidental overdose, consult a doctor. Keep out of reach of children.

INGREDIENTS: Each tablet contains
500 mg acetylsalicylic acid.
Excipient c.b.p. 1 tablet.
Reg. No. 88246



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Prose Level 2

Score range: 226 to 275

Tasks at this level tend to require the reader to locate one or more pieces of information in the text, but several distractors may be present, or low-level inferences may be required. Tasks at this level also begin to ask readers to integrate two or more pieces of information, or to compare and contrast information.

Like the tasks at Level 1, most of the tasks at Level 2 ask the reader to locate information. However, more varied demands are placed on the reader in terms of the number of responses the question requires, or in terms of the distracting information that may be present. For example, a task based on an article about the impatiens plant asks the reader to determine what happens when the plant is exposed to temperatures of 14°C or lower. A sentence under the section “**General care**” states that “When the plant is exposed to temperatures of 12-14°C, it loses its leaves and won’t bloom anymore.” This task received a difficulty value of 230, just in the Level 2 range. What made this task somewhat harder than those identified at Level 1 is that the previous sentence in the text contains information about the requirements of the impatiens plant in various temperatures. This information could have distracted some readers, making the task slightly more difficult.

In Canada, 26% of adults are at this level.

IMPATIENS

Like many other cultured plants, impatiens plants have a long history behind them. One of the older varieties was sure to be found on grandmother’s windowsill. Nowadays, the hybrids are used in many ways in the house and garden.

Origin: The ancestors of the impatiens, *Impatiens sultani* and *Impatiens holstii*, are probably still to be found in the mountain forests of tropical East Africa and on the islands off the coast, mainly Zanzibar. The cultivated European plant received the name *Impatiens walleriana*.

Appearance: It is a herbaceous bushy plant with a height of 30 to 40 cm. The thick, fleshy stems are branched and very juicy, which means, because of the tropical origin, that the plant is sensitive to cold. The light green or white speckled leaves are pointed, elliptical, and slightly indented on the edges. The smooth leaf surfaces and the stems indicate a great need of water.

Bloom: The flowers, which come in all shades of red, appear plentifully all

year long, except for the darkest months. They grow from “suckers” (in the stem’s “armpit”).

Assortment: Some are compact and low-growing types, about 20 to 25 cm. high, suitable for growing in pots. A variety of hybrids can be grown in pots, window boxes, or flower beds. Older varieties with taller stems add dramatic colour to flower beds.

General care: In summer, a place in the shade without direct sunlight is best; in fall and spring, half-shade is best. When placed in a bright spot during winter, the plant requires temperatures of at least 20°C; in a darker spot, a temperature of 15°C will do. When the plant is exposed to temperatures of 12-14°C, it loses its leaves and won’t bloom anymore. In wet ground, the stems will rot.

Watering: The warmer and lighter the plant’s location, the more water it needs. Always use water without a lot of minerals. It is not known for sure whether or not the plant needs humid air. In any case, do not spray water directly onto the leaves, which causes stains.

Feeding: Feed weekly during the growing period from March to September.

Repotting: If necessary, repot in the spring or in the summer in light soil with humus (prepacked potting soil). It is better to throw the old plants away and start cultivating new ones.

Propagating: Slip or use seeds. Seeds will germinate in ten days.

Diseases: In summer, too much sun makes the plant woody. If the air is too dry, small white flies or aphids may appear.

Quantitative Level 4**Score range: 326 to 375**

With one exception, the tasks at this level require the reader to perform a single arithmetic operation where typically either the quantities or the operation are not easily determined. That is, for most of the tasks at this level, the question or directive does not provide a semantic relation term such as “how many” or “calculate the difference” to help the reader.

Tasks around 350 on the quantitative scale tend to require the application of a single operation where either the quantities or the operation are not easily determined. One such task involves a compound interest table. It directs the reader to “calculate the total amount of money you will have if you invest \$100 at a rate of 6% for 10 years.” This task received a difficulty value of 348, in part because many people treated this as a document rather than a quantitative task and simply looked up the amount of interest that would be earned. They likely forgot to add the interest to their \$100 investment.

In Canada, 16% of adults are at this level.

**Compound Interest
Compounded Annually**

Principal	Period	4%	5%	6%	7%	8%	9%	10%	12%	14%	16%
\$100	1 day	0.011	0.014	0.016	0.019	0.022	0.025	0.027	0.033	0.038	0.044
	1 week	0.077	0.096	0.115	0.134	0.153	0.173	0.192	0.230	0.268	0.307
	6 mos	2.00	2.50	3.00	3.50	4.00	4.50	5.00	6.00	7.00	8.00
	1 year	4.00	5.00	6.00	7.00	8.00	9.00	10.00	12.00	14.00	16.00
	2 years	8.16	10.25	12.36	14.49	16.64	18.81	21.00	25.44	29.96	34.56
	3 years	12.49	15.76	19.10	22.50	25.97	29.50	33.10	40.49	48.15	56.09
	4 years	16.99	21.55	26.25	31.08	36.05	41.16	46.41	57.35	68.90	81.06
	5 years	21.67	27.63	33.82	40.26	46.93	53.86	61.05	76.23	92.54	110.03
	6 years	26.53	34.01	41.85	50.07	58.69	67.71	77.16	97.38	119.50	143.64
	7 years	31.59	40.71	50.36	60.58	71.38	82.80	94.87	121.07	150.23	182.62
	8 years	36.86	47.75	59.38	71.82	85.09	99.26	114.36	147.60	185.26	227.84
	9 years	42.33	55.13	68.95	83.85	99.90	117.19	135.79	177.31	225.19	280.30
	10 years	48.02	62.89	79.08	96.72	115.89	136.74	159.37	210.58	270.72	341.14
	12 years	60.10	79.59	101.22	125.22	151.82	181.27	213.84	289.60	381.79	493.60
	15 years	80.09	107.89	139.66	175.90	217.22	264.25	317.72	447.36	613.79	826.55
	20 years	119.11	165.33	220.71	286.97	366.10	460.44	572.75	864.63	1,274.35	1,846.08

Quantitative Level 5

Score range: 376 to 500

These tasks require readers to perform multiple operations sequentially, and they must disembed the features of the problem from the material provided or rely on background knowledge to determine the quantities or operations needed.

One of the most difficult tasks on the quantitative scale (381) requires readers to look at a table providing nutritional analysis of food and then, using the information given, determine the percentage of calories in a Big Mac® that comes from total fat. To answer this question, readers must first recognize that the information about total fat provided is given in grams. In the question, they are told that a gram of fat has 9 calories. Therefore, they must convert the number of fat grams to calories. Then, they need to calculate this number of calories as a percentage of the total calories given for a Big Mac®. Only one other item on this scale received a higher score.

In Canada, 4% of adults are at this level.

Nutritional Analysis

	Serving Size	Calories	Protein (g)	Carbohydrates (g)	Total Fat (g)	Saturated Fat (g)	Monounsaturated Fat (g)	Polysaturated Fat (g)	Cholesterol (mg)	Sodium (mg)		
Sandwiches												
Hamburger	102 g	255	12	30	9	5	1	3	37	490		
Cheeseburger	116 g	305	15	30	13	7	1	5	50	725		
Quarter Pounder®	166 g	410	23	34	20	11	1	8	85	645		
Quarter Pounder® w/Cheese	194 g	510	28	34	28	16	1	11	115	1110		
McLean Deluxe™	206 g	320	22	35	10	5	1	4	60	670		
McLean Deluxe™ w/Cheese	219 g	370	24	35	14	8	1	5	75	890		
Big Mac®	215 g	500	25	42	26	16	1	9	100	890		
Filet-O-Fish®	141 g	370	14	38	18	8	6	4	50	730		
McChicken®	187 g	415	19	39	19	9	7	4	50	830		
French Fries												
Small French Fries	68 g	220	3	26	12	8	1	2.5	0	110		
Medium French Fries	97 g	320	4	36	17	12	1.5	3.5	0	150		
Large French Fries	122 g	400	6	46	22	15	2	5	0	200		
Salads												
Chef Salad	265 g	170	17	8	9	4	1	4	111	400		
Garden Salad	189 g	50	4	6	2	1	0.4	0.6	65	70		
Chunky Chicken Salad	255 g	150	25	7	4	2	1	1	78	230		
Side Salad	106 g	30	2	4	1	0.5	0.2	0.3	33	35		
Croutons	11 g	50	1	7	2	1.3	0.1	0.5	0	140		
Bacon Bits	3 g	15	1	0	1	0.3	0.2	0.5	1	95		
Soft Drinks												
	Coca-Cola Classic®				diet Coke®				Sprite®			
	Small	Medium	Large	Jumbo	Small	Medium	Large	Jumbo	Small	Medium	Large	Jumbo
Calories	140	190	260	380	1	1	2	3	140	190	260	380
Carbohydrates (g)	38	50	70	101	0.3	0.4	0.5	0.6	36	48	66	96
Sodium (mg)	15	20	25	40	30	40	60	80	15	20	25	40