

LITERACY MATTERS:

A call for action



Bank Financial Group

The writing is on the wall: literacy must be a national priority



Canada's place in the world is increasingly defined by its intellectual rather than political boundaries.

We are well into a new era where innovative societies are not only sustained by a limitless supply of ideas and imagination, but also by the ability to comprehend, compute and convey them.

Literacy facilitates all of these activities, and in turn, fosters a nation's standard of living and quality of life. It is the great enabler.

Studies suggest Canada stands tall in the global community. One international assessment recently placed Canadian students in or near the top quartile for reading, math and science. For the first two categories, we ranked among the top 10 countries.

Yet these standings mask significant problems that demand serious attention. Almost forty percent of Canadian youth do not have adequate literacy levels. Adults fare worse. Close to half have inadequate prose and document literacy skills. More than half fall short in numeracy skills. Discrepancies exist across regions, gender and socio-economic class. Great divides have also emerged between rural and urban as well as Canadian-born and immigrant populations.

This is unacceptable given the evolving structure of the global economy. At risk are billions of dollars in lost productivity, investment and economic opportunity.

There are even greater costs, though difficult to measure. After all, what price does Canada pay when parents cannot read bedtime stories to their children, or when citizens are unable to cast a ballot? What price does our nation pay for new Canadians who feel isolated, or students who are disengaged?

Astute observers, such as Craig Alexander, TD's Deputy Chief Economist and author of this report, make the point that improved literacy rates extend well beyond economic gain. They can help fulfill more lives and strengthen communities. Indeed, as the author notes it is hard to identify any other single issue that can have such a large payoff to individuals, the economy and society.

That is why our literacy challenge must be viewed as a national priority. This begins with a more coordinated and complementary approach among all levels of government, which currently operates in a state of policy entanglement and overlap. It also demands a more active role by the private sector, which should view literacy as an integral facet of the productivity agenda.

Ultimately, it will require a chorus of voices to elevate the issue, and initiate meaningful improvements. The following pages were written with this in mind, making the case that literacy is a prerequisite to prosperity. We encourage you to read this report and share it with others. It is critical that everyone understands the writing is on the wall: improving literacy outcomes must be a national priority.

Frank McKenna
Deputy Chairman,
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LITERACY MATTERS

Of all the issues that Canadians are concerned about – the environment, health care and the war against terrorism – literacy is never identified as a pressing problem. This is not surprising, since it is hard to imagine how Canada can have a literacy challenge when it has a caring, inclusive society, a modern industrialized economy and a well developed primary, secondary and post-secondary education system. So it is a quite shocking fact that many Canadians lack the necessary literacy skills to succeed in today's economy: a situation that is eroding their standard of living. Surveys show that almost four in 10 youths aged 15 have insufficient reading skills; while more than two in 10 university graduates, almost five in 10 Canadian adults and six in 10 immigrants have inadequate literacy. [Cht1]

This depressing situation carries a significant economic and social cost that can be tied to many pressing problems facing Canada today. For example, poor youth literacy is related to high school drop out rates, long-term unemployment and higher crime rates. Weak adult literacy contributes to poverty and to Canada's dismal productivity performance. Poor literacy in English and French amongst immigrants severely hampers the ability of many new arrivals to integrate into the Canadian economy and society at a time when an aging population means their skills

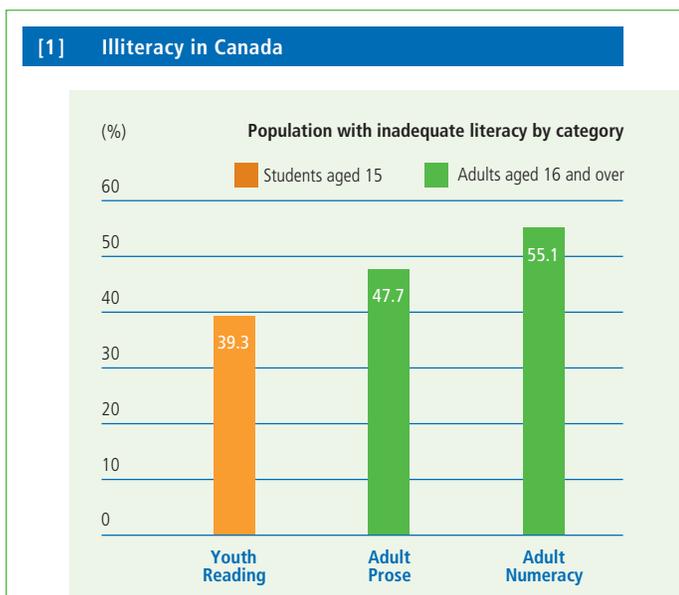
are needed more than ever. There is also a notable regional dimension to literacy levels that contributes to the economic disparity that has plagued the country almost since Confederation.

As a long-standing advocate of literacy, TD Bank Financial Group has prepared this report to raise greater awareness of the state of literacy in Canada. The subject is too broad and too complex to be addressed completely in one general paper, but the intent is to shine a spotlight on it and provoke discussion. It is also hoped that this will be the first in a series of studies, with future instalments focusing on specific issues or dimensions.

The report has four major sections. First, we investigate exactly what is meant by the term 'literacy'. Second, we outline how Canada has been doing. Third, the economic and social cost of illiteracy is discussed. Finally, the role of public policy and private sector initiatives to improve literacy is outlined.

The central conclusion is that Canadians should be worried about the state of literacy. They should be taking a stand, since policy makers generally do not lead – they follow public opinion. This is evident from the recent response by governments to public demands for action on the environment.

In terms of policy, Canada would benefit from higher literacy levels amongst all individuals – whether they are young or old, men or women, native born or new arrivals, and regardless of their place of residence. However, on a purely cost-benefit basis, a clear case can be made for giving priority to youth literacy programs, with the emphasis on programs aimed at those from disadvantaged, immigrant or aboriginal backgrounds. Youth literacy should also be a particular priority in the provinces that have demonstrated below average literacy results. This is not to say that other literacy programs are unimportant, it is simply a reflection that younger individuals have a longer time horizon to reap the rewards of improved literacy. The issue is also not black and white, as an unemotional cost-benefit analysis must be balanced against more qualitative social gains. For example, what price does one put on the ability of a parent to read to their child? A case can also be made that efforts to improve adult literacy can play a significant role in achieving heightened youth literacy.



Source: Statistics Canada, Learning Metrix Inc.

WHAT IS LITERACY?



The traditional view is that literacy is the ability to read or write. However, this narrow description leads to a misinterpretation that this is a binary outcome... literacy is actually far broader in nature.

WHAT IS LITERACY?

Before delving into the meat of the issue, we need to define the subject. There is a lot of confusion about exactly what literacy means. The traditional view is that literacy is the ability to read or write. However, this narrow description leads to a misperception that there is a binary outcome – i.e. an individual is either literate or illiterate.

In recent years there has been greater awareness that literacy is actually far broader in nature. An international experts' meeting of the United Nations Educational, Scientific and Cultural Organization (UNESCO) in 2003, defined literacy as "the ability to identify, understand, interpret, create, communicate and compute, using printed and written materials associated with varying contexts. Literacy involves a continuum of learning to enable an individual to achieve his or her goals, to develop his or her knowledge and potential, and to participate fully in the wider society."¹

There are several important points to note in the UNESCO definition. Literacy is more than simply reading and writing, as there is a heavy weight on comprehension. The reference to the ability to 'compute' also suggests that there is a numerical or mathematical aspect. The definition recognizes that there is an array of performance related

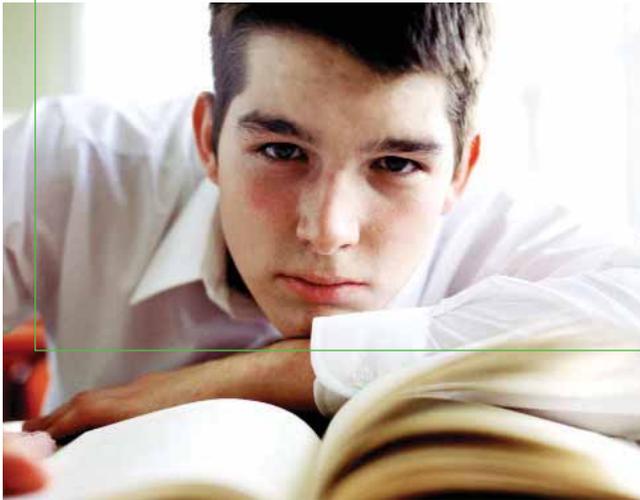
to a 'continuum' of learning. There is a notion that literacy is inherently part of education and personal development. Finally, there is acknowledgement that literacy allows individuals to be more involved in society.

Measuring literacy

In discussing literacy proficiency, we will adopt four categories: poor, weak, adequate and strong. These correspond to the levels used in the benchmark International Adult Literacy and Skills Survey (IALSS). Individuals with a poor performance (Level 1) have difficulty reading, locating and interpreting information or performing arithmetic calculations. Weak literacy (Level 2) implies that the individuals do not read or perform math calculations well. Adequate literacy (Level 3) corresponds to sufficiently solid skills for coping with a modern knowledge-based economy. Level 3 is often referred to as the 'desired' proficiency. It is used in the international survey as the benchmark for developed countries, because it is usually associated with better labour market outcomes, higher income, greater independence, community involvement and continued education. Strong literacy (Levels 4/5) represents advanced reading, writing and arithmetic skills.

¹ Nordtveit, Harald. 2005. "Family Literacy", UNESCO. Page 4.

THE STATE OF LITERACY IN CANADA



But before we get too comfortable... we need to look at the details. They reveal a number of problem areas.

THE STATE OF LITERACY IN CANADA

So how is Canada doing? The answer is that Canada generally has a very literate population, but there are critical areas of weakness.

part one: YOUTH LITERACY

Almost four in-10 Canadian youths lack adequate literacy skills

The natural place to start is the status of youth literacy. Canada was one of 32 participant countries in the 2000 Program for International Student Assessment (PISA), which measured the performance of 15-year old students in reading, math and science. This was followed by a 2003 PISA of 41 countries.

Canada fared remarkably well in both the 2000 and the 2003 PISA findings. In 2003, Canada scored 3rd in reading, 7th in mathematics, 11th in science and 9th in problem solving – implying that Canada was near the top of the international ranking in all areas. [Cht2] Canada also did particularly well in terms of having a low inequality score, meaning that the share of students with poor scores relative to high scores was less than in many other countries, which is a very desirable outcome. [Cht3]

[2] Youth reading proficiency

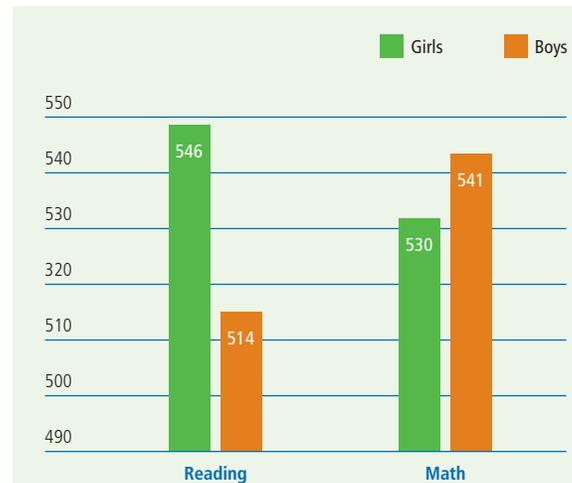


Note: This is subset from a survey of 41 countries
Average Score

Source: Statistics Canada: PISA 2003

[3] Reading inequality

Source: Statistics Canada

[4] Reading scores by gender

Source: Statistics Canada, PISA 2003

Significant regional differences in literacy performance

The 2003 PISA results also revealed significant regional disparities, with the west generally outperforming and the east generally underperforming. In the three key areas (reading, math and science), Alberta was statistically well above the national average; British Columbia, Ontario, Quebec, and Manitoba were close to average; Saskatchewan, Nova Scotia, New Brunswick and Prince Edward Island were below average. Newfoundland and Labrador was average in reading and science, but below average in mathematics. The provinces with the lowest scores in each of the areas also had the greatest share of students with a poor assessment, and generally had the highest levels of literacy inequality.

Boys at a disadvantage in reading

There were gender differences in both the 2000 and 2003 surveys. In reading, girls performed significantly better than boys in all provinces. Boys generally scored better than girls in mathematics, but the extent of the difference is less than in the case of reading. [Cht4]

But before we get too comfortable with these truly commendable results, we need to look at the details. They reveal a number of problem areas. The 2000 PISA notes that "it is fair to say that Canada's achievement ranking relative to other countries has been improving over time. Canada has risen from a mid-ranked country to one of the top ranked countries...This does not tell us how much achievement has actually improved, however, or indeed if it has improved at all. It simply indicates that Canada has advanced in relation to other countries."²

To assess Canada's actual absolute performance, it is useful to take the PISA results and make them correspond to the four-level ranking used in the IALSS and our categories of poor, weak, adequate and strong. A recent paper by Learning Metrix Inc. made this reconciliation and the results were not encouraging. 39.3 per cent of Canadian youths age 15 had literacy scores on an IALSS basis below the adequate level.

² OECD PISA, "Measuring up: The Performance of Canada's Youth in Reading, Mathematics and Science", Statistics Canada, pg. 15

French-language schools outside Quebec underperformed

In both the PISA 2000 and 2003, students from French-language schools in Nova Scotia, New Brunswick, Ontario and Manitoba posted lower scores in reading and science than students from English-language schools in the same province. There was no difference in Quebec. In terms of mathematics, the only significant difference was in Ontario, where French-language schools underperformed.

Lower socio-economic background adversely affects literacy

There was good news that Canada had less variation in reading and mathematics results between students from high and low socio-economic backgrounds – implying less inequality between children from rich and poor families. However in absolute terms, lower socio-economic family conditions did reduce literacy performance. The same was true for the performance of students who attended low average family socio-economic status (SES) schools, as they tended to perform at a lower reading level than high average SES schools. This suggests that students are affected by both their family's socio-economic status and that of their peers. [Cht5]

It is worth noting that students without jobs during the school year had significantly higher average reading performances, but this was not true of math or science achievement. And, as hours worked increased, perform-

ance in all three areas declined. Increasing work hours also raised the odds of high school drop out. For some students, these findings can be related back to their socio-economic situation – but the issue is not black and white, since some youths choose to work even if they come from wealthier families.

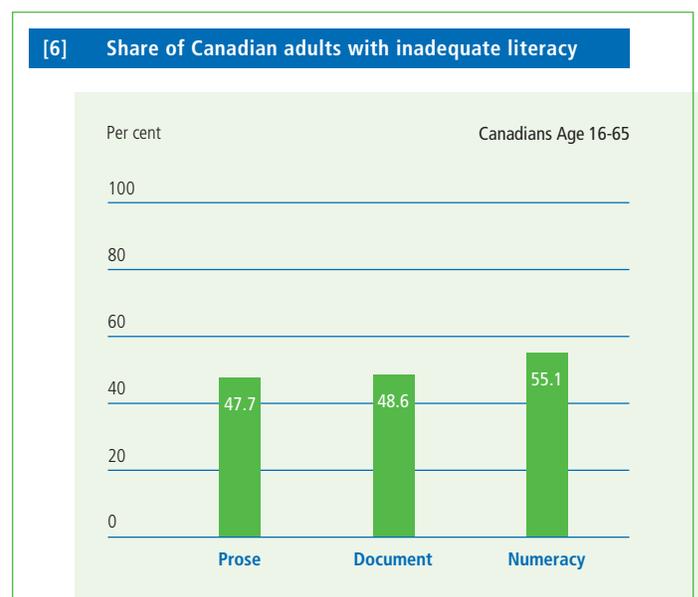
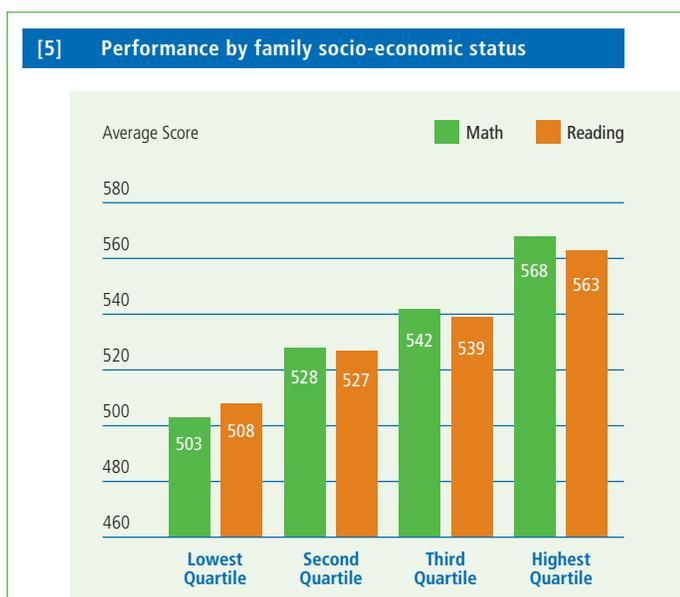
Conclusions about youth literacy

To summarize, Canadian youths rank very well in international terms, but far too many still have inadequate literacy skills. Particular areas of underperformance are: selected eastern provinces, boys in terms of reading, girls in terms of mathematics, and some French language schools. Youths from disadvantaged backgrounds or attending schools with lower than average socio-economic status also appear to be vulnerable.

part two: ADULT LITERACY

48% of Canadian adults have inadequate literacy

Turning to adult literacy, the core data are found in the International Adult Literacy and Skills Survey (IALSS). The 2003 results suggest that Canada is in the middle of the pack in terms of international rankings of advanced nations, but the details are troubling once again. Nationally, 48 per cent of Canadians aged 16 and over –



close to 12 million people – have inadequate prose and document literacy skills, while 55 per cent lacked the desired level of numeracy. The share with only rudimentary literacy was significant, with 20 per cent of Canadians having poor (level 1) prose literacy, 22 per cent having poor document literacy, and 26 per cent having poor numeracy. [Cht 6, Cht 7]

These results are shocking, but even more worrying is the fact that despite increasing demand for more highly skilled workers, there was no statistically significant improvement in the national outcomes in 2003 from a prior survey done in 1994. And, literacy results from earlier surveys suggest virtually no improvement since the mid 1970s for either men or women. [Cht 8]

Regional differences evident again

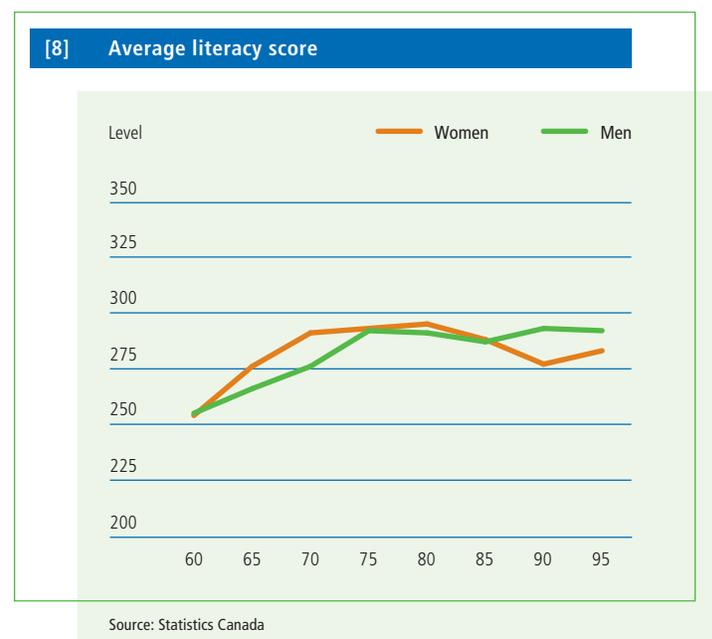
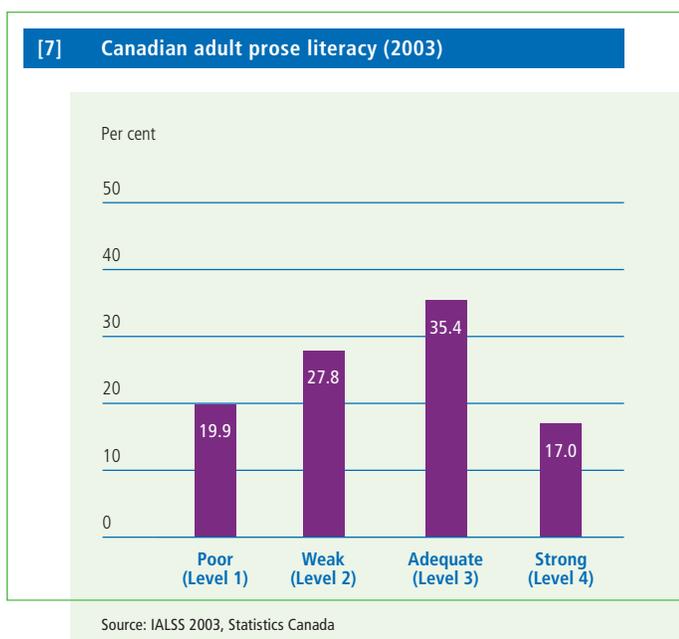
As with the youth findings, there was a significant regional dimension to adult performance, with the west above and the east below the national average. Alberta, British Columbia and Saskatchewan did better in all three literacy areas (prose, document and numeracy) than the Canadian average. Ontario, Manitoba, Nova Scotia, Prince Edward Island were close to the average. Quebec was average in numeracy, but below average in prose and document literacy. New Brunswick, and Newfoundland and Labrador were well below average in all three areas. Although the national statistics did not improve between 1994 and 2003, there were some gains at the regional level outside

Ontario and Alberta. In particular Quebec did better on prose literacy and Atlantic Canada did better on document literacy. Nevertheless, for a country that prides itself on equality, the substantial regional variation is unsettling. [Cht9]

Older Canadians have weaker literacy

In terms of demographics, there is evidence that literacy diminishes with age. The majority of seniors have relatively low literacy. For example, only 18 per cent over the age of 65 had the desired level of prose literacy, while only 15 per cent had adequate document literacy and 12 per cent had adequate numeracy. Even worse, more than half of all seniors have poor (level 1) prose literacy and almost two-thirds have poor numeracy. This likely has a material impact on their standard of living. For example, it makes them more reliant on family or helpers. It may restrict their ability to participate in their communities. It could even pose health risks if they are unable to read prescriptions or follow written instructions.

To be fair, there is a generational dimension, as literacy is tied to education attainment, and older Canadians did not receive as much schooling as younger Canadians. Younger adult participants in the IALSS did fare better, but even limiting the perspective to individuals aged 16 to 25, the results are that more than one-third still had poor or weak prose and document literacy and slightly less than half had the desired numeric skills.



Education boosts literacy

Higher literacy was found to be linked to educational success and there is evidence that greater education tempers the deterioration of literacy over a person’s lifetime. Both of these observations highlight the importance of investing in literacy at a young age. However, one surprising statistic is that 22 per cent of university graduates do not achieve adequate scores in prose literacy. There is an age and immigration effect within these results. Between 11 to 14 per cent of Canadian-born university graduates aged 26 to 55 have inadequate prose literacy. This highlights the weak literacy in Canada’s two official languages of older university graduates and immigrant university graduates. It also poses the question whether it is acceptable that roughly one tenth of Canadian-born university graduates do not have adequate prose literacy. [Cht10]

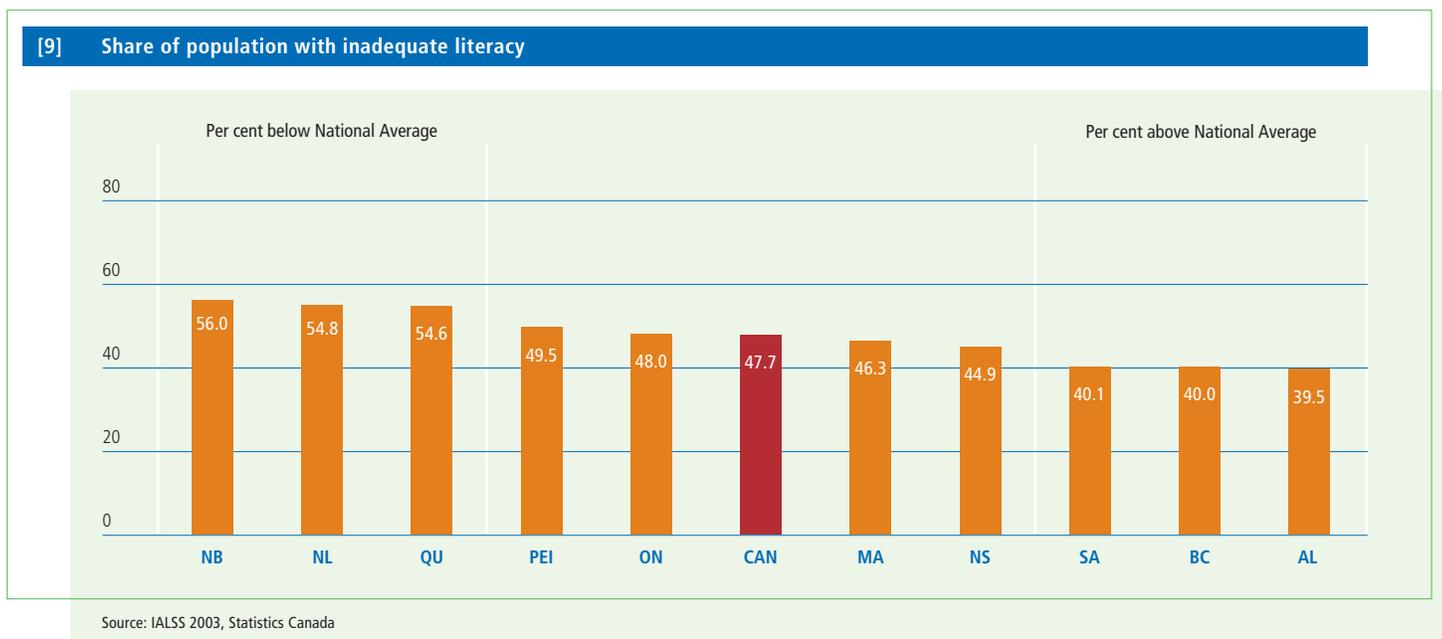
Gender not an issue

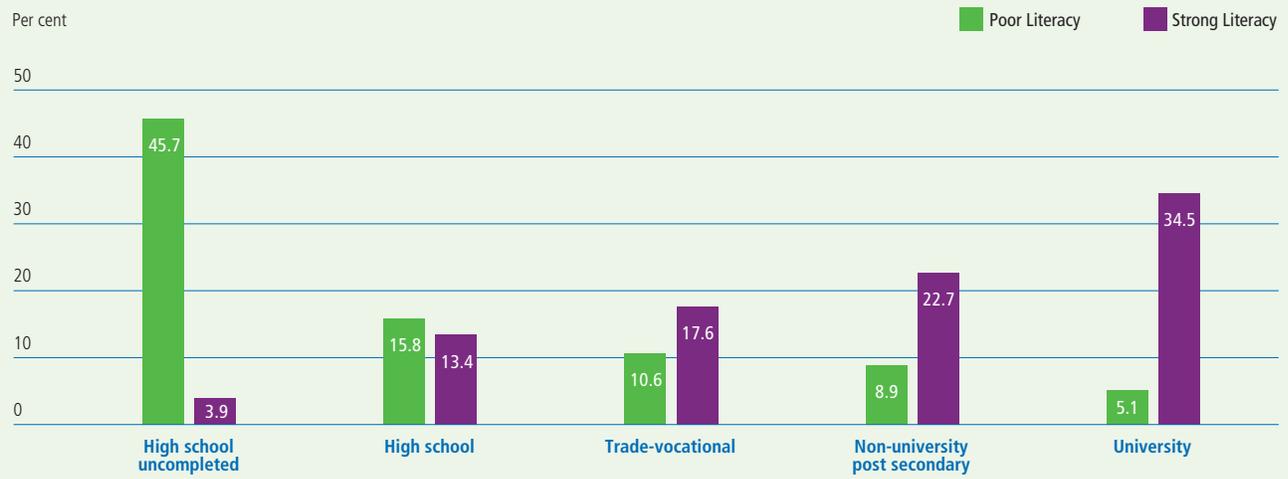
The gender results for adults had some similarities and differences compared to the outcomes for youths. Women had an advantage in prose literacy, which parallels the youth finding of better reading scores – but the difference for adults was slight and it was not statistically significant. Meanwhile, adult males tended to have higher document and numeric performance, with the latter result matching the finding that boys are better at mathematics.

Francophones and Aboriginals underperformed

The IALSS also examined the performance of linguistic minorities. Participants could choose to conduct the survey in English or French based on their preference. In each of the four provinces where a significant proportion of the population speaks both official languages (New Brunswick, Quebec, Ontario and Manitoba), the proportion of Francophone (individuals with a mother tongue of French) that failed to achieve adequate prose literacy is significantly higher than the proportion of Anglophones. Outside Quebec, almost two-thirds of francophone took the test in English. Francophones electing to be judged in English had higher prose literacy than those tested in French. Fifty per cent of francophone living outside Quebec who took the test in English scored below an adequate literacy outcome, compared with 62 per cent that took the test in French. In Quebec, the weaker performance by francophones was deemed to be partly a reflection of lower educational attainment. However, education levels did not fully explain the weaker literacy results for francophone outside Quebec.

The IALSS also surveyed aboriginal people living in urban Manitoba and Saskatchewan and selected communities in the territories. The aboriginal participants scored lower than the national average in terms of prose literacy. In Manitoba and Saskatchewan, six in 10 did not achieve adequate literacy scores, and the results were even worse in the Northwest Territories and in Nunavut. The Yukon



[10] Prose literacy by education attainment

Source: Statistics Canada

fared better with five in 10 having poor or weak literacy. The disappointing performance partly reflects lower levels of formal education and use of a mother tongue that is neither English nor French for some of the participants (i.e. Inuktitut in Nunavut).

Immigrants face significant literacy challenges

In order to assess the performance of immigrants, the IALSS identified three groups: Canadian-born (non-immigrants), recent immigrants (those living in Canada for less than 10 years), and established immigrants (living in Canada for more than 10 years).

Immigrants aged 16 to 65 performed significantly below the national average. Sixty per cent of recent and established immigrants had poor or weak prose literacy, compared to 37 per cent of Canadian-born respondents. Strangely, duration of residence had no impact on average performance of immigrants. This odd result may be partly a statistical aberration, but it still adds to the strong evidence that Canada is not integrating new arrivals into the economy and society as well as it needs to. [Cht 11]

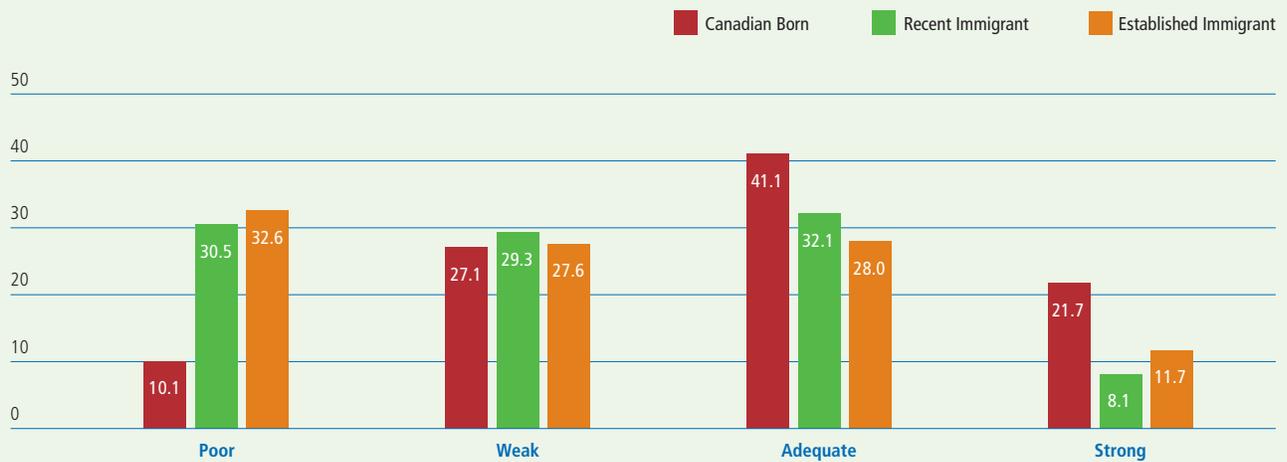
In terms of gender, 34 per cent of recent female immigrants had poor (level 1) prose literacy, while 28 per cent of recent male immigrants are at that level – this compares with 9 per cent for Canadian-born females and 12 per cent for Canadian-born males.

Immigrants with a mother tongue which is neither English nor French had lower literacy scores. So, the individuals may be quite literate in their native language, but they face challenges in Canada's two official languages. Nevertheless, this does not diminish the finding of inadequate literacy, since it is likely that English and French proficiency matters most for economic and financial success in Canada. Although some may be able to live comfortable lives in selected communities, there is no disputing that poor English and/or French would limit available opportunities.

The demographic trends are the same for immigrants as for other Canadians, with younger individuals having stronger literacy. Education also had an impact. Only 2 per cent of Canadian-born university-educated individuals had poor (level 1) ability in prose literacy, compared to 14 per cent for established immigrants and 18 per cent for recent immigrants. Again, the results are likely largely due to many immigrants being tested in a language other than their native tongue.

The performance of immigrants is a major problem, since the Canadian economy desperately needs the skills that new arrivals bring. And, with more immigration coming from non-English/French mother tongue countries, the challenges may worsen in the years ahead. One in three immigrants in 1980 came from English/French speaking nations, but this fell to one in 10 in 2003, and the ratio is

[11] Prose literacy: native born & immigrant



Source: Statistics Canada

likely to continue to fall. Moreover, the fact that duration of residency has had no impact on literacy performance suggests that Canada is doing a poor job of integrating immigrants into society. It also raises a question about societal and economic exclusion. [Cht 12]

The rural-urban perspective

Past surveys have shown weaker literacy in rural areas. The 1997 IALS reported that 24 per cent of the rural population had poor (level 1) prose literacy compared with 21 per cent in metropolitan areas. Conversely, only 17 per cent of rural survey participants had strong prose literacy compared with 21 per cent in cities. An urban-rural difference was also revealed in the 2000 PISA, which found urban school students aged 15 performed significantly better in reading. Most importantly, socio-economic considerations (including the parent’s education and income) did not explain the difference. The generally weaker rural literacy skills have been interpreted by researchers as being the product of an older average age in the rural population that also tends to have fewer years of education and often lower income.

So, it comes as a surprise that the 2003 IALSS revealed little difference in urban and rural literacy performance. The latest adult survey found that 48.5 per cent of rural respondents had inadequate prose literacy, only marginally above the 47.5 per cent of urban participants.

In our opinion, the narrowing of the urban-rural skills in the 2003 IALSS likely reflects the growing immigrant populations in urban centres. In the 1990s, 73 per cent of all new arrivals to Canada located in three major cities – Toronto, Vancouver and Montreal. Only six per cent of immigrants chose to live in rural areas. As discussed above, immigrant literacy scores tend to be weak in both of Canada’s official languages. If the immigrant effect was eliminated, it is likely that weaker rural literacy would once again become apparent.

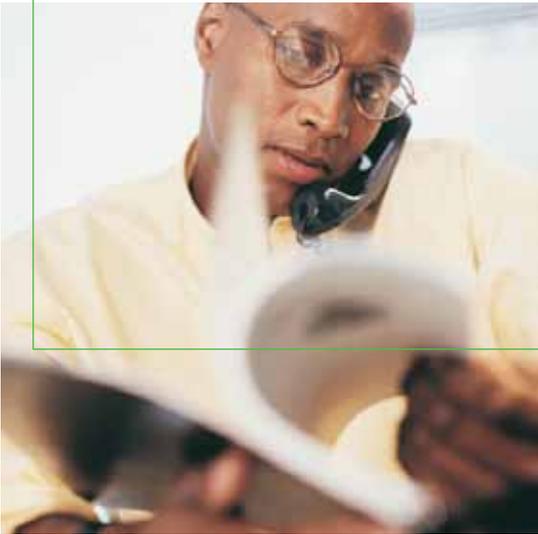
[12] Canadian Immigration in 2001-2002

Per cent of total by destination

GTA	46.9
Vancouver	13.5
Montreal	12.9
Calgary-Edmonton	5.2
Ottawa-Gatineau	3.8
Winnipeg	2.6
Halifax	0.6
Regina	0.4
Other	14.4

Source: Statistics Canada, TD Economics

BENEFITS OF HIGHER LITERACY



It is hard to identify any other single issue that can have such a large payoff to individuals, the economy and society than literacy.

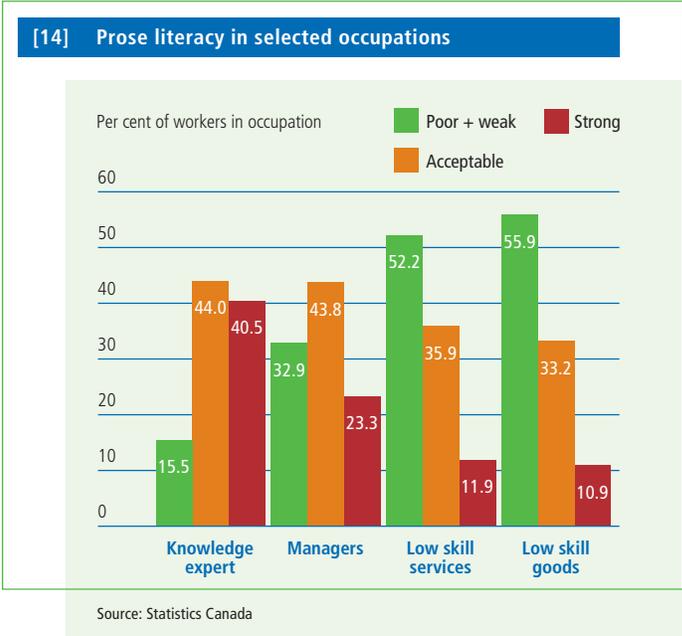
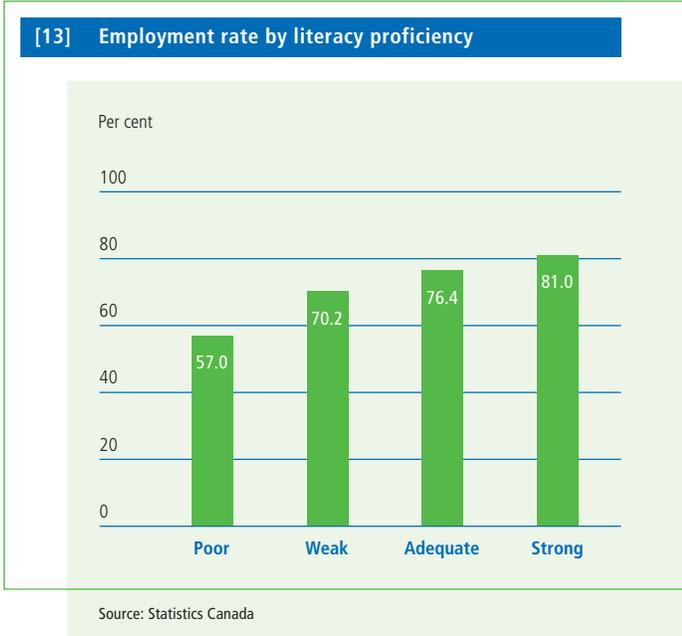
BENEFITS OF HIGHER LITERACY

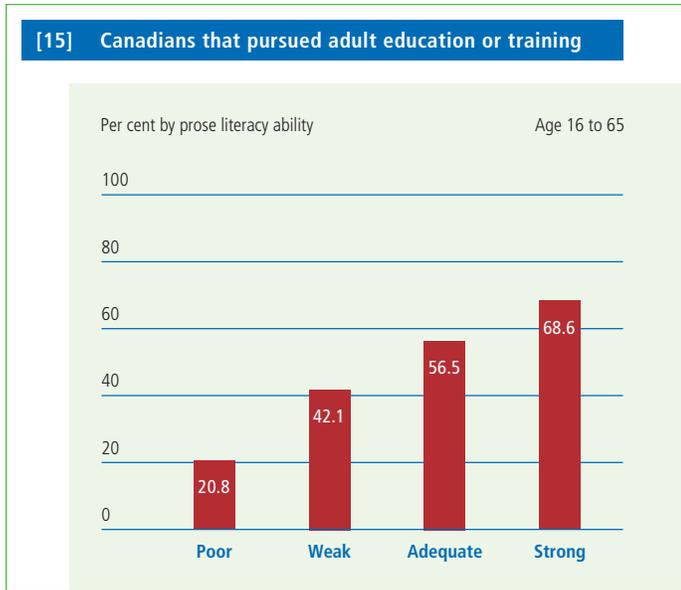
The clear implication of the survey data is that many Canadians have inadequate literacy skills. Our view is that this poses a material cost to the individuals, to businesses, to the economy and to society. Let's first highlight why literacy is critical to individual Canadians and households.

Literacy as the key to unlock individual potential

Literacy is a core ability to function in today's economy and society. For example, individuals with higher literacy scores are more likely to complete high school and pursue post-secondary education. They are also more likely to succeed at college or university.

After finishing their formal education, individuals with higher literacy skills are more likely to enter the labour market and to find gainful employment [Cht 13]. Moreover, individuals with greater literacy skills tend to obtain full-time positions and have greater odds of being employed as managers or as subject matter experts. [Cht 14] Conversely, they are less likely to work in low-skill or low-tech goods-producing jobs.

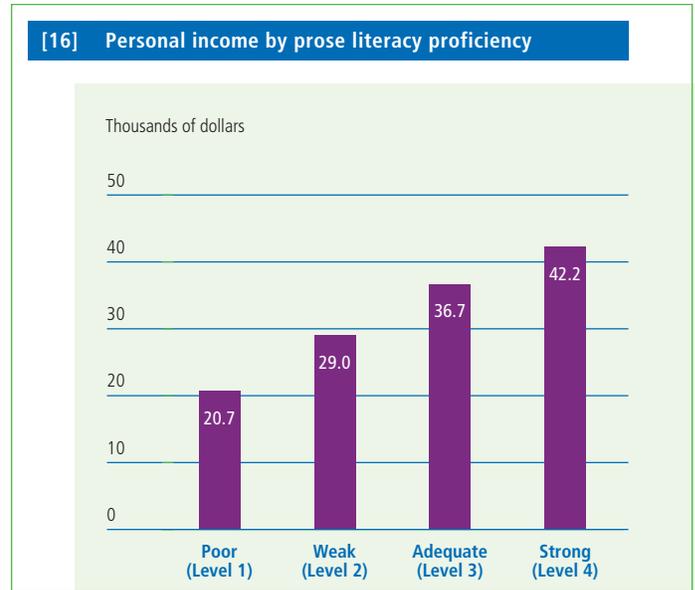




Source: Statistics Canada

For individuals who suffer a period of unemployment, the duration is usually shorter for those who are more accomplished in reading, writing and numeracy. Canadians with greater literacy proficiency are more likely to pursue further education after leaving school, both in terms of employer-sponsored training and self-funded studies. [Cht 15] In other words, literacy affects the ability and the willingness of individuals to pursue life-long learning, which is increasingly important in a fast-moving and ever changing economy that offers workers less job security.

As a result of better employment opportunities, there is a strong relationship between literacy and personal income. To illustrate, the average income level of individuals with strong literacy skills in 2003 was \$42,239 – more than double the \$20,692 of those with poor literacy and significantly greater than the \$29,001 of individuals with weak literacy. [Cht 16] These results are also supported by studies that have linked literacy to education, and education to wages. For example, economists David Green and Craig Riddell found that, “each additional year of education raises annual earnings by approximately 8.3 per cent and, of that, approximately 3.1 percentage points result from the combined influences of education on literacy and, in turn, literacy on earnings.”³



Source: Statistics Canada

Businesses and economy benefit from a more literate workforce

Businesses and the economy also benefit from a more literate workforce. In 1997, the Conference Board of Canada conducted a survey asking companies to identify the benefits they had observed from enhancing their employees’ literacy skills. The results provide a good synopsis of the advantages. Almost one-third of respondents reported an increased ability to do on-the-job training. Roughly one quarter noted better team performance, improved labour relations and increased quality of work. One-in-five noted reduced time per task, increased output and a lower error rate. Other advantages were better health and safety records, reduced wastage, better employee and customer retention, and increased profitability.

From a broader economic perspective, all of the firm-specific observations can be rolled up into greater productivity and flexibility. This is crucial if Canada is to improve its recent dismal productivity performance. Since 1973, Canada has had the third lowest growth rate in productivity, as measured by output per hour worked, of the 23 industrialized nations in the OECD. As a result, Canada has dropped from the third highest level of productivity to 16th in 2006. Moreover, this weakness intensified in the early part of this decade. From an annual trend rate of 2 per cent productivity growth in the 1990s, the business sector has only been able to eke out an average annual increase of 1% between 2002 and 2006. [Cht17]

³ Green, David A. and W. Craig Riddell. 2001. “Literacy, Numeracy and Labour Market Outcomes in Canada” Statistics Canada. Page 37.

1% increase in literacy boosts productivity 2.5% and output 1.5%

Clearly, Canada needs to turn this situation around. A key part of the solution is the development of a more skilled workforce, which is tied to both education and literacy – and each of these reinforces the other. Moreover, boosting productivity will lift the standard of living of all Canadians. A Statistics Canada study found that a 1 per cent increase in literacy relative to other countries produces a 2.5 per cent increase in the level of labour productivity and a 1.5 per cent increase in output per capita compared to the other nations⁴.

These outcomes are almost three times the returns from investment in machinery and equipment and other physical capital. The authors of the study stressed, however, that the findings did not necessarily imply that investment in literacy was superior on a cost-benefit basis, since the expenditure to raise literacy levels by 1 per cent could be much higher than boosting physical capital by a similar amount. Nevertheless, this does not diminish the conclusion that higher literacy could provide significant, and even dramatic, economic gains.

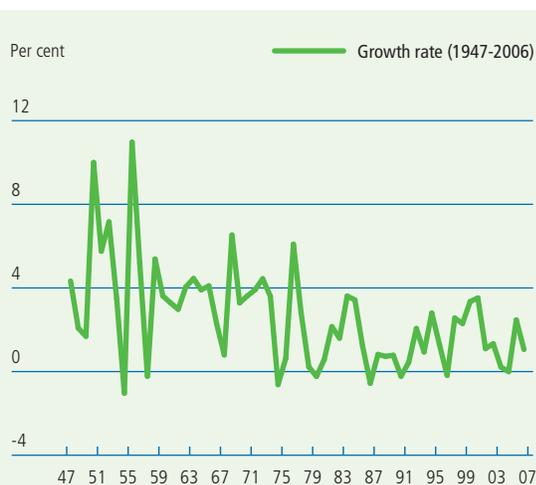
Globalization will continue to raise demand for literacy skills

It is also evident that the structural changes unfolding in the economy will only increase the need for a more literate workforce in the future. The dominant theme in recent

decades has been a steady shift towards a more services-based and more knowledge-based economy. Services in the economy have climbed to a dominant 70 per cent of GDP, with business services accounting for more than 50 per cent of all economic output. [Cht18] Within services, the strongest growth is coming from employers that require high skills – such as information and communication technologies, health care, public administration, etc. For example, the growth rate of high skilled occupations was double that of low skilled occupations over the 1980s and 1990s. Moreover, fierce competition emanating from globalization is pushing Canadian firms to alter their output towards higher value-added goods and services. As an illustration, the share of goods-producing industries represented by the primary sector (i.e. agriculture, forestry, fishing and hunting) has fallen by 20 per cent since 1981. Similarly, industries that produce more sophisticated products have increased as a share of manufacturing, while low value-added industries have contracted in both relative and absolute terms. [Cht19]

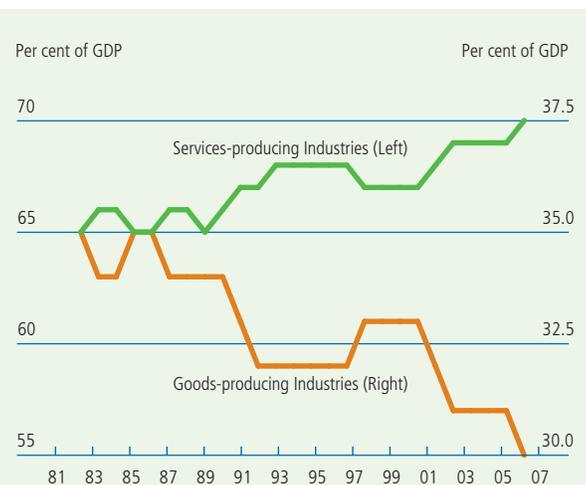
This structural change is far from over. It will continue to dislocate workers at firms that discover they can no longer compete and it will lead to greater demand for a more skilled workforce over time. Higher literacy rates are needed to facilitate these changes and reduce the economic and social costs borne by both workers and businesses in responding to the new environment.

[17] Business sector productivity



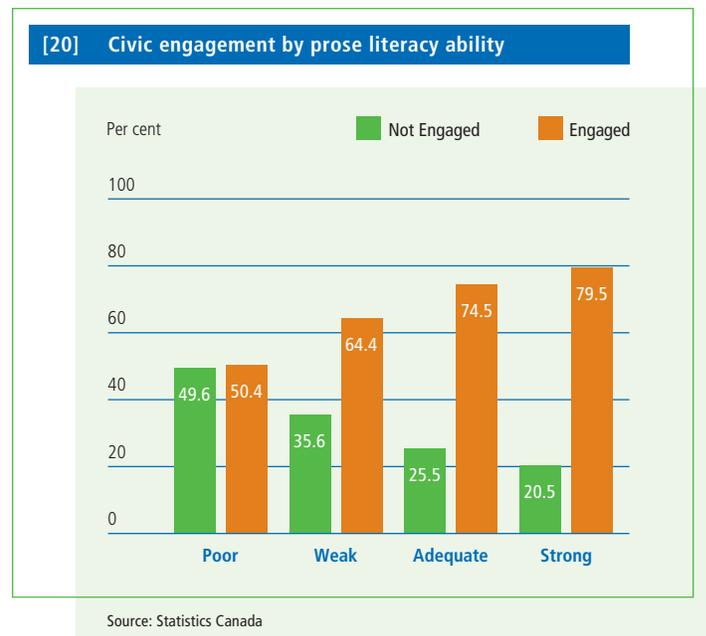
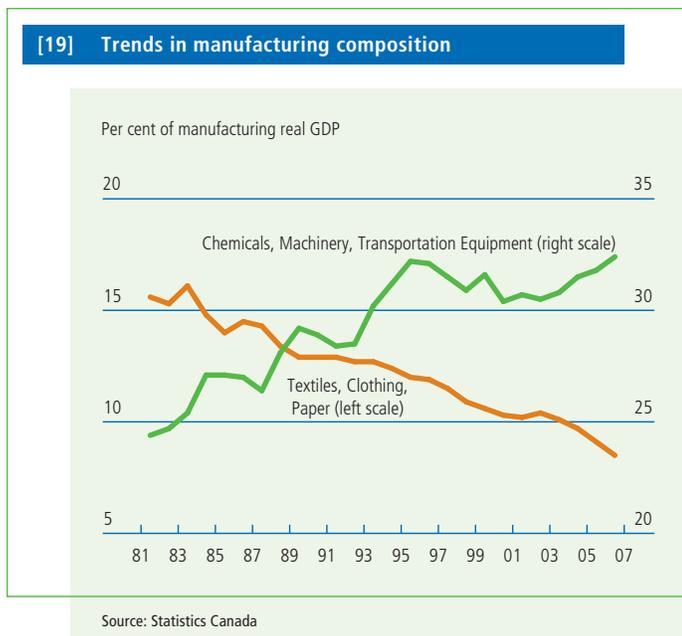
Source: Centre for the Study of Living Standards

[18] Structural change in the economy



Source: Statistics Canada

⁴ Coulombe, Serge and Jean-Francois Tremblay and Sylvie Marchand. 2004. "International Adult Literacy Survey: Literacy scores, human capital, and growth across fourteen OECD countries" Statistics Canada. Page 31.



Social benefits tied to literacy

Literacy also has a significant social dimension, but this is relatively difficult to quantify. The 2003 IALSS took a stab at surveying this area by asking questions about volunteering and participation in community organizations or activities. The results showed that half of all individuals with poor prose literacy were not engaged in their community compared with one fifth of individuals with strong prose literacy. [Cht20] This finding implies that literacy is tied to the building of strong communities and social institutions. It is also likely related to the conduct of a well functioning democracy, since individuals with higher literacy are more likely to understand the issues and participate in discussion and debate over the appropriate course of public policy. Conversely, poor literacy can lead to the risk of exclusion for some individuals and some social groups. A good example of this is youth crime rates that can be directly tied to poor economic and societal outcomes.

Higher literacy scores also tend to be correlated to better health, which may reflect the fact that knowledge of health issues is often conveyed through printed materials. Better health invariably leads to a superior quality of life. Given the aging of the Canadian population, a case could be made that literacy might help to take some of the pressure off the health care system in the future – although the effect is likely to prove modest.

Illiteracy is costing Canada billions of dollars and thousands of jobs

We’ve talked about the benefits, but what about the costs associated with illiteracy? A firm number is virtually impossible to determine, but results from the 2003 IALSS, such as average unemployment rates by literacy level, can provide some numbers for illustrative purposes. If we assume all else is constant and raise the performance of those with inadequate literacy by one level – with all individuals with poor (level 1) literacy being raised to weak (level 2) literacy and all with weak literacy to adequate literacy – the outcome would lift employment by as much as 800,000 positions, which is equivalent to roughly 3.5 years’ worth of average job creation. It could also lower the national unemployment rate by more than 1 percentage point.

Based on the analysis that a 1% increase in national literacy scores lifts output per worker 2.5%, the implication is that every 1% improvement in literacy would boost national income by \$32 billion. The IALSS results suggest that raising the level of literacy for those with weak scores (level 2) to adequate scores would be equivalent to a close to 2.5% increase in national literacy, an economic payoff of close to \$80 billion dollars.

Moreover, since the literacy weakness is not spread evenly across the country, the biggest gains in employment and income, and the largest decline in unemployment, would likely come in the east where literacy performance is the weakest.

It is also important to note that the impact of the job creation and higher income would not be inflationary if it occurred over a significant length of time, since it would coincide with an increase in labour productivity. This would help to stem the deterioration in Canada's international productivity performance and fundamentally boost the standard of living in Canada and the quality of life for many Canadians.

To be fair, these outcomes are extreme and the reality is that everything else is not constant. Some workers with improved literacy would not be able to fully realize all of the possible benefits, since there are some jobs that only require rudimentary literacy skills. There would also likely be a diminishing payoff as more and more individuals reached the desired literacy level. In other words, a lower premium would be paid for having the better skill set. Nevertheless, the numbers above illustrate that improving literacy could create thousands of jobs and dramatically boost national income.

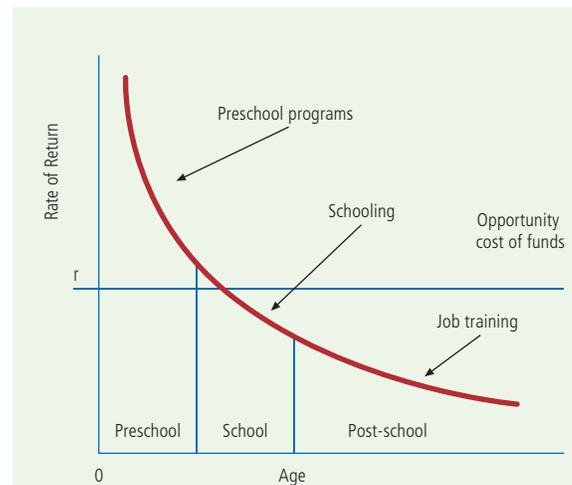
This message has been stressed in a number of analytical papers, although the absolute results must always be taken with a grain of salt since any assessment of the economic costs will be imprecise. For example, the Canadian Business Task Force on Literacy estimated that low literacy in 1988 was costing businesses \$4 billion dollars in lost productivity. Given that literacy has failed to improve materially since then, if this estimate was correct at that time, the cost today when adjusted for past inflation would be around \$6 billion annually.

A key question is what the cost of raising literacy might be. It could take years and billions of dollars. Regrettably, this is an area that requires more study. There is plenty of academic work on the benefits of literacy, but minimal consideration of the outlays that would be needed to change the landscape.

Governments should make literacy initiatives a priority

So, what should governments do to improve literacy? The natural response is to focus on the areas of weakness highlighted in the benchmark surveys. Programs to enhance both youth and adult literacy would provide significant benefits, with an emphasis on immigrants, aboriginals, French-language schools and rural communities. The implication is that a broad-based strategy would reap benefits. While this might be possible in a world of unlimited government revenues, the reality of fiscal constraints means that policy makers will have to set some priorities.

[21] Rates of return to human capital investment



On a cost-benefit basis, the clear recommendation is to put the greatest weight behind youth literacy. The reason is that benefits accrue over a longer time span than for adults. Moreover, literacy appears to be a virtuous circle in skill development. Higher literacy promotes greater education that, in turn, lifts literacy and helps to develop skills. Starting this self-reinforcing cycle early leads to greater returns. Moreover, as mentioned earlier, higher literacy skills and education reduce the rate at which literacy atrophies over time. On the cost side, age is not a barrier to improving literacy, but the cost of enhancing youth literacy might be lower, since many argue that children learn faster than adults. In economic terms, all of this is simply a way of saying that there are declining returns on investment in human capital with age, which is summarized in the accompanying chart. [Cht21]

This assessment suggests that policy makers should target early childhood education, primary and secondary school programs. Moreover, the surveys discussed above reveal that youths from disadvantaged backgrounds, immigrant and aboriginal families, and certain provinces should also be given priority. An emphasis on reading skills for boys and quantitative skills for girls could also pay substantial dividends.

That said, you have to be careful about basing policy only on the clinical approach of cost-benefit analysis. The fact of the matter is that we do not truly know the impact of \$1 dollar invested in child/youth literacy relative

to \$1 in adult literacy. Further research is desperately needed in this area. Moreover, the cost-benefit approach does not capture the societal gains. How does one measure the importance of increased community participation by adults with greater literacy skills? What is the dollar value on a higher quality of life and greater independence for older Canadians?

There is also a feedback loop, as parents with stronger literacy tend to encourage greater literacy in their children. Conversely, weak adult literacy skills can lead to social and economic exclusion and inequality; which, in turn, can result in a lower socio-economic environment for children. In other words, greater youth literacy may be the priority, but adult literacy programs might help to achieve the goal.

Coordinated policy approach is called for

One of the challenges of improving literacy is that no single level of government is ultimately responsible. This means that the electorate holds no level solely accountable. Both the provinces and the federal government have been heavily involved in literacy initiatives in recent years – always with the best intentions. While youth literacy falls naturally under the umbrella of education, a provincial responsibility, immigration is largely a Federal concern. Policies involving the aboriginal population are even more muddled, as aboriginals on reserves are a Federal responsibility, but those off reserves are a provincial concern. Both levels of government have also been debating appropriate policies for early childhood education. There is overlap too in adult literacy. At the federal level, Human Resources and Social Development Canada runs the Office of Literacy and Essential Skills. Indian and Northern Affairs Canada, Canadian Heritage, and Citizenship and Immigration Canada also run literacy-promoting activities. Meanwhile, the provinces have their own adult literacy initiatives through a variety of social-economic programs

The key question is whether a more coordinated and complementary approach can be found and adopted. One possibility might be to make the federal government responsible for setting national literacy standards through a centre of excellence that collects best practices and acts as a repository of research and analysis. Meanwhile, the provincial governments could be explicitly responsible for program delivery. Both levels of government would need to provide financing for the initiatives.

Businesses can also play a role

Businesses can play their own part in boosting literacy. As discussed earlier, companies can profit from employees with greater reading, writing and numerical skills. Literacy unlocks the potential of many individuals and can add to the firm's bottom line. Many businesses already provide substantial training programs, but they tend to be focused on specific skill sets. Companies are encouraged to think about offering employees the opportunity to develop language skills and more basic abilities that could reinforce or bolster their literacy. This can be done in-house or through employer-sponsored training. Businesses can also support literacy initiatives through their charitable giving activities.

Parental involvement is also key

Finally, it goes almost without saying that parents should strive to nourish the literacy of their children. Surveys show that discussing topical issues with children and family cultural activities (e.g. trips to museums, concerts, etc) can help to bolster literacy and the pursuit of knowledge. Similarly, parents who set higher educational expectations often foster greater literacy attainment by their children.

Conclusions

To wrap up, a high level of literacy is an absolute necessity for today's knowledge-based economy. It is the foundation on which other skills are developed and it enables individuals to keep pace with the changing times. Although the majority of Canadians have adequate literacy, too many simply don't. This situation is not just unacceptable, it is critical in light of the evolving structure of the economy. Ever higher literacy skills will be needed in the future. It is worrying that there is no compelling evidence of improvement in literacy skills in Canada over the past three decades. To address this challenge, we need public policies and business initiatives that target the weakest areas, with the greatest long-term gains coming from investing in the young. The best news is that efforts to improve literacy can have dramatic and far reaching effects. Higher literacy can boost the economic and financial success of individuals and the economy as a whole. It can reduce poverty, improve health, lift community engagement and lead to a higher standard of living. In fact, it is hard to identify any other single issue that can have such a large payoff to individuals, the economy and society.

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