

PLAIN LANGUAGE SUMMARIES

GAINING AND LOSING LITERACY SKILLS OVER THE LIFE COURSE

SUMMARY BY T. SCOTT MURRAY

What is this study about?

This paper, by Doug Willms from the University of New Brunswick and Scott Murray of Statistics Canada, explores how the amount of literacy skill available in Canada changed between 1994 and 2003.

The study uses data from the International Adult Literacy Survey (IALS) and the International Adult Literacy and Skills Survey (IALSS) to show net change in document literacy for various groups of adults for Canada and the provinces and to explore the individual characteristics that influence whether a particular group has gained or lost skill on average over the nine year reference period.

The paper is organized in five parts.

The first part introduces the study, introducing readers to the concept of skill loss and telling them why skill loss matters economically and socially.

The second part presents estimates of how much average skill has changed between 1994 and 2003 for Canada and each of the provinces.

The third part shows what factors might explain why some groups gained skill between 1994 and 2003, and why some groups of adults lost skill.

The fourth part presents how changes that occurred between 1994 and 2004 might explain skill loss.

The final part summarizes what the study found and suggests what policy makers need to do to reduce skill loss in the future.

What are the questions addressed by the study?

The study looks at three questions.

1. How much did average document literacy skills change between 1994 and 2003?

2. What factors explain why some groups gained document literacy skill and why some lost skill?
3. What overall changes might explain why average document literacy skill levels changed?

Why is this study important?

The study is important because the amount of document literacy skill that adults have has been shown to influence what people earn and how rapidly the size of the economy can grow.

The fact that the study found evidence of skill loss at a time when average document literacy skill should have been growing means that economic growth was not as rapid as it might otherwise have been and that Canadians did not get as much value out of their investments in education as they should have.

If the study can help adults and policy makers find a way to reduce the amount of skill loss in the future Canadian's will become richer faster and will get more out of the investments of time and money they make in education.

What does the study conclude?

The analysis reveals the presence of significant document literacy skill loss in adulthood, loss that would seem to be concentrated in adults from lower socio-economic backgrounds. The amount of skill loss varies by province.

Given that document literacy skill influences individual labour market success and the overall performance of the economy understanding what underlies the loss and what, if anything, should be done by individuals, institutions or governments to slow or reverse the skill loss process, should be a priority.

The analysis then tries to get more accurate estimates of skill loss, and to explain some of the observed loss.

The analysis uses people's demographic characteristics and their experiences at home and at work to see if they influenced the amount of skill gained or lost.

The statistical model took the following characteristics into account: gender, age, level of education, people's engagement in general literacy activities at work, people's engagement in technical literacy activities at work, and people's engagement in literacy activities at home. The analyses found that skill loss varied by the level of respondent's education.

The estimate of average skill loss from 1994 to 2003 was 12.7 points. This is

roughly equivalent to the additional literacy skill that someone gains through an additional half year of education.

The results indicate that compared with high school graduates, adults who did not complete secondary school scored about 48 points lower on the document literacy scale, while those who had completed some postsecondary scored 15 points higher than high school graduates, and those who had completed university scored about 30 points higher.

An important finding, though, is that skill loss differed with level of education. For dropouts, there was no skill loss, while for high school grads, and those who completed some post-secondary and university graduates, the skill loss was the same as in the general population.

The results also indicate that adults who had participated in further education and training in the previous twelve months scored about 16 points higher than those who had not participated. Adults who were regularly engaged in literacy activities at work or at home had higher literacy scores. The effects associated with general literacy engagement at work and at home were 11.1 and 14.3 points respectively. The effect associated with engagement in technical activities at work was also positive.

The most important finding of the study is that literacy is not a static commodity that is acquired in youth and then maintained throughout life. Some groups of individuals find a way to add to their level of skill over their adult lives, while others manage to maintain their skill level and others lose skill.

The data from the IALS and ALL provide an opportunity to see how average literacy skill levels changed between 1994 and 2003. The results provide compelling evidence that on average people lose skills after the period of formal schooling, but the amount of skill loss differs considerably from group to group. Skill loss in Canada appears to be a gradual process, which begins at about age 25, peaks at around age 40, and tapers off during late middle age. For example, adults who were age 40 in 1994 had average scores on the IALS literacy test of about 288, while the same cohort, when tested 9 years later at age 49, had average scores of about 275. A skill loss of about 13 points is roughly equivalent to nearly half a year of additional schooling over the nine-year period. Taking into account that skill loss appears to be less for young and late middle age adults, on average most Canadian adults experience a skill loss over their lifetime of about one grade level.

The analyses also provide an account of the factors related to skill acquisition, based on data from the combined IALS and ALL data sets. Exposure to education appears to have a positive impact on skill change. Individuals with university completion have average scores that are about 30 points higher than secondary school graduates, and even those with some post-secondary education do better, by about 15 points. Those who have not completed

secondary school do considerably worse, scoring nearly 50 points lower than their counterparts who finish secondary school, a drop equivalent to the average learning gain associated with over a year and a half of additional education.

These are the effects associated with level of education across all adults, after controlling for labour market participation, further education and training, and engagement in literacy practices.

The level of general reading engagement at work also has a positive effect: individuals who read more frequently and a wider range of materials scored about 11 points higher than those with low levels of engagement. Similarly, those who had participated in further education or training scored about 16 points higher than those who had not participated. The combined effect of these two factors is equivalent to the positive effect associated with completing university.

The data suggest that there are likely certain occupations and firms that create a culture that supports and values the acquisition and maintenance of literacy skills.

Engagement in technical literacy practices at work increased over the study period, but this does not seem to have as strong an impact on people's literacy skills. In contrast, the amount and range of what people choose to read at home, away from the job, seems to have a strong influence on skill development. In fact, the increase in skill observed for individuals with higher levels of reading at home is about the same as the skill loss observed on average over the ten-year period when skill loss is greatest. Clearly, lifestyle and individual choice matter.

Finally, employment seems to have a very positive effect on literacy skills – those individuals who were employed scored about 12 points higher than those who were not in the labour force. As was noted with regards to the effects associated with further education and engagement at in literacy activities at work, this analysis does not allow one to determine if this loss is the result of unemployment or simply a symptom, but the effect is real and socially significant to the individuals involved and to the economy.

The analysis also examined differences among the provinces in their average levels literacy and their skill loss. Provinces and regions varied substantially in their average levels of skills. A small proportion of this difference is simply attributable to differences in the demographic age and sex distributions of the provinces. But even when this is taken account, there remains considerable variation, ranging from about 13 points below the national average to 13 points above it, or about one grade level. The levels of education attained by adults in each province explain about 40% of this variation. A finding that is more salient though is that the other factors – employment, further education and training, and engagement in literacy practices at home and at work – account for

over one-half of the variation between provinces. The variance explained by these factors overlaps that associated with level of education, such that the two sets of factors together explain nearly 60% of the inter-provincial variation in how much skill adults possess.

The statistical modeling provided more accurate measurement of skill loss, by making the groups being compared identical in terms of their sex and age distribution.

Between 1994 to 2003 the analysis shows that while levels of both formal and informal education and training had increased, levels of engagement at work had fallen slightly, and levels of home engagement had fallen considerably.

The results presented in the report are troubling and hold several important messages.

First, the existence of literacy skill loss is confirmed.

Second, the magnitude of skill loss is high when judged in educational terms, eliminating literacy acquisition that took months, or even years, to acquire on average.

Third, given the relationship of literacy skill to individual economic and social outcomes, and to macro economic performance, it is reasonable to assume that the economy is paying a price for skill loss.

Fourth, the probability of whether a group will gain or lose skills appears to depend on a variety of factors over which both individuals and governments can decide to change. Post-secondary education, the amount of reading on the job and off, and stable employment all appear to have had a positive impact on the stock of literacy skills and reduce the magnitude of skill loss.

One interpretation of these findings is that Canadians are over-educated, that our education systems are producing individuals with literacy skills that the economy is not able to absorb. If this is true then one might consider reducing investments in post-secondary education where the losses appear to be the greatest.

A second interpretation of the findings is that governments need to do something to increase the social and economic demand for literacy skill. Literacy skills drive economic growth. The fact that one observes skill loss implies either that some individuals are adopting lifestyles that do not support and maintain skill levels, or that some employers are behaving in a way that is constraining the performance of the overall economy.

Both of these forces could be at play. If this is true then it could be taken as evidence of a market failure of the sort that only governments can correct. If so,

investments by government might induce employers to make full use of the available human capital to the benefit of all.

A third interpretation of these findings is that Canada's education system is failing to impart durable skills, or at least the attitudes, values and behaviours that would allow their graduates to retain the literacy skills they learned. If this is true, then Canadian educators need to take a hard look at the content and delivery of instruction to see what might be improved.

This Willms and Murray report does not pretend to provide answers to these questions, or to say which of these interpretations is correct. The report does show that something is wrong and that the economic and social consequences of ignoring it are likely too large to bear.

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