

Labour Market Matters



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Literacy skills found to decline with age, improvement is unlikely after formal schooling

Literacy is central to the improvement and betterment of any society. Individuals cannot fully engage in social and political discourse, and are more likely to become less-than-equals in society without basic literacy to pursue their goals. On the individual level, more literate individuals tend to enjoy better employment opportunities and higher earnings – leading to a better quality of life. On a societal level, a more literate workforce may be better positioned to adjust to change and to adopt new technologies. Thus, improving literacy for individuals may have spill-over effects that benefit the economy as a whole. As many industrialized countries are facing significant population ageing in the coming decades, what are the implications for literacy skills? A paper entitled **“Ageing and Literacy Skills: Evidence from Canada, Norway and the United States”** ([CLSRN Working Paper no. 98](#)) by CLSRN affiliates David A. Green and W. Craig Riddell (both of the University of British Columbia) studies the relationship between age and literacy skills using data from the 1994 International Adult Literacy Survey (IALS) and the 2003 International Adult Literacy and Life Skills Survey (IALSS).

Using cross-sectional data from the two surveys, the researchers investigate the relationship between literacy skills and ageing in Canada, Norway and the United States. The analysis found formal education to be the primary driver of adult literacy skills. There is a surprisingly weak

negative relationship between literacy skills and age, after controlling for other influences. The characteristics of the respondents’ parents – such as education and immigrant status – have significant effects on the respondents’ education, but only a modest direct impact on literacy.

The relationship between skills and age in cross-sectional data could reflect some combination of age and cohort effects. A 35-year old in 2003 may differ from a 25-year old in 2003 both because she is older and comes from an earlier cohort that experienced schooling and work experience in a different time period. The 1994 and 2003 surveys provide representative samples of the adult population at two points in time in the three countries, which allowed the researchers to separately identify cohort and ageing effects. In so doing, the study found that the small negative slope of the profile of literacy relative to age in cross-sectional data actually arises from a combination of offsetting ageing and cohort effects. In particular, individuals from a given birth cohort lose literacy skills in the years after they leave school at a rate that is typically greater than is indicated by cross-sectional estimates. At the same time, they find evidence that more recent birth cohorts have lower levels of literacy. Thus, a 35 year old in IALSS 2003 has approximately the same average literacy score as a 25 year old in the same survey not because that 25 year old should expect to be at the same literacy level in 10 years but because the 35 year old started from a higher literacy level at age 25 (i.e., comes

from a more literate cohort) but lost some of their initial literacy skills during the time since they left school. These results suggest, on the one hand, a tendency for literacy skills to decline over time and on the other that we are doing a poorer and poorer job of educating successive generations. The three countries are of interest for several reasons, including the fact that Canada generally falls between Norway and the U.S. both in terms of literacy levels and the extent of inequality in their literacy distributions. All three countries show the same pattern of literacy loss with age. Thus, whatever Norway is doing better it seems not to have to do with maintaining literacy levels after leaving school. Furthermore, both the U.S. and Norway show much the same cross-cohort pattern as Canada. The countries differ, however, in the part of the skill distribution where falling skills are most evident. In Canada the cross-cohort declines are especially large among those at the top of the skill distribution. The Norwegian data also shows declining skills across cohorts, but these are more prevalent at the bottom rather than the top of the distribution. In the U.S. the decline in literacy skills over time is most pronounced in the middle of the distribution. Thus, in all three countries there is evidence of declining literacy skills with successive generations, although there are differences in the extent of these declines among different segments of the population.

Special points of interest:

- Study finds a surprisingly weak negative relationship between literacy skills and age, after controlling for other influences. Formal education is found to be the primary driver of adult literacy skills.
- Given the fact that labour force growth in Canada is projected to slow significantly in the coming years, a group of researchers project that unemployment rate could decrease by 2.7 percentage points, leading to upward pressure on wages in the order of 12 percent.

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Literacy is associated with better societal outcomes and quality of life; but evidence from Canada, Norway and the United States, finds that literacy appears to decline with age. Image: Graur Codrin/Freedigitalphotos.net

Population ageing and slow labour force growth to lead to higher wages in knowledge-based industries and decline in labour-intensive industries

Canada, as many other advanced economies is projected to face a significant “greying” of its population in the coming decades due to factors such as the ageing of the baby boomers and low-birth rates. What impact will population ageing have on the Labour Market? A study entitled “[Inter-temporal and Inter-industry Effects of Population Ageing: A General Equilibrium Assessment for Canada](#)”¹ by CLSRN Affiliates Nabil Annabi, Maxime Fougère, and Simon Harvey (all of Human Resources and Skills Development Canada, HRSDC) find that the projected decline in the growth of the labour force would raise pressures on labour markets leading to an increase in wages and to an unprecedented decline in unemployment. However, the authors show that the impact would vary at the industrial and occupational levels causing significant distributional effects. The authors also suggest that investment in capital and labour quality would become more important than labour quantity in the determination of productivity.

Using an economy-wide policy simulation model, which accounts for past, present and future generations as well as lifecycle earnings specific to 25 occupations, the researchers assess the economic and labour market effects of future demographic changes and find that the growth in real GDP per capita could decline by nearly one percentage point between 2006 and 2050. While the production of services, in per-

cent of total GDP, is projected to increase in the long-run, the analysis shows more modest changes in production shares than in previous studies. As labour force growth is projected to slow very significantly, the unemployment rate could decrease by 2.7 percentage points in the long run, leading to increased pressure on wages – 12 percent upward pressure on wages on average.



Nabil Annabi
(Human Resources and Skills Development Canada)

The analysis show that production costs would increase more in labour-intensive sectors. This means that production would expand more in sectors that require less labour – such as primary industries. Industries such as finance, insurance, and real estate would also be favoured in such labour market conditions. The researchers note that the change in consumption preferences of older workers as well as the related shift in government expenditures in

favour of the health sector – following the ageing of the population, may mitigate some of the long-run negative effects on labour-intensive service industries such as health, accommodation and leisure.

Real wage pressures are projected by the model to rise across all occupational groups. Wage pressures in management occupations, business, finance, and administration, health, social science and education as well as occupations in primary industries would be well above average. In contrast, wage pressures in processing and manufacturing, sales, and trades could be well below average.

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Finally, the researchers conclude that there are three important structural implications of



Simon Harvey
(Human Resources and Skills Development Canada)

population ageing for the labour market: one is that the contribution of labour supply (quantity) to economic growth would decline leading to a more important role for physical capital and investment in knowledge in fostering labour productivity (quality). Secondly, the researchers assert that the equilibrium unemployment rate would fall significantly and would likely achieve an unprecedented low level. Lastly, the study suggests that significant distributional effects are to be expected, and will be caused by rising disparity in occupational unemployment and wage rates. This implies that the distributional impact of population ageing is a very important issue to consider in future research.

¹Nabil Annabi, Maxime Fougère, Simon Harvey. [Labour](#). Volume 23, Issue 4. December 2009. This paper was also released as: [CLSRN Working Paper no. 36](#)

Endnotes

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