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THE CASE FOR GOVERNMENT INVESTMENT IN ESSENTIAL SKILLS

Canadians want more jobs, to earn more without working more, to be healthier and to have access to the Canada's rate of productivity growth is below the level needed to drive improvement in our standard of living and to maintain our competitiveness on global markets.

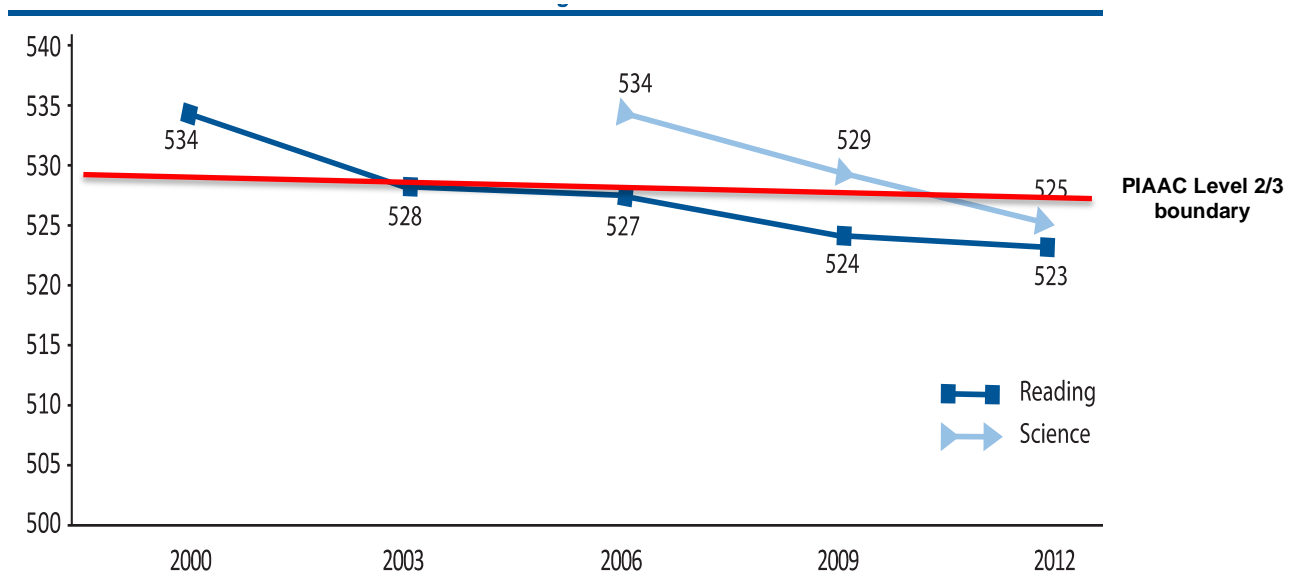
Achieving higher rates of productivity depends on increasing both our level of technical skill and knowledge and our levels of key cognitive skills – language, literacy and numeracy – needed to apply technical skills and knowledge to globally competitive levels. It also requires that employers create jobs that require workers to use their knowledge and skills rich.

Canada is a global leader in the creation of technical skills and knowledge, with one of the highest level of educational attainment in the world. Our level of educational attainment will continue to grow rapidly as fully 85% of each new youth cohorts leaving the secondary system pursue some form of post-secondary study.

Canada's record on cognitive skills is poor, and getting worse.

Despite the fact that our 15 year olds score at the top of international assessments of reading, mathematics and science, our average scores in reading and science are not improving at a rate that will meet the demand of workers with Level 3 and above literacy skill. In fact, at 523, the average reading score of our 15 years olds is now below 529, the critically important threshold between Level 2 and 3 on the PIAAC scales.

Figure 1 Trends in reading and science, students aged 15, Canada, 2000 to 2012

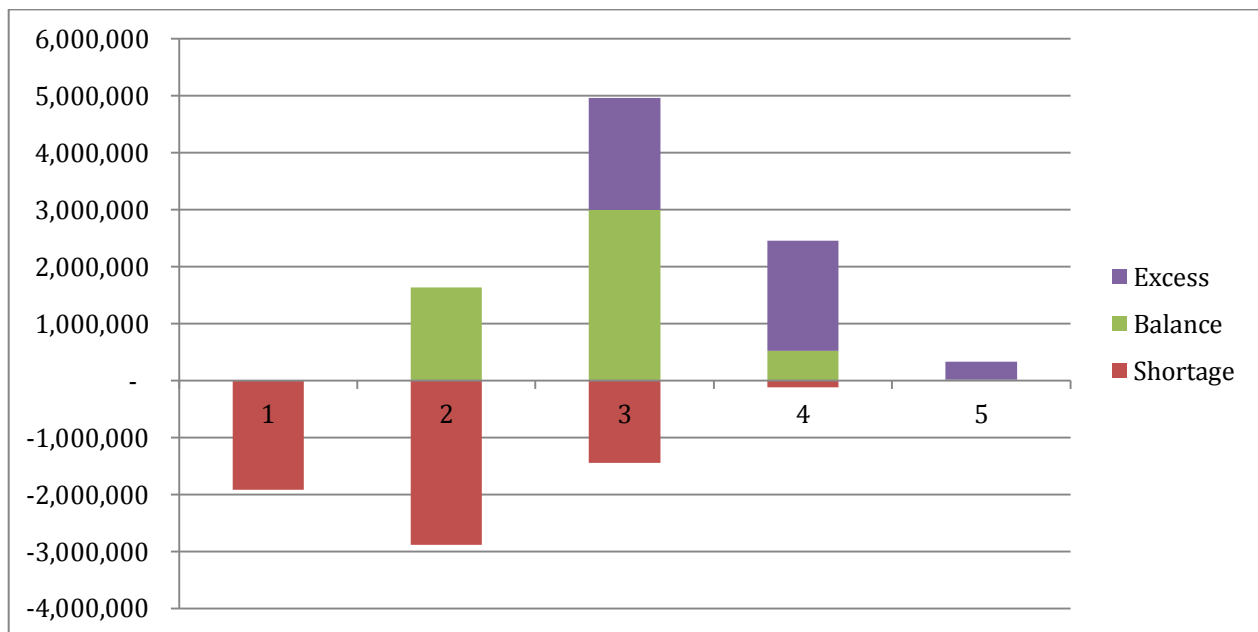


Source: CMEC, 2014

Average scores do not, however, tell the full story. Up to 30% of youth are leaving the secondary system with skills below the level needed to fill the knowledge and skill rich jobs that we need to compete. Students need a minimum of Level 3 literacy to take full value from post-secondary education. Since 85% of youth go on to some form of post-secondary education, a minimum of 15% of youth are in the post-secondary system without this required level. Their presence increases dropout rates and reduces the taxpayer's return on their massive investments in post-secondary education. It also means that employers will have increasing difficulty finding enough workers to fill their knowledge and skill rich jobs.

Canada's labour force is also among the most cognitively skilled in the world on average. Unfortunately, this average is misleading because of poor fit between the occupational demands of the job and workers literacy skill levels. As shown in the chart below, fully 40% of all workers have literacy skills below the level demanded by their current job. This skill shortage makes them far less productive, more prone to workplace illness and accident, to require more supervision, more likely to be laid off and to have to rely on income support, more likely to be absent and adopt new work processes and technologies less easily. An additional 30% of workers have skills above the notional level of the job, skills that cost a lot to create, that have significant economic value but that go unused.

Figure 2 Aggregate fit between the occupational demand for literacy skill and the occupational literacy skill supply by proficiency level, adults aged 16 to 65, Canada, 2011



Source: DataAngel's market segmentation analysis of the National Household Survey, 2011 and PIAAC, 2011

The chart reveals that the degree of misfit between the literacy demands of the job and the skills of workers in those jobs varies a lot by level of the job demanded:

Level 1 jobs

For Level 1 jobs, there is a surplus of almost 2,000,000 adult workers aged 16 to 65 who have Level 1 skills for which there are no Level 1 jobs.

Level 2 jobs

Of the 4,528,000 Level 2 jobs, 2,887,000 or 67% are filled by adults with level 1 skills and the balance by workers with Level 2 skills (33%).



Level 3 jobs

Of the 6,412,000 Level 3 jobs 1,969,000 (31%) workers have level 4 or 5 literacy skill, so have surplus skills that represent an untapped economic asset.

An additional 2,994,000 (47%) of adults in Level 3 jobs have Level 3 literacy skill, so have no skill surplus upon which to meet rising skill demand.

An additional 1,448,000 workers in Level 3 jobs (23%) have literacy skill below Level 3, so are defined as being in literacy skill shortage.

Level 4 jobs

Of the 2,568,000 Level 4 jobs 1,933,000 (75%) workers have skills at Level 5.

An additional 519,000 workers in Level 4 jobs (20%) have level 4 skills.

116,000 workers in Level 4 jobs (5%) have Level 3 or less literacy skills.

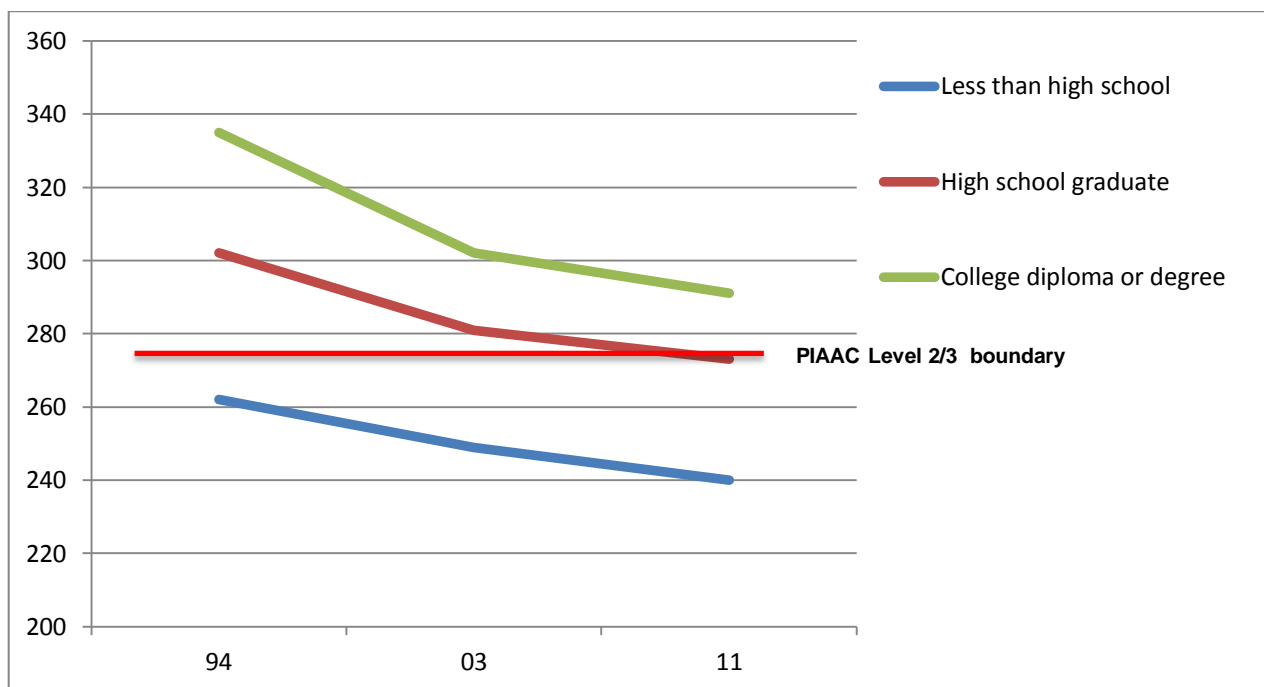
Level 5 jobs

100% of the 315,000 Level 5 workers have skills above the lower boundary of the Level 5 threshold.

Ironically, Canada's record on job quality is mixed. Some employers have been creating jobs that demand higher levels of both technical skills and knowledge and cognitive skills. As a result the long-term occupational demand for literacy has been rising slowly. A significant number of employers have chosen, however, to respond to the variable skills of the workforce by reducing the cognitive level of demand associated with the job. In practical terms, these employers have reduced the level of literacy demand from level 3 to level 2, a shift that reduces the proportions of workers that need to do analysis, solve problems and work in high performance teams.

Unfortunately, this business strategy involves sacrificing a significant amount of productivity and, ironically, results in a significant amount of skill loss by more skilled workers with level 3, 4 and 5 skills that are needed to compete on global market. The following chart shows the decline in average literacy scores by education level during the period 1994 to 2011, standardized to the 2011 ratios to remove the effect of changes in the educational, gender, age and immigrant composition of the population.

Figure 3 Average literacy skills by education level, standardized to the 2011 population composition; adults aged 16 to 65, Canada, 1994, 2003, 2011



Source: DataAngel's analysis of 1994 IALS, 2003 IALSS and 2011 PIAAC



Canada's foreign competitors have access to large numbers of workers with world-class technical and cognitive skills, including large numbers of workers with the level 2 literacy skills needed to apply routine procedural knowledge whose wage rates are significantly lower than those of Canadian workers. Ironically, the only way to close the associated productivity gap is to become more productive, something that requires higher levels of key cognitive skills.

The available data suggests that no one knows that they have a cognitive skills problem, have access to the information to judge how much to invest or have a way to choose a reliable training provider to upgrade the cognitive skills of their workforce. In technical terms, the 'market' for cognitive skills is in failure of a sort that only governments have the policy tools to correct.

Most obviously, governments should demand that the K-12 education systems reduce the proportions of youth leaving the secondary system with literacy skills below level 3. In real terms, Canada's expenditures on elementary and secondary education are among the highest in the world so the problem is not money but rather how and where it is spent.

Governments also need to reduce the proportions of youth entering the post-secondary education system with level 1 and 2 literacy and numeracy skills and reduce the proportions of youth leaving post-secondary institutions without level 3 in these key cognitive skills.

Governments must also seek to reduce the proportions of immigrants entering the Canadian labour market with skills below the level of their Canadian peers. Anything less is unfair to the immigrants and denies the Canadian economy of desperately needed technical skills and knowledge.

In all three cases the federal government, in a move to improve the efficiency of both the education and labour markets, create a national literacy standard and associated micro-credential that certifies worker skill levels.



With respect to workforce cognitive skills upgrading, governments should, at a minimum, disseminate information to individuals and employers about the nature of the cognitive skill shortage facing Canadian firms, the cost of the required skill upgrading and the potential returns to different levels of investment. This should precipitate higher levels of private investment in cognitive skills upgrading. Ironically, the Canada Job Grant (CSG) could be used by firms if only they had a means to know that they have a problem with their current levels of literacy skill. The Canada Jobs Grant has the distinct advantage of requiring firms to only fund 33% of the cost of remedial training. So government should be actively encouraging firms to apply for CSG funding.

It is unlikely, however, even if implemented immediately, that these government measures would precipitate a rapid enough increase in the supply of key cognitive skills. As a result, a strong case can be made for governments to invest directly in upgrading adult cognitive skills. Specifically, there is a need for governments to:

- Fund cognitive skills upgrading for unemployed adults to increase their employability
- Create financial incentives for employers to assess their employees skill levels and to upgrade their skill as needed
- Insist that training providers publish data on their results, in particular their instructional efficiency and effectiveness so that employers have a way to select training providers that offer the best value for money
- Create a set of national micro-credentials that certify cognitive skill levels for recruitment and selection purposes



There is also a role for employers to play. Employers should re-design their jobs and production processes to ensure that they demand high levels of skill use. This measure will increase productivity and reduce skill loss.

Employers should also assess and upgrade the cognitive skills of their current workforce as needed.

Employers should also consider assessing skills at the point of hiring and upgrade skills as needed.

Individuals should consider having their cognitive skills assessed and upgrade their skills to the level needed to satisfy their career objectives.

Training providers should systematically assess the skills of their learners pre- and post-training to inform training plans and to provide data on program efficiency and effectiveness

Although not a guarantee, if implemented, these government measures would go a long way to addressing Canada's productivity challenge. The available data suggests that investments in key cognitive skills would yield extraordinary rates of return to individuals, employers and governments.

Related documentation: **12 QUESTIONS TO HIGHLIGHT THE IMPORTANCE OF GOVERNMENT ACTION ON ESSENTIAL SKILLS**, which is available to download from our website here: www.dataangel.ca/resources

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