

PIAAC—a quick look at the data and age

By Jan Hagston

This article looks briefly at the Australian Programme for the International Assessment of Adult Competencies (PIAAC) survey results, the skill levels across time and in comparison to other countries, and focuses on the difference in skill levels across age and some of the implications.

In February last year, the ABS released the initial Australian results from the Programme for the International Assessment of Adult Competencies (PIAAC) survey, an international survey of adult skills in the areas of literacy, numeracy and problem solving in technology-rich environments. PIAAC builds on the foundations of over thirty years of national and international surveys of adult skills and has been designed on the basis of prior assessments and lessons learned from the Adult Literacy and Lifeskills survey (ALLS), the International Adult Literacy Survey (IALS) (Statistics Canada and OECD, 1996; 2005), and earlier studies (Kirsch & Jungeblut, 1986; Kirsch et al, 1993; Wickert & Kevin, 1995).

In October 2013, the OECD released the PIAAC results for twenty-four countries or regions (OECD 2013a). A second group of nine countries will administer the test this year and a further group of countries will follow (Hagston & Tout, 2013, OECD 2013a.).

In Australia, the release of the results received little attention and there seems to have been little analysis or reporting of the results. Perhaps this isn't surprising given that the report is 460 pages, the Readers Guide, the companion volume which contains information to help readers understand and interpret the results

is 124 pages and the Technical report is over 1000 pages. All a bit overwhelming! There is, however, a 32 page summary available at www.oecd.org/site/piaac/SkillsOutlook_2013_ebook.pdf. The Australian results can be found on the ABS website: www.abs.gov.au/ausstats/abs@.nsf/mf/4228.0

The Australian results

The overall results (see Table 1) for Australia show that 14.1% of the population have literacy levels at or below level 1 and another 30.1% have skills at level 2. For numeracy 21.8% are at or below level 1 and 32.5% are at level 2. Unlike literacy and numeracy, problem solving in technology-rich environments (PSTRE) has only 3 levels. 44.8% of the population are at level 1 for PSTRE. Another 25% didn't take part in this part of the survey as they had insufficient computer experience or expertise.

So, what does this mean?

While there are ongoing discussions about what level adults need in Australian society, it is hard to argue that having skills at or below level 1 are satisfactory for individuals or for the community. People at these levels are only able to undertake basic tasks such as locating information in brief texts or carrying out simple processes such as counting, sorting and performing basic arithmetic function with

Table 1: Literacy, Numeracy and Problem solving in technology-rich environments skill level of persons aged 15–74 years

	Literacy		Numeracy			Problem solving in technology-rich environments ^a	
	'000	%	'000	%		'000	%
Below Level 1	615.8	3.7	1081.9	6.5	Below Level 1	2232.2	13.4
Level 1	1745.4	10.4	2549.6	15.3	Level 1	5251.5	31.4
Level 2	5036.0	30.1	5423.2	32.5	Level 2	4135.8	24.8
Level 3	6339.0	37.9	5231.5	31.3	Level 3	541.7	3.2
Levels 4 & 5	2611.9	15.7	2061.9	12.3	Not included	4186.9	25.1
Total	16348.1	97.8 ^b	16348.1	97.9		16704.4	97.9

a: There are only three levels of Problem solving in technology-rich environments

b: Percentages do not add up to 100% due to missing data.

Table 2: Literacy skill level of persons aged 15-74 years (%)

	15–19 years	20–24 years	25–34 years	35–44 years	45–54 years	55–64 years	65–74 years
Below Level 1 & Level 1	12.0	10.5	10.3	9.3	13.2	19.6	29.0
Level 2	33.8	29.1	25.5	26.9	29.9	33.5	38.3
Levels 3, 4 & 5	54.2	59.4	62.8	61.8	54.4	43.7	28.1

whole numbers. More information about the levels and the type of tasks located at each level can be found in OECD Skills Outlook 2013 (pages 64–66 and 76–78).

The results show that there are at least 2,361,200 adult Australians who don't have the literacy skills to cope, by themselves, with the demands of our society. For numeracy, the number is nearly 3.5 million.

From IALS to PIAAC

As mentioned above, PIAAC is the latest in international studies of adults' skills. The International Adult Literacy Survey (IALS) was conducted in 1996 and the Adult Literacy and Lifeskills Survey (ALLS) in 2006. IALS assessed prose, document and quantitative literacy. ALLS assessed prose and document literacy, numeracy and problem solving. PIAAC assesses literacy, numeracy and problem solving in technology-rich environments. Although each has assessed something slightly different, there has been enough consistency across the surveys to allow the comparison of results from one survey to the next.

The Australian results show that the average literacy score of Australian adults rose from 272 (level 2) in 1996 to 280 (level 3) in 2011–2012. While this is good news, it doesn't give us an understanding of whether this is true across all age groups, socio economic groups, gender, education backgrounds, etc. Further 'digging' is needed.

The results, however, show a different picture of the numeracy skills of Australians. IALS didn't assess numeracy skills so the comparison can only be made between ALLS and PIAAC results. The picture isn't a pretty one with the average numeracy score dropping from 272 in 2006 to 268 in 2011–12. But, like the literacy score, this alone isn't enough to tell us much, perhaps only that something is wrong.

Age and skill levels

The general trend across countries, including Australia, is for literacy and numeracy scores to peak among 25–34

year olds. In Australia, skill levels plateau and then begin to decline from 45 years on, with the oldest age group having the lowest scores. Australian young people aged 15–19 have skills similar to those in the 45–54 year age group and higher than those in the older age groups.

Most of those in the younger age group will still be in some form of education and their skills and cognitive abilities will still be developing (OECD 2013a). In comparison, for older adults cognitive abilities are declining, although when factors such as education levels, work, etc. are taken into account, the level of decline is less, but still takes place (Level & van der Velden, 2013). For all of us over 45 years this is a worry, even more so for those of us who are over 60! But, there are a number of factors that can help to negate the effects of ageing: education, skill use and work experience, and post-school training (Levels & van der Velden, 2013; OECD 2013a).

International comparisons

One of the main purposes of studies such as PIAAC is to compare ourselves to other countries. International comparisons about the skill levels of different age groups are particularly interesting. Overall Australia's literacy skills are above average with only Japan, Finland, Netherlands and Sweden performing better. Numeracy skills are slightly below average and in problem solving in technology-rich environments (PSTRE), Australia performed well above average. However, comparing those in the 16–24 year old age group we find Australian young people are:

- only just above average for literacy
- slightly below average for numeracy
- average in PSTRE.

In comparison to other countries, Australia's older age groups perform highly in PSTRE. So, it would seem that it is older Australians who are performing better than their counterparts in other countries, particularly in literacy and PSTRE. Initial education has a positive effect on the skill levels of adults of all ages (Levels & van der Velden, 2013) and the relatively higher performance of older Australians

may be due to the relatively high levels of secondary school and post-secondary school participation in Australia of those who are now in their 50s and 60s.

Countries such as Korea and Finland had relatively low participation rates in secondary and post-secondary education of those who are in their 50s and 60s. However, these countries, along with Japan and the Netherlands stand out as having young people with high skill levels, much higher than Australia's young people. While these countries differ from Australia in their characteristics, they do show that it is possible to make significant progress in improving skills proficiency (OECD, 2013b).

Skills for the Future?

The declining performance of young (15 year old) Australians in reading and maths particularly, when compared with students in other countries, is also indicated in the Programme in International Student Assessment (PISA) (OECD, 2010). The data should 'ring some alarms about Australia's future' (Mendelovits, 2013) as the stock of skills available to Australia is likely to decline in the next few decades.

For this decline in skills to be halted, the proficiency of young people needs to be improved. Given the importance of initial education in skill proficiency, the education of young Australians needs to be reassessed. However, opportunities need to be provided for adults and young people who have left school to further develop their skills. Education and training throughout life is obviously an important aspect of this but engagement in activities requiring the use of literacy, numeracy and problem solving, both in and outside work, is important to both develop and maintain skills.

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References

Australian Bureau of Statistics, (2013). 4228.0— Programme for the International Assessment of Adult

Competencies, Australia, 2011–12. Retrieved February 2014. Available at www.abs.gov.au/ausstats/abs@.nsf/mf/4228.0

Hagston, J & Tout, D. (2013). PIAAC results 2013, ACAL. Available at www.acal.edu.au/downloads/ACAL-PIAAC-paper.pdf

Kirsch, I. & Jungeblut, A. (1986). Literacy, Profiles of America's Young Adults, Final Report, Educational Testing Service. Princeton NJ.

Kirsch, I. Jungeblut, A. Jenkins, L & Kolstad, A. (1993). Adult Literacy in America: A first look at the national survey, National Centre for Educational Statistics, Washington D.C.

Levels, M. and van der Velden, R. (2013). 'Use-it-or-lose-it? Explaining age-related differences in key information processing skills' paper presented at PIAAC Invitational Research Conference: The Importance of Skills and How to Assess Them. Washington, D.C., United States November 13–15, 2013.

Mendelovits, J. (2013). 'What's the adult L&N story? The results from international assessments of adult literacy and numeracy skills' paper presented at 17th Annual National Conference of the Centre for the Economics of Education and Training, Melbourne.

OECD, (2010). PISA 2009 Results: Learning Trends (Volume V). Paris, OECD Publishing.

OECD, (2013a). OECD Skills Outlook 2013: First Results from the Survey of Adult Skills. Available at skills.oecd.org/skillsoutlook.html

OECD, (2013b). Skilled for Life? Key findings from the Survey of Adult Skills. Available at www.oecd.org/site/piaac/SkillsOutlook_2013_ebook.pdf

OECD and Statistics Canada, (2005). Learning a Living: First results of the Adult Literacy and Life Skills Survey. OECD and Statistics Canada, Paris and Ottawa.

Statistics Canada and OECD, 1996. Literacy, economy, and society: First results from the International Adult Literacy Survey, OECD and Statistics Canada, Ottawa.

Wickert, R and Kevin, M., (1995). No single measure: the final report. Dept of Employment, Education and Training, Canberra.