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Is literacy and the practice of literacy on the decline?

Richard Desjardins, Professor at UCLA Department of Education

Introduction

One of the big surprises I had when I started working with the latest OECD data on adult skills was that there were hardly any changes in the overall literacy proficiency profiles across countries that had participated in both PIAAC (the Programme for the International Assessment of Adult Competencies conducted in 2012) and IALS (the International Adult Literacy Survey in the 1990s). In fact, small average declines were recorded in a number of countries. This was particularly strange given the fact that tertiary level qualifications among adult populations had increased substantially in the interim period in the majority of the countries. How could this be? Should I begin to doubt the highly intuitive idea that schooling and formal education develops literacy proficiency or at least reinforces it (especially at the higher level)? Or should I believe, like far too many still do, that intelligence is fixed at birth and in the family? And that the measure of literacy in PIAAC and IALS simply reflects IQ that is untrainable? In any case, the apparent stagnation in overall literacy at the population level in so many OECD countries prompted me to take a closer look at the trend data made available from IALS and PIAAC, and to consider some of the major drivers affecting literacy proficiency profiles across countries. There are few other comparative data like these that can help us improve our insights on what drives the development and maintenance of literacy in adult populations.

Changes to national literacy profiles

My first step was to ascertain the overall trend without relying on just the average or the extremes. Building on the criterion-based approach embedded in the studies (which helps to translate the measures into meanings about what people can actually do in their daily lives with their literacy skills), I decided to take the ratio of adults at Level 2 or below to adults at Level 3 or higher in both PIAAC and IALS. The breakpoint is somewhat arbitrary but what is clear is that people who score at Level 2 or below have substantively lower levels of literacy proficiency than those who score at Level 3 or higher. The 2013 Skills Outlook (OECD, 2013) defines the distinction between the levels. In short, people who score at Level 2 are literate by demonstrating an ability to integrate two or more pieces of information or to compare and contrast easily identifiable information when responding to text based stimuli, but are more likely to make errors when there are several distractors or when plausible but incorrect pieces of information are present, or when more complex inferences are required. So the questions are: are there more people who score at this level or even lower in 2012 compared to the 1990s? and if so, why? In addressing these questions, I have summarized some basic results in Table 1 and Figure 1.

Table 1 helps us to see that among the 12 countries who participated in both PIAAC and IALS and for which I have access to their data, that indeed the answer to the first question is yes, except for a few countries (Columns 1-2). Overall, PIAAC seems to be telling us that literacy proficiency is on the decline, or at least that it is not so obvious that it would increase with higher levels of investment in education. Starting from a relatively low point in the 1990s, Poland stands out as being the only country that substantively improved the overall literacy proficiency of the adult population. Results also indicate that overall literacy proficiency in Ireland and the UK neither declined, nor improved much. In principle, this

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implies that literacy inequality increased in the other 9 countries (Column 3). For the Scandinavian countries, the increases of adults at Level 2 or below are very large, exceeding over 15 percentage points (Column 4).

Table 1. Changes to national literacy profiles and macro drivers affecting profiles

	Literacy inequality index			Percentage point change of adults with literacy proficiency Level 2 or below	Percentage point change from PIAAC (2012) to IALS (1990s) in key macro level drivers of change in adult literacy					
	Ratio of adults at Level 2 or below to adults at Level 3 or higher in PIAAC (2012)	Ratio of adults at Level 2 or below to adults at Level 3 or higher in IALS (1990s)	Change in literacy inequality		Adults with tertiary qualifications	Adults in professional, managerial or technical jobs	Immigrants with literacy proficiency at Level 2 or below	Immigrants with literacy proficiency at Levels 3 or higher	Adults reading frequently a variety of texts at work	Adults participating in organized learning in last 12 months
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Finland	0.58	0.55	+	1.2	18	7	2.4	0.8	-17	7
Netherlands	0.66	0.56	+	3.9	12	17	4.2	1.7	-12	28
Sweden	0.75	0.39	+	18.8	4	1	7.8	0.6	-13	11
Norway	0.75	0.39	+	15.2	9	10	5.7	1.3	-8	16
Belgium	0.83	0.75	+	2.7	12		2.7	1.1	-12	26
UK	0.98	1.03	-	-1.2	16	12	3.5	3.4	-10	10
Denmark	1.01	0.53	+	15.9	10	13	7.3	2.6	-12	10
Germany	1.06	0.80	+	7.0	16	17	4.9	0.9	-24	
US	1.10	0.87	+	5.8	-3	17	1.1	0.6	-10	17
Ireland	1.21	1.22	-	-0.3	15	17	8.5	6.5	-2	28
Poland	1.25	3.26	-	-20.9	11	19	0.0	0.0	2	20
Italy	2.30	2.04	+	2.6	4	13	6.4	0.7	-15	2

Source: Authors own calculations based on the PIAAC (2012) and IALS (1990s) micro datasets.

Major drivers affecting literacy proficiency profiles across countries

So what are the possible macro level changes that might have caused this, especially in light of the increased investment in tertiary level education?

Growth of tertiary qualifications

According to PIAAC and IALS, tertiary qualifications can be seen to have increased in most countries in excess of 10 percentage points (Column 5). Featuring already an elevated level of tertiary qualifications in the 1990s, the US is the only exception. For similar reasons, Sweden did not add much to the proportion of adults with tertiary qualifications which partly explains its disproportionate increase in adults scoring at lower levels. Italy on the other hand continues to feature relatively low levels of tertiary qualifications which is consistent with its high proportion of adults scoring at lower levels in both 2012 and in the 1990s.

Growth of knowledge economies

Another macro level factor that one might expect is driving literacy upwards is the rise of knowledge economies. Naturally, the rise of qualifications and knowledge jobs tend to go hand in hand but one might expect that the presence of both would surely add to overall levels of proficiency (at least for a growing proportion of the population), because it would mutually reinforce the development of literacy

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or at least mitigate the loss of cognition as people age which is so important for literacy proficiency (Desjardins and Warnke, 2011). With the exception of Finland and Sweden, which had very high levels of knowledge oriented jobs already in the 1990s, managerial, professional and technical jobs are indeed on the rise, exceeding 10 percentage points in most countries (Column 6).

Growth of low vs high skill immigrants

With qualifications and knowledge jobs presumably driving literacy upwards, what might be driving it down? An obvious factor that might lead to overall declines in literacy is the change in the proportion of immigrants with low levels of literacy in the host language (Column 7). This is where the Scandinavian countries stand out most. They are among the countries who have embraced the most immigrants who tend not to score very high on the literacy test administered in PIAAC. It is important to note that low-literacy in this context refers to literacy in the language of the host country. This is important because many migrants, especially in Europe, are in addition to being literate in their own language, are now literate in the English language but not necessarily the local language. Yet they thrive in the host country, especially in the high-skill sector. PIAAC does not capture this phenomenon very well and it also brings into question the purpose of a narrow national-language based approach to literacy, especially for small open economies in non-English speaking countries which are fully integrated in the 'English-speaking' global economy. On this point, interestingly, Ireland and the UK (both English speaking) have benefited the most from immigrants who tend to score well on PIAAC (Column 8). This in part explains why they are among the few whose literacy profile did not decline.

Declining literacy practice

A less obvious factor that might be driving down literacy is literacy practice. We might expect literacy practice to be in the rise as average levels of education increase and there are more demanding high skill jobs in the economy. But is this the case? Not according to PIAAC data. A handful of (nearly) identical questions in both IALS and PIAAC asked respondents how often they read letters, memos, emails, reports, articles, magazines, journals, manuals, reference books or catalogues at work. The Likert categories were not identical in both surveys but collapsing categories in IALS allows for these comparable categories: at least once a week, less than once a week, or rarely or never. With a couple exceptions, results in Table 1 show major declines in the proportion of people who reported engaging in at least two types of reading once a week and one other less than once a week. I checked this by type of job, and it seems that the downward trend is present in many countries even among high skill jobs. Unfortunately, only a handful of measures on literacy practices at work are comparable between IALS and PIAAC, and it is not possible to see if the pattern is similar for literacy practice outside work. Even so, this is truly puzzling and it is not clear that the data are at all reliable since these are self reports. But it turns out that this observation helps to explain the overall declines in national literacy profiles almost perfectly. If we sum the percentage point changes in columns 5-9 (adjusting column 7 as a negative) and correlate this to the percentage point change of adults scoring at Level 3 or higher, the correlation is nearly perfect (see Figure 1).

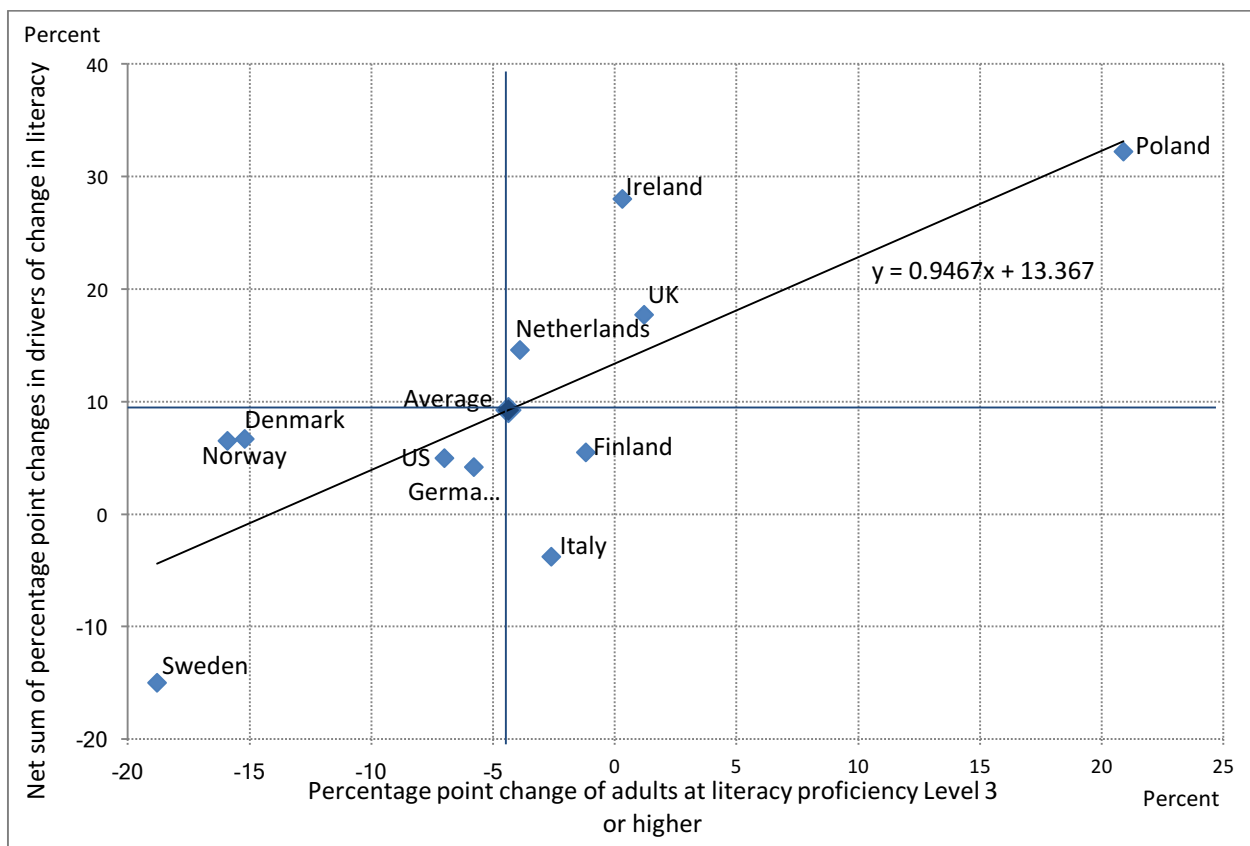
This brings into question the rejection of Braverman's deskilling hypothesis. In a book entitled *Monopoly and Labor Capital: The Degradation of Work in the 20th Century* (1974), Braverman questioned the notion that upskilling goes hand in hand with technological progress. Instead, he suggested that it will lead to deskilling. He noted the division of work tasks, stronger control by the employers through scientific management resulting in de-qualification, and the use of computer technologies to routinize

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and mechanise non-manual work. Despite intense debates among scholars, evidence regarding tendencies for deskilling or upskilling remains ambiguous. This is partly due to varying understandings of skills and considerable variation in the way the demand for skill has been assessed. While there is little evidence of widespread deskilling as postulated by Braverman, deskilling cannot be ruled out. It is likely that some deskilling is occurring as technological change affects production and work processes. It may even be happening just enough to offset otherwise expected improvements over time in literacy skill profiles at the country level.

Figure 1. Near perfect correlation between changes to national literacy profiles and macro drivers affecting profiles



Source: Authors own calculations based on the PIAAC (2012) and IALS (1990s) datasets.

Growth of adult education

Although adult education is a powerful means to promoting the development and enhancement of literacy, I did not include the sharp increase in participation in the interim period between 2012 and 1990s (Column 10) in the calculation for Figure 1 because there is an important confounding relationship between adult learning and having low vs high levels of skill. In fact, adult learning has grown at a much

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faster rate among those who are already highly skilled which may in fact be contributing to increased inequality in access to learning opportunities (Desjardins, 2017).

Conclusion

On the basis of this empirical analysis, it would thus seem that if we are to believe the data and if indeed literacy is to be recognized as a human right and all its merits and values are to be fully acknowledged, we should then encourage policymakers to do the following:

- Invest in quality education at all levels
- Invest in creating good jobs that nurture literacy and cognition into old age
- Foster labour market and industrial practices that seek to avoid, mitigate or compensate for routine and dehumanizing job tasks – this may even apply to supposedly high skill jobs
- Promote active aging including physical, social and mental activity

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