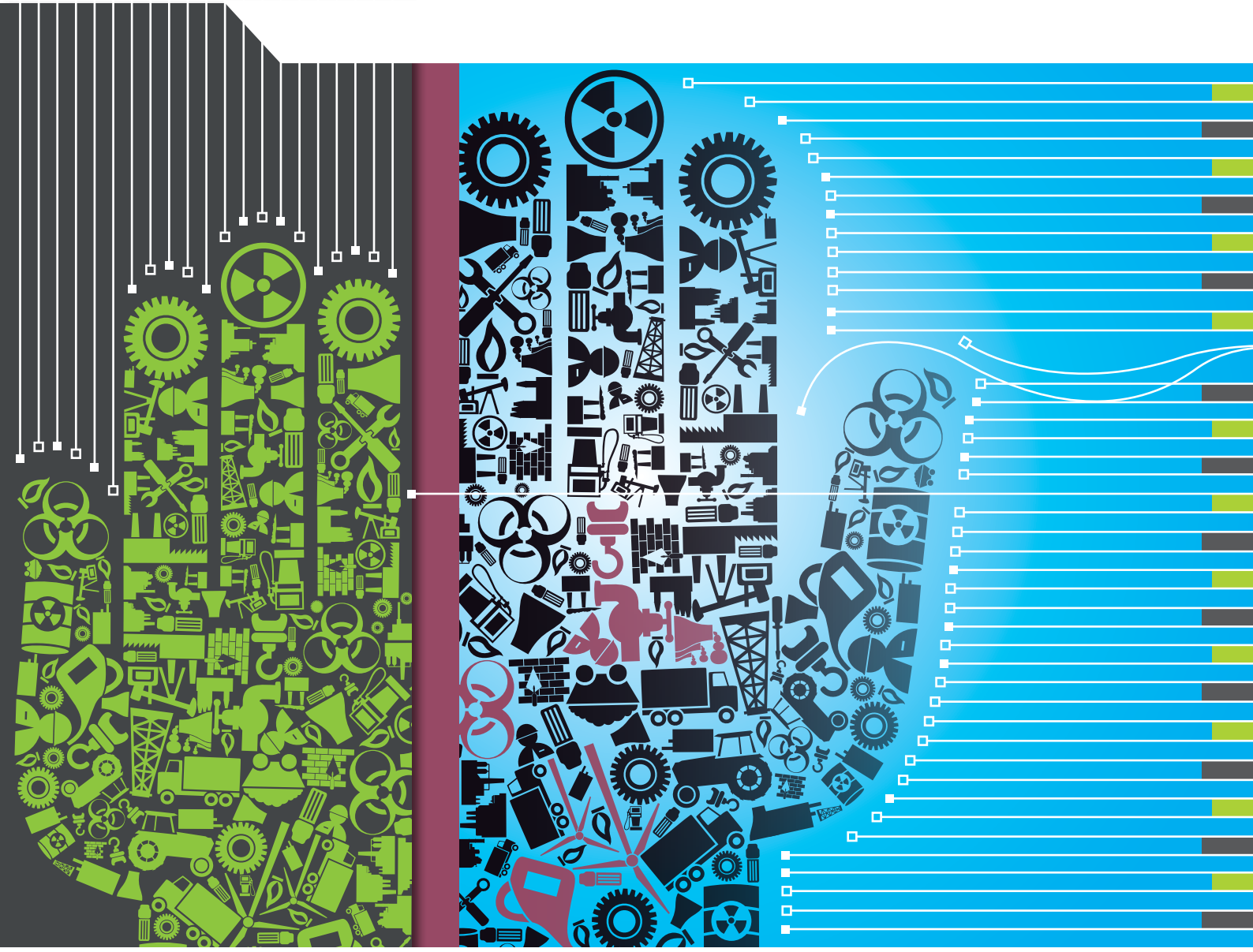
OECD Skills Studies

Time for the U.S. to Reskill?

WHAT THE SURVEY OF ADULT SKILLS SAYS



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OECD
BETTER POLICIES FOR BETTER LIVES

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Foreword

Not only are skills, including basic literacy and numeracy, critical to the prosperity and well-being of individuals, they are also key drivers of economic growth and societal advancement. The OECD's new international Survey of Adult Skills aims to help countries secure better skills policies by measuring the basic skills of adults in 24 countries and demonstrating how these skills relate to economic and social outcomes.

This report, *Time for the U.S. to Reskill? What the Survey of Adult Skills Says* which sits alongside the main international report on the Survey, explores the main results from the United States in greater depth. It underlines how the U.S. compares with other countries and what this means for policy-making.

By international standards, despite a relatively high level of educational qualifications, the basic skills of adults in the United States are relatively weak. Unlike many other countries, there has been little sign of improvement in recent decades. The skills of young people are little different from those of their parents. 36 million adult Americans are living with the consequences of low literacy skills. In addition, the results at the top end of the ability range are not more impressive than those of other countries.

The good news is that there are very few countries in the world that are able to make better use of their citizens' skills than the United States. Skills contribute effectively to the strength of the economy. However, in the context of global upskilling and increasing competition for skills in global markets, it is important that the United States takes action. This should include strengthening initial schooling, supporting adult learning, and developing a set of coherent policies to address the needs of those with the weakest skills. The report puts forward a set of seven key recommendations designed to that end.

This will be the first of many studies designed to ensure that countries make the most out of their skills policies, by building on the findings from the Survey of Adult Skills both for policy development and for charting a way forward. The OECD is firmly committed to supporting countries in their bid to develop "*better skills policies for better lives.*"

Angel Gurría

Secretary-General of the OECD

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This report was written by Viktória Kis and Simon Field. Vanessa Denis provided statistical assistance. Analyses drawing on data from the U.S. national dataset were conducted by the National Center for Education Statistics. Jennifer Cannon prepared the text for publication.

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Summary of findings and policy recommendations

Key findings on the United States from the OECD Survey of Adult Skills

- Low[1] "basic" skills (literacy and numeracy) are more common in the United States than on average across countries. One in six adults have low literacy skills – in Japan the comparable figure is one in 20. Nearly one in three have weak numeracy skills against a cross country average of one in five. Looking at stronger performers, while one in nine US adults score at the highest level in literacy, similar to the cross-country average, only one in twelve score at the highest numeracy level, well below the average. In a new domain designed to assess some skills with modern information and communication technology "problem solving in technology-rich environments" the US results are a little worse than the cross-country average.
- Explanations for the relatively weak performance of the United States include failings in initial schooling, lack of improvement in educational attainment over time, and poor skills in some subpopulations including migrants.
- Thus:
  - The weaknesses in basic skills occur despite a relatively high level of education. Among comparison countries the U.S. had one of the smallest proportions of adults with less than high school education, and one of the largest with more than high school.
  - There are few signs of improvement. Today, adults in the U.S. have similar or weaker literacy skills to their counterparts in the mid-90s, and the average basic skills of young adults are not very different from older persons.
  - The performance of the initial schooling system is closely linked to adult skills and the US results from the international PISA assessment of the basic skills of 15-year-olds are consistent with the US Survey results. Between 2000 and 2009, 15-year-old students in the U.S. tended to score below the cross country average in the PISA assessment of both literacy and numeracy. Similarly, young adults now score below average in the Survey of Adult Skills.
  - Socio-economic economic background has a stronger influence on adult basic skills in the U.S. than in other countries. More positively, among *young* US adults the link between socio-economic background and skills is much weaker.
  - Migration status and ethnicity remain important. One-third of the low-skilled are immigrants. 35% of black and 43% of Hispanic adults have low literacy skills, compared with only 10% of whites. Racial differences in skills remain even among adults with similar levels of education.

- Basic skills are linked not only to employment outcomes, but also to personal and social well-being. The odds of having low levels of health are four times higher for low-skilled[2] US adults than for those with the highest skills, a ratio that is double the cross country average.
- About 36 million US adults have low skills, more than half are black or Hispanic and two-thirds were born in the U.S. One-third are aged less than 35. Two-thirds of young (16-25) low-skilled adults are men, with the difference reversing among older age groups. Nearly two-thirds are in work. Three out of ten report having only "fair" to "poor" health.
- While many of these findings are worrying, certain results point to pathways of opportunity for the low-skilled:
  - Most (63%) low-skilled adults in the U.S. are in employment, more than in other countries. This means that workforce development programs could reach many of the low skilled.
  - Stronger basic skills tend to be rewarded by better chances of employment and higher wages, even when taking educational attainment into account. The wage reward for basic skills is higher in the U.S. than almost any other surveyed country – so the incentives to strengthen basic skills are strong.
  - Participation rates in adult education and training are higher in the U.S. than in most countries at all skill levels (although, as elsewhere, low-skilled adults are less likely to participate). Among those low skilled adults who did not participate in adult education, 18% – representing around 3 million persons – say they would have liked to participate.

Policy recommendations

Recommendation 1: Take concerted action to improve basic skills and tackle inequities affecting sub-populations with weak skills.

Action is needed, for in its absence the skills of US adults will fall further behind those of other countries. As young cohorts replace older ones, the basic skills of their workforces will progressively outpace those of the U.S. Some degree of catch-up by previously less-developed countries is natural, but the speed at which the skills of comparable developed countries are now outpacing the U.S. must be a matter of deep concern. Although the U.S. is notable in its diversity, this does not explain weak results at the top end of the ability spectrum, and the lack of improvement over time in basic skills.

Action is needed to help low-skilled groups in the interests of equity and social cohesion. Despite extensive efforts over recent decades, large racial disparities remain, with low literacy being three or four times more common among Hispanic and black adults than among whites. So while policy recommendations are addressed at basic skills improvement across the board, there is a particular focus on the low-skilled.

Recommendation 2: Strengthen initial schooling for all, ensuring that all children receive an adequate standard of education, with effective interventions to support the basic skills of those in difficulty.

Getting basic schooling right is always important, but critically so in the U.S. given evidence, both from the Survey and from PISA, of a significant challenge in schooling

quality relative to other countries, and because the US population is relatively young. Much could be achieved by ensuring higher minimum standards.

Recommendation 3: Ensure effective and accessible education opportunities for young adults, using the strengths of the community college system to support and develop basic skills and offer substantive career options.

For the one-third of low-skilled adults in the U.S. that are under 35, successful interventions should yield lifetime returns and further benefits through the children of those concerned. Many young adults return to education and while many are successful, others drop out - often because of basic skills weaknesses – and/or become burdened with debt. The OECD's recent review of postsecondary vocational education and training in the U.S. examines these and other related challenges, and advances recommendations to improve quality and attainment.

Recommendation 4: Link efforts to improve basic skills to employability, recognizing that good jobs open up further learning options, while basic skills can often be more readily acquired in practical contexts.

At school, weak basic skills are often linked to disengagement from academic forms of learning. But strong career and technical education (CTE) programs, linked to work-based learning, can develop basic skills alongside employment skills. For someone in disadvantaged circumstances in mid-life, stronger basic skills may on their own not provide sufficient impetus to significantly improve life chances. Linking basic skills to career preparation is a more promising route, engaging low-skilled adults in learning, and transitioning them into good jobs, which in turn offer a springboard for further learning and career development.

Given that two-thirds of the low-skilled are in work, employers have an important role to play. The key objective is to help employers to see employee acquisition of basic skills (and other forms of training) as being in the interests of employers.

Recommendation 5: Adapt to diversity. Adapt adult learning programs to better respond to the diverse challenges of different groups with different needs. Work across all levels of government and across the public and private sectors to achieve better outcomes at all ages and stages.

The causes and effects of weak basic skills are many-layered. They may emerge from a culturally impoverished background, from a learning disability, from poor schooling, or simply from life experiences and jobs which have not supported skills development. Given the diversity of groups and multiple causes involved, differentiated interventions are required.

Sustained improvement depends on policy coherence. Interventions need to be carefully coordinated across agencies, avoiding duplication and ensuring the most cost-effective blend of interventions.

Recommendation 6: Build awareness of the implications of weak basic skills among adults, their links with other social factors, and the need to tackle this challenge in the interests of all.

A shared understanding of the size of the problem and the consequences of inaction are necessary to its solution. Public discussion is needed to build consensus about investing in relevant policies. Awareness of the implications of weak basic skills is also very important for the adults directly concerned, and their immediate contacts – employers, family and friends.

Recommendation 7: Support action with evidence. Build on US excellence in research and data-gathering to construct evidence-based policies and programs.

Good data are a precondition for well-targeted and effective interventions. While knowing "what works" in adult education is critical, international evidence is meager. The U.S. is clearly a leader in the quality of evaluation evidence available, and should build on these strengths.

Notes

1. In this report, "low" literacy skills are defined as below level 2 in the Survey Assessment (and similarly for numeracy skills).
2. In this report "low-skilled adults" are defined as those with low literacy skills (recognizing that they often also have low numeracy skills).

Chapter 1

The Survey of Adult Skills and the role of this special report

The basic skills of literacy and numeracy are of huge importance to our economies and societies. The OECD's new Survey of Adult Skills (PIAAC) assesses skills of literacy, numeracy and a newly assessed domain of "problem solving in technology-rich environments" in a number of countries. This special report, to be published alongside the main international survey, looks at the results for the United States and identifies their policy implications.

The "basic skills" of literacy and numeracy are among the most fundamental attributes of human beings and their civilization, lying at the root of our capacity to communicate and live and work together, to develop and share knowledge, science and culture. Their contribution to workforce skills has increasingly been recognized as critical to economic success, while evidence on gaps in adult basic skills and the link with economic and social outcomes has also been growing, both at national and international level (e.g. through the International Survey of Adult Skills of 1994-98 and Adult Literacy and Life Skills Survey of 2003-2007). Most tellingly, there has been a belated realization that despite universal basic education in advanced countries, some adults have slipped through the net, leaving them with very weak literacy and numeracy.

All of these factors underline the importance of the OECD's new international Survey of Adult Skills (see Box 1.1 and Annex A). Alongside the publication of the international Survey (OECD, 2013a), at the request of OVAE in the U.S. Department of Education, the OECD agreed to prepare the current special report on the U.S. to be published simultaneously. In addition to analysis conducted specifically for this report, it draws heavily on results and analysis published in the international Survey (OECD, 2013a). Its aim is to draw out the policy implications of the Survey for the U.S., while also making use of some additional data collected for the Survey on the U.S. alone. The study does not directly seek to evaluate relevant US policies and programs – such as schooling and adult education – which would be a different and much more ambitious exercise. Instead it aims to identify in the results of the Survey some key lessons about the strategic objectives and directions which should form a frame for policy development, including policy on adult learning and schooling.

The skills measured by the Survey are the joint outcome of individual qualities and a lifetime of experience at home, at school and college, and at work – in other words the result of a vastly complex set of interacting factors. This snapshot can give us clues about how skills are formed, and help us to pinpoint weak skills as a guide to intervention priorities, but it rarely gives us direct evidence about the interventions that work best. The snapshot is akin to an MRI scan in the hands of a doctor, a powerful diagnostic tool that can guide but not directly determine the required therapy. Consequently the policy recommendations advanced here are broad.

Chapter 2 of this report sets out some main findings of the Survey and looks at the implications and some potential explanations. Chapter 3 draws out policy implications in the form of recommendations. The analysis gives special attention to those with weak basic skills, their circumstances and how their needs might best be addressed.

Box 1.1 The OECD Survey of Adult Skills

The Survey, a product of the Programme for the International Assessment of Adult Competencies (PIAAC), assesses the skills of adults in literacy, numeracy and problem solving in technology-rich environments.

- The **literacy** assessment covers a range of skills from the decoding of written words and sentences to the comprehension, interpretation and evaluation of complex texts (but not writing).
- The **numeracy** assessment involves managing a situation or solving a problem in a real context, by responding to mathematical content/information/ideas represented in multiple ways.
- The **problem solving in technology-rich environments** assessment focuses on the abilities to solve problems for personal, work and civic purposes by setting up appropriate goals, and accessing and making use of information through computers.

Each of the three assessments yields results scaled from 0 to 500 points. The scales are divided into six levels in literacy and numeracy (Levels 1 through 5 plus below Level 1) and four for problem solving in technology-rich environments (Levels 1 through 3 plus below Level 1). (Annexes B, C and D describe what adults can typically do at different levels of skill). The purpose of skill levels is to facilitate the interpretation of the results, and not as standards defining levels of skill required for particular purposes.

In addition, the Survey collects a range of information on the reading- and numeracy-related activities of respondents, the use of information and communication technologies at work and in everyday life, and on a range of generic skills, such as teamwork and time management.

More than 160 000 adults aged 16 to 65 were surveyed in 24 countries and sub-national regions: 22 OECD member countries – Australia, Austria, Belgium (Flanders), Canada, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Ireland, Italy, Japan, Korea, the Netherlands, Norway, Poland, the Slovak Republic, Spain, Sweden, the United Kingdom (England and Northern Ireland), and the United States; and two partner countries – Cyprus** and the Russian Federation (**see notes A and B in OECD, 2013b). Data collection for the Survey of Adult Skills (PIAAC) took place from 1 August 2011 to 31 March 2012 in most participating countries.

Source: OECD (2013a), *OECD Skills Outlook 2013: First Results from the Survey of Adult Skills*, OECD Publishing. doi: http://dx.doi.org/10.1787/9789264204256-en; OECD (2013b), *The Survey of Adult Skills: Reader's Companion*, OECD Publishing. doi: http://dx.doi.org/10.1787/9789264204027-en

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OECD (2013a), *OECD Skills Outlook 2013: First Results from the Survey of Adult Skills*, OECD Publishing. doi: http://dx.doi.org/10.1787/9789264204256-en

OECD (2013b), *The Survey of Adult Skills: Reader's Companion*, OECD Publishing. doi: http://dx.doi.org/10.1787/9789264204027-en

Chapter 2

Basic skills in the United States

This chapter describes the main findings of the OECD's Survey of Adult Skills for the United States and compares them with the results from a set of key comparison countries. The implications of the results – in terms of labor market outcomes such as employment and wages, and social outcomes such as health and citizenship are considered. Potential explanations for the US results are then assessed in relation to outcomes from basic schooling, age factors, and educational attainment. The characteristics of low-skilled adults are given separate attention.

Introduction

This chapter presents key findings from the Survey, looking at how the U.S. compares to the cross-country average (of all OECD countries participating in the Survey) and a set of selected comparison countries – Australia, Canada, England/Northern Ireland (UK), Finland, France, Germany, Italy, Japan, Korea, the Netherlands, Poland and Spain.[1] These include all those OECD country participants in the Survey that are also among the world's largest 20 economies (in terms of GDP at PPP).[2] Finland was added to the group of comparison countries as a Nordic country with strong basic schooling and therefore of particular interest.

Initially the overall results for the U.S. are examined, followed by a closer look at the circumstances of adults with low skills.

Basic skills in the U.S.: How they compare, what they mean for the U.S. and how they might be explained

This section provides an overall summary of the main findings, their implications, and considers potential explanations for the differences between the U.S. and other countries.

The main results

Of the three skills domains, and comparing the U.S. with other countries, the US performance is weak on literacy, very poor on numeracy, but only a little worse than average on problem solving in technology rich environments.[3] Broadly speaking the weakness affects the entire skills distribution, so that the U.S. has proportionately more people with weak skills than some other countries and fewer people with strong skills.

Literacy. 12% of US adults scored at the highest levels (Level 4/5), close to the cross-country average but less than in countries like Finland and Japan (about 22%). One in six adults in the U.S. has weak literacy skills (below level 2), making weak literacy more common in the U.S. than on average across countries. In Japan, the comparable figure of one in 20 is the lowest among surveyed countries (Figure 2.1). The average literacy score of adults in the U.S. (270 points) is similar to that of Germany and England/Northern Ireland (UK) (Table F.1). This corresponds to level 2 (see Annex B for a description of levels and sample tasks). The U.S. average score is higher than that of Poland, France, Spain and Italy, but below that of countries like Canada, Australia and Japan. About one-third (34%) of adults have Level 3 literacy skill, and another third (33%) Level 2.

Numeracy. Relatively few US adults achieve at the highest levels: only 8% scored at Level 4/5, below the cross-country average of 13% while in Japan and Finland 19% achieve the highest levels. Weak numeracy is more common in the U.S. than most other comparison countries, with almost a third of adults in the U.S. having scores below Level 2 (Figure 2.2). The U.S. average score (253 points) is higher than only two comparison countries (Italy and Spain) and similar to France (Table F.2). The U.S. average score corresponds to Level 2 (see Annex C for a description of levels and sample tasks). One-quarter (26%) of adults score at Level 3 and one-third (33%) at Level 2.

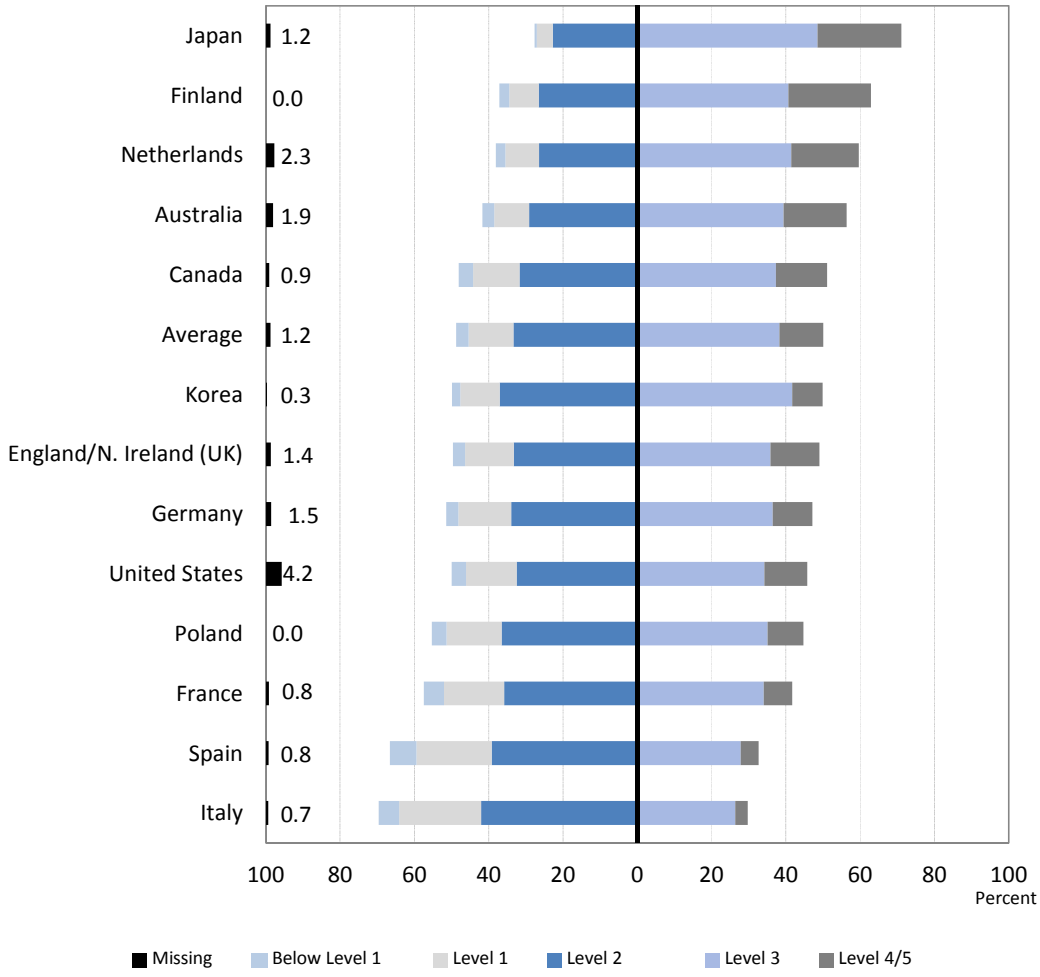
Survey respondents completed either a computer-based version of the assessment or a paper-based version of the literacy or numeracy assessment, depending on their computer

skills. The paper-based test was taken by those who had no computer experience (5% of surveyed adults in the U.S.), by those who did not have the basic ICT skills needed to take the test (4% in the U.S.) and by those who simply opted out of the computer-based assessment (6% in the U.S.). Some socio-economic groups were more likely to take the paper-based version than others (see Table F.3 for data on the U.S.). In the U.S., among those with less than high school education 41% took the paper-based test, against 17% for high school graduates and 5% of those with at least a college degree. The paper-based test was also more common among US adults who are inactive (i.e. out of the labor force) with 30% taking the paper-based test against around 14% for active adults. Many (35%) Hispanic adults took the paper-based test, against 22% of black adults and 11% of white non-Hispanic adults. These results suggest that in some groups many adults have limited familiarity with computer devices and applications.

Problem solving in technology-rich environments. About one-third (31%) of US adults score at least at Level 2, slightly below the cross-country average of (34%) and close to Korea (30%). The Netherlands and Finland are among the top performers with about 42% of adults performing at least at Level 2 (Figure E.1). Among young adults (aged 16-24) the U.S. has one of the lowest shares of adults performing at Level 2 or 3 (38%), while on average across OECD countries half (51%) of young adults do so and in Sweden, Finland and Korea the figure is over 60% (Table F.4) About a third of adults in the U.S. have Level 1 skill. The remaining third is evenly divided between a group that achieved scores lower than Level 1 and a second group that were unable to display skills in this domain.[4] More literate and numerate adults tend to be better at this type of problem solving. Those who achieve at least Level 2 in problem solving in technology-rich environments have on average at least Level 3 skills in both literacy and numeracy (see figures E.2 and E.3).

Figure 2.1 Literacy proficiency among adults

Percentage of adults scoring at each proficiency level in literacy



How to read this chart: This chart shows the share of adults with different levels of literacy skills. For example, in the United States 34.2% of adults scored at Level 3 and 11.5% of adults scored at Level 4/5. Countries closer to the top of the chart have proportionately more adults who score at higher levels of literacy. The black bar on the left edge of the chart shows the share of adults for whom no literacy score was imputed.

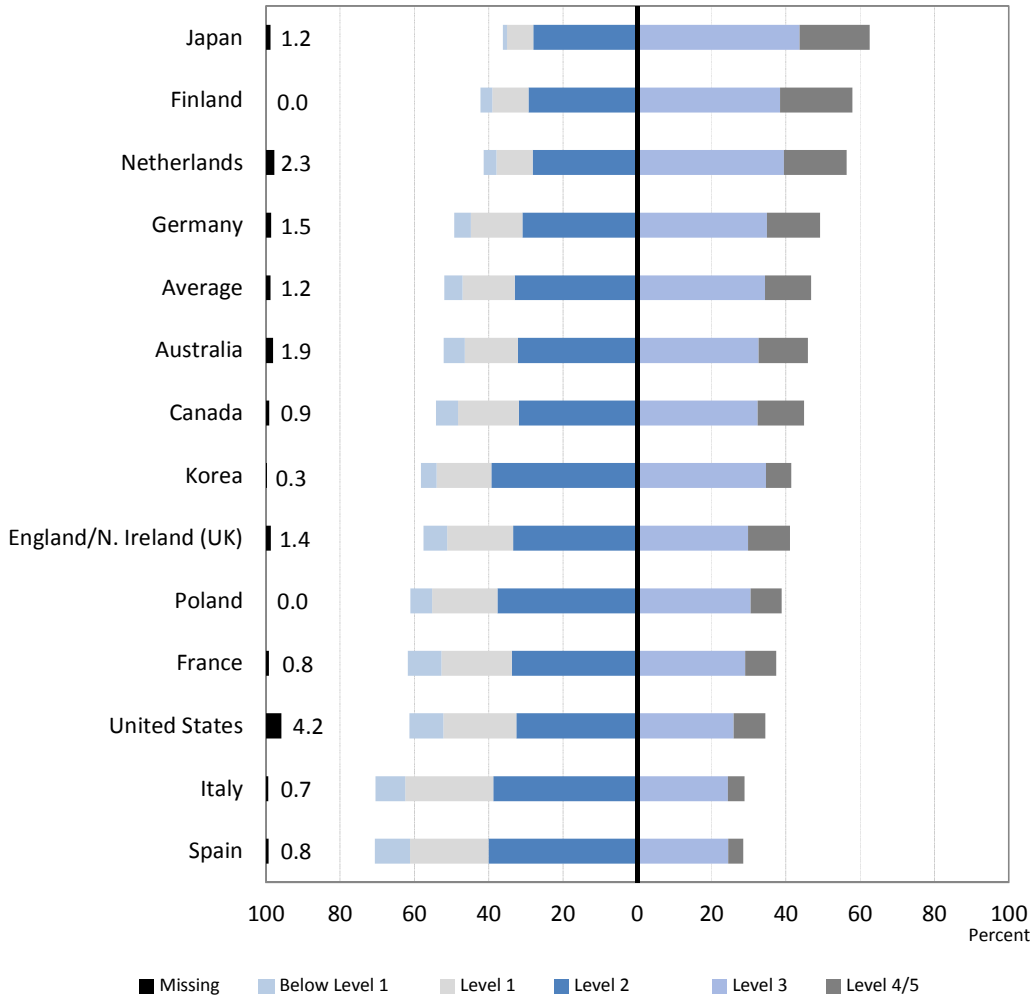
Notes: Countries are ranked in descending order of the combined percentage of adults scoring at Level 3 and Level 4 or 5. Adults in the missing category were not able to provide enough background information to impute proficiency scores because of language difficulties, or learning or mental disabilities (referred to as literacy-related non-response).

Source: Survey of Adult Skills (PIAAC) (2012).

StatLink http://dx.doi.org/10.1787/888932905856

Figure 2.2 Numeracy proficiency among adults

Percentage of adults scoring at each proficiency level in numeracy



How to read this chart: This chart shows the share of adults with different levels of numeracy skills. For example, in the United States 25.9% of adults scored at Level 3 and 8.5% of adults scored at Level 4/5. Countries closer to the top of the chart have proportionately more adults who score at higher levels of numeracy. The black bar on the left edge of the chart shows the share of adults for whom no numeracy score was computed.

Notes: Countries are ranked in descending order of the combined percentage of adults scoring at Level 3 and Level 4 or 5. Adults in the missing category were not able to provide enough background information to impute proficiency scores because of language difficulties, or learning or mental disabilities (referred to as literacy-related non-response).

Source: Survey of Adult Skills (PIAAC) (2012).

StatLink http://dx.doi.org/10.1787/888932905875

How basic skills affect economic and social outcomes

This subsection looks at how basic skills affect life chances. In practice, many correlates of basic skills are both causes and effects of basic skills, and this needs to guide the interpretation of the results. For the same reason there is some overlap between this section, which looks at how basic skills affect outcomes, and the following section, which looks at the factors which explain basic skills levels in the U.S.

Good labor market returns from basic skills

In most countries, those with better basic skills (independently of their education level) are more likely to be economically active, in employment, and receive higher wages (see figures E.4, E.5 and E.6). The relationship between skills and wages is particularly strong in the U.S., and in other similar countries where there is less stringent employment protection and higher wage dispersion. Where it is easier for employers to hire and fire workers, they may more readily try out relatively unqualified recruits, checking their skills on-the-job, and retaining and rewarding the better skilled workers. So the wage rewards for basic skills, regardless of education levels, are particularly high in the U.S. This is consistent with research evidence showing that among high school dropouts who tried but failed to obtain a GED, those with higher scores had higher earnings than those with lower scores (Tyler, Murnane and Willett, 2000).

This strong US association between basic skills and wages has a positive side, in that there are strong incentives to obtain strong basic skills, and a negative side, in that the penalties for those with weak basic skills are greater.

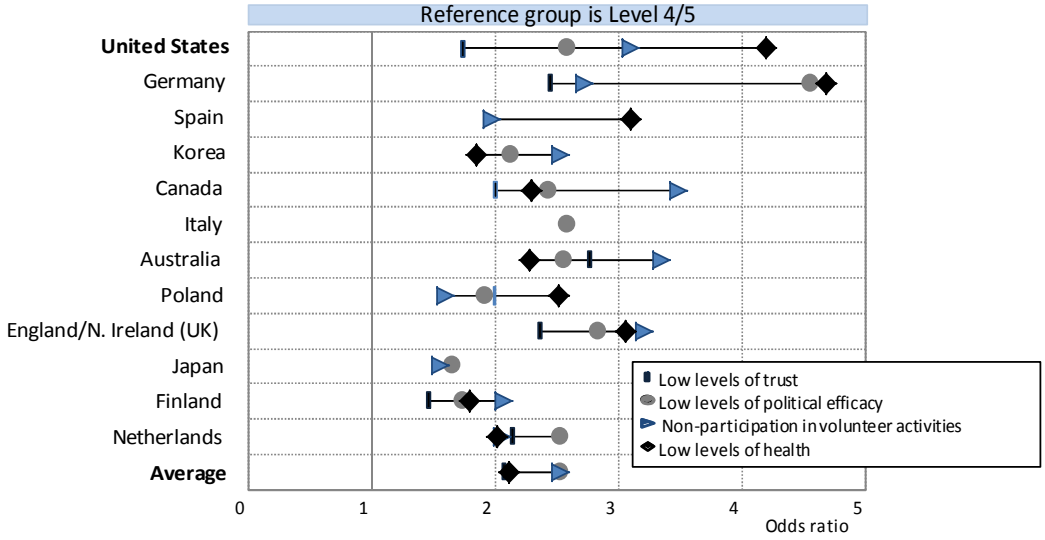
Social outcomes

Basic skills are important for effective citizenship and personal well-being as well as employment (see Figure 2.3).

- In the U.S., the odds of reporting[5] "fair" or "poor" health are four times higher for those with low literacy skills (below Level 2) than for those with strong skills (Level 4/5). This is double the ratio found on average across countries and the relationship between health and literacy skills is stronger[6] in the U.S. than in all but one comparison country (Germany).
- In the U.S., even more than in most other countries, those with lower skills are more likely to feel that they lack influence on public decisions. (60% of low-skilled adults do not believe that "people like them" have a say in what the government does).
- Voluntary participation is more common in the U.S. than in most OECD countries. To a greater extent than in most countries, literacy in the U.S. is associated with voluntary participation.
- The association between basic skills and trust[7] in the U.S., although present, is weaker than in most countries.

Figure 2.3 Low literacy proficiency and negative social outcomes

Odds ratio showing the likelihood of adults scoring at or below Level 1 in literacy reporting low levels of trust and political efficacy, fair or poor health, or of not participating in volunteer activities (adjusted)



How to read this chart: This chart shows that adults with weaker literacy skills are more likely to report negative social outcomes, even when other factors (e.g. age, gender, education, immigrant and language background) are taken into account. For example, in the United States the odds of reporting low levels of health (black rhombus) are over four times higher for low-skilled adults than for high-skilled adults. But in Korea and Finland the corresponding figure is less than two.

Notes: Countries are ranked in descending order of the difference between the maximum and the minimum odds ratios for the four social outcomes. Estimates that are not statistically different from the reference group are not shown. Odds ratios are adjusted for age, gender, educational attainment and immigrant and language background.

Source: Survey of Adult Skills (PIAAC) (2012).

StatLink http://dx.doi.org/10.1787/888932905894

Participation in adult education and training

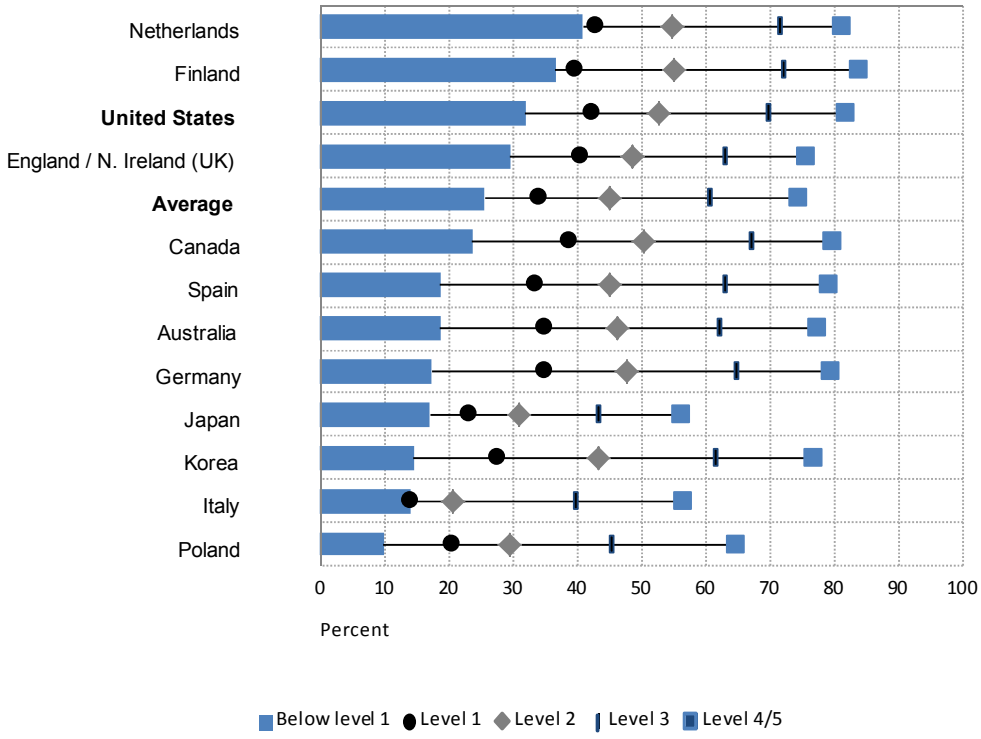
The capacity to read and interpret complex texts, and handle quantitative concepts, is critical to many types of formal learning. One function of basic skills is therefore to facilitate further learning. Figure 2.4 shows that, everywhere, those with stronger existing basic skills tend to participate more in adult education and training (which takes forms ranging from basic literacy to university education and high level professional training). In the U.S. participation in adult education and training is more common than on average across countries, at all skill levels.

Data collected specifically for the U.S. (but not in other surveyed countries) show that adults with less education – and therefore often with low skills – are less likely to pursue basic skills training. Among low-educated 16-29 year-olds, 18% participated in basic reading, writing or math training and 15% in GED preparation (or other high school equivalent) in the year preceding the Survey. Among those who did participate, the group with the greatest needs – those with low literacy skills – represented the minority of participants (Table F.5). Some people are not aware of their skills weaknesses – among

adults who describe themselves as "reading English well", fully 38% score at below Level 2 on the literacy scale in the U.S. (Table F.6) – meaning that their self-assessment is at odds with the Survey assessment. So many of those with the weakest basic skills do not recognize that they have a problem and/or are unwilling to seek help.

Figure 2.4 Participation rate in adult education, by literacy proficiency levels

Percentage of adults who participated in adult education and training during year prior to the Survey, by level of proficiency in literacy



How to read this chart: This chart shows that adults with higher literacy skills tend to participate more in adult education than those with weaker literacy skills. For example in the US participation rate in adult education (over the past 12 months) was 81.5% among adults scoring at Level 4/5, 69.7% among those scoring at Level 3, 52.6% among those scoring at Level 2, 41.9% among those scoring at Level 1 and 31.9% among those scoring below Level 1.

Note: Countries are ranked in descending order of percent of adults scoring below Level 1 in literacy in adult education and training during year prior to the survey.

Source: Survey of Adult Skills (PIAAC) (2012).

StatLink http://dx.doi.org/10.1787/888932905913

Explaining the US results: Potential causes and correlates

How might the US results – in particular the relatively weak overall results – be explained? Some potential factors are considered below.

Basic skills as school outcomes and among adults

It is no surprise that the basic skills of teenagers, reflecting school outcomes, have a very strong bearing on the skills of the same individuals when young adults. So the basic skills of 15-year-olds observed across countries in OECD's PISA[8] exercise are related to the same skills observed among young adults in the Survey.

The cohorts assessed at the age of 15 in various rounds of the PISA survey (2000, 2003, 2006 and 2009) reappear as young adults in the Survey of Adult Skills. Clearly these two surveys have to be compared cautiously. The overlap between the target populations is not perfect: not all adults aged 27 were in school at the age of 15, and both emigration and immigration will have changed the composition of the cohorts. While the assessments in the two surveys are very similar, the measurement scales are not the same[9] – so the comparative measure used is independent of the scales, namely mean skill scores relative to the cross-country average. The results signal the strength of the link between the basic skills of 15 year olds and those same individuals as young adults.

As expected, countries performing well in PISA in a given year (e.g. 2000) tend also to perform well in results for the young adults in the Survey of Adult Skills, conducted just over 10 years later (see Figure 2.5). So many differences between countries in the basic skills of current young adults reflect earlier differences in the skills of the same cohorts at the age of 15 – which in turn reflect the effectiveness of learning during early childhood and the school-age years. Both in literacy and numeracy 15-year-olds in the U.S. scored below-average[10] in various rounds of PISA, and the corresponding age cohorts also scored below-average[11] in the Survey of Adult Skills. To a great extent therefore, weaknesses in basic skills among young US adults is attributable to weaknesses in basic skill acquisition in the school-age years and earlier.

Figure 2.5 Skills proficiency in PISA and in the Survey of Adult Skills

Mean reading score in PISA 2000 and literacy score in the Survey of Adult Skills 2012, 26-28 year-olds

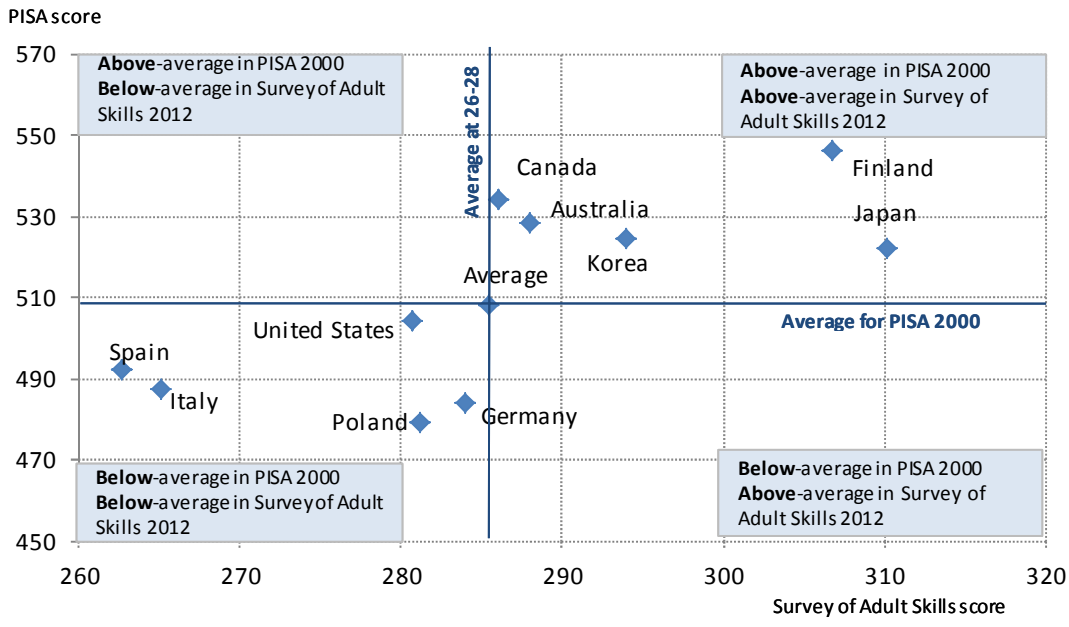
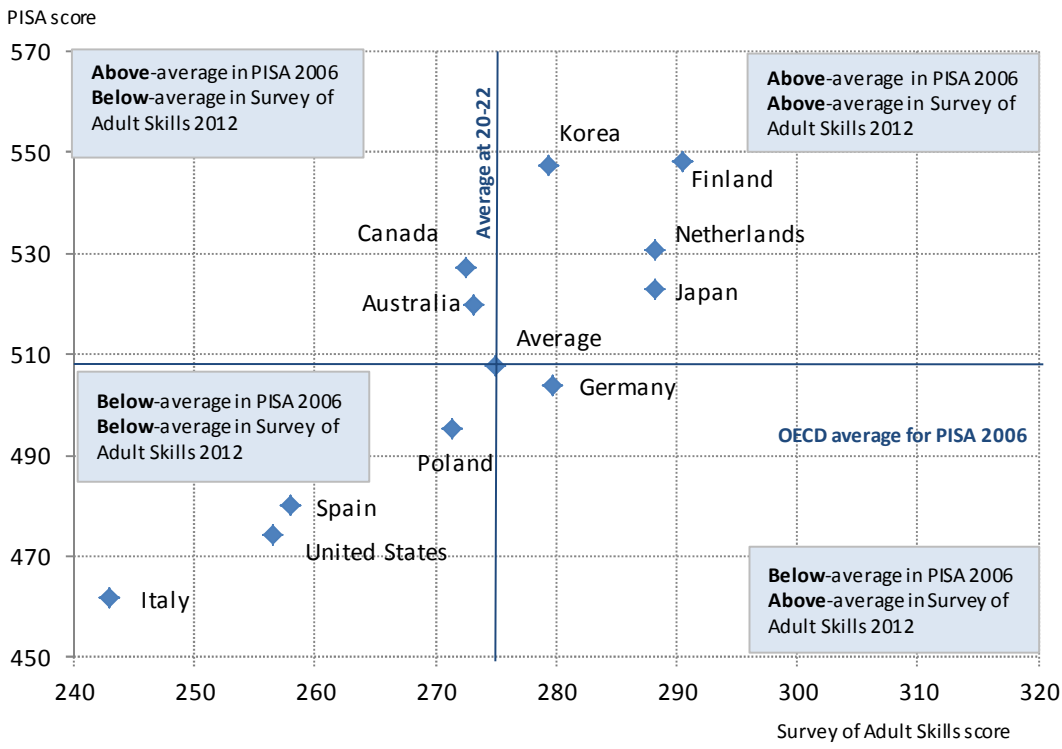


Figure 2.5 Skills proficiency in PISA and in the Survey of Adult Skills (*continued*)

Mean mathematics score in PISA 2006 and numeracy score in the Survey of Adult Skills 2012, 20-22 year-olds



How to read this chart: This chart shows how 15-year-old students performed in PISA relative to other countries, and how the same cohorts scored, again relative to other countries, as young adults a few years later in the Survey of Adult Skills. For example, the 15-year-olds in the U.S. had below-average numeracy scores in 2006. Six years later, 21-year-olds US adults also had below-average scores in the Survey of Adult Skills. Countries in the top right quadrant (e.g. Korea, Finland) had above-average scores on both assessments.

Note: The average presented here is a refinement of the average presented in the main report of the Survey of Adult Skills (OECD, 2013a). It refers to the arithmetic mean of country estimates, restricted to the set of countries that participated in both the Survey of Adult Skills and the corresponding round of PISA.

Source: OECD, Survey of Adults Skills (2012) and OECD, PISA databases (2000, 2006).

StatLink http://dx.doi.org/10.1787/888932905932

Education and basic skills

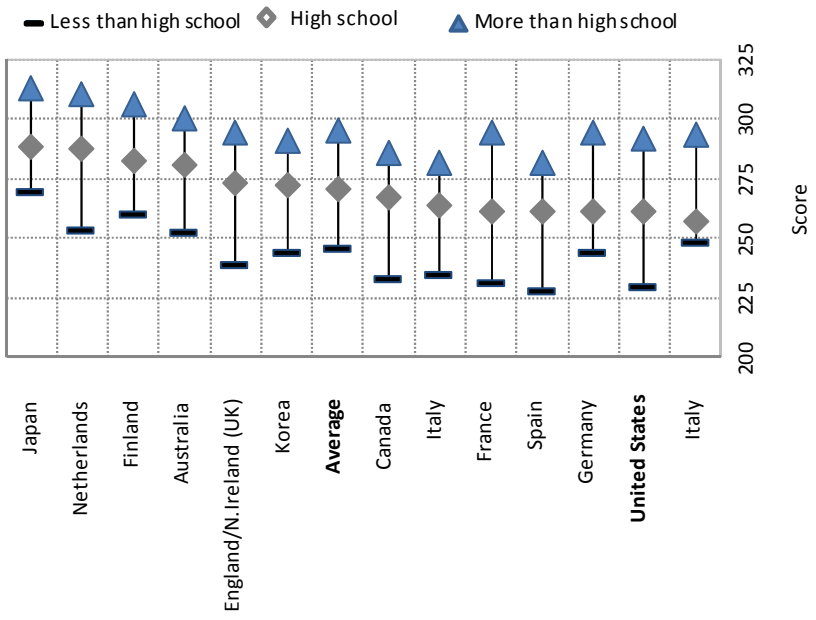
Basic skills and educational attainment are mutually reinforcing, so those with higher levels of education tend to have better basic skills (see Figure 2.6). Among comparison countries the U.S. had one of the smallest proportions of adults with less than high school education, and one of the largest with more than high school (see Table F.7).

US adults with "more than high school" education have similar literacy skills (on average) to their similarly educated counterparts in other OECD countries. But for US adults with high school education or less, performance is worse, on average, than their

international counterparts. Despite the higher level of education of US adults relative to those in comparison countries, this is outweighed by the weaker basic skills in the U.S. among those at high school level and below, so overall, US adult skills do not compare well internationally.

Figure 2.6 Skills proficiency scores by educational attainment

Mean proficiency scores on the literacy scale by educational attainment



How to read this chart: This chart shows the average score of adults with more than high school education (triangles), high school education (rhombuses) and less than high school education (lines). For example in the United States adults with less than high school education achieved an average score of 230.3, those with high school education scored on average at 260.9 points, while those with more than high school education scored on average at 291.4 points.

Note: Countries are ranked in descending order of the average score of adults with high school education.

Source: OECD, Survey of Adult Skills (2012).

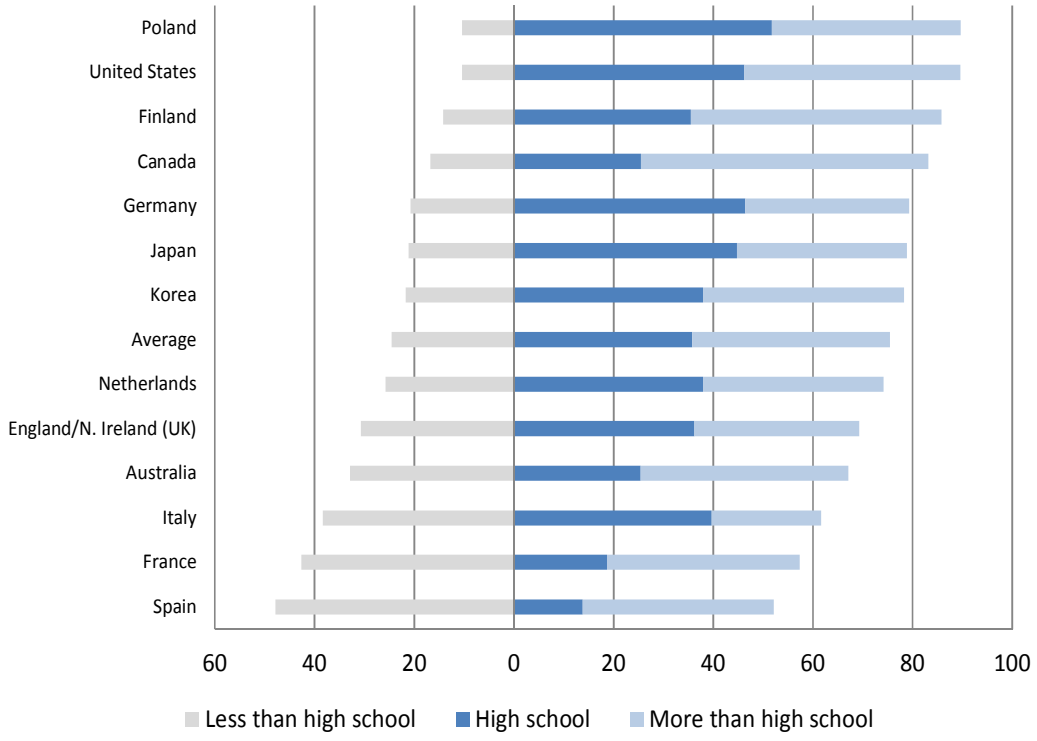
StatLink http://dx.doi.org/10.1787/888932905970

While the skills of adults with a particular level of education may tell us something about the quality of that education level, we need to be cautious about such inferences. Prior abilities often determine selection into an education level. In the U.S., for example, comparatively few adults report having less than high school education (14% against a cross-country average of 24%) (Table F.7). A particular education "level" may also correspond to rather different mixes of programs in different countries. For example the "more than high school" category includes qualifications ranging from relatively short programs (e.g. certificates in the U.S.) to doctoral programs, and countries vary substantially in the mix of these programs completed by their adult population. Finally, basic skills can be developed or may decline outside the formal education system, so differences among countries may also reflect variations in skills development after (and alongside) the completion of formal education.

There is substantial variation across countries in the level of education that workers consider necessary for their jobs. Nine out of ten US workers report that a person applying for their job today would need at least high school level education – one of the highest proportions among OECD countries (see Figure 2.7) – and more workers than elsewhere said that "more than" high school would be needed. This could reflect more complex job requirements in the U.S. given its advanced economy. Alternatively, in the U.S., high school is commonly seen as an educational minimum and postsecondary credentials as an almost universal aspiration: such educational expectations could color US respondent perceptions, perhaps leading some respondents to say that their jobs require higher qualifications than their counterparts in similar jobs in other countries.

Figure 2.7 Education requirements of workers

Percentage of workers in jobs requiring different levels of education (self-reported measure)



How to read this chart: This chart shows the level of education that workers think their job requires. Countries towards the top of the chart have the lowest share of workers in jobs requiring less than high school education (grey bars). For example, in the U.S. only about 10% of workers say their job requires less than high school education, while 46% say it requires high school education (dark blue bar) and 43% say it requires more than high school education (light blue bar).

Notes: Education required to get the job is the qualification the worker deems necessary to get his job today. Countries are ranked in ascending order of the percentage of workers in jobs requiring less than high school education (level ISCED 3C short or below). High school corresponds to level ISCED 3 long. More than high school corresponds to level ISCED 4 and 5.

Source: OECD, Survey of Adults Skills (2012).

StatLink http://dx.doi.org/10.1787/888932905989

Unsurprisingly, US adults with a diagnosed learning disability are about twice as likely to have low skills as those without such disabilities (Table F.8). Among those with a learning disability 34% scored below Level 2 in literacy, against 17% for those without a disability. Conversely, it is striking that fully two-thirds of those with diagnosed learning disabilities are *not* low-skilled in literacy, with some (around 6%) performing at the highest levels (4 and 5). In numeracy about half of those with a learning disability scored below Level 2, compared with just over a quarter of those without a learning disability. Data on disability were collected as part of the U.S. national data collection in the Survey, so comparable data from other countries are not available.

Trends in basic skills in the U.S. and how they compare with other countries

Three different lines of analysis all point to the same conclusion – that the basic skills of US adults are changing little.

- Both the average education level and the average basic skills of young US adults are not hugely different from their older peers. The difference between the average scores of the youngest and oldest adults is nine points in the US, the lowest of all countries (Figure E.7). In many OECD countries young adults are much better educated and have much better skills than their older compatriots. In Korea, for example, the average literacy score for the youngest adults is 49 points higher than for the oldest adults – reflecting the rapid increase in educational attainment among younger Korean cohorts (Table F.7).
- There is little evidence of any sustained improvement in the basic skills acquired at school; US PISA results have been stable over the last decade in reading and mathematics (with some improvement in science).
- Figure E.8 compares the average scores of adults of the same age at the time of the Survey of Adult Skills and the International Adult Literacy Survey (for the U.S. 2012 and 1994 respectively) in selected countries. "Cohort"[12] effects may be due to a range of factors, such as changes in the quality and/or quantity of educational attainment among cohorts, changes in labor market experience and further learning opportunities, etc. In the U.S. there is a negative cohort effect for several cohorts – for example 30-year-olds in 2012 scored on average lower than 30-year-olds in 1994.

This relative stability in adult basic skills has implications for how the U.S. will compare to other countries in the future – these are discussed further in Chapter 3.

Skills use at and outside work

Skills are developed by use, and, in a pattern of mutual reinforcement, the existence of skills facilitates their use. Table F.9 shows that adults who engage more in reading at work tend to have better literacy skills. The same correlation is observable between numeracy skill and practice at work (Table F.10). Similarly, those who more often use their literacy and numeracy skills outside work have better skills in these domains than those who seldom use them (OECD, 2013a). These relationships remain even after taking education and language background into account.

While these findings do not establish the direction of causality, independent research evidence supports the common sense view that skills are maintained and developed through practice (sometimes called the "use it or lose it" hypothesis). Some studies suggest that intellectually demanding jobs enhance cognitive skills (e.g. Schooler, Mulatu

and Oates, 1999; Potter, Helms and Plassman, 2008) and that retirement may lead to a decline in cognitive skills (Bonsang, Adam and Perelman, 2012; Mazzonna and Peracchi, 2012). Results from the Longitudinal Study of Adult Learning, which followed up high school drop-outs over time, also suggest that practicing literacy and numeracy, at home, in the community or at work, helps to sustain and improve those skills (Reder, 2009).

We know that two-thirds of the low-skilled in the U.S. are in work. While on the positive side, this may be seen as a foundation for career advance, and a means of engaging the low-skilled through employers, on the negative side it raises concerns: clearly these jobs have not been particular helpful in developing and maintaining the basic skills of those in these jobs (otherwise the workers involved would no longer be low-skilled).

Socio-economic background

In all countries, but particularly strongly in the U.S., adults born to better educated parents tend to have stronger basic skills. Among 16-24 year-olds in the U.S. the association is much weaker and is close to the cross-country average (Table F.11). This latter finding might be interpreted positively in terms of an improvement over time in equity in the education and training system. More negatively, it could simply be that the effect of parental education takes some time to have its full impact in adult life.

Figure E.9 shows that in all countries, but again more strongly in the US, low-educated adults from disadvantaged backgrounds are particularly likely to have low skills. In the U.S., the odds of being low skilled are ten times higher for low-educated adults born to low-educated parents than for higher-educated adults born to higher-educated parents, much greater than in other countries.

These strong social background effects have an interaction with race. They mean that, quite independently of any direct effects of race or ethnicity, any socially disadvantaged group will tend to pass on their disadvantages to their children in the form of weaker skills, and this effect is stronger in the U.S. than in other countries.

Race/ethnicity

Although race and ethnicity are not expected to be linked to underlying ability, they are often found to be correlated with skill levels in adult populations. Data on race/ethnicity were therefore collected as part of the U.S. national data collection in the Survey (so comparable data from other countries are not available). On average white adults scored highest in literacy, followed by adults of "other ethnicity", black adults and Hispanic adults[13] (Table F.12). While 10% of white adults score below Level 2 in literacy, over a third (35%) of black adults do so, and even more (43%) Hispanics (Table F.13). Similar patterns are observed in numeracy (Table F.14): 59% of black and 56% of Hispanic adults score below Level 2, compared to 19% of white adults.

Considerable skills differences between races remain even when comparing those with similar educational attainment (Figure E.10). Some of this may reflect variations in the exact type and mix of qualifications (e.g. length of college program, GED vs. high school diploma) and variations in the quality of educational programs. But other unmeasured factors, such as family background, and the experience of adults outside the formal education system, may also be at work.

Immigrants

In most countries, including the U.S., the foreign-born, and particularly those among them that are socio-economically disadvantaged, tend to have fewer skills than native-born adults – particularly but not only literacy skills, recognizing that many immigrants have less fluency of the language of assessment than the native-born. In the U.S. this group of immigrants (referred to as "migrants" to follow international nomenclature in the tables and figures) face particularly large skills disadvantages – the odds of having low literacy skills (in the context of an assessment in English) are about ten times higher for foreign language immigrants from a disadvantaged background than for non-immigrants from advantaged backgrounds, well above the cross-country average of 6.8 (Figure E.11). Cross-country variations in immigrant skills may reflect the way in which immigrant groups are selected, or select themselves, as well as the effectiveness of integration policies (including language training).

The impact of an immigrant population on overall adult skills therefore depends on a combination of the skills of immigrants relative to the general population and the relative size of the immigrant population. The U.S., like Germany and Canada, has a relatively large immigrant population (14% or more of 16-65 year-olds): some other countries have very small immigrant populations (e.g. less than 2% in Korea, Japan and Poland) (Table F.25).

Explaining the US results: Conclusion

How does this mix of factors explain the US basic skills results relative to other countries? A few key points stand out. First, education is tied to skills, and US weaknesses in basic skills, particularly among young adults, are in significant part the product of initial schooling. Moreover, unlike many other countries, the U.S. has not succeeded in improving the education (and therefore skills) level of younger cohorts, as compared with older cohorts. This has allowed, and will continue to allow, other countries to gradually improve the basic skills of their adult populations while those in the U.S. remain largely unchanged. Second, a large proportion of the low-skilled in the U.S. are black or Hispanic, and one-third of the low-skilled are immigrants. So continued skills disparities among some large sub-populations go some way to explaining the relatively large number of low-skilled persons in the U.S. Third, socio-economic background appears to have a larger impact on skills than in other countries, so that skills deficits in the previous generation are readily reproduced in the current generation.

Adults with low skills

Here we have defined "low-skilled adults" as those with poor basic skills – below Level 2 on the literacy scale, including both those at Level 1 and those with skills below Level 1. This definition was chosen recognizing that literacy and numeracy skills are very closely correlated, so that an analysis of those with low numeracy levels would yield broadly similar findings and implications. In the U.S. this includes around 36 million adults – roughly the (all-age) population of New York, Michigan and Minnesota. Around 8 million adults have literacy skills below Level 1 and around 28 million at Level 1. This section describes the characteristics of these adults, identifying implications for the kind of interventions which might help this group.

Who are the low-skilled in the United States?

One-third are aged less than 35

Relative to the U.S., countries like Italy, Spain and Poland have a higher share of adults overall with low literacy levels but fewer of them are young – less than 10% of those with literacy skills below Level 2 are under 25 (Table F.17). This partly results from the more youthful demographic profile of the U.S., but it also reflects the fact that (as discussed above) some countries have substantially increased educational attainment, and therefore basic skills, among younger cohorts, while the U.S. has not done so.

One-third are immigrants

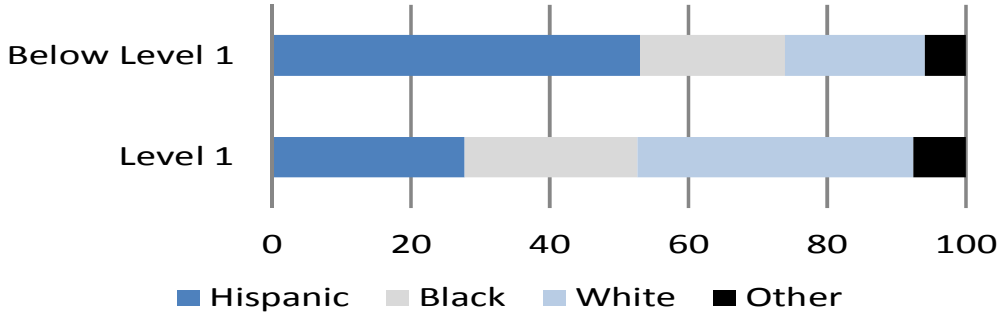
Immigrants represent one-third of low-skilled adults in the U.S., more than in the comparison countries that have fewer immigrants overall.[14] One-quarter of those with weak numeracy skills are immigrants (Table F.15 and F.16).

More than half are black or Hispanic

Given that low skills are three to four times more common among blacks and Hispanics than among whites, these groups are substantially over-represented in the low-skilled population. Half of those with the very lowest level of literacy (below Level 1) are Hispanic, and a further one in five are black. Among those with Level 1 literacy skills, about a quarter are black and a little over a quarter are Hispanic. Among those scoring at the lowest level of numeracy (below Level 1), 31% are black and 37% are Hispanic, while about the same proportion (22%) of those scoring at Level 1 are black and Hispanic (Figure 2.8A and 2.8B).

Figure 2.8A Race/ethnicity of adults with low literacy skills in the United States

Percentages



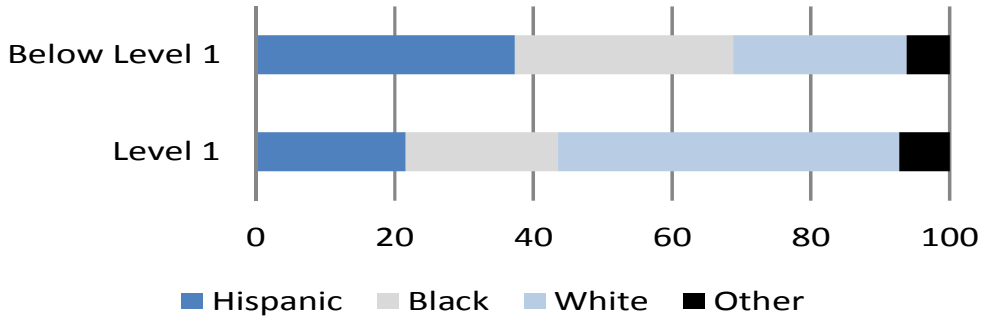
How to read this chart: This chart shows the race/ethnicity of adults at the two lowest levels of literacy in the U.S. Among those scoring at the lowest level (Below Level 1), 53% are Hispanic, 20.9 are black and 20.1% are white. Among adults scoring at Level 1 in literacy 27.7% are Hispanic, 24.9% are black and 39.7% are white.

Source: Survey of Adult Skills (PIAAC) (2012) U.S. national dataset.

StatLink http://dx.doi.org/10.1787/888932906008

Figure 2.8B Race/ethnicity of adults with low numeracy skills in the United States

Percentages



How to read this chart: This chart shows the race/ethnicity of adults at the two lowest levels of numeracy in the U.S. Among those scoring at the lowest level (Below Level 1), 37.3% are Hispanic, 31.5% are black and 25.8% are white. Among adults scoring at Level 1 in numeracy 21.6% are Hispanic, 21.9% are black and 49.3% are white.

Source: Survey of Adult Skills (PIAAC) (2012) U.S. national dataset.

StatLink http://dx.doi.org/10.1787/888932906008

Two-thirds of young (16-24) low-skilled adults are men, with the difference reversing among older age groups.

Overall the low-skilled are about as likely to be men as women (52% men, 48% women). But among low-skilled young persons (aged 16-24) two-thirds are men, with the difference reversing among older age groups. This same pattern is observed in most other countries (Table F.18), reflecting among other factors rising levels of educational attainment (and therefore skills) among more recent cohorts of young women.

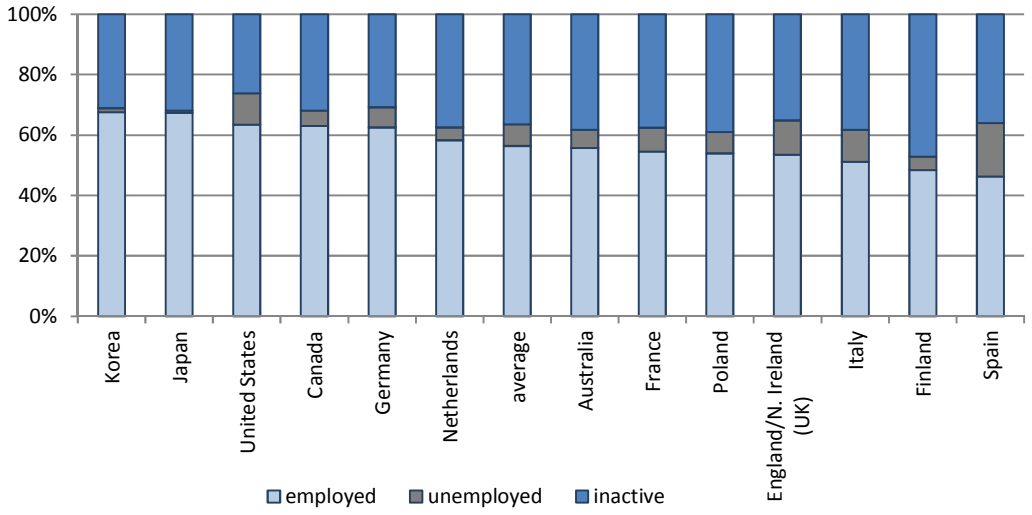
Three out of ten report having only "fair" to "poor" health.

Close to a third (29%) of low-skilled adults in the U.S. report having only "fair" to "poor" health (Table F.19). As discussed above, when age and other background variables are taken into account, there is a very strong relationship between literacy skills and health in the U.S.

Nearly two-thirds are in work, but they earn comparatively low wages.

In the U.S. two-thirds (63%) of low-skilled adults are in employment, higher than in most comparison countries. One in ten low-skilled adults are unemployed (not in employment but actively searching) – again a share higher than in most comparison countries. Economic inactivity among low-skilled adults, at 26%, is therefore less common in the U.S. than in any other comparison country (Figure 2.9). 40% of low skilled adults have earnings in the bottom fifth of the distribution, similar to other countries (Table F.20).

Figure 2.9 Employment status of adults with low literacy skills, percentages



How to read this chart: This chart shows the share of low-skilled adults who work, are searching for a job or are inactive. For example, in the United States, 63% of low-skilled adults are employed, 10% are unemployed but actively searching for a job and 26% are inactive.

Note: Countries are ranked in descending order of the percentage of low-skilled adults in employment.

Source: Survey of Adults Skills (PIAAC) (2012).

StatLink http://dx.doi.org/10.1787/888932906027

For the low-skilled, some pathways of opportunity

While many Survey findings regarding the low-skilled are worrying, some results, more positively, hint at potential policy interventions and career routes.

High levels of labor market participation

Compared with other countries, the U.S. is distinctive both in that so many low-skilled adults have jobs (as described above), and in terms of the good rewards for basic skills in the labor market. Potentially at least, this provides an avenue, and the incentives, for career advance.

Youth

Given that the low-skilled are relatively young in the U.S., they may be more flexible and amenable to education and training, and the lifetime returns from effective interventions will be greater.

High levels of participation in adult learning

Almost 40% of low-skilled adults report having participated in some form of adult education or training over the past 12 months (Table F.21) higher than in most other comparison countries and the cross-country average of 31%. But low-skilled adults benefit much less from such learning opportunities than those with Level 3 or higher

literacy skills (where in the U.S. over 70% participated in adult learning over the previous year).

One key question is whether those with the weakest literacy skills would be interested in learning opportunities and what obstacles lie in their path. Among those low skilled adults who did not participate in adult education, 18% – representing around 3 million persons – say they would have liked to participate (Table F.22). Among low-skilled participants in adult education, 36% say they would have wanted to participate more. Both figures are above the cross-country average, reflecting the overall pattern that interest in further learning opportunities tends to be higher in countries where participation rates in adult education are higher. This suggests some unmet demand, which could be addressed by policy programs.

Participation and voluntary work

Just over one-third (35%) of low-skilled adults in the U.S. have done voluntary work for charity or non-profit organizations over the past 12 months – more than in any comparison country and well above the cross-country average of 22% (Table F.19). The implication is that programs which seek to address skills needs through the non-profit sector could be effective. This could involve a mix of programs, including partnerships between non-profit organizations and community colleges.

Notes

1. Data from France are included in only some charts of the report due to the timing of data collection. Some charts include a smaller number of countries, selected as illustration.
2. This is a slightly different group to the organized "G20" set of countries. Data from Russia could not be processed in time for this publication.
3. Percentages of adults reported here at each proficiency level differ from the results published by the U.S. National Center for Education Statistics (NCES), due to differences in the accounting of adults unable to participate in the assessment part of the survey. NCES bases calculations of the percentage distribution by proficiency level based only on those that participated in the assessment. The OECD includes the assessment non-respondents as a separate category in the percentage distribution.
4. In each participating country, some adults were unable to display proficiency in problem solving in technology-rich environments. This group includes adults who had no prior computer experience and adults with some computer experience who did not have the basic computer skills necessary to take the assessment component of the Survey of Adult Skills in its computer-based version. In addition, some respondents opted to take the paper-based version of the assessment without first taking the test of basic ICT skills, even though they reported that they had experience with computers (OECD, 2013a, p.34).

5. Survey respondents were invited to describe their own health status.

6. A recent report (National Research Council, 2013) found that people in the U.S. live shorter lives and have poorer health than their counterparts in other high-income countries. There are clear linkages between health and socio-economic conditions (e.g. Marmot et al., 2008; Adler and Stewart, 2010), which are in turn strongly linked to basic skills. These considerations have led many to consider health literacy as the "sixth vital sign" along with signs like blood pressure and respiration (Heinrich, 2012). In the light of rising levels of obesity and diabetes, for example, the capacity to understand and act upon prevention and treatment messages and insurance advice.

7. Adults were considered as having low levels of trust if they agreed with the statement that "There are few people you can trust completely".

8. PISA is an international sample survey, conducted every three years in a large number of OECD and non-OECD countries, including the U.S. It measures the skills of 15-year-old students the areas of reading, mathematics and science.

9. See OECD (2013b) for more details.

10. The PISA average considered here is the mean score of countries that participated in both PISA and the Survey of Adult Skills. Consequently the set of countries included in the average may vary across rounds of PISA.

11. The Survey of Adult Skills average considered here is the mean score of countries that participated in both PISA and the Survey of Adult Skills. Consequently the set of countries included in the average may vary across rounds of PISA.

12. In understanding the relationships between age and other variables using cross-sectional data, it is useful to distinguish age, cohort and period effects. It is possible to disentangle some of these effects by linking findings of the Survey of Adult Skills and those in previous surveys of adult skills. *Age effects* are the consequences of growing older: as adults age from their 30s to their 40s and 50s their skills may change as a result of their experiences, brain changes etc. *Cohort effects* are the consequences of being born at different times: individuals who attended school in the 1960s will not have received the same type of education as adults who went to school in the 1980s. *Period effects* are the consequences of influences that vary through time. For example the recession that followed the 2007-08 financial crisis affected adults of all ages during a particular period (OECD, 2013a).

13. The terminology used here is the one used in the U.S.-specific dataset on race/ethnicity.

14. The U.S., similarly to countries like Germany and Canada, has a relatively large immigrant population (14% or more of surveyed adults), while countries like Poland and Japan have much fewer immigrants (less than 1%).

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Chapter 3

Policy recommendations for the United States

This chapter assesses the policy implications of the US results. It looks at why action is needed, arguing that the lack of improvement in skills in younger cohorts and the relatively weak performance at the top end of the ability spectrum suggest underlying weaknesses requiring both improvements in initial education and training and effective adult learning interventions. The chapter argues for seven policy recommendations: that concerted action is necessary to address the skills challenge; that substantial improvements are needed in initial schooling, with adequate standards for all; that effective learning pathways should be available for young adults after leaving high school; that programs to address basic skills should be linked to employability; that adult learning programs should be adapted to diverse needs and effectively coordinated with other interventions; that awareness of basic skills challenges should be increased; and that action should be well-supported with evidence.

The US results and the basis for policy

Is action needed?

There may be some temptation to look at the results reported here as something which might be expected in a country as large, diverse and decentralized as the U.S., with a large immigrant population, and therefore not calling for any specific policy response. Although these features of the U.S. are relevant, the argument is unconvincing. Diversity cannot explain the lack of progress over time in skills and educational attainment which the U.S. displays relative to other countries, nor can it explain the two-thirds of the low-skilled population born in the U.S.

It could also be argued that the strength of the U.S. economy depends heavily on strongly-performing elites at the upper end of the skills distribution, and less on average skills levels or the proportionate size of the low-skilled population. This is a debatable point, but even if it is true, the figures provide little comfort. One of the more surprising findings of the Survey is the relatively weak US performance at the top end of the ability range. Critically, among young adults, the U.S. has fewer top performers on either literacy or numeracy than most comparison countries. These weaknesses in performance at the top as well as the bottom end of the spectrum suggest structural weaknesses in the education, training and skills system, rather than just diversity or inequity or specific challenges faced by only certain subpopulations. The policy recommendations which follow are therefore addressed at basic skills improvement across the board, alongside a necessary focus on the low-skilled, where considerations of equity are particularly salient.

Initial schooling and adult learning

Among 15-year olds, the PISA exercise tells us that some countries like Korea and Finland have tackled weak basic skills very effectively (in Korea no more than 1% of students are at or below the lowest level 1b of the reading scale, compared with around 6% on average for the OECD) (OECD, 2010a). But for adults the position is different. Most countries have a lot of low-skilled adults, even the best-performing countries. The share of adults with literacy skills below Level 2 is about 5% in Japan and slightly above 10% in Finland and the Netherlands. The implication is that in countries, like Finland and Korea, the pedagogical challenges of providing basic skills to most (if not all) the population can be solved in initial schooling, despite the many learning difficulties encountered. This is almost certainly because the institutional supports, which ensure that – say – a child with poor reading skills will experience targeted interventions in an effective school system, are not similarly available for adults. In adult life, initial weaknesses may therefore drift into illiteracy and innumeracy.

This is a profoundly important message for two reasons. First it tells us that many of the challenges of helping those who struggle with basic skills at school can be solved with strong and effective schooling. Second it suggests that, in principle, it should be possible to address adult skills similarly, using targeted support for those who struggle with poor literacy and numeracy.

It has been argued, notably by Heckman, that the most cost-effective interventions are early on in life (including early childhood) and some have been led by this to suggest that interventions with adults are in relative terms unlikely to be cost-effective (see a summary of arguments in Heckman, 2008). While the value of many early interventions is well-established, and some interventions with adults have yielded disappointing results,

that is no argument for systematic despair in adult learning.[1] By the same token, although disease prevention is typically more cost-effective than cure, that is no argument for abandoning the search for better cures. In adult learning, as in the battle against disease, our approach should be cautious and systematic, carefully evaluating interventions. Adult learning must therefore augment initial education and training.

One further point is important here. We know that US 15-year-olds have mediocre basic skills and that these are reflected in those of young adults. This implies weaknesses in basic schooling, but the Survey yields no equivalent evidence that adult or postsecondary education in the U.S. is weaker than in other countries. Indeed the generally higher levels of participation by adults in education and training seen in the U.S. would make that argument hard to make. Clearly as adult basic skills are weak, then adult and postsecondary education in the U.S. face a greater challenge than elsewhere, but this is a separate point (and one familiar in the context of the extensive remedial activities of community colleges). The discussion which follows makes a number of recommendations bearing on adult education, but the point of departure is not one in which the US system of adult and postsecondary education is seen as weaker than some international benchmark. In that respect the recommendations bearing on adult learning have a very different tenor to those bearing on initial schooling.

Seven recommendations

Seven policy recommendations are advanced below:

- concerted action is necessary to address the skills challenge;
- substantial improvements are needed in initial schooling, with adequate standards for all;
- effective learning pathways should be available for young adults after leaving high school;
- programs to address basic skills should be linked to employability;
- adult learning programs should be adapted to diverse needs, and effectively co-ordinated;
- awareness of basic skills challenges needs to be increased;
- action should be well-supported with evidence.

These recommendations are intended to provide a frame for policy rather than to drive specific policies or programs. As explained earlier, we do not set out to review or assess current adult learning policies and practices (or indeed education policy more broadly). The implementation of our recommendations would, of course, necessarily be very concerned with the concrete specifics of these policies.

Policy recommendations

Recommendation 1: Take concerted action to improve basic skills and tackle inequities affecting sub-populations with weak skills.

Two compelling arguments underline the priority which needs to be attached to action on basic skills – skills matter, and without action, the U.S. will fall further behind other countries.

Skills matter

The basic skills of numeracy and literacy are of profound and increasing importance in working and civic life, playing a vital direct role, and supporting the development of higher level skills. For the low-skilled, the future is bleak, and if sub-populations have very weak basic skills that will create serious challenges both to equity and social cohesion. While low-skilled jobs will remain in advanced economies, they will not be abundant, and they will often be bad, insecure jobs, with low wages and poor conditions. Low skills will also limit the capacity of individuals to act as effective citizens and look after their own health. Despite extensive efforts over recent decades, large racial disparities remain in the basic skills of the adult population, with low literacy, for example, being around three or four times more common among Hispanic and black adults than among whites. These differences require specific attention, recognizing that the dynamics of low skills may be different in the different subpopulations, and require different solutions.

Without action, the skills of US adults will progressively fall behind other countries

As an example of the challenge, while the basic skills profile of US adults is currently similar to that of Poland, young Poles (aged 16-24) have significantly stronger basic skills than their U.S counterparts. This means that, other things being equal, as young cohorts replace older ones, the basic skills of the Polish workforce will progressively outpace those of the U.S. Other OECD countries are similarly poised to overtake the U.S. So unless there is a significant change of direction in the U.S., the workforce skills of other OECD countries will overtake those of the U.S. just at the moment when all OECD countries will be facing (and indeed are already facing) major and fast-increasing competitive challenges from emerging economies, including China, India and Brazil. These and other emerging economies are upskilling their labor forces with exceptional speed, as the improvements in basic schooling which have already been achieved feed through into progressively more highly skilled labor forces.

To accept relative decline in basic skills would not only mean accepting relative decline in the economic sphere, but also in other domains which depend on high levels of basic skills – in the arts and sciences and intellectual innovation, all areas in which historically the U.S. has excelled. The weaknesses in US performance at the top end of the ability spectrum underpin this point. Some degree of catch-up by previously less-developed countries is natural, but the speed at which the skills of comparable (and sometimes poorer) countries in the developed world are now outpacing the U.S. must be a matter of deep concern.

Recommendation 2: Strengthen initial schooling for all, ensuring that all children receive an adequate standard of education, with effective interventions to support the basic skills of those in difficulty.

Chapter 2 argued that many basic skills weaknesses in the U.S. are attributable to weaknesses in schooling. Getting basic schooling right is always important, but it is particularly significant in the U.S. for three reasons. First, relative to most other OECD countries, the US population is younger and so changes made at school level have a greater and faster impact on the adult workforce than elsewhere. Second, the evidence, from PISA, augmented by the current Survey of Adult Skills, suggests a significant challenge in schooling quality which needs to be addressed. Third, the evidence from

PISA also suggests that successful education systems can effectively tackle the majority of basic skills weaknesses that are found in 15-year-olds. A special OECD report (OECD, 2011) provides lessons from key countries for reform of the US school system.

One of the functions of initial education is to provide a consistent and supportive learning environment for all citizens, compensating for variations and weaknesses in home background, and therefore making the development of basic skills more independent of the accidents of birth. In the U.S., the unusually strong linkage between adult basic skills and socio-economic background suggest that the initial education system has been less successful than those of other countries in achieving this leveling objective. One potential reason is that school resources in the U.S. are much more dependent on local district resources than in most OECD countries, meaning that the most disadvantaged communities have some of the most weakly resourced schools (recognizing that there are sometimes compensating mechanisms). US school outcomes in terms of high school graduation may also hide some real weaknesses in the schooling system, given the evidence reported here that those with high school education or less have fewer basic skills than their counterparts in many other countries. Much could be achieved by ensuring common standards and resourcing across the school system.

One of the strongest arguments for interventions in initial education, and for young adults, is that the positive impacts will extend to the next generation (see for example OECD, 2010b). While US children in poverty exhibit a substantial vocabulary deficit even in their first three years of life (Hart and Risley, 2003), parental engagement helps improve children's school results and fosters positive attitudes and behavior (e.g. Gonzalez-Pienda et al., 2002; George and Kaplan, 1998; Catsambis, 2001; Feinstein and Symons, 1999). This is consistent with international evidence. Results from PISA collected in over a dozen of countries show that activities like reading books to children when they start primary school or talking with adolescents about topical social issues are positively associated with test scores at age 15 (OECD, 2012a).

A particular challenge surrounds high school completion. While a generation ago the U.S. had one of the highest levels of high school completion in the world, completion rates then barely rose until the last decade, allowing many other OECD countries to outpace the U.S. One US high school student in five still leaves without a diploma, more than in most OECD countries (OECD, 2012b). Cunha et al. (2006) suggest that mentoring and social programs can improve outcomes in terms of schooling, earnings and crime. Heckman (2000) and Heckman and Lochner (2000) show that programs aiming to prevent drop-out can be effective. Tackling the completion challenge is crucial, particularly given a high school system which, unlike many European countries, contains very limited direct career preparation, as high school dropouts and even graduates face a very difficult labor market. Career preparation mostly takes place later on in postsecondary programs (such as certificates) typically requiring a high school degree. The high school diploma is therefore seen as an educational minimum, and by the same token, the lack of a diploma is a serious disadvantage in the labor market.

Recommendation 3: Ensure effective and accessible education opportunities for young adults, using the strengths of the community college system to support and develop basic skills and offer substantive career options.

One-third of all low-skilled adults in the U.S. are under 35, and simple arithmetic determines that the lifetime impact of successful interventions will be greater for younger

adults. As argued above, successful interventions with young adults who are parents will have positive intergenerational returns.

In the U.S., a strong system of community colleges permits many young adults to return to education. The colleges provide an extensive range of programs, including basic skills, which seek to remedy some of the skills weaknesses found in high school graduates. Much effort also goes into the development of occupation-specific skills – not measured in the Survey, but potentially very important. While many obtain valuable qualifications, others drop out – often because of basic skills weaknesses – and/or become burdened with debt. So this very important postsecondary mechanism does not always fully realize its potential. The OECD's recent review of postsecondary vocational education and training in the U.S. examines these and other challenges, and advances recommendations designed to improve quality and attainment in postsecondary occupational programs (see Box 3.1). Box 3.2 describes the Swedish approach to adult education and dropout.

Box 3.1 Key messages from the OECD review of postsecondary career and technical education

The report recommends that the U.S. should strategically pursue more quality, coherence and transparency in the U.S. postsecondary system. This should help deliver the skills training and credentials needed to build employer confidence, support student success and maintain the global standing of the US workforce.

Specific recommendations include:

- Substantially strengthen quality assurance in postsecondary education and its links to Title IV student aid.
- Establish a quality standard for industry credentials (especially certifications).
- Develop workplace training as a standard element in postsecondary career and technical programs.
- Systematically develop and support prior learning assessment both as a means of encouraging adults to return to postsecondary education, and because of its wider benefits.
- Ensure that postsecondary students have sufficient information and career guidance.

Source: Kuczera, M. and S. Field (2013), *A Skills beyond School Review of the United States*, OECD Reviews of Vocational Education and Training, OECD Publishing, doi: http://dx.doi.org/10.1787/9789264202153-en

The high level of participation in adult education and training in the U.S. should represent the means for young people who dropped out to return to education later on, but the level of provision is highly variable. While measuring how need compares to actual provision is hard, one potential indicator is the ratio of adults lacking basic prose literacy skills (an indicator of need) to those enrolled in state-administered adult education (an indicator of provision).[2] In Minnesota, Utah, Florida and South Carolina this ratio is between five and seven; in New Jersey, the District of Columbia, Massachusetts, New York and Texas it is about 25 (see Table F.24). These figures need to be interpreted with great caution for any number of reasons, but they do give some flavor of the variation in provision.

Box 3.2 Adult education and dropout in Sweden

Affordable and easily accessible adult education courses partly explain low graduation rates in Sweden, since the cost of dropping out from a regular high school is relatively low. Adult education is open to those who have not completed primary and secondary education and leads to a qualification that is equivalent to that provided within "regular" education. Adult education is free and people who are over 20 and study at least half-time can apply for grants and loans. Among those who were 20 years old in 2011, 65% received a grant while 13% received a grant and a loan.

In 2011, 24 thousand persons without a high school diploma were enrolled in adult education institutions in Sweden compared to 350 thousand in the regular upper secondary education system. 90% of those in adult education were 24 or below. While dropping out and then returning imposes an extra cost on society by delaying the transition of young people to work, it also provides a valuable second chance safety network.

Source: Centre for Introduction to Swedish Society in Stockholm County (2013), *Adult Education and Folk High School*, http://nyistockholm.se/engelska/undersida-till-engelska/jobs-and-education/adult-education/komvux-och-folkhogskola/; Statistics Sweden (2012), *Population 16-64 Years of Age by Sex, Age, Type of Studies The Autumn Term, Level of Educational Attainment and Use of Student Grants During The Autumn Term. Year 1993 – 2011,* www.scb.se/Pages/SSD/SSD_TreeView.aspx?id=340506

Recommendation 4: Link efforts to improve basic skills to employability, recognizing that good jobs open up further learning options, while basic skills can often be more readily acquired in practical contexts.

At high school

At school, weaknesses in basic skills are often linked to disengagement from academic forms of learning, so additional drilling in math and literacy may not be the most effective response. More practically oriented career and technical education (CTE) programs, linked to work-based learning, can be effective in developing not only vocational but also basic skills. In particular, career preparation and basic skills development can be linked in integrated models. In the U.S. the Math-in-CTE model illustrates the potential of this approach. The model involved CTE lessons with math integrated into the occupational curriculum and extensive teamwork between math and CTE teachers. Students did better on the math test without compromising occupational learning (Stone, Alfeld and Pearson, 2008). This integrated approach requires careful planning and teamwork, but the potential benefits are large, and could help raise high school completion rates by engaging students who are less keen on academic forms of learning.

The integration of basic skills and career preparation would benefit both those who pursue postsecondary studies right after high school and those who do not. For those who do not enter postsecondary education immediately upon completing high school, the element of career preparation would give them a better chance of succeeding in the labor market. Many other OECD countries provide high school options which include education and training preparing for specific jobs for those who start work right after high school.

In adult learning, integrate basic skills improvement with career preparation and work-based learning.

For someone in mid-life, where weak basic skills are so often found in association with other social disadvantages, improved basic skills may on their own not provide sufficient impetus to change someone's career path.[3] Even before the economic crisis, in many countries policies on adult learning were already shifting to emphasize employability. Enhanced employability through basic skills education and career preparation could help low-skilled adults into a self-sustaining trajectory. The perspective of a particular career can help engage adults in learning and transition them into jobs. Those jobs can in turn be a springboard for further learning and career development.

Khatiwada et al. (2007) estimate that by strengthening basic skills proficiencies and educational attainment, adult basic education can improve the fiscal position of federal, state and local governments. To achieve this, basic education programs must enhance the employability and earnings of adults.[4] But the benefits of employment go beyond the economy, with much research suggesting that successful entry into employment is a key step in tackling social inclusion (e.g. Grove, 1999; Van Dongen, 1996; Bolton and Oatley, 1987; Coleman, Ellis and Smith, 1998). Employment enhances self-esteem, develops wider social relationships, improves health outcomes and provides a foundation for further learning and career development.

For adults as for high school students, integrating basic skills teaching with career preparation, and work-based learning if possible, provides a powerful tool to enhance both basic skills and more broadly, employability. Box 3.3 describes two programs that integrate basic skills with occupational training. The U.S. is a leader among OECD countries in developing, implementing and evaluating such approaches.

Given that two-thirds of the low-skilled are in work, employers have an important potential role in addressing low skills. In other OECD countries, employers are sometimes encouraged through public policy programs and incentives to train their workforces. But such programs are relatively unusual in the U.S. The key element is to help employers to see basic skills and other forms of training as being in their own interests as employers, allowing them to make more demands on their workers, rather than as something which merely offers an exit route for their workers into other jobs.

Box 3.3 Example of integrated instruction

I-BEST

The Integrated Basic Education and Skills Training (I-BEST) provides a strong example of a program designed to improve labor market outcomes and entry rates to postsecondary career programs among adults with low basic skills. The program, developed in Washington State, has proved successful and is now being introduced in other parts of the country. An I-BEST program combines basic skills teaching and professional training. Occupational training yields college credits and contributes to a certificate credential. These courses can only be provided in occupations in high demand (Wachen et al., 2010). I-BEST programs are available in every community and technical college (WTECB, 2013). Individuals must score below a certain threshold on an adult skill test and qualify for adult basic education to participate in the program (Wachen et al, 2010).

Studies measuring the impact of I-BEST in Washington State found that I-BEST students earn more credits and are more likely to complete a program than a comparable group of students not participating in the program. Evidence on the link between participation in I-BEST and earnings is less conclusive (Jenkins et al, 2010).

Source: Kuczera, M. and S. Field (2013), *A Skills beyond School Review of the United States*, OECD Reviews of Vocational Education and Training, OECD Publishing.
doi: http://dx.doi.org/10.1787/9789264202153-en

LaGuardia's Bridge to Health and Business Program

The GED Bridge program was designed as a pathway to college and careers, targeting low-income individuals in New York City who did not have a high school diploma or a GED. It includes more hours in class than typical GED programs, as well as intensive advising from full-time Bridge staff. Contextualized curriculum is the foundation of the program, which aims to develop skills tested on the GED exam through career-related content (health or business). The program also aims to foster general academic habits and skills that prepare students for postsecondary education.

The results of the random assignment evaluation of the program are promising: participants in the GED Bridge program were more likely to complete the semester of classes, pass the GED exam and enroll in college than those who enrolled in a more traditional GED program.

Source: MDRC (2013), "New study shows LaGuardia Community College's GED Bridge Program significantly boosts GED pass rates and college enrollment", MDRC press release May 2013, www.mdrc.org/news/press-release/new-study-shows-laguardia-community-college%E2%80%99s-ged-bridge-program-significantly (accessed September 2013)

Recommendation 5: Adapt to diversity. Adapt adult learning programs to better respond to the diverse challenges of different groups with different needs. Work across all levels of government and across the public and private sectors to achieve better outcomes at all ages and stages.

Over a lifetime, the causes and effects of weak basic skills are complex and many-layered. Weak basic skills may emerge from a culturally impoverished background, from a learning disability, from poor schooling, or from life experiences and working lives which have not supported the development of basic skills. Causes and effects will often be mutually reinforcing, entrenching whole sets of disadvantages of which weak basic skills will be no more than a component. Those with weak basic skills will inevitably have less access to further education, fewer job opportunities, particularly in relation to jobs that allow for skills development. Given the diversity of groups facing basic skills challenges, and the multiple causes involved, it may make little sense to search for interventions with very wide application. Such a course might represent the equivalent of seeking a common therapy for all patients who present themselves in the doctor's office complaining of fatigue.

Although weak basic skills are very much part of the problem, it does not necessarily follow that teaching basic skills, particularly in isolation from other reinforcing interventions, will be only solution or the most effective solution. A virtuous cycle of improvement is only possible if it can rely on policy coherence across different areas, including the social safety net.[5] Typically basic skills are the domain of education while workforce development programs are managed by labor departments. Interventions designed to help low-skilled adults need to be carefully coordinated, both locally and nationally across government agencies, avoiding duplication and ensuring the most cost-effective blend of interventions.

To improve co-ordination between services for adult learners the Departments of Education, Labor, and Health and Human Services have adopted a common career pathways approach (U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, Career/Technical Education Statistics, 2013). The goal is to facilitate simultaneous development of basic and labor market skills among adult learners and recognition of these skills within a formal education system. Other countries have also recognized the importance of a coordinated nationwide effort to enhance basic skills (see Box 3.4).

Box 3.4 The Australian National Foundation Skills Strategy for Adults

This 10 year National Strategy was developed by Australian governments following results from the 2006 Adult Literacy and Life Survey, which found that 44% of working-age Australians have literacy and numeracy skills below Level 3 – the level needed to meet the demands of work and life in modern economies. The National Strategy sets a target that by 2022 two-thirds of working age Australians will have literacy and numeracy skills at Level 3 or above. Results from the International Survey of Adult Skills (PIAAC) will be the benchmark for this target.

Four priorities for action have been set: raising awareness and commitment to action; adult learners having high quality learning opportunities and outcomes; strengthening foundation skills in the workplace; and building the capacity of the education and training workforces to deliver foundation skills.

For each priority, the strategy specifies objectives, indicators of success, and actions at national, jurisdictional and systemic level. The principles underpinning the strategy are collaboration and co-ordination; equitable access to and increased participation in learning; and a stronger research base.

Source: Standing Council on Tertiary Education Skills & Employment (SCOTESE) (2012), *National Foundation Skills Strategy for Adults,* www.scotese.natese.gov.au/__data/assets/pdf_file/0007/71755/National_Foundation_Skills_Strategy_for_Adults.pdf

There is some evidence of unmet need for adult education: looking at low-skilled adults, around 3 million of them said that they wanted to undertake adult education but did not do so. This represents one in five of those not currently participating in adult education. Among those already participating, two in five said they wanted to participate *more*. For those who do engage in some sort of adult learning, persistence is often a major challenge. The National Research Council (2012) reports low completion rates for developmental education courses in college, low persistence rates in adult education programs and high attrition rates in research studies on learning among adults with low and mid-level skills.

Although better basic skills can be a route to improved life chances, that same route may appear to the learner as unclear and obstacle-ridden. Adequate guidance and support can help: research suggests that developing learning plans and a path toward longer term goals can support persistence in adult learning (Comings, 2007; National Research Council, 2012). Other studies (e.g. Comings, 2007; National Research Council, 2012; Portland State University, 2010) suggest policy programs to improve persistence (e.g. instruction accessible from home, financial support and incentives). Given multiple barriers (such as lack of awareness of weak basic skills, financial constraints, family responsibilities) the simple offer of basic skills instruction may have limited impact, and is best complemented with programs that support enrollment and completion.

Recommendation 6: Build awareness of the implications of weak basic skills among adults, their links with other social factors, and the need to tackle this challenge in the interests of all.

A shared understanding of both the size of the problem and the consequences of inaction are necessary to its solution. As argued above, tackling the challenge will require

the engagement of multiple stakeholders, ranging from governments and the private sector, through parents and families, to schools and local communities, across the public and private sectors, and this will in turn require a shared understanding of the challenge. To this end, much can be gained by disseminating information and promoting public discussion, stimulating interest and building consensus about the need to invest in skills.

Building awareness of the implications of weak basic skills is also important for the adults directly concerned, and their immediate contacts – employers, family and friends. Research shows that adults are often unable or unwilling to recognize their own basic skills weaknesses. In the U.S. 40% of adults scoring at Level 1 in literacy evaluate their English reading skills as good or very good. Even when adults do recognize their own weaknesses, they may face significant obstacles to engaging in learning, or for understandable reasons want to avoid the classroom settings where in the past they experienced failure. This calls for an approach which goes beyond simply responding to expressed demand, but emphasizes the need to reach out to those who may have weak skills, to raise awareness of the issues, and the scope for individuals to improve their skills through learning initiatives. This will require working through the bodies that have direct contact with the adults concerned, including employers, schools and non-profit organisations. Such activation of latent demand is always challenging, but will be substantially assisted by greater public awareness and discussion.

Recommendation 7: Support action with evidence. Build on US excellence in research and data-gathering to construct evidence-based policies and programs.

Good data are a precondition for well-targeted and effective interventions. While knowing "what works" in adult education is critical, international evidence is meager. Much research has focused on policy tools, with less analysis of outcomes (NALA, 2011). Some programs have been evaluated (see Box 3.5), but reviews of the research literature on adult basic skill interventions (e.g. Beder, 1999; Torgerson et al., 2004) argue that a surprising majority of evaluation studies have serious methodological flaws. Similarly, the European Commission (2006) argues that failure to provide rigorous demonstrations of the benefits of adult learning is a significant weakness in the field.

The U.S. is clearly a leader in the quality of evaluation evidence available. A review found far more studies in the U.S. than in other countries (only two out of 36 studies were not conducted in the U.S.) (Torgerson et al., 2004), and the US studies include random assignment exercises (for example the evaluation of Job Corps by Long, Maller and Thornton, 1981; and of the GED Bridge program by MDRC, 2013. Other US studies provide useful information on adult skills development, the causal factors and outcomes (e.g. the Longitudinal Study of Adult Learning, Portland State University, 2010). Consistent with the commendable evidence-based approach, federal legislation provides a funding steam used to give technical assistance to states and promote evidence-based practice. The U.S. should build on its existing strengths in this area.

Box 3.5 Examples of adult learning programs

The Knowledge Lift Program – Sweden. 1997-2002

This program aimed to raise the skills of poorly educated workers (equivalent to those without high school) to medium level (about high school level). It had a particular focus on the unemployed, and sought to improve basic skills (Swedish, English, mathematics), but participants could also follow vocational courses or pursue a work placement. They were eligible, depending on their circumstances, for income grants and other financial support programs.

The program increased enrollment in adult education by about 80%. An evaluation, based on matched longitudinal data sets, found a positive employment effect for young men, but did not find an effect on all participants.

Source: Albrecht, J., G.J. Van den Berg, and S. Vroman (2005), *The Knowledge Lift: the Swedish Adult Education Program That Aimed to Eliminate Low Worker Skill Levels.*

Noste Program – Finland. 2003-2009

This program was designed to raise attainment and improve the employment and career prospects of low-educated adults (primarily those aged 30 to 59). It provided learning opportunities towards a comprehensive school qualification, a general or vocational high school qualification, and other vocational and work-related training programs. Funding was provided to local projects that provided enrollment, instruction, examinations and other support programs. Apart from examination fees, students could complete the program free of charge. A particular feature of the program was that it encouraged education providers to engage in outreach activities. Tripartite collaboration, involving employer, employee and education providers, were particularly successful in encouraging participation.

Graduates and workplace representatives reported that the studies increased professional competences and motivation, as well as enhancing self-esteem and a sense of security in working life, even though graduates did not typically find a new job or receive higher wages. The evaluation concluded that guidance and support programs and efforts to improve learning skills were very important for the least educated adults. The program helped increase awareness among teaching staff and providers improved their ability to identify and address the needs of students.

Source: Ministry of Education and Culture, Finland (2010), Noste Programme 2003-2009, www.minedu.fi/export/sites/default/OPM/Julkaisut/2010/liitteet/okm08.pdf?lang=fi

Workplace English Language and Literacy (WELL) program – Australia

The aim of the WELL Program is to assist organizations to train workers in literacy and numeracy skills. Funding is available on a competitive grant basis to organizations for English language and literacy training linked to job-related workplace training. *Training projects* target workers who need to improve their basic skills to remain or progress in employment. *Resource projects* fund the development and trialing of specific training materials, industry relevant language, literacy and numeracy assessment and reporting methods, as well as professional development resources for industry trainers/assessors. *Strategic projects* cover activities with a national scope to support workplace English, language, literacy and numeracy training across one or more industry sectors.

78% of employers considered WELL effective in meeting their business needs, and 79% found that their employee's job performance improved as a result. 80% of employers reported that, after the training, employees participated in additional work-related training that was directly supported by skills acquired through WELL. Employees themselves considered the ability to participate in further training the most important benefit of the program. The program also seems to have improved general employability skills and career prospects.

Source: Department of Industry, Innovation, Climate Change, Science, Research and Tertiary Education (2013), *Workplace English Language and Literacy (WELL)*
www.innovation.gov.au/skills/LiteracyAndNumeracy/WorkplaceEnglishLanguageAndLiteracy/Pages/default.aspx

Notes

1. Cunha et al. (2006) provide an extensive discussion of skill formation over the lifecycle with a review of evidence on the effectiveness of interventions at different ages.
2. This ratio is defined as the number of adults who scored Below Basic in prose and those who could not be tested due to language barriers on the National Assessment of Adult Literacy in 2003 divided by the number of adults enrolled in a state-administered adult education program.
3. The situation of the incarcerated population is a striking example of this point. A large proportion of the between two and three million incarcerated persons have weak basic skills. The vast majority (95%) of these adults return to US communities (Erisman and Contardo, 2005). With most of those near release are aged less than 40, many will continue to be of working age for decades (Amodeo, Jin and Kling, 2009). For this group, programs which increase not only basic skills but also employability are clearly central to efforts at rehabilitation.
4. The paper analyzed the net annual fiscal contributions (tax payments minus cash and in-kind transfers and institutionalization costs) of US adults aged 16-64 by their educational attainment.
5. For example, poor adults who obtain a job, even a low-wage one, may lose access to subsidized childcare, health insurance, transportation, housing, cash supports and food stamps. The risk is that low wages combined with losing such support may drive adults back out of employment. So if the objective is to help adults into employment, policies in all relevant areas must ensure that adults do gain when they find a job. This may require, for example, reconsideration of support programs, such as transitional supports to assist adults while working towards stable, family-supporting wages.

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Annex A

Methodology of the Survey of Adult Skills

The target population for the Survey was the non-institutionalized population, aged 16 to 65 years, residing in the country at the time of data collection, irrespective of nationality, citizenship or language status.

The language of assessment was the official language or languages of each participating country. In some countries, the assessment was also conducted in widely spoken minority or regional languages. In the United States the assessment was conducted in English only, while the background questionnaire was available in English and Spanish.

Two components of the assessment were optional: the assessment of problem solving in technology-rich environments and the assessment of reading components. Twenty of the 24 participating countries administered the problem solving assessment and 21 (excluding Finland, France and Japan) administered the reading components assessment.

Sample sizes depended primarily on the number of cognitive domains assessed and the number of languages in which the assessment was administered. Some countries boosted sample sizes in order to have reliable estimates of proficiency for the residents of particular geographical regions and/or for certain sub-groups of the population such as indigenous inhabitants or immigrants. The achieved samples ranged from a minimum of approximately 4 500 to a maximum of nearly 27 300. The sample in the United States was about 5 000.

The Survey was administered under the supervision of trained interviewers either in the respondent's home or in a location agreed between the respondent and the interviewer. The background questionnaire was administered in Computer-Aided Personal Interview format by the interviewer. Depending on the situation of the respondent, the time taken to complete the questionnaire ranged between 30 and 45 minutes.

After having answered the background questionnaire, the respondent completed the assessment either on a laptop computer or by completing a paper version using printed test booklets, depending on their computer skills. Respondents could take as much or as little time as needed to complete the assessment. On average, the respondents took 50 minutes to complete the cognitive assessment.

Participating countries made major efforts to reduce the level of non-response and to minimize its effects. Response rates varied across countries (between 45% and 75%). The analyses of non-response bias (compulsory in countries with response rates below 70%) found that the non-response bias was minimal to low in most countries (see OECD, 2013b for more details).

Respondents with very low literacy skills bypassed the full literacy, numeracy and problem solving in technology-rich environment assessments and went directly to a test of basic "reading component" skills instead. This test assessed vocabulary knowledge, the ability to process meaning at the level of the sentence, and to fluently read passages of text. The test had no time limit but the time taken by respondents to complete the tasks was recorded. The reading components assessment was also taken by all respondents taking the paper version of the assessment.

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Annex B

What adults can do at different levels of literacy proficiency

Proficiency at Level 5 (scores equal to or higher than 376 points): At level 5, adults can perform tasks that involve searching for and integrating information across multiple, dense texts; constructing syntheses of similar and contrasting ideas or points of view, or evaluating evidence and arguments. They can apply and evaluate logical and conceptual models, and evaluate the reliability of evidentiary sources and select key information. They are aware of subtle, rhetorical cues and are able to make high-level inferences or use specialized background knowledge. In the U.S. 0.6% of adults and across countries, on average, less than 1% of adults score at Level 5.

Proficiency at Level 4 (from 326 points up to 376 points): At Level 4, adults can perform multiple-step operations to integrate, interpret, or synthesize information from complex or lengthy continuous, non-continuous, mixed, or multiple-type texts that involve conditional and/or competing information. They can make complex inferences and appropriately apply background knowledge as well as interpret or evaluate subtle truth claims or arguments. In the U.S. 10.9% and across countries, on average, 11.1% of adults score at Level 4.

Proficiency at Level 3 (from 276 points up to 326 points): Adults performing at Level 3 can understand and respond appropriately to dense or lengthy texts, including continuous, non-continuous, mixed, or multiple pages. They understand text structures and rhetorical devices and can identify, interpret, or evaluate one or more pieces of information and make appropriate inferences. They can also perform multi-step operations and select relevant data from competing information in order to identify and formulate responses. In the U.S. 34.2% of adults and across countries, on average, 38.2 % of adults score at Level 3.

Proficiency at Level 2 (from 226 points up to 276 points): At Level 2, adults can integrate two or more pieces of information based on criteria, compare and contrast or reason about information and make low-level inferences. They can navigate within digital texts to access and identify information from various parts of a document. In the U.S. 32.6% of adults and on average across countries 33.3% of adults perform at Level 2.

Proficiency at Level 1 (from 176 points up to 226 points): At Level 1, adults can read relatively short digital or print continuous, non-continuous, or mixed texts to locate a single piece of information, which is identical to or synonymous with the information given in the question or directive. These texts contain little competing information. Adults performing at this level can complete simple forms, understand basic vocabulary, determine the meaning of sentences, and read continuous texts with a degree of fluency. In the U.S. 13.6% of adults and across countries, on average, 12.2% of adults score at Level 1.

Proficiency below Level 1 (scores lower than 176 points): Individuals at this level can read brief texts on familiar topics and locate a single piece of specific information identical in form to information in the question or directive. They are not required to understand the structure of sentences or paragraphs and only basic vocabulary knowledge is required. Tasks below Level 1 do not make use of any features specific to digital texts. In the U.S. 3.9% of adults and across countries, on average, 3.3% of adults perform below Level 1.

Annex C

What adults can do at different levels of numeracy proficiency

Proficiency at Level 5 (scores equal to or higher than 376 points): Adults at Level 5 on the numeracy scale can understand complex representations, and abstract and formal mathematical and statistical ideas, sometimes embedded in complex texts. They can integrate several types of mathematical information where considerable translation or interpretation is required; draw inferences; develop or work with mathematical arguments or models; and justify, evaluate and critically reflect upon solutions or choices. Only 1.1% of adults score at Level 5 on average across countries, in the U.S. 0.7% of adults score at this level.

Proficiency at Level 4 (from 326 points up to 376 points): At this level, adults understand a broad range of mathematical information that may be complex, abstract or embedded in unfamiliar contexts. They can perform tasks involving multiple steps and select appropriate problem-solving strategies and processes. They can analyze and engage in more complex reasoning about quantities and data, statistics and chance, spatial relationships, change, proportions and formulae. They can also understand arguments and communicate well-reasoned explanations for answers or choices. In the U.S. 7.8% of adults and on average across countries, 11.4% of adults score at Level 4.

Proficiency at Level 3 (from 276 points up to 326 points): Adults at Level 3 can successfully complete tasks that require an understanding of mathematical information that may be less explicit, embedded in contexts that are not always familiar, and represented in more complex ways. They can perform tasks requiring several steps and that may involve a choice of problem-solving strategies and relevant processes. They have a good sense of number and space; can recognize and work with mathematical relationships, patterns, and proportions expressed in verbal or numerical form; and can interpret and perform basic analyses of data and statistics in texts, tables and graphs. In the U.S. 25.9% of adults and on average across countries 34.4% of adults score at Level 3.

Proficiency at Level 2 (from 226 points up to 276 points): Adults at this level can successfully perform tasks that require identifying and acting upon mathematical information and ideas embedded in a range of common contexts where the mathematical content is fairly explicit or visual with relatively few distractors. The tasks may require applying two or more steps or processes involving, for example, calculations with whole numbers and common decimals, percents and fractions; simple measurement and spatial representations; estimation; or interpreting relatively simple data and statistics in texts, tables and graphs. In the U.S. 32.6% of adults and on average across countries, one in three adults (33.0%) scores at Level 2.

Proficiency at Level 1 (from 176 points up to 226 points): Adults at Level 1 can complete tasks involving basic mathematical processes in common, concrete contexts where the mathematical content is explicit with little text and minimal distractors. They can perform one-step or simple processes involving counting, sorting, basic arithmetic operations, understanding simple percents, and locating and identifying elements of simple or common graphical or spatial representations. In the U.S. 19.6% of adults and on average across countries, 14% of adults score at Level 1.

Proficiency below Level 1 (scores lower than 176 points): Adults at this level can only cope with very simple tasks set in concrete, familiar contexts where the mathematical content is explicit and that require only simple processes such as counting; sorting; performing basic arithmetic operations with whole numbers or money, or recognizing common spatial representations. Adults who score less than 176 points are considered to be below Level 1. In the U.S. 9.1% of adults and on average across countries, 5% of adults score below Level 1.

Annex D

What adults can do at different levels of proficiency in problem solving in technology-rich environments

Proficiency at Level 3 (scores equal to or higher than 341): Adults at Level 3 can complete tasks involving multiple applications, a large number of steps, impasses, and the discovery and use of ad hoc commands in a novel environment. They can establish a plan to arrive at a solution and monitor its implementation as they deal with unexpected outcomes and impasses. In the U.S. 5.1% of adults and on average across countries, 5.8% of adults score at Level 3.

Proficiency at Level 2 (from 291 points up to 340 points): At Level 2, adults can complete problems that have explicit criteria for success, a small number of applications, and several steps and operators. They can monitor progress towards a solution and handle unexpected outcomes or impasses. In the U.S. 26% of adults and on average across countries, 28.2% of adults score at Level 2.

Proficiency at Level 1 (from 241 points up to 290 points): At Level 1, adults can complete tasks in which the goal is explicitly stated and for which the necessary operations are performed in a single and familiar environment. They can solve problems in the context of technology-rich environments whose solutions involve a relatively small number of steps, the use of a restricted range of operators, and a limited amount of monitoring across a large number of actions. In the U.S. 33.1% and on average across countries, 29.4% of adults score at Level 1.

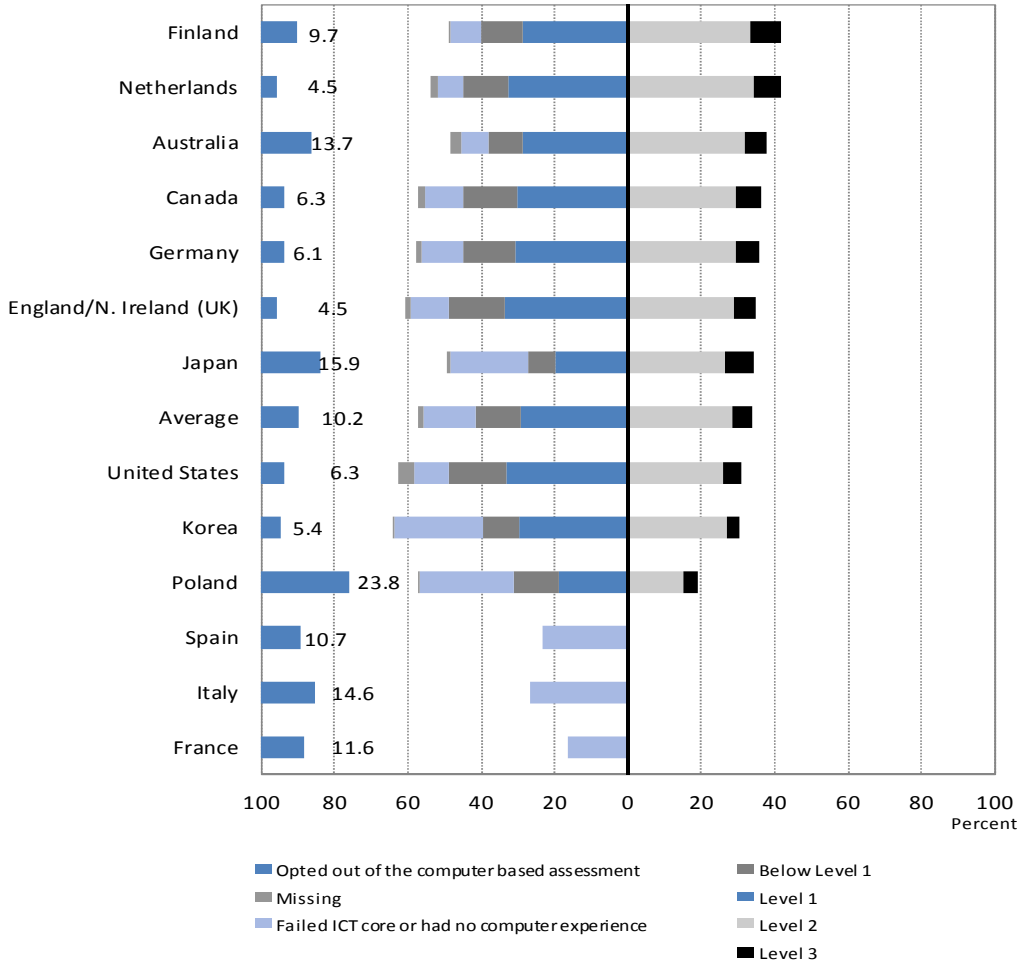
Proficiency below Level 1 (scores below 241 points): Below Level 1, adults can complete tasks in which the goal is explicitly stated and for which the necessary operations are performed in a single and familiar environment. They can solve problems whose solutions involve a relatively small number of steps, the use of a restricted range of operators, and a limited amount of monitoring across a large number of actions. In the U.S. 15.8% of adults and on average across countries, 12.3% of adults score below Level 1.

Annex E

Key figures on adult skills in the United States versus other countries

Figure E.1 Proficiency in problem solving in technology-rich environments among adults

Percentage of adults scoring at each proficiency level in problem solving in technology-rich environments



How to read this chart: This chart shows the share of adults with different levels of skills in problem solving in technology-rich enviroments. For example, in the United States 26% of adults scored at Level 2 and 5.1% of adults scored at Level 3. Countries closer to the top of the chart have proportionately more adults who score at least at higher levels of skills. The black bar on the left edge of the chart shows the share of adults for whom no proficiency score was computed.

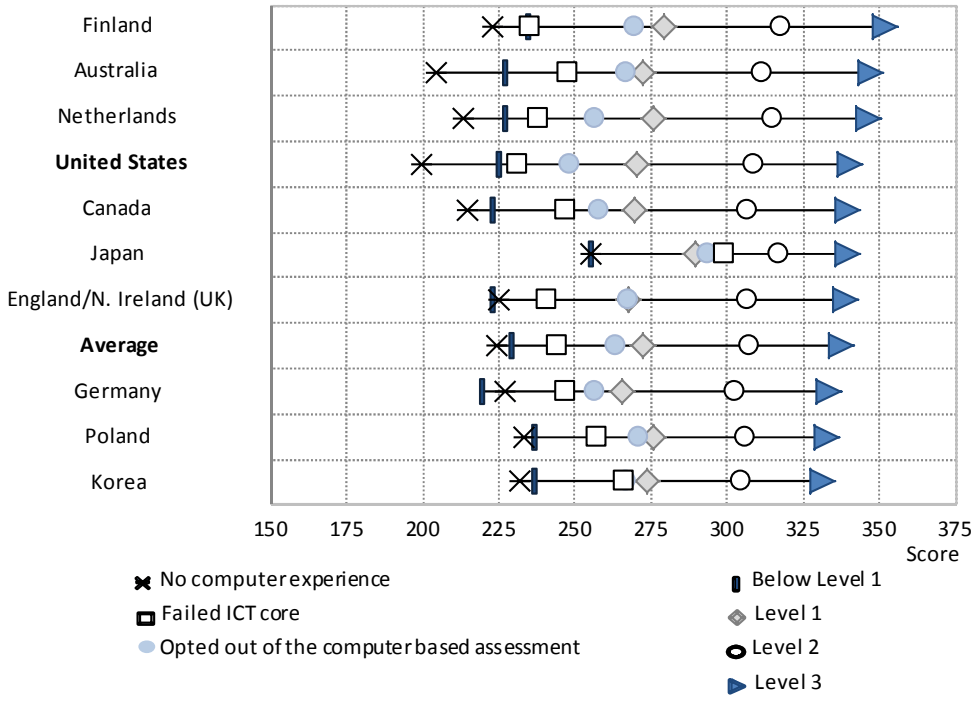
Notes: Adults included in the missing category were not able to provide enough background information to impute proficiency scores because of language difficulties, or learning or mental disabilities (referred to as literacy-related non-response). The missing category also includes adults who could not complete the assessment of problem solving in technology-rich environments because of technical problems with the computer used for the survey. France, Italy and Spain did not participate in the problem solving in technology-rich environments assessment. Countries are ranked in descending order of the percentage of adults who scored at Level 2 or 3.

Source: Survey of Adult Skills (PIAAC) (2012).

StatLink http://dx.doi.org/10.1787/888932906046

Figure E.2 Correlation between literacy and problem solving in technology-rich environments

Mean literacy proficiency, by proficiency level in problem solving in technology-rich environments



How to read this chart: This chart shows the average literacy score of adults who achieved different levels of proficiency on the prolem solving in technology-rich environments scale. For example, in the US adults who scored at Level 3 in problem solving had an average literacy score of 340.4 points and those who scored at Level 1 in problem solving had an average literacy score of 270.5 points.

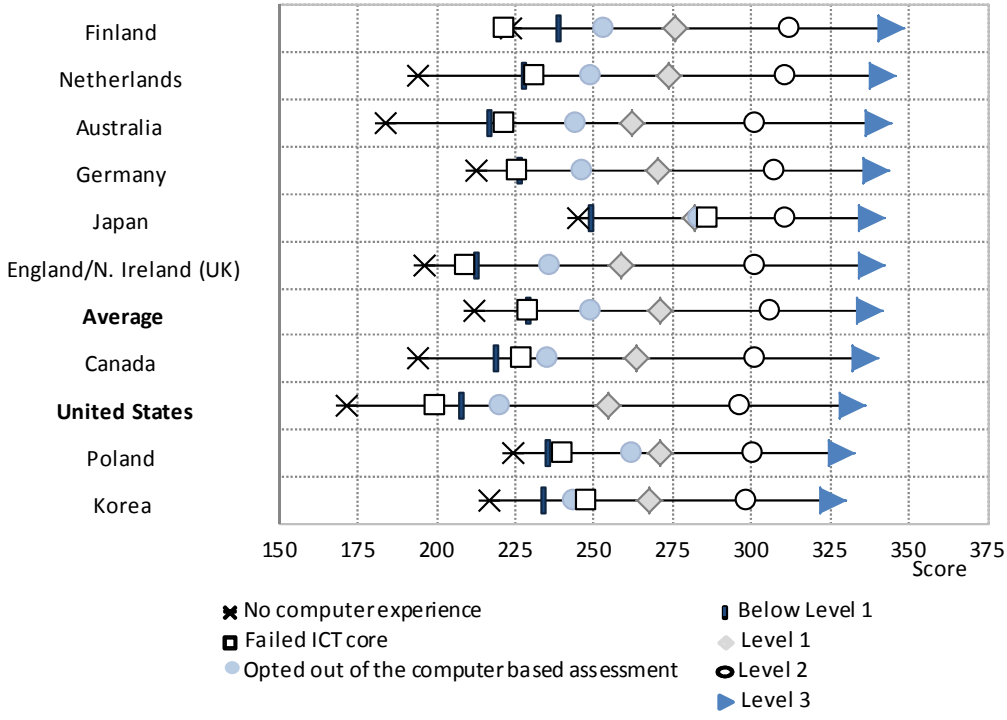
Note: Countries are ranked in descending order of the mean literacy score of adults scoring at Level 3 on the problem solving in technology-rich environments scale.

Source: Survey of Adult Skills (PIAAC) (2012).

StatLink http://dx.doi.org/10.1787/888932906065

Figure E.3 Correlation between numeracy and problem solving in technology-rich environments

Mean numeracy proficiency, by proficiency level in problem solving in technology-rich environments



How to read this chart: This chart shows the average numeracy score of adults who achieved different levels of proficiency on the prolem solving in technology-rich environments scale. For example, in the US adults who scored at Level 3 in problem solving had an average numeracy score of 332 points and those who scored at Level 1 in problem solving had an average literacy score of 254.6 points.

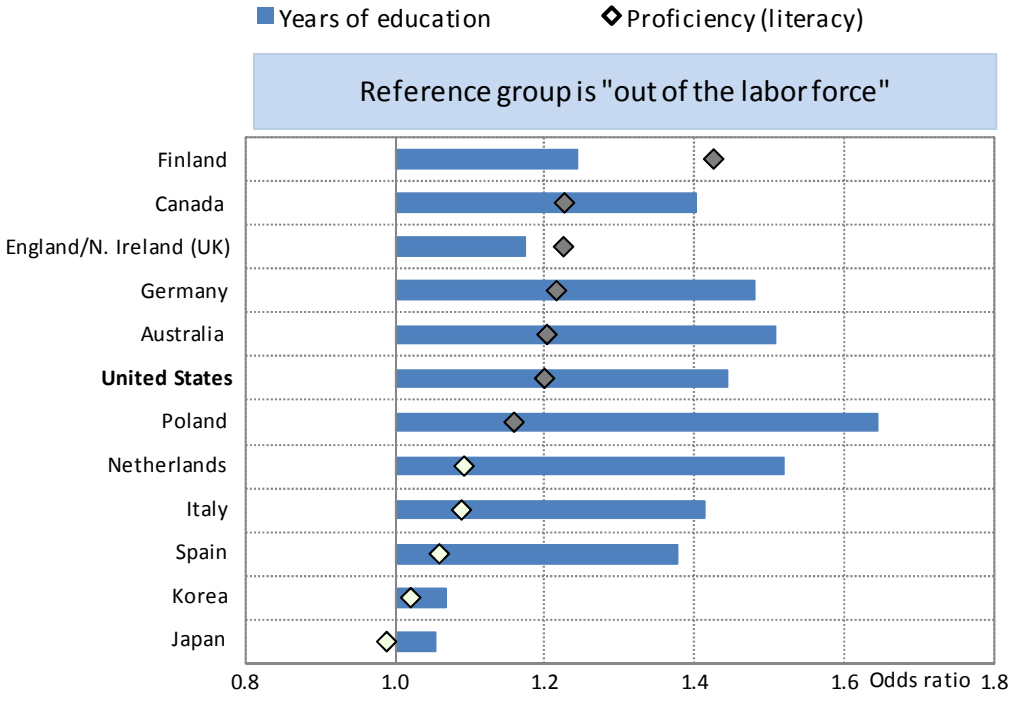
Note: Countries are ranked in descending order of the mean numeracy score of adults scoring at Level 3 on the problem-solving in technology-rich environments scale.

Source: Survey of Adult Skills (PIAAC) (2012).

StatLink http://dx.doi.org/10.1787/888932906084

Figure E.4 The relationship between education and literacy proficiency and labor market participation

Odds ratios showing the link between education and literacy proficiency and the likelihood of participating in the labor market among adults not in formal education



How to read this chart: This chart shows that adults with stronger literacy skills are more likely to participate in the labor market, even when education and other background factors are taken into account. The higher the odds ratio associated with literacy (rhombus), the stronger the link between literacy skills and the likelihood of labor market participation.

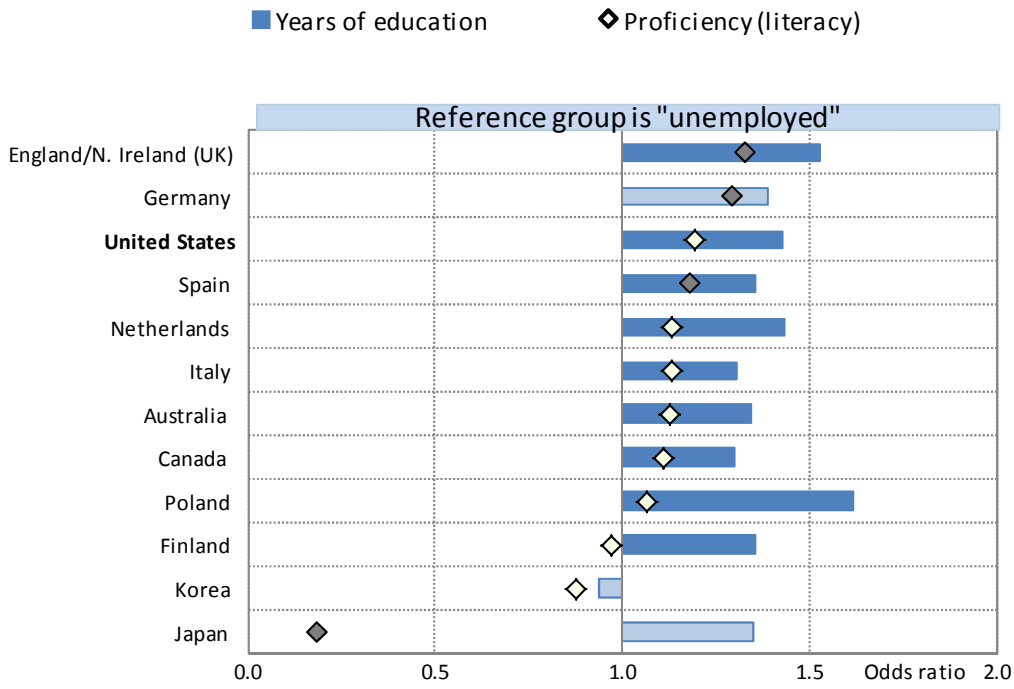
Notes: Results are adjusted for gender, age, marital and foreign-born status. The odds ratios correspond to a one-standard-deviation increase in proficiency/years of education. Statistically significant values are shown in darker tones. Years of education have a standard deviation of 3.05, literacy has a standard deviation of 45.76. Countries are ranked in descending order of the odds ratios of proficiency.

Source: Survey of Adults Skills (PIAAC) (2012).

StatLink http://dx.doi.org/10.1787/888932906103

Figure E.5 The relationship between education and literacy proficiency and the likelihood of being employed

Adjusted odds ratios showing the link between of education and literacy on the likelihood of being employed among adults not in formal education



How to read this chart: This chart shows that adults with stronger literacy skills are more likely to be employed, even when education and other background factors are taken into account. The higher the odds ratio associated with literacy (rhombus), the stronger the link between literacy skills and the likelihood of being employed.

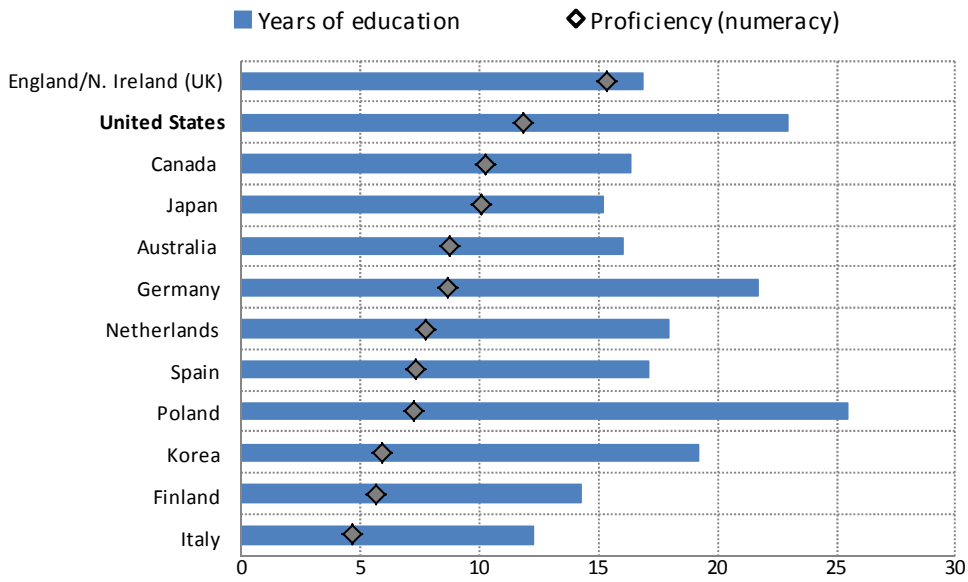
Notes: Results are adjusted for gender, age, marital and foreign-born status. The odds ratios correspond to a one standard deviation increase in literacy/years of education. Statistically significant values are shown in darker tones. Years of education have a standard deviation of 3.05, literacy has a standard deviation of 45.76. Countries are ranked in descending order of the odds ratios of proficiency.

Source: Survey of Adults Skills (PIAAC) (2012).

StatLink http://dx.doi.org/10.1787/888932906122

Figure E.6 Do education and numeracy proficiency affect wages?

Percentage change in wages associated with a one standard deviation change in years of education and proficiency in numeracy



How to read this chart: This chart shows that adults with better numeracy skills tend to have higher wages. The association between numeracy skills and wages exists even when taking other factors like education, age, gender, immigrant status and tenure into account. The association between numeracy skills and wages is stronger in countries towards the top of the chart.

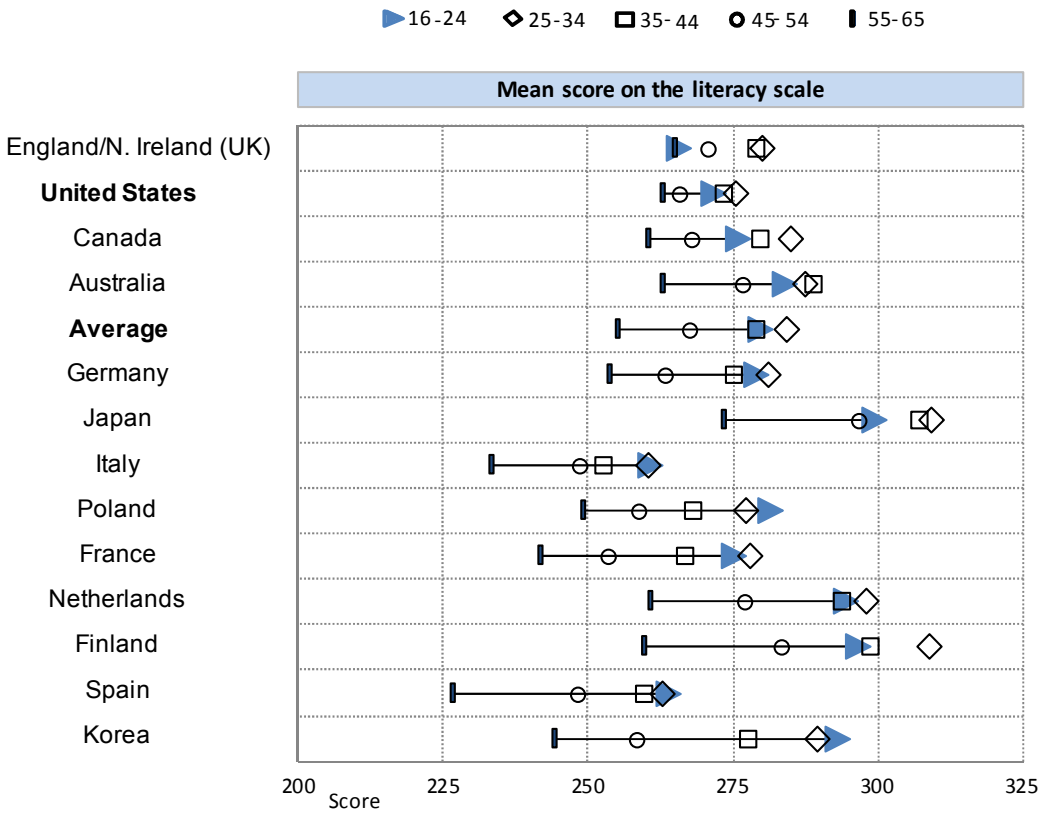
Notes: Coefficients from the OLS regression of log hourly wages on years of education and proficiency. Coefficients adjusted for age, gender, foreign-born status and tenure. The wage distribution was trimmed to eliminate the 1st and 99th percentiles. All values are statistically significant. The regression sample includes only employees. Years of education have a standard deviation of 3.05, numeracy has a standard deviation of 52.6. Countries are ranked in descending order of the effect of proficiency.

Source: Survey of Adults Skills (PIAAC) (2012).

StatLink http://dx.doi.org/10.1787/888932906141

Figure E.7 Age differences in literacy proficiency

Mean literacy proficiency, by 10-year age groups



How to read this chart: This chart shows the average literacy scores of different age groups. Countries at the top of the chart have smaller differences between younger and older adults than do countries at the bottom of the chart. In Korea for example, the 16-24 year-olds (blue triangle) scored on average almost 50 points higher than their oldest compatriots, aged 55-65 (black line).

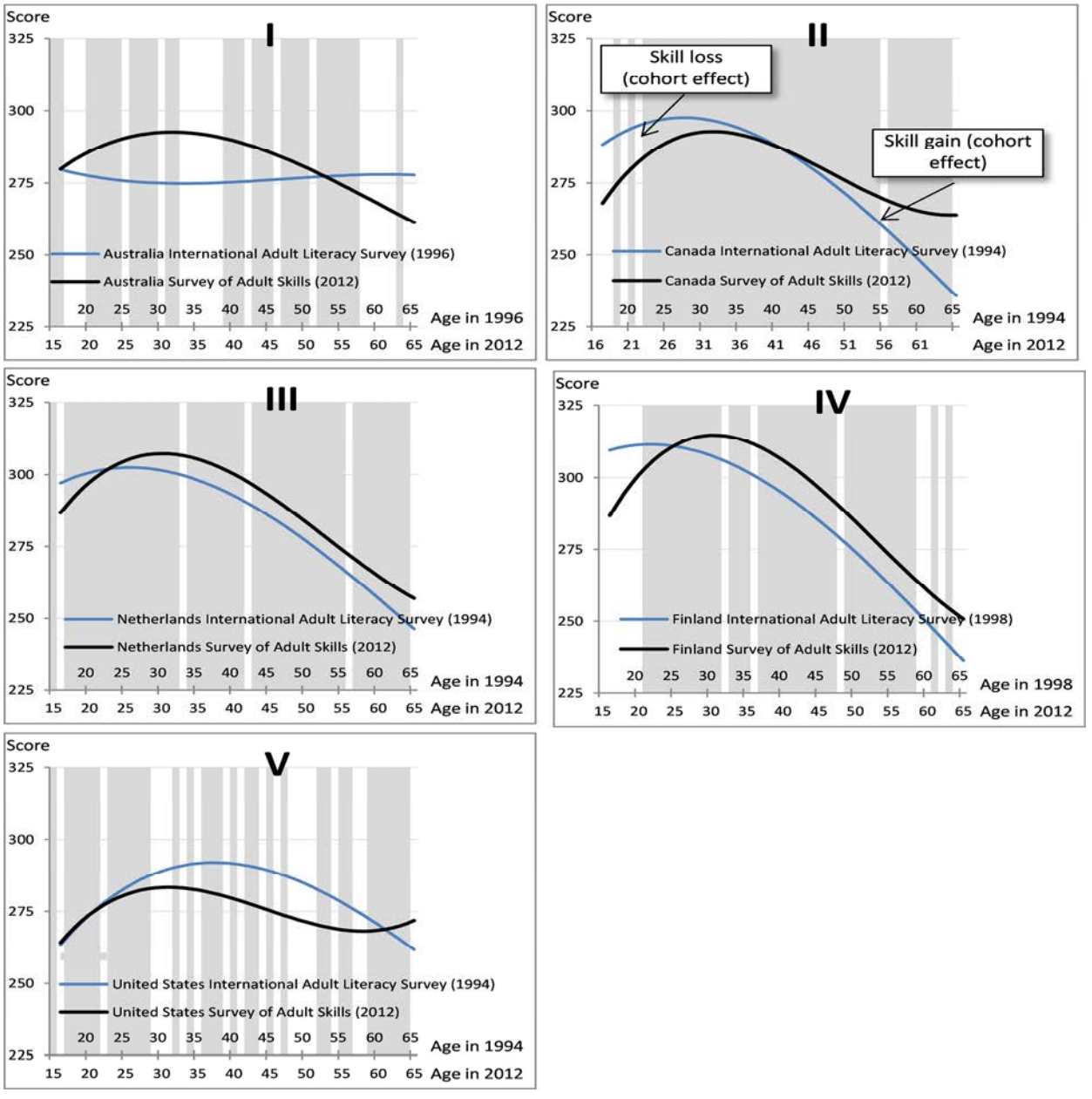
Notes: Statistically significant differences in panel II are marked in a darker tone. Unadjusted differences are the differences between the two means for each contrast category. Adjusted differences are based on a regression model and take account of differences associated with other factors: gender, education, immigration and language background, socio-economic background, and type of occupation. Only the score-point differences between two contrast categories are shown in panel II, which is useful for showing the relative significance of age vis-a-vis observed score-point differences. All adults aged 16 to 65, including the non-employed, are in the analysis. For more detailed regression results, including for each category of each variable included in the model, see corresponding table in Annex. Countries are ranked in ascending order of the unadjusted difference in literacy scores (16-24 year olds minus 55-65 year olds) scored almost 50 points higher on average than their oldest compatriots, aged 55-65 (grey line).

Source: Survey of Adult Skills (PIAAC) (2012).

StatLink http://dx.doi.org/10.1787/888932906160

Figure E.8 The relationship between belonging to a certain age group and literacy proficiency

Trend scores on the literacy scale, by age (cohort effect), for selected countries, foreign-born adults excluded



How to read this chart: This chart shows the scores adults of a particular age tended to achieve at the time of the International Adult Literacy Survey in the 1990s (blue line) and at the time of the Survey of Adult Skills (black line). Only results shaded in white should be interpreted as differences. For example, for the United States adults aged about 50 tended to have higher literacy skills in the 1994 than did adults aged 50 in 2012.

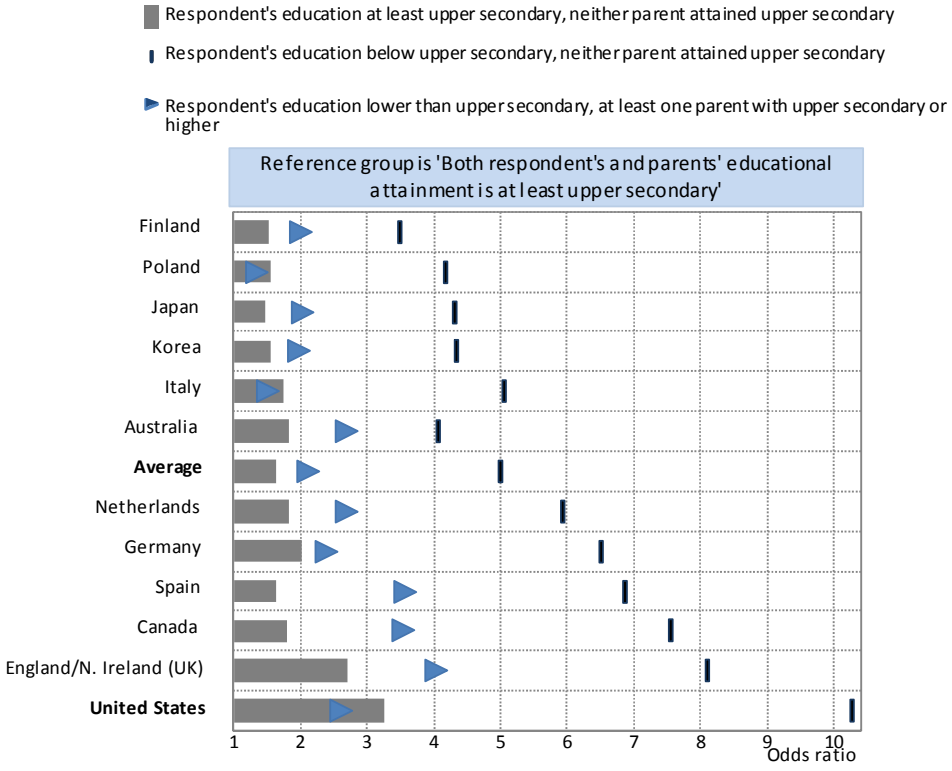
Notes: Only a random sample of countries are shown as an example. Sections of the chart shaded in grey reveal score differences that are not statistically significant at the 5% level using a one-tailed test. A cubic specification of the trend curves is found to be most accurate in reflecting the distribution of scores by age in most countries. Foreign-born adults are excluded from the analysis.

Source: International Adult Literacy Survey (1994-1998), and Survey of Adult Skills (PIAAC) (2012).

StatLink http://dx.doi.org/10.1787/888932906179

Figure E.9 Likelihood of lower literacy proficiency among low-educated adults

Adjusted odds ratio of scoring at or below Level 2 in literacy, by respondent's and parents' level of education



How to read this chart: This chart shows that low-educated adults coming from low-educated families (black line) are more likely to have lower literacy skills than adults who attained higher levels of education or come from better educated families. In the U.S., unlike most other comparator countries, better educated adults coming from low-educated families (grey bar) are more likely to have lower literacy skills than low-educated adults coming from more educated families (blue triangle).

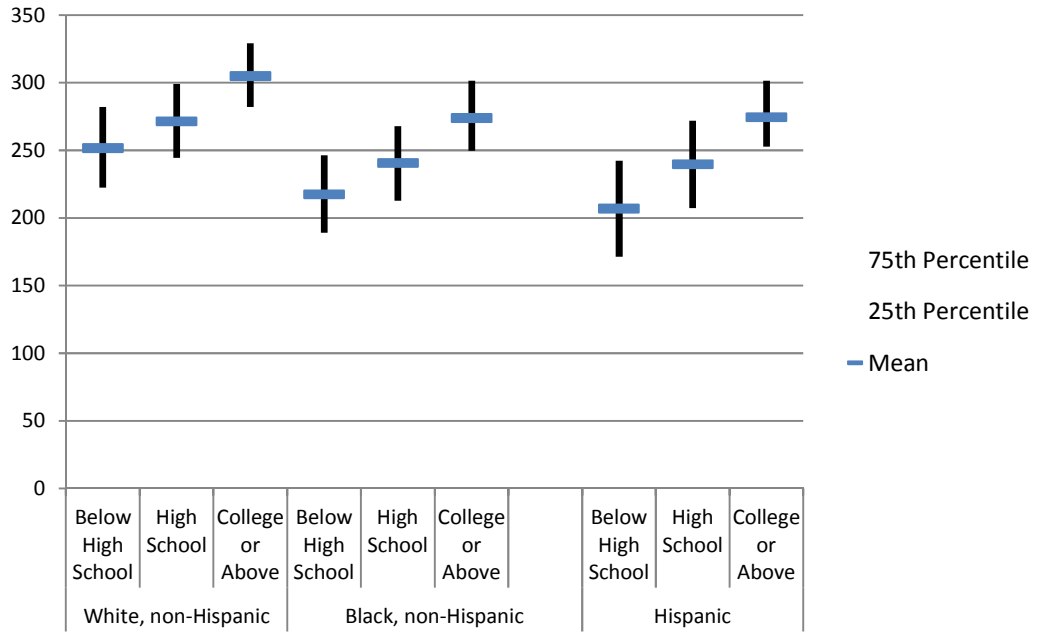
Notes: Estimates based on a sample size less than 30 or are not statistically different from the reference group are not shown. For more detailed results, see corresponding table in Annex. Odds ratios are adjusted for age, gender, type of occupation, and immigrant and language background. Countries are ranked in ascending order of the odds ratios of respondents scoring at or below proficiency Level 2 when their and their parents' educational attainment is below upper secondary.

Source: Survey of Adult Skills (PIAAC) (2012).

StatLink http://dx.doi.org/10.1787/888932906217

Figure E.10 Literacy skills by race/ethnicity and education

Literacy scores (mean, 25th and 75th percentile) by race/ethnicity and educational attainment



How to read this chart: This chart shows the literacy skills of adults in the U.S. by race and education. Blue lines indicate the average score of each group, the bottom of the black line shows the score range at which the middle half scores (exluding the top quarter and the bottom quarter). For example, high school educated Hispanic adults score on average 239 points. Half of high school educated adults score between 253 and 302 points - the bottom quarter score below 253 and the top quarter score above 302 points.

Source: Survey of Adult Skills (PIAAC) (2012).

StatLink http://dx.doi.org/10.1787/888932906236

Figure E.11 Likelihood of lower literacy proficiency among foreign-born and foreign-language adults

Adjusted odds ratios of scoring at or below Level 2 in literacy, by immigrant, language and socio-economic background

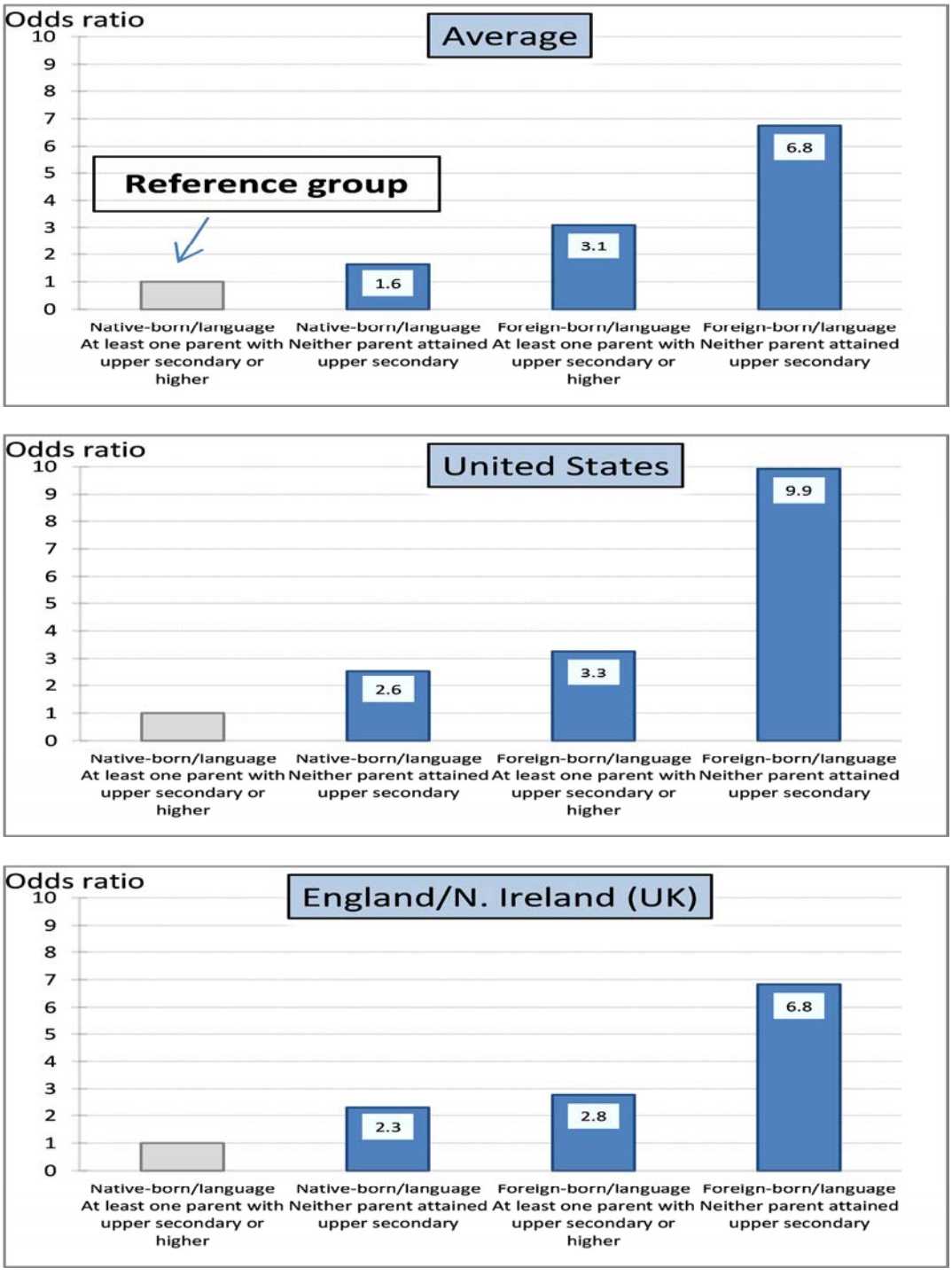
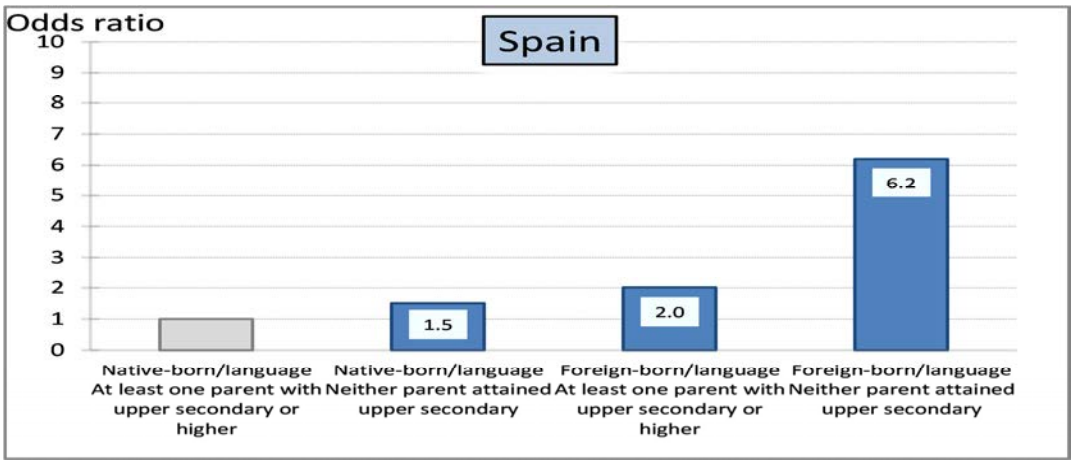
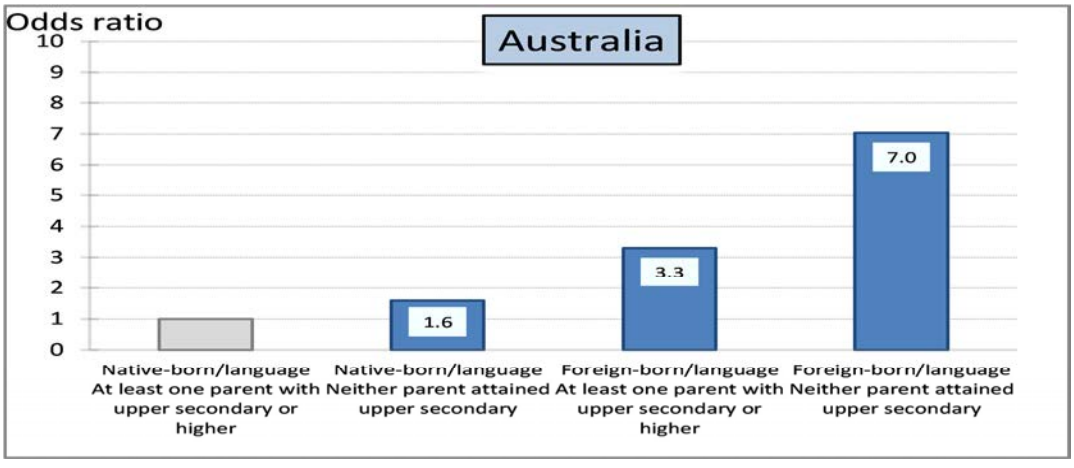
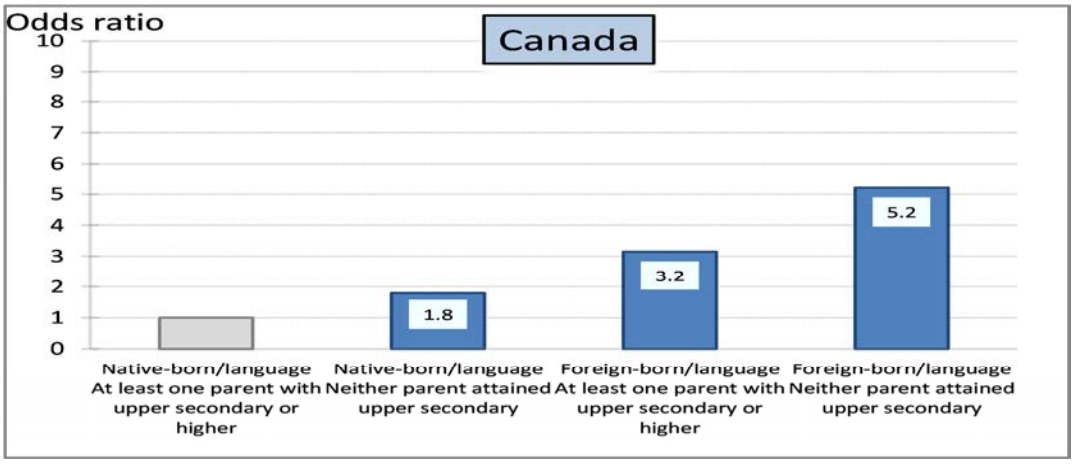


Figure E.11 Likelihood of lower literacy proficiency among foreign-born and foreign-language adults (*continued*)







How to read this chart: This chart shows the link between immigrant status, socio-economic background and the risk of lower literacy skills, after taking into account other factors (age, gender, education and occupation). A higher odds ratio indicates a higher risk of lower literacy skills for that particular group. For example in the in all countries immigrants born to low-educated parents are most likely to have lower literacy skills. Also in all countries immigrants born to better educated parents are more likely to have lower literacy skills than native-born adults born to low-educated parents. Only a sample of countries with a relatively high proportion of foreign-language immigrants are shown as an example.

Notes: Statistically significant odds ratios are marked in a darker tone. For more detailed results, see corresponding table through StatLink. Odds ratios are adjusted for age, gender, education and type of occupation. Native language refers to whether the first or second language learned as a child is the same as the language of assessment, and not whether the language has official status. Foreign language refers to whether the first or second language learned as a child is not the same as the language of assessment. Thus in some cases, foreign language might refer to minority languages in which the assessment was not administered.

Source: Survey of Adult Skills (PIAAC) (2012).

StatLink http://dx.doi.org/10.1787/888932906255

Annex F

Key tables on adult skills in the United States versus other countries

Table F.1 Mean literacy proficiency and distribution of literacy scores, by percentile

	Mean			5th percentile		10th percentile		25th percentile		50th percentile		75th percentile		90th percentile		95th percentile	
	Score	S.E.	S.D.	Score	S.E.	Score	S.E.	Score	S.E.	Score	S.E.	Score	S.E.	Score	S.E.	Score	S.E.
OECD																	
National entities																	
Australia	280.4	(0.9)	(50.5)	193.3	(3.2)	217.4	(2.0)	251.2	(1.3)	284.7	(1.1)	314.9	(1.2)	339.7	(1.2)	354.6	(1.7)
Canada	273.5	(0.6)	(50.4)	185.1	(1.9)	208.4	(1.4)	242.5	(1.0)	277.8	(0.8)	308.7	(0.8)	334.0	(1.1)	348.0	(1.2)
Finland	287.5	(0.7)	(50.7)	199.9	(3.2)	223.7	(2.0)	258.3	(1.1)	292.1	(1.1)	322.1	(1.0)	347.2	(1.1)	361.8	(1.4)
France	262.1	(0.6)	(49.0)	173.7	(1.8)	197.0	(1.4)	231.8	(0.9)	266.9	(0.9)	296.9	(0.9)	320.9	(0.9)	333.9	(1.1)
Germany	269.8	(0.9)	(47.4)	186.4	(2.6)	206.1	(2.1)	238.7	(1.5)	273.3	(1.3)	303.8	(1.2)	327.7	(1.4)	341.4	(1.6)
Italy	250.5	(1.1)	(44.7)	173.1	(3.1)	192.4	(2.0)	221.8	(1.6)	252.4	(1.4)	282.1	(1.6)	306.1	(1.4)	319.5	(1.8)
Japan	296.2	(0.7)	(39.7)	226.3	(2.0)	243.8	(1.7)	272.2	(1.2)	299.6	(0.8)	323.6	(0.8)	343.6	(1.1)	355.3	(1.5)
Korea	272.6	(0.6)	(41.7)	198.5	(1.8)	218.5	(1.5)	247.7	(0.8)	276.0	(0.9)	301.2	(0.9)	322.3	(1.2)	334.6	(1.8)
Netherlands	284.0	(0.7)	(48.4)	195.6	(2.9)	219.4	(2.0)	255.6	(1.0)	289.1	(1.1)	317.2	(0.9)	341.0	(1.4)	354.6	(1.5)
Poland	266.9	(0.6)	(48.0)	182.5	(2.6)	204.3	(1.9)	236.8	(1.1)	270.1	(0.9)	299.9	(0.9)	325.2	(1.4)	340.2	(1.5)
Spain	251.8	(0.7)	(49.0)	163.5	(3.0)	187.4	(1.7)	221.7	(1.2)	255.6	(1.0)	286.1	(0.8)	310.9	(1.3)	325.1	(1.9)
United States	269.8	(1.0)	(49.2)	182.0	(3.4)	204.2	(2.7)	238.3	(1.5)	273.2	(1.4)	304.6	(1.5)	330.3	(1.2)	344.3	(2.1)
Sub-national entities																	
England / N. Ireland (UK)	272.5	(1.0)	(49.0)	188.0	(3.4)	209.2	(2.4)	241.2	(1.4)	275.6	(1.3)	307.1	(1.3)	332.7	(1.7)	346.6	(1.9)
Average	272.8	(0.2)	(46.7)	190.3	(0.6)	212.1	(0.4)	244.5	(0.3)	276.7	(0.2)	305.1	(0.2)	328.6	(0.3)	342.1	(0.4)

Notes: Literacy-related non-response (missing) is excluded from the calculation of mean scores. S.E. Standard Error; S.D. Standard Deviation.

Source: Survey of Adult Skills (PIAAC) (2012).

Table F.2 Mean numeracy proficiency and distribution of numeracy scores, by percentile

	Mean			5th percentile		10th percentile		25th percentile		50th percentile		75th percentile		90th percentile		95th percentile	
	Score	S.E.	S.D.	Score	S.E.	Score	S.E.	Score	S.E.	Score	S.E.	Score	S.E.	Score	S.E.	Score	S.E.
OECD																	
National entities																	
Australia	267.6	(1.0)	(56.6)	169.3	(4.6)	197.7	(2.3)	234.7	(1.4)	271.9	(1.1)	305.4	(1.4)	334.3	(1.6)	351.6	(2.1)
Canada	265.5	(0.7)	(55.5)	169.2	(2.5)	194.2	(1.4)	230.8	(1.1)	269.8	(0.9)	303.9	(0.8)	332.4	(1.0)	349.3	(1.2)
Finland	282.2	(0.7)	(52.2)	193.6	(3.0)	217.4	(1.7)	250.8	(1.4)	285.8	(0.8)	317.3	(0.9)	345.0	(1.3)	360.8	(2.2)
France	254.2	(0.6)	(56.2)	152.1	(2.8)	179.7	(1.5)	219.9	(1.4)	259.2	(1.0)	293.9	(0.9)	321.5	(1.2)	336.5	(1.5)
Germany	271.7	(1.0)	(53.1)	179.0	(3.4)	201.9	(2.3)	238.4	(1.5)	275.9	(1.5)	309.3	(1.2)	335.0	(1.2)	350.5	(2.1)
Italy	247.1	(1.1)	(50.0)	161.1	(3.3)	182.9	(2.5)	215.4	(1.6)	249.3	(1.4)	281.9	(1.6)	309.1	(1.4)	324.1	(1.8)
Japan	288.2	(0.7)	(44.0)	212.6	(2.5)	231.7	(1.7)	260.7	(1.3)	290.8	(1.0)	318.1	(1.0)	341.7	(1.4)	355.4	(1.3)
Korea	263.4	(0.7)	(45.6)	181.3	(2.2)	203.8	(1.5)	236.2	(1.0)	267.1	(0.9)	294.7	(1.1)	318.4	(1.4)	331.6	(1.3)
Netherlands	280.3	(0.7)	(51.1)	188.6	(2.7)	214.6	(1.7)	251.0	(1.3)	285.8	(1.0)	315.3	(0.9)	339.7	(1.1)	354.2	(1.6)
Poland	259.8	(0.8)	(50.7)	171.0	(2.7)	194.0	(2.0)	228.6	(1.4)	262.6	(1.1)	294.4	(1.1)	321.8	(1.6)	338.1	(1.7)
Spain	245.8	(0.6)	(51.3)	149.1	(3.1)	177.8	(2.3)	216.3	(1.2)	250.3	(1.0)	280.9	(1.0)	307.4	(1.2)	322.3	(1.5)
United States	252.8	(1.2)	(57.0)	151.7	(3.7)	177.9	(2.5)	217.1	(1.8)	256.1	(1.5)	293.1	(1.7)	322.7	(2.0)	340.0	(2.6)
Sub-national entities																	
England / N. Ireland (UK)	261.7	(1.1)	(54.9)	167.4	(3.0)	191.6	(2.1)	227.0	(1.5)	265.0	(1.4)	300.1	(1.5)	329.3	(1.7)	345.4	(2.0)
Average	268.7	(0.2)	(51.3)	178.4	(0.7)	202.8	(0.4)	237.9	(0.3)	272.5	(0.2)	303.9	(0.2)	330.3	(0.3)	345.6	(0.4)

Notes: Literacy-related non-response (missing) is excluded from the calculation of mean scores. S.E. Standard Error; S.D. Standard Deviation.

Source: Survey of Adult Skills (PIAAC) (2012).

Table F.3 Percentages of adults by assessment mode (United States)

	Assessment Mode				Missing	
	Took CBA		Took Paper-based			
	%	S.E.	%	S.E.		
Gender						
Male	78	(1.1)	17	(1.0)	5	(0.8)
Female	82	(0.8)	15	(0.9)	4	(0.7)
Age						
24 or less	87	(1.4)	7	(1.0)	6	(1.0)
25-34	86	(1.1)	10	(1.3)	4	(1.1)
35-44	82	(1.3)	13	(1.3)	5	(1.1)
45-54	77	(1.3)	20	(1.4)	4	(0.8)
55 plus	69	(1.8)	27	(1.6)	4	(0.7)
Race/Ethnicity						
White, non-Hispanic	88	(0.8)	11	(0.8)	#	†
Black, non-Hispanic	78	(1.8)	22	(1.8)	#	†
Hispanic	65	(3.1)	35	(3.1)	#	†
Other	87	(2.1)	13	(2.1)	‡	†
Employment Status						
Employed	87	(0.9)	13	(0.9)	#	†
Unemployed	86	(1.6)	14	(1.6)	‡	†
Out of the labor force	70	(1.6)	30	(1.6)	‡	†
Educational Attainment						
Below High School	59	(1.8)	41	(1.8)	#	†
High School	83	(1.2)	17	(1.2)	‡	†
College or Above	95	(0.6)	5	(0.6)	#	†

Notes: † Not applicable; # Rounds to zero; ‡ Reporting standards not met. Standard errors are in parentheses. Detail may not sum to totals because of rounding. CBA: computer-based assessment.

Source: Survey of Adult Skills (PIAAC) (2012) U.S. national dataset.

Table F.4 Percentage of 16-24 year-olds scoring at each proficiency level in problem solving in technology-rich environments

	Proficiency levels															
	Below Level 1		Level 1		Level 2		Level 3		No computer experience		Opted out of computer based assessment		Failed ICT core		Missing	
	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.
OECD																
National entities																
Australia	6.7	(1.2)	32.2	(2.4)	41.7	(2.7)	8.9	(1.7)	0.4	(0.3)	6.9	(1.1)	2.1	(0.6)	1.0	(0.4)
Canada	9.0	(0.8)	32.0	(1.9)	40.9	(1.6)	9.9	(1.0)	0.2	(0.1)	1.9	(0.3)	4.6	(0.6)	1.5	(0.2)
Finland	3.6	(0.9)	29.7	(1.9)	50.4	(2.1)	11.5	(1.8)	0.0	(0.0)	1.8	(0.5)	3.1	(0.7)	0.0	(0.0)
France	m	m	m	m	m	m	m	m	0.5	(0.2)	3.9	(0.5)	1.4	(0.4)	m	m
Germany	9.1	(1.3)	32.8	(1.7)	43.2	(2.0)	10.9	(1.8)	0.5	(0.3)	1.3	(0.4)	1.5	(0.5)	0.6	(0.3)
Italy	m	m	m	m	m	m	m	m	2.5	(0.7)	6.3	(1.4)	3.1	(1.0)	m	m
Japan	5.9	(1.2)	21.9	(2.2)	35.7	(2.5)	10.2	(1.3)	1.6	(0.6)	12.9	(1.6)	10.5	(1.4)	1.4	(0.3)
Korea	2.6	(0.7)	27.9	(2.1)	53.6	(2.1)	9.9	(1.5)	0.7	(0.3)	0.8	(0.3)	4.6	(0.7)	0.0	(0.0)
Netherlands	5.1	(1.1)	30.8	(2.0)	46.9	(2.0)	11.4	(1.5)	0.0	(0.0)	1.6	(0.5)	2.8	(0.6)	1.4	(0.5)
Poland	11.4	(0.7)	30.6	(1.1)	30.3	(1.2)	7.6	(0.9)	0.7	(0.2)	12.4	(0.7)	7.0	(0.4)	0.0	(0.0)
Spain	m	m	m	m	m	m	m	m	1.2	(0.4)	3.5	(0.6)	4.5	(0.7)	m	m
United States	10.7	(1.7)	38.7	(2.4)	31.1	(2.2)	6.5	(1.2)	0.8	(0.3)	3.0	(0.7)	3.5	(0.8)	5.7	(1.0)
Sub-national entities																
England / N. Ireland (UK)	9.8	(1.5)	39.7	(2.5)	35.8	(2.2)	6.6	(1.4)	0.7	(0.4)	0.8	(0.4)	4.1	(0.7)	2.4	(0.6)
Average	7.5	(0.3)	32.4	(0.5)	41.7	(0.5)	9.0	(0.3)	0.8	(0.1)	4.1	(0.2)	3.5	(0.1)	1.1	(0.1)

Notes: Young adults in the missing category were not able to provide enough background information to impute proficiency scores because of language difficulties, or learning or mental disabilities (referred to as literacy-related non-response). The missing category also includes adults who could not complete the assessment of problem solving in technology-rich environments because of technical problems with the computer used for the survey. France, Italy and Spain did not participate in the problem solving in technology-rich environments assessment.

S.E. Standard Error; m Data are not available. The data are not submitted by the country or were collected but subsequently removed from the publication for technical reasons.

Source: Survey of Adult Skills (PIAAC) (2012).

Table F.5 Percentage of adults aged 16 to 29* scoring below level 2 and at level 2 and above on the literacy scale by participation in basic skills training (United States)

Participation	Percent of Youth*		Literacy proficiency levels: Below Level 2			Literacy proficiency levels: At or above Level 2	
	%	S.E.	%	S.E.		%	S.E.
Participated in basic reading, writing or math training							
Yes	18	(1.8)	26	(5.6)		74	(5.6)
No	82	(1.8)	20	(2.6)		80	(2.6)
Participated in GED preparation							
Yes	8	(1.1)	42	(9.6)		58	(9.6)
No	92	(1.1)	19	(2.3)		81	(2.3)
Participated in other high school equivalency or adult high school program							
Yes	7	(1.0)	25	(8.7)	!	75	(8.7)
No	93	(1.0)	21	(2.5)		79	(2.5)
Reason for basic skills and GED / adult education							
Work-related	18	(3.3)	39	(11.4)		61	(11.4)
Personal Interest	50	(5.3)	31	(8.0)		69	(8.0)
Both equally	32	(4.1)	27	(10.1)		73	(10.1)

Notes: ! Interpret data with caution. *A subset of young adults who did not finish high school, in high school, attended trade school, college or university with no certificate, or, if only a foreign degree reported, having up to a certificate from a college or trade school for completion of a program prior to the associate/bachelor's degree. The percent of youth (adults ages 16 to 29) with these characteristics is 45.42 (1.25). S.E. Standard Error.

Source: Survey of Adult Skills (PIAAC) (2012) U.S. national dataset.

Table F.6 Percentage of adults aged 16 to 65 scoring at each proficiency level on the literacy scale by self-evaluation of English skills (United States)

	Literacy proficiency levels									
Reading English	Below Level 1		Level 1		Level 2		Level 3		Level 4/5	
	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.
Very well	1	(0.3)	11	(0.7)	34	(1.2)	40	(1.1)	14	(0.9)
Well	9	(1.8)	29	(2.6)	41	(3.0)	18	(2.3)	3	(1.0) !
Not well	32	(5.6)	42	(4.8)	21	(4.4)	5	(2.3) !	‡	†
Not at all	51	(8.3)	28	(8.2)	20	(8.1) !	‡	†	#	†

Notes: ! Interpret data with caution, # Rounds to zero; ‡ Reporting standards not met; † Not applicable. Standard errors are in parentheses. Detail may not sum to totals because of rounding.

Source: Survey of Adult Skills (PIAAC) (2012) U.S. national dataset.

Table F.7 Educational attainment of adults

	16-65 year-olds						35-65 year-olds						25-34 year-olds					
	Less than high school		High school		More than high school		Less than high school		High school		More than high school		Less than high school		High school		More than high school	
	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.
OECD																		
National entities																		
Australia	27.1	(0.5)	33.2	(0.4)	38.0	(0.5)	30.7	(0.7)	27.9	(0.5)	39.1	(0.7)	14.6	(1.0)	33.3	(1.3)	51.1	(1.3)
Canada	14.7	(0.1)	24.6	(0.0)	59.7	(0.1)	12.5	(0.3)	20.8	(0.4)	65.7	(0.3)	7.6	(0.6)	20.2	(0.9)	71.4	(0.9)
Finland	19.6	(0.4)	40.3	(0.6)	40.1	(0.5)	16.5	(0.6)	36.4	(0.8)	47.1	(0.7)	7.6	(1.0)	43.8	(1.3)	48.6	(1.4)
France	27.7	(0.4)	44.9	(0.4)	26.6	(0.0)	29.7	(0.5)	43.8	(0.5)	25.6	(0.3)	14.9	(1.0)	43.7	(1.2)	40.4	(1.2)
Germany	17.0	(0.5)	46.4	(0.6)	35.0	(0.5)	9.9	(0.6)	49.6	(0.8)	38.7	(0.6)	10.2	(1.1)	43.6	(1.6)	44.7	(1.5)
Italy	53.4	(0.2)	33.1	(0.2)	12.9	(0.2)	58.8	(0.8)	29.1	(0.7)	11.5	(0.4)	27.6	(1.7)	46.5	(1.8)	24.8	(1.4)
Japan	14.6	(0.4)	41.4	(0.4)	42.8	(0.2)	12.4	(0.5)	42.7	(0.7)	43.6	(0.5)	7.9	(1.0)	33.4	(1.6)	57.6	(1.5)
Korea	21.6	(0.5)	43.1	(0.5)	35.0	(0.0)	24.8	(0.6)	41.7	(0.6)	33.3	(0.1)	c	c	35.3	(0.7)	61.6	(0.6)
Netherlands	30.3	(0.6)	37.6	(0.7)	29.9	(0.5)	31.1	(0.8)	34.1	(0.8)	32.3	(0.7)	16.8	(1.4)	40.6	(1.9)	40.6	(1.7)
Poland	15.3	(0.4)	53.9	(0.6)	30.8	(0.5)	12.4	(0.7)	60.5	(0.9)	27.0	(0.8)	5.2	(0.7)	43.8	(1.5)	50.9	(1.5)
Spain	47.1	(0.1)	21.5	(0.2)	30.7	(0.2)	49.9	(0.5)	18.8	(0.4)	30.4	(0.4)	34.3	(1.4)	23.9	(1.1)	41.3	(1.2)
United States	14.1	(0.3)	39.3	(0.5)	42.3	(0.5)	9.9	(0.4)	39.1	(0.6)	46.9	(0.5)	9.7	(0.9)	35.4	(1.4)	51.4	(1.2)
Sub-national entities																		
England / N. Ireland (UK)	25.1	(0.5)	39.0	(0.7)	35.6	(0.6)	28.1	(0.7)	35.2	(0.8)	36.4	(0.8)	17.3	(0.9)	34.2	(1.4)	47.6	(1.0)
Average	24.0	(0.1)	39.8	(0.1)	35.0	(0.1)	23.0	(0.1)	39.1	(0.1)	36.6	(0.1)	13.6	(0.2)	38.2	(0.3)	47.6	(0.3)

Notes: c There are too few observations or no observations to provide reliable estimates (i.e. there are fewer than 30 individuals) Also denotes unstable odds ratios which may occur when probabilities are very close to 0 or 1. S.E. Standard Error.

Source: Survey of Adult Skills (PIAAC) (2012).

Table F.8 Percentage of adults aged 16 to 65 scoring at each proficiency level by diagnosed learning disability: 2012

Part I/II Literacy

Diagnosed learning disability	Literacy proficiency levels									
	Below Level 1		Level 1		Level 2		Level 3		Level 4/5	
Yes	8.8	(2.05)	25.5	(3.40)	37.4	(4.01)	22.7	(2.69)	5.6	(1.59)
No	3.7	(0.48)	13.1	(0.69)	33.7	(1.15)	36.9	(1.09)	12.6	(0.79)

Part II/II Numeracy

Diagnosed learning disability	Numeracy proficiency levels									
	Below Level 1		Level 1		Level 2		Level 3		Level 4/5	
Yes	21.2	(2.63)	28.4	(3.10)	29.9	(2.48)	15.9	(2.76)	4.6	(1.58) !
No	8.4	(0.65)	19.8	(0.85)	34.5	(1.09)	28.1	(0.96)	9.2	(0.65)

Notes: Standard errors are in parentheses. Detail may not sum to totals because of rounding. ! Interpret data with caution.

Source: Survey of Adult Skills (PIAAC) (2012) U.S. national dataset.

Table F.9 Relationship between reading at work and literacy proficiency

Adjusted OLS regression weights, adults employed in year prior to survey

	Adults aged 30 to 65															
	Constant			Level of engagement in reading at work (quintiles)												R^2
				No practice and first quintile			Second quintile			Fourth quintile			Fifth quintile			
	β	S.E.	p-value	β	S.E.	p-value	β	S.E.	p-value	β	S.E.	p-value	β	S.E.	p-value	
OECD																
National entities																
Australia	290.45	(2.5)	0.000	-28.76	(3.4)	0.000	-11.23	(2.6)	0.000	1.35	(2.5)	0.905	1.05	(2.8)	0.805	0.2644
Canada	277.14	(1.8)	0.000	-26.36	(2.3)	0.000	-10.84	(2.1)	0.000	5.24	(1.8)	0.004	2.40	(2.0)	0.299	0.2545
Finland	281.43	(1.9)	0.000	-22.04	(3.8)	0.000	-4.14	(2.3)	0.115	5.00	(2.1)	0.012	5.76	(2.4)	0.001	0.206
Germany	270.73	(2.1)	0.000	-23.59	(3.0)	0.000	-7.33	(2.8)	0.024	4.96	(2.6)	0.156	4.41	(2.4)	0.041	0.2679
Italy	269.76	(3.0)	0.000	-13.74	(4.0)	0.001	-1.99	(3.8)	0.931	7.71	(3.7)	0.003	4.53	(3.8)	0.039	0.2222
Japan	287.98	(2.1)	0.000	-6.72	(2.4)	0.013	0.09	(2.6)	0.506	3.65	(2.5)	0.012	3.90	(2.5)	0.098	0.1715
Korea	267.23	(1.6)	0.000	-12.87	(2.4)	0.000	-6.14	(2.2)	0.002	4.68	(2.0)	0.020	4.59	(1.9)	0.019	0.2967
Netherlands	293.72	(1.9)	0.000	-27.23	(3.3)	0.000	-9.55	(2.4)	0.000	0.86	(2.0)	0.971	0.37	(2.8)	0.806	0.3265
Poland	265.64	(2.4)	0.000	-17.90	(2.8)	0.000	-6.88	(3.8)	0.005	3.15	(3.1)	0.581	3.70	(3.8)	0.302	0.2554
Spain	266.43	(2.8)	0.000	-20.06	(2.9)	0.000	-5.98	(3.3)	0.033	2.13	(3.6)	0.640	4.19	(3.5)	0.271	0.2773
United States	268.75	(2.0)	0.000	-18.13	(3.7)	0.000	-5.53	(2.8)	0.004	5.01	(2.8)	0.329	0.65	(2.4)	0.979	0.3477
Sub-national entities																
England / N. Ireland (UK)	282.99	(2.4)	0.000	-25.93	(3.7)	0.000	-13.11	(3.2)	0.000	1.80	(3.0)	0.899	0.84	(2.6)	0.769	0.2176
Average	276.55	(0.5)	0.000	-18.90	(0.7)	0.000	-5.92	(0.6)	0.000	3.86	(0.6)	0.000	3.00	(0.6)	0.000	0.247

Notes: Results are adjusted for educational attainment and language background. Reference group for level of engagement in reading at work variable is the third quintile. The reference group on which the constant for adjusted results is based is adults who have attained upper secondary education, are native-born, and whose first or second language learned as a child is the same as the language of the assessment. No practice of reading is combined with the lowest quintile of practice, which generally reflects reading at work rarely or less than once a month, whereas highest practice reflects reading multiple types of texts daily or weekly. S.E. Standard Error.

Source: Survey of Adult Skills (PIAAC) (2012).

Table F.10 Relationship between numeracy-related practices at work and numeracy proficiency

Adjusted OLS regression weights, adults employed in year prior to survey

	Adults aged 30 to 65															
	Constant			Level of engagement in numeracy-related practices at work (quintiles)												R^2
				No practice and first quintile			Second quintile			Fourth quintile			Fifth quintile			
	β	S.E.	p-value	β	S.E.	p-value	β	S.E.	p-value	β	S.E.	p-value	β	S.E.	p-value	
OECD																
National entities																
Australia	281.29	(2.7)	0.000	-25.87	(2.7)	0.000	-15.88	(3.1)	0.000	1.63	(2.9)	0.702	9.93	(3.1)	0.001	0.2582
Canada	265.57	(2.1)	0.000	-21.52	(2.3)	0.000	-9.42	(2.8)	0.000	4.66	(2.3)	0.057	13.29	(2.8)	0.000	0.2441
Finland	277.37	(2.4)	0.000	-22.83	(3.0)	0.000	-8.06	(3.5)	0.000	6.46	(2.7)	0.037	13.01	(3.0)	0.000	0.238
Germany	279.73	(2.5)	0.000	-27.34	(2.8)	0.000	-12.74	(3.5)	0.000	6.55	(3.2)	0.012	9.34	(3.0)	0.001	0.3396
Italy	277.81	(2.9)	0.000	-23.72	(3.2)	0.000	-11.65	(4.0)	0.001	4.59	(3.9)	0.265	13.32	(3.5)	0.001	0.2531
Japan	290.14	(2.1)	0.000	-20.78	(2.3)	0.000	-12.65	(2.4)	0.000	6.67	(2.7)	0.009	12.09	(2.6)	0.000	0.2564
Korea	257.40	(2.2)	0.000	-10.71	(2.4)	0.000	-2.73	(2.5)	0.541	5.00	(2.8)	0.016	7.71	(2.7)	0.000	0.3136
Netherlands	291.34	(2.3)	0.000	-18.91	(2.4)	0.000	-3.97	(2.8)	0.205	6.97	(3.2)	0.019	14.99	(2.7)	0.000	0.3299
Poland	263.58	(3.3)	0.000	-17.61	(3.7)	0.000	-11.87	(3.7)	0.001	1.46	(4.2)	0.687	11.18	(3.7)	0.001	0.234
Spain	261.20	(2.7)	0.000	-16.44	(3.0)	0.000	-4.26	(3.6)	0.472	3.22	(3.3)	0.203	15.91	(3.3)	0.000	0.2992
United States	255.16	(3.1)	0.000	-23.93	(3.8)	0.000	-7.39	(3.7)	0.022	-0.25	(3.4)	0.550	4.58	(3.5)	0.129	0.3448
Sub-national entities																
England / N. Ireland (UK)	274.68	(2.8)	0.000	-22.64	(3.2)	0.000	-10.41	(3.6)	0.003	5.77	(2.9)	0.092	10.26	(3.2)	0.003	0.2229
Average	276.89	(0.5)	0.000	-20.05	(0.6)	0.000	-8.58	(0.7)	0.000	5.22	(0.7)	0.000	12.18	(0.7)	0.000	0.275

Notes: Results are adjusted for educational attainment and language background. Reference group for the level of engagement in numeracy-related practices at work variable is the third quintile. The reference group on which the constant for adjusted results is based is adults who have attained upper secondary education, are native-born, and whose first or second language learned as a child is the same as the language of the assessment. No engagement in numeracy-related practices is combined with the lowest quintile of practice, which generally reflects reading at work rarely or less than once a month, whereas highest practice reflects reading multiple types of texts daily or weekly. S.E. Standard Error.

Source: Survey of Adult Skills (PIAAC) (2012).

Table F.11 Mean literacy proficiency, by parents' educational attainment, and link between parents' education and proficiency, adults aged 16-24 and 16-65

Part I/II

	16-24 year-olds							
	Neither parent attained upper secondary		At least one parent attained upper secondary		At least one parent attained tertiary		Slope of the socio-economic gradient	
	Mean score	S.E.	Mean score	S.E.	Mean score	S.E.	Slope	S.E.
OECD								
National entities								
Australia	258.8	(5.7)	285.2	(3.5)	297.9	(2.8)	18.4	(2.9)
Canada	246.4	(5.5)	270.5	(2.4)	282.6	(1.6)	14.6	(2.0)
Finland	263.0	(10.0)	291.7	(2.4)	310.5	(2.3)	21.3	(2.9)
France	257.1	(3.7)	270.6	(2.1)	294.1	(1.9)	19.9	(1.9)
Germany	246.4	(6.1)	270.7	(2.5)	293.5	(2.3)	23.2	(2.8)
Italy	247.3	(4.9)	263.9	(3.3)	287.1	(5.5)	19.2	(3.6)
Japan	c	c	292.2	(2.5)	306.1	(1.9)	11.4	(3.0)
Korea	276.0	(5.1)	290.1	(1.8)	299.2	(2.5)	10.6	(2.2)
Netherlands	278.9	(3.0)	293.2	(2.7)	306.5	(2.5)	13.8	(1.8)
Poland	246.1	(5.8)	277.3	(1.3)	299.8	(1.7)	23.8	(2.1)
Spain	253.3	(2.4)	268.5	(2.8)	280.7	(2.7)	13.8	(1.6)
United States	248.4	(6.2)	264.1	(2.8)	284.8	(2.8)	19.1	(2.5)
Sub-national entities								
England/N. Ireland (UK)	231.6	(6.3)	270.8	(3.1)	287.4	(3.7)	24.3	(3.6)
Average	252.4	(1.3)	276.5	(0.5)	293.6	(0.6)	18.6	(0.6)

Notes: The slope of the socio-economic gradient is based on the trend line connecting mean scores for each level of parents' educational attainment. Lower than upper secondary includes ISCED 1, 2 and 3C short. Upper secondary education includes ISCED 3A, 3B, 3C long and 4. Tertiary includes ISCED 5A, 5B and 6. c There are too few observations or no observations to provide reliable estimates (i.e. there are fewer than 30 individuals) Also denotes unstable odds ratios which may occur when probabilities are very close to 0 or 1. S.E. Standard Error.

Source: Survey of Adult Skills (PIAAC) (2012).

Table F.11 Mean literacy proficiency, by parents' educational attainment, and link between parents' education and proficiency, adults aged 16-24 and 16-65 (*continued*)

Part II/II

	16-65 year-olds							
	Neither parent attained upper secondary		At least one parent attained upper secondary		At least one parent attained tertiary		Slope of socio-economic gradient	
	Mean score	S.E.	Mean score	S.E.	Mean score	S.E.	Slope	S.E.
OECD								
National entities								
Australia	270.6	(1.5)	286.6	(1.6)	300.5	(1.4)	15.0	(1.0)
Canada	252.6	(1.1)	276.2	(1.0)	288.9	(0.9)	17.7	(0.7)
Finland	270.3	(1.3)	295.2	(1.2)	311.3	(1.8)	21.1	(1.2)
France	246.3	(0.9)	271.3	(1.2)	294.5	(1.2)	24.2	(0.7)
Germany	235.7	(2.9)	268.2	(1.2)	289.4	(1.4)	25.0	(1.3)
Italy	242.6	(1.2)	268.2	(2.0)	282.5	(3.8)	22.2	(1.5)
Japan	278.6	(1.5)	298.3	(1.0)	310.1	(1.1)	15.5	(0.9)
Korea	259.2	(0.8)	283.5	(1.1)	294.0	(1.3)	18.5	(0.7)
Netherlands	269.7	(1.0)	293.4	(1.5)	306.6	(1.5)	18.9	(0.9)
Poland	244.5	(1.5)	271.9	(0.9)	295.7	(2.1)	25.9	(1.3)
Spain	243.9	(0.9)	267.5	(1.6)	282.3	(1.8)	20.0	(1.0)
United States	233.2	(2.6)	270.5	(1.4)	290.4	(1.6)	27.1	(1.5)
Sub-national entities								
England/N. Ireland (UK)	252.3	(1.7)	281.5	(1.4)	296.2	(1.7)	22.1	(1.2)
Average	254.7	(0.3)	278.4	(0.3)	294.6	(0.4)	20.1	(0.2)

Notes: The slope of the socio-economic gradient is based on the trend line connecting mean scores for each level of parents' educational attainment. Lower than upper secondary includes ISCED 1, 2 and 3C short. Upper secondary education includes ISCED 3A, 3B, 3C long and 4. Tertiary includes ISCED 5A, 5B and 6. S.E. Standard Error.

Source: Survey of Adult Skills (PIAAC) (2012).

Table F.12 Proficiency scores of adults aged 16 to 65 by race/ethnicity (United States)

Part I/II Literacy

Race/Ethnicity	Literacy percentile scores					
	25th Percentile		Mean		75th Percentile	
	Source	S.E.	Source	S.E.	Source	S.E.
White, non-Hispanic	254	(1.8)	283	(1.2)	313	(1.5)
Black, non-Hispanic	213	(4.4)	244	(2.5)	276	(4.2)
Hispanic	198	(6.2)	233	(3.3)	270	(4.2)
Other	240	(4.9)	272	(3.1)	305	(5.3)

Notes: Standard errors are in parentheses. Detail may not sum to totals because of rounding.

Source: Survey of Adult Skills (PIAAC) (2012) U.S. national dataset.

Part II/II Numeracy

Race/Ethnicity	Numeracy percentile scores					
	25th Percentile		Mean		75th Percentile	
	Source	S.E.	Source	S.E.	Source	S.E.
White, non-Hispanic	237	(2.0)	268	(1.4)	303	(1.8)
Black, non-Hispanic	179	(4.8)	212	(3.2)	247	(3.8)
Hispanic	176	(6.1)	215	(3.9)	256	(4.9)
Other	223	(6.2)	258	(3.2)	297	(6.7)

Notes: Standard errors are in parentheses. Detail may not sum to totals because of rounding.

Source: Survey of Adult Skills (PIAAC) (2012) U.S. national dataset.

Table F.13 Percentage of adults aged 16 to 65 scoring at each proficiency level on the literacy scale by race/ethnicity (United States)

Race/Ethnicity	Literacy proficiency levels													
	Below Level 1			Level 1		Level 2		Level 3		Level 4/5		
	%	S.E.		%	S.E.	%	S.E.	%	S.E.	%	S.E.	
White, non-Hispanic	1	(0.3)		9	(0.6)	32	(1.3)	42	(1.3)	16	(1.0)	
Black, non-Hispanic	7	(1.7)		28	(2.9)	41	(2.9)	22	(2.3)	3	(0.9)	!
Hispanic	15	(2.5)		28	(2.3)	36	(2.8)	18	(2.8)	3	(1.2)	!
Other	3	(1.4)	!	14	(2.4)	35	(4.0)	34	(3.1)	14	(2.6)	

Notes: ! Interpret data with caution. Standard errors are in parentheses. Detail may not sum to totals because of rounding. Overall literacy proficiency scores are missing for 4.2 percent of the population; these also do not report race/ethnicity.

Source: Survey of Adult Skills (PIAAC) (2012) U.S. national dataset.

Table F.14 Percentage of adults aged 16 to 65 scoring at each proficiency level on the numeracy scale by race/ethnicity (United States)

Race/Ethnicity	Numeracy proficiency levels										
	Below Level 1		Level 1		Level 2		Level 3		Level 4/5		
	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.	
White, non-Hispanic	4	(0.4)	15	(0.9)	36	(1.2)	34	(1.1)	12	(0.8)	
Black, non-Hispanic	24	(2.6)	35	(2.2)	31	(2.5)	9	(1.4)	1	(0.5)	!
Hispanic	25	(2.7)	31	(3.2)	29	(2.9)	13	(2.4)	2	(0.9)	!
Other	8	(1.8)	19	(2.4)	34	(3.9)	28	(3.7)	11	(2.0)	

Notes: ! Interpret data with caution. Standard errors are in parentheses. Detail may not sum to totals because of rounding. Overall numeracy proficiency scores are missing for 4.2 percent of the population; these also do not report race/ethnicity.

Source: Survey of Adult Skills (PIAAC) (2012) U.S. national dataset.

Table F.15 Migrant status of adults with low literacy skills

	Migrant		Native	
	%	S.E.	%	S.E.
OECD				
National entities				
Australia	42.2	(1.7)	57.6	(1.7)
Canada	43.1	(1.2)	56.9	(1.2)
Finland	19.4	(1.4)	79.6	(1.3)
France	26.0	(0.9)	74.0	(0.9)
Germany	31.4	(2.1)	68.5	(2.1)
Italy	15.3	(1.5)	84.7	(1.5)
Japan	c	c	99.2	(0.6)
Korea	5.5	(0.7)	94.5	(0.7)
Netherlands	38.3	(2.0)	61.7	(2.0)
Poland	c	c	99.6	(0.1)
Spain	20.1	(1.0)	79.8	(1.0)
United States	32.3	(2.5)	67.5	(2.6)
Sub-national entities				
England/N. Ireland (UK)	28.3	(2.2)	71.7	(2.2)
Average	26.8	(0.4)	75.4	(0.3)

Notes: c There are too few observations or no observations to provide reliable estimates (i.e. there are fewer than 30 individuals) Also denotes unstable odds ratios which may occur when probabilities are very close to 0 or 1. S.E. Standard Error.

Source: Survey of Adult Skills (PIAAC) (2012).

Table F.16 Migrant status of adults with low numeracy skills

	Migrant		Native	
	%	S.E.	%	S.E.
OECD				
National entities				
Australia	34.7	(1.6)	65.1	(1.6)
Canada	38.8	(1.0)	61.1	(1.0)
Finland	18.5	(1.3)	80.8	(1.3)
France	23.8	(0.7)	76.0	(0.7)
Germany	30.1	(2.1)	69.8	(2.1)
Italy	12.1	(1.3)	87.9	(1.3)
Japan	c	c	98.5	(0.7)
Korea	3.6	(0.5)	96.4	(0.5)
Netherlands	35.0	(1.7)	65.0	(1.7)
Poland	c	c	99.4	(0.2)
Spain	19.9	(0.9)	80.1	(0.9)
United States	23.6	(1.4)	76.2	(1.5)
Sub-national entities				
England/N. Ireland (UK)	24.4	1.5	75.6	1.5
Average	24.3	(0.3)	77.7	(0.3)

Notes: c There are too few observations or no observations to provide reliable estimates (i.e. there are fewer than 30 individuals) Also denotes unstable odds ratios which may occur when probabilities are very close to 0 or 1. S.E. Standard Error.

Source: Survey of Adult Skills (PIAAC) (2012).

Table F.17 The age of adults with low literacy skills

percentages

	16-24		25-34		35-44		45-54		55-65	
	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.
OECD										
National entities										
Australia	12.8	(1.4)	17.2	(1.6)	15.7	(1.5)	21.1	(1.4)	33.2	(1.4)
Canada	13.4	(0.7)	13.8	(0.9)	16.5	(0.8)	27.1	(1.1)	29.1	(1.0)
Finland	9.8	(1.1)	8.6	(1.3)	12.3	(1.8)	21.2	(1.8)	48.1	(1.9)
France	9.8	(0.7)	11.5	(0.9)	18.1	(0.8)	25.2	(0.8)	35.4	(1.0)
Germany	11.2	(1.0)	14.2	(1.2)	19.0	(1.2)	28.7	(1.5)	26.9	(1.6)
Italy	9.4	(1.0)	14.9	(1.2)	22.3	(1.4)	21.6	(1.3)	31.7	(1.4)
Japan	c	c	c	c	c	c	14.4	(2.6)	63.5	(3.1)
Korea	c	c	6.4	(0.9)	13.7	(1.5)	34.7	(1.7)	41.3	(1.5)
Netherlands	7.2	(1.2)	13.8	(1.6)	14.4	(1.6)	25.8	(1.8)	38.7	(1.9)
Poland	9.6	(0.5)	16.7	(1.1)	18.3	(1.2)	25.6	(1.4)	29.7	(1.4)
Spain	7.2	(0.6)	14.6	(0.8)	21.0	(0.9)	24.1	(1.0)	33.0	(1.0)
United States	15.3	(1.4)	17.9	(1.3)	18.8	(1.4)	26.1	(1.7)	21.8	(1.0)
Sub-national entities										
England/N. Ireland (UK)	18.9	(1.5)	16.0	(1.4)	18.6	(1.4)	23.9	(1.4)	22.7	(1.6)
Average	12.2	(0.3)	14.4	(0.3)	17.6	(0.3)	23.7	(0.3)	33.4	(0.4)

Notes: c There are too few observations or no observations to provide reliable estimates (i.e. there are fewer than 30 individuals) Also denotes unstable odds ratios which may occur when probabilities are very close to 0 or 1. S.E. Standard Error.

Source: Survey of Adult Skills (PIAAC) (2012).

Table F.18 Gender of adults with low literacy skills

	16-24 year-olds				25-54 year-olds				55-65 year-olds				16-65 year-olds			
	men		women		men		women		men		women		men		women	
	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.
OECD																
National entities																
Australia	61.8	(7.8)	38.2	(7.8)	51.9	(3.0)	48.1	(3.0)	43.1	(3.0)	56.9	(3.0)	50.2	(2.4)	49.8	(2.4)
Canada	52.0	(3.5)	48.0	(3.5)	49.1	(1.6)	50.9	(1.6)	47.0	(1.9)	53.0	(1.9)	48.9	(1.2)	51.1	(1.2)
Finland	c	c	c	c	56.6	(3.9)	43.4	(3.9)	49.6	(2.9)	50.4	(2.9)	52.4	(2.1)	47.6	(2.1)
France	53.7	(4.2)	46.3	(4.2)	51.3	(1.4)	48.7	(1.4)	47.6	(1.6)	52.4	(1.6)	50.2	(1.0)	49.8	(1.0)
Germany	44.7	(5.0)	55.3	(5.0)	50.2	(2.4)	49.8	(2.4)	44.0	(3.5)	56.0	(3.5)	47.9	(1.8)	52.1	(1.8)
Italy	72.4	(4.8)	c	c	51.5	(2.0)	48.5	(2.0)	50.1	(3.1)	49.9	(3.1)	53.1	(1.4)	46.9	(1.4)
Japan	c	c	c	c	55.7	(6.1)	44.3	(6.1)	51.4	(4.2)	48.6	(4.2)	52.4	(3.4)	47.6	(3.4)
Korea	c	c	c	c	45.3	(2.5)	54.7	(2.5)	39.5	(2.3)	60.5	(2.3)	43.4	(1.6)	56.6	(1.6)
Netherlands	c	c	c	c	47.7	(3.1)	52.3	(3.1)	45.0	(3.2)	55.0	(3.2)	47.4	(2.2)	52.6	(2.2)
Poland	61.8	(3.1)	38.2	(3.1)	58.6	(1.8)	41.4	(1.8)	52.8	(2.8)	47.2	(2.8)	57.2	(1.5)	42.8	(1.5)
Spain	55.0	(3.9)	45.0	(3.9)	49.1	(1.5)	50.9	(1.5)	45.3	(1.7)	54.7	(1.7)	48.3	(1.2)	51.7	(1.2)
United States	65.5	(4.6)	34.5	(4.6)	50.9	(1.8)	49.1	(1.8)	47.7	(4.2)	52.3	(4.2)	52.5	(1.6)	47.5	(1.6)
Sub-national entities																
England/N. Ireland (UK)	50.2	(5.2)	49.8	(5.2)	51.5	(2.6)	48.5	(2.6)	50.0	(3.8)	50.0	(3.8)	50.9	(1.8)	49.1	(1.8)
Average	56.7	(1.2)	44.2	(1.2)	51.1	(0.6)	48.9	(0.6)	47.5	(0.7)	52.5	(0.7)	50.4	(0.4)	49.6	(0.4)

Notes: c There are too few observations or no observations to provide reliable estimates (i.e. there are fewer than 30 individuals). Also denotes unstable odds ratios which may occur when probabilities are very close to 0 or 1. S.E. Standard Error.

Source: Survey of Adult Skills (PIAAC) (2012).

Table F.19 Percentage of adults with low literacy skills reporting negative social outcomes

	Low levels of health		Low levels of trust		Low levels of political efficacy		Low levels of volunteering	
	%	S.E.	%	S.E.	%	S.E.	%	S.E.
OECD								
National entities								
Australia	26.8	(1.6)	79.9	(1.4)	58.0	(2.0)	79.5	(1.5)
Canada	20.2	(1.1)	72.0	(1.1)	54.9	(1.1)	70.2	(1.1)
Finland	33.2	(2.0)	65.2	(2.1)	40.6	(2.2)	65.3	(2.1)
France	31.2	(1.4)	83.5	(0.9)	64.8	(1.2)	85.9	(0.9)
Germany	23.4	(1.6)	76.5	(1.7)	63.9	(2.1)	80.1	(1.8)
Italy	23.6	(1.7)	85.7	(1.2)	80.3	(1.6)	84.6	(1.3)
Japan	40.6	(3.5)	73.3	(3.2)	57.3	(4.1)	70.6	(3.2)
Korea	67.9	(1.6)	72.8	(1.7)	51.9	(1.7)	81.3	(1.4)
Netherlands	38.5	(1.8)	69.3	(2.0)	57.5	(2.2)	70.2	(1.9)
Poland	34.4	(1.4)	79.8	(1.3)	59.2	(1.5)	86.5	(1.2)
Spain	35.3	(1.3)	72.0	(1.4)	63.7	(1.2)	89.2	(0.8)
United States	28.7	(1.6)	75.5	(2.2)	49.2	(1.6)	64.8	(2.2)
Sub-national entities								
England/N. Ireland (UK)	26.3	(1.5)	79.6	(1.7)	58.8	(1.8)	82.9	(1.5)
Average	31.8	(0.4)	75.9	(0.4)	59.3	(0.4)	77.6	(0.4)

Note: S.E. Standard Error.

Source: Survey of Adult Skills (PIAAC) (2012).

Table F.20 Earnings distribution of adults with low literacy skills (quintiles)

	1		2		3		4		5	
	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.
OECD										
National entities										
Australia	37.4	3.3	13.1	1.9	29.9	3.4	13.2	2.3	c	c
Canada	26.9	1.5	17.6	1.3	35.3	1.8	12.3	1.2	7.9	0.9
Finland	40.5	3.9	c	c	c	c	c	c	c	c
France	34.2	1.7	11.0	1.0	34.3	1.8	14.4	1.3	6.1	0.8
Germany	31.9	2.3	18.0	2.1	31.4	2.2	12.3	2.0	6.4	1.1
Italy	36.0	3.1	12.7	1.9	28.1	2.7	10.8	2.1	12.4	1.8
Japan	37.0	4.1	c	c	c	c	c	c	c	c
Korea	35.0	2.7	14.4	1.9	28.6	3.0	10.3	1.6	11.6	1.9
Netherlands	38.2	3.3	16.8	2.7	c	c	c	c	c	c
Poland	24.0	2.3	13.4	2.0	29.2	2.3	21.2	2.6	12.2	1.9
Spain	32.3	2.6	13.1	1.7	32.2	2.3	12.8	1.5	9.6	1.3
United States	39.9	3.0	13.3	1.7	29.4	2.6	8.9	1.8	c	c
Sub-national entities										
England / N. Ireland (UK)	37.7	3.6	11.7	2.2	32.6	3.2	13.6	2.4	c	c
Average	35.8	0.6	14.0	0.5	29.7	0.7	13.0	0.5	10.1	0.5

Notes: c There are too few observations or no observations to provide reliable estimates (i.e. there are fewer than 30 individuals). Also denotes unstable odds ratios which may occur when probabilities are very close to 0 or 1. S.E. Standard Error.

Source: Survey of Adult Skills (PIAAC) (2012).

Table F.21 Participation in adult education or training among adults with low literacy skills

	Did not participate in adult education or training over the past 12 months		Participated in adult education or training over the past 12 months	
	%	S.E.	%	S.E.
OECD				
National entities				
Australia	71.9	(2.0)	28.1	(2.0)
Canada	66.5	(1.3)	33.5	(1.3)
Finland	59.3	(2.3)	40.7	(2.3)
France	77.8	(1.2)	22.2	(1.2)
Germany	70.2	(1.7)	29.8	(1.7)
Italy	86.3	(1.3)	13.7	(1.3)
Japan	79.3	(2.7)	20.7	(2.7)
Korea	75.2	(1.8)	24.8	(1.8)
Netherlands	56.3	(2.2)	43.7	(2.2)
Poland	81.4	(1.3)	18.6	(1.3)
Spain	70.7	(1.2)	29.3	(1.2)
United States	60.7	(2.1)	39.3	(2.1)
Sub-national entities				
England/ N. Ireland (UK)	63.4	(2.2)	36.6	(2.2)
Average	68.9	(0.4)	31.1	(0.4)

Note: S.E. Standard Error.

Source: Survey of Adult Skills (PIAAC) (2012).

Table F.22 Percentage of adults with low literacy skills who would have liked to participate in more learning activities over the past 12 months

	Among low-skilled adults who did not participate in adult education or training over the past 12 months		Among low-skilled adults who participated in adult education or training over the past 12 months	
	%	S.E.	%	S.E.
OECD				
National entities				
Australia	14.3	(1.7)	16.5	(3.1)
Canada	14.6	(1.1)	29.3	(1.8)
Finland	12.3	(2.1)	25.8	(3.3)
France	11.8	(1.1)	22.6	(2.7)
Germany	11.6	(1.7)	31.4	(3.5)
Italy	7.0	(1.0)	18.2	(3.1)
Japan	c	c	c	c
Korea	19.9	(2.0)	32.0	(3.5)
Netherlands	c	c	21.9	(2.8)
Poland	3.7	(0.8)	5.6	(1.7)
Spain	19.4	(1.3)	32.6	(2.4)
United States	18.2	(2.3)	36.4	(2.7)
Sub-national entities				
England/ N. Ireland (UK)	13.4	(1.6)	27.5	(2.9)
Average	14.3	(0.4)	26.5	(0.8)

Notes: c There are too few observations or no observations to provide reliable estimates (i.e. there are fewer than 30 individuals). Also denotes unstable odds ratios which may occur when probabilities are very close to 0 or 1. S.E. Standard Error.

Source: Survey of Adult Skills (PIAAC) (2012).

Table F.23 Percentage of adults at each proficiency level in literacy, adults aged 16-24

	16-24 year-olds									
	Proficiency levels									
	Below Level 1		Level 1		Level 2		Level 3		Level 4/5	
	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.
OECD										
National entities										
Australia	1.6	(0.7)	8.7	(1.6)	30.3	(2.6)	41.5	(2.7)	17.4	(2.1)
Canada	2.6	(0.5)	10.7	(0.9)	32.7	(1.7)	41.5	(1.5)	11.8	(1.0)
Finland	1.4	(0.5)	4.3	(1.0)	21.8	(2.3)	48.2	(2.0)	24.4	(1.6)
France	1.8	(0.5)	11.1	(1.0)	33.9	(1.9)	42.9	(1.9)	10.0	(1.0)
Germany	1.5	(0.5)	11.6	(1.4)	30.0	(2.0)	42.4	(2.4)	14.0	(1.4)
Italy	3.5	(1.3)	16.1	(2.3)	40.5	(3.0)	35.2	(2.9)	4.4	(1.6)
Japan	0.0	(0.0)	2.5	(0.9)	20.5	(2.0)	53.1	(2.5)	22.4	(1.8)
Korea	0.5	(0.3)	2.4	(0.6)	24.5	(2.0)	58.4	(2.2)	14.2	(2.1)
Netherlands	1.0	(0.4)	4.0	(0.9)	24.5	(1.7)	48.5	(2.0)	20.9	(1.7)
Poland	1.2	(0.3)	8.5	(0.7)	31.8	(1.4)	45.7	(1.3)	12.7	(0.9)
Spain	3.2	(0.7)	13.7	(1.2)	41.9	(1.8)	35.8	(1.7)	4.9	(0.9)
United States	1.8	(0.7)	11.6	(1.4)	36.9	(3.0)	34.6	(2.5)	9.4	(1.4)
Sub-national entities										
England/N. Ireland (UK)	3.7	(1.1)	14.8	(2.1)	36.4	(2.7)	34.8	(2.8)	8.3	(1.3)
Average	1.7	(0.1)	9.0	(0.3)	31.8	(0.5)	43.9	(0.5)	12.6	(0.3)

Note: S.E. Standard Error.

Source: Survey of Adult Skills (PIAAC) (2012).

Table F.24 Adults lacking basic skills and enrollment in adult education (United States)

Location	A - Number of adults lacking basic prose literacy skills	B - Enrollment in state-administered adult education program	Ratio A/B
	(2003)	(program year 2002-2003)	
Alabama	504 085	22 019	22.9
Alaska	42 231	4 723	8.9
Arizona	534 588	32 492	16.5
Arkansas	280 667	38 336	7.3
California	5 999 994	565 311	10.6
Colorado	335 726	15 137	22.2
Connecticut	228 632	33 062	6.9
Delaware	66 287	5 953	11.1
District of Columbia	81 401	3 226	25.2
Florida	2 563 809	387 710	6.6
Georgia	1 064 975	114 008	9.3
Hawaii	149 950	10 687	14.0
Idaho	105 393	8 780	12.0
Illinois	1 231 051	130 492	9.4
Indiana	371 481	41 397	9.0
Iowa	168 601	16 338	10.3
Kansas	158 810	10 386	15.3
Kentucky	390 210	34 700	11.2
Louisiana	529 021	31 998	16.5
Maine	76 853	10 485	7.3
Maryland	470 049	30 082	15.6
Massachusetts	504 834	21 337	23.7
Michigan	633 153	70 893	8.9
Minnesota	229 338	43 864	5.2
Mississippi	339 486	36 614	9.3
Missouri	322 846	41 928	7.7
Montana	61 867	4 437	13.9
Nebraska	95 325	10 200	9.3
Nevada	269 110	7 601	35.4
New Hampshire	57 876	6 444	9.0
New Jersey	1 118 233	42 465	26.3
New Mexico	229 609	21 587	10.6
New York	3 326 200	138 184	24.1
North Carolina	853 831	108 431	7.9
North Dakota	30 945	2 145	14.4
Ohio	797 181	59 761	13.3
Oklahoma	330 472	21 620	15.3
Oregon	278 004	24 863	11.2
Pennsylvania	1 206 747	52 823	22.8
Rhode Island	70 391	4 567	15.4
South Carolina	455 354	69 284	6.6
South Dakota	39 890	3 446	11.6
Tennessee	584 805	46 166	12.7
Texas	3 032 405	128 363	23.6
Utah	153 775	32 883	4.7

Table F.24 Adults lacking basic skills and enrollment in adult education (United States) (*continued*)

Location	A - Number of adults lacking basic prose literacy skills	B - Enrollment in state-administered adult education program	Ratio A/B
	(2003)	(program year 2002-2003)	
Vermont	32 056	1 937	16.5
Virginia	665 406	31 574	21.1
Washington	455 764	55 363	8.2
West Virginia	190 805	10 717	17.8
Wisconsin	306 767	30 437	10.1
Wyoming	34 158	2 671	12.8

Note: Those lacking basic prose literacy skills include those who scored below basic in prose and those who could not be tested due to language barriers on the National Assessment of Adult Literacy in 2003.

Source: Survey of Adult Skills (PIAAC) (2012) U.S. national dataset.

Table F.25 Percentage of migrants among adults aged 16-65

	Migrant		Native	
	%	S.E.	%	S.E.
OECD				
National entities				
Australia	27.3	(0.7)	70.8	(0.7)
Canada	25.5	(0.2)	73.7	(0.2)
Finland	5.7	(0.2)	94.2	(0.2)
France	12.7	(0.0)	86.5	(0.1)
Germany	13.6	(0.6)	84.8	(0.7)
Italy	9.3	(0.6)	90.0	(0.6)
Japan	c	c	98.4	(0.2)
Korea	1.6	(0.2)	98.1	(0.2)
Netherlands	12.6	(0.2)	85.2	(0.2)
Poland	c	c	99.7	(0.1)
Spain	13.2	(0.1)	86.0	(0.1)
United States	14.1	(0.6)	81.6	(0.2)
Sub-national entities				
England/N. Ireland (UK)	14.8	(0.6)	83.8	(0.6)
Average	12.8	(0.1)	87.0	(0.1)

Notes: c There are too few observations or no observations to provide reliable estimates (i.e. there are fewer than 30 individuals). Also denotes unstable odds ratios which may occur when probabilities are very close to 0 or 1. S.E. Standard Error.

Source: Survey of Adult Skills (PIAAC) (2012).

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OECD Skills Studies

Time for the U.S. to Reskill?

WHAT THE SURVEY OF ADULT SKILLS SAYS

Literacy and numeracy skills lie at the root of our capacity to communicate, live and work together, to develop and share knowledge. They matter for economic success and social well-being. But despite universal basic education in advanced countries, some adults have slipped through the net, leaving them with weak literacy and numeracy. This report draws on the new international OECD Survey of Adult Skills to highlight the challenges faced by the United States. It shows that the United States should take action to improve adult skills, if it wants to avoid falling behind other countries. The report also advances a set of key recommendations to improve basic skills across the board.

Contents

Chapter 1. The Survey of Adult Skills and the role of this special report
Chapter 2. Basic skills in the United States
Chapter 3. Policy recommendations for the United States

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