



# What the Data Say About the Skills of U.S. Adults

## Introduction

In October 2013, the U.S. Department of Education’s National Center for Education Statistics (NCES) and its international partner, the Organization for Economic Co-operation and Development (OECD), released the results from the Program for the International Assessment of Adult Competencies (PIAAC). The OECD describes PIAAC as the “adult Program for International Student Assessment (PISA)” because it provides the same kind of rich comparative data about the applied skills of working-age adults (ages 16–65) as PISA provides about the skills of 15-year-old students.

Over 165,000 working-age adults, **representing more than 724 million adults in 23 countries**, participated in the first round of PIAAC in 2011–12, including 5,000 adults in the United States.<sup>1</sup> In the second round, nine additional countries are currently collecting data using the same computer-based assessment to assess critical information processing skills in three domains: literacy, numeracy, and problem solving in technology-rich environments.<sup>2</sup>

PIAAC also includes a background questionnaire that collects information on a broad range of demographic and socioeconomic characteristics, including employment status, health status, skill use at work and at home, and the acquisition of skills over one’s lifetime. By providing a rich portrait of the distribution of 21st century skills in our adult population, PIAAC enables us to understand not only the level of skills that adults have, but how they use them and what the economic and social benefits of higher skills are for both the individual and the broader society.

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## Key Results

The PIAAC results raise serious concerns about whether current and future generations of U.S. adults will have the skills necessary to keep pace with changes in the workplace and the world around us.

### **U.S. adults scored below the international average in all three domains.<sup>3</sup>**

Overall, U.S. adults scored slightly below the PIAAC international average in literacy, higher than only Poland, Ireland, France, Italy, and Spain. In numeracy, the U.S. average was near the bottom of the rankings—only Italy and Spain scored lower than the United States. In problem solving in technology-rich

<sup>1</sup> Participants in Round 1: Austria, Australia, Belgium (Flanders), Canada, Cyprus, 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.

<sup>2</sup> Participants in Round 2: Chile, Greece, Indonesia, Israel, Lithuania, New Zealand, Singapore, Slovenia, and Turkey.

<sup>3</sup> PIAAC results are reported as average scores on a scale of 0–500 in all three domains and as the percentages of adults scoring at six proficiency levels in literacy and numeracy (Below Level 1, Level 1, Level 2, Level 3, Level 4, and Level 5) and at four proficiency levels in Problem Solving in Technology-Rich Environments (Below Level 1, Level 1, Level 2, and Level 3). To see what performance at each of these levels looks like, refer to the NCES *First Look* report *Literacy, Numeracy, and Problem Solving in Technology-Rich Environments Among U.S. Adults* (NCES 2014-008), available at <http://nces.ed.gov/pub2014/2014008.pdf>.

environments, the U.S. average was only slightly below the international average. However, we shared the lowest ranking with England and Northern Ireland in the United Kingdom, Estonia, Ireland, and Poland.<sup>4</sup>

**While a small percentage of adults in the United States perform at the highest levels in all three domains, a greater percentage perform at the lowest levels.**

The percentage of U.S. adults who scored at the highest levels in all three domains was similar to or only somewhat lower than the international average; however, the percentage of U.S. adults who scored at the lowest levels was among the largest in PIAAC. (See figures 1–3.) *It is this disparity between the small*

Figure 1. Percentage of adults ages 16 to 65 at each level of proficiency on the PIAAC literacy scale

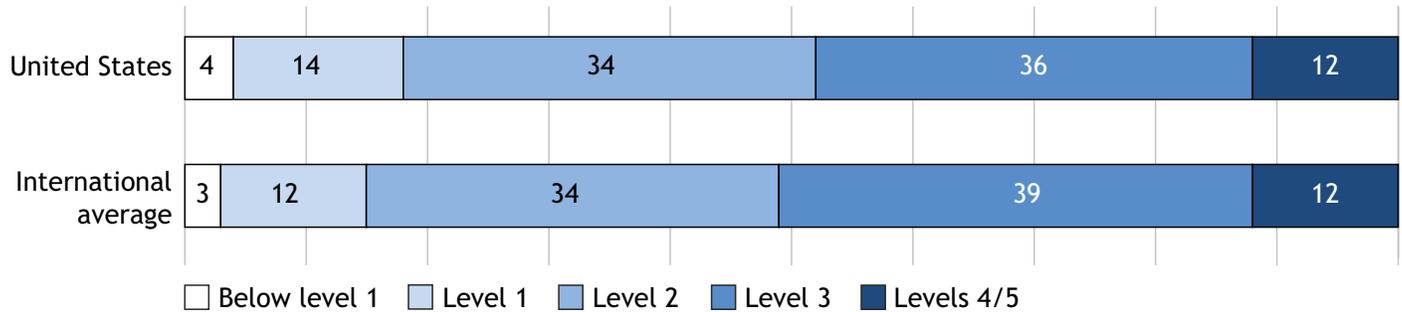
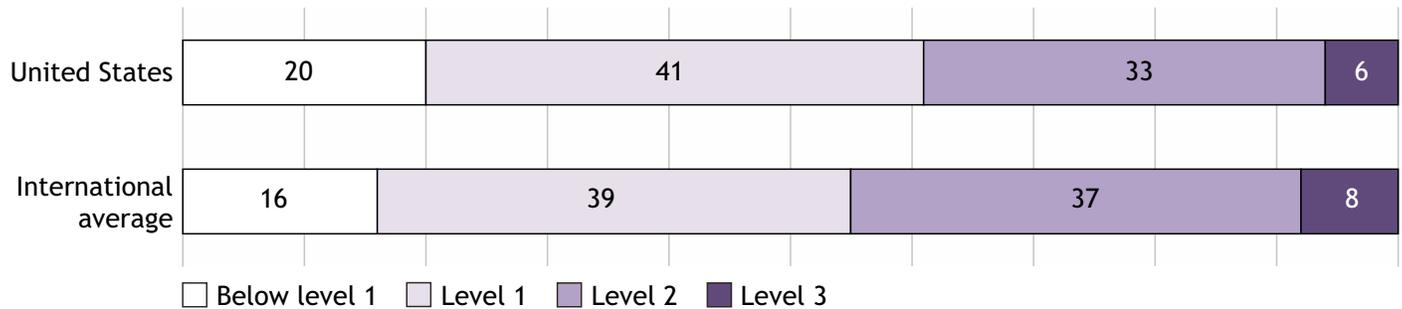


Figure 2. Percentage of adults ages 16 to 65 at each level of proficiency on the PIAAC numeracy scale



Figure 3. Percentage of adults ages 16 to 65 at each level of proficiency on the PIAAC problem solving in technology-rich environments scale



SOURCE: U.S. Department of Education, National Center for Education Statistics, Organization for Economic Cooperation and Development (OECD), Program for the International Assessment of Adult Competencies (PIAAC), 2012.

<sup>4</sup> All participating countries are required to assess adults in the literacy and numeracy domains; the problem-solving domain is optional. The United States assessed adults in all three domains.

proportion of adults whose skills are among the highest and the much greater proportion of adults whose skills are among the lowest that lowers the U.S. ranking among its peers.

**What do these scores mean? Let’s take a closer look.** Adults who scored at the lowest levels (Level 2, Level 1, and Below Level 1) have a limited ability to engage with text, work with numbers, and solve problems in a digital environment. For example:

- » 2 out of 10 adults in the United States are unlikely to find the name of a particular congressperson within a summary information sheet that lists the congressional district, the name of the district’s representative, and the representative’s date and place of birth.
- » 6 out of 10 adults in the United States are unlikely to be able to add up a total amount payable for shoes on sale for “buy one pair, get a second pair of equal or lesser value for half price,” given the price for each pair.
- » 3 out of 10 adults in the United States are likely to have difficulty sorting through e-mails and organizing them into folders.

**Adults in the United States who demonstrated these low skill levels in PIAAC are broadly distributed across our adult working-age population.** They are fairly equally distributed across age cohorts, with adults in the youngest cohorts scoring only slightly better than those in older cohorts. (See figure 4.)

Low-skilled adults are also represented at every level of educational attainment, reminding us that possessing a degree does not automatically translate into possessing a set of skills for the 21st century. (See figure 5.)

Figure 4. Percentage of U.S. adults who demonstrated low skill levels in literacy, by age and proficiency level

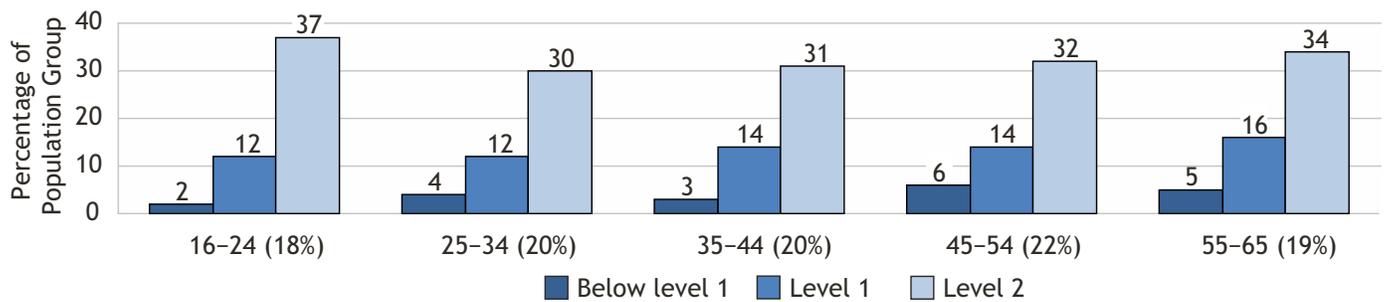
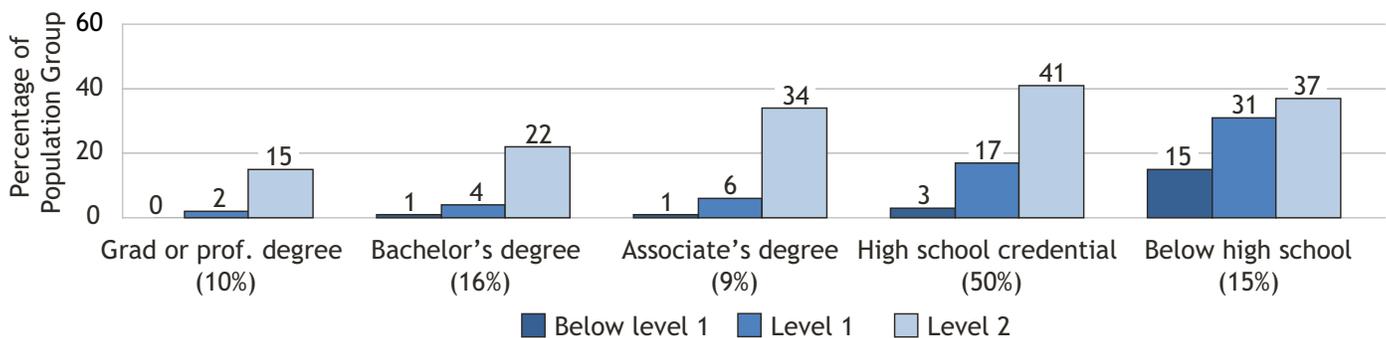


Figure 5. Percentage of U.S. adults who demonstrated low skill levels in literacy, by educational attainment and proficiency level



SOURCE: U.S. Department of Education, National Center for Education Statistics, Program for the International Assessment of Adult Competencies (PIAAC), 2012.

The persistence of low-skilled adults at every level of educational attainment does not negate the continuing importance of formal education in skill development. U.S. adults with more than a high school education have literacy skills similar to their peers in other countries. This includes the 35 percent of U.S. adults who have attained associate’s, bachelor’s, or graduate degrees, who scored near the top among adults in the participating countries. However, U.S. adults with less than a high school diploma scored lower than their peers internationally, especially in literacy and numeracy. (See figures 6 and 7.) In fact, the gap in average scores between adults with the highest and lowest levels of educational attainment was greater in the United States than in any other participating country, for both literacy and numeracy.<sup>5</sup>

Figure 6. Average literacy scores in PIAAC, by educational attainment

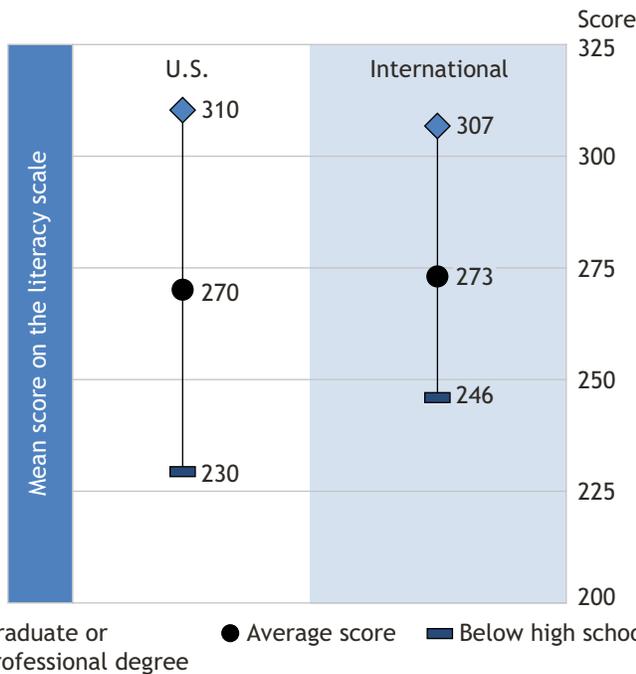
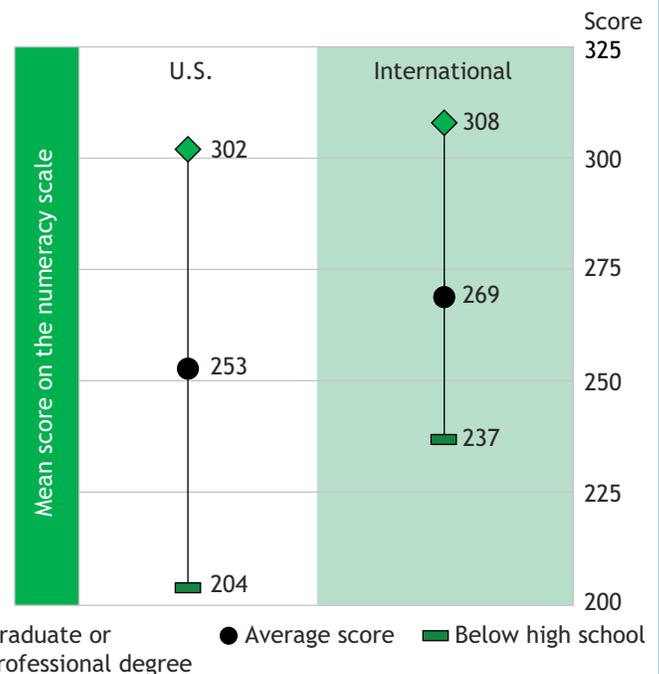


Figure 7. Average numeracy scores in PIAAC, by educational attainment



SOURCE: U.S. Department of Education, National Center for Education Statistics, Organization for Economic Cooperation and Development (OECD), Program for the International Assessment of Adult Competencies (PIAAC), 2012.

The gaps in performance persist from one generation to the next. While Americans are strong believers in social mobility, the wide gaps in U.S. average scores in both literacy and numeracy between adults whose parents did not complete high school<sup>6</sup> and adults with at least one parent who earned a college degree<sup>7</sup> suggest that skill levels are strongly linked to socioeconomic status. In fact, these gaps in performance associated with socioeconomic status are larger in the United States than in any other participating country.

There are also large differences in performance between racial/ethnic groups in the United States. Blacks and Hispanics are overrepresented in the population that scored at the lowest levels on

<sup>5</sup> See table A.3.9. in *OECD Skills Outlook 2013: First Results From the Survey of Adult Skills*, available at <http://dx.doi.org/10.1787/9789264204256-en>.

<sup>6</sup> In PIAAC, parents’ educational level is used as a proxy for socioeconomic status.

<sup>7</sup> See *OECD Skills Outlook 2013: First Results From the Survey of Adult Skills*, available at <http://dx.doi.org/10.1787/9789264204256-en>.

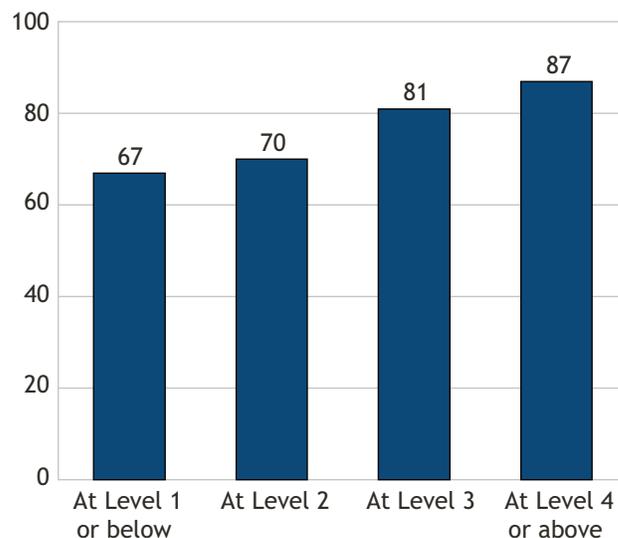
PIAAC. While Hispanics represent 14 percent of the adults who took the assessment, they comprise 53 percent of those who scored at the lowest level (Below Level 1) in literacy and 37 percent of those who scored at the lowest level in numeracy. While Blacks fared better in literacy, they were still overrepresented in those who scored at the lowest levels. At 13 percent of the adults who took the assessment, they comprised 21 percent of those who scored at the lowest level in literacy and 32 percent of those who scored at the lowest level in numeracy.<sup>8</sup>

As figure 4 demonstrates, young people in the United States are not doing much better than older generations of Americans (nor are they keeping up with their peers internationally). In general, younger adults in all countries have higher average skills than older adults. However, achievement gaps between generations vary among the participating countries. In many countries, including Finland, Germany, and South Korea, younger generations of adults have made large gains in performance over older generations. But this kind of advance has not been achieved in the United States, where the average skill level of young adults is only slightly higher than the average skill level of older adults. This means that the generation of adults who will be carrying the U.S. economy for the next 30 to 40 years is entering a highly competitive global job market with almost the same skill level as those who are retiring. Without significant improvements in their skills, they will most likely be at a disadvantage to higher skilled young adults in other countries in the global competition for jobs.

PIAAC results also provide information about the social and economic impacts of skill level.

**Skill level is correlated with success in the labor market.** When looking at employment rates among U.S. participants with a high school degree, those who performed at higher proficiency levels reported higher employment rates than those who performed at lower proficiency levels. (See figure 8.) While nearly two-thirds of the 36 million low-skilled adults in the United States are employed, they are by and large employed in semiskilled blue- and white-collar occupations that pay low wages. In addition, many of these jobs tend not to provide opportunities for using (and thus maintaining and developing) literacy, numeracy, and problem-solving skills.<sup>9</sup> This contributes to the very large gap in proficiency between those employed in high-skilled occupations and those employed in low-skilled occupations in the United States.

Figure 8. Percent employed among U.S. adults with only a high school degree, by PIAAC literacy proficiency levels



SOURCE: U.S. Department of Education, National Center for Education Statistics, Program for the International Assessment of Adult Competencies (PIAAC), 2012.

<sup>8</sup> See the OECD's *Time for the U.S. to Reskill? What the Survey of Adult Skills Says*, pp. 34–35, available at [http://skills.oecd.org/Survey\\_of\\_Adult\\_Skills\\_US.pdf](http://skills.oecd.org/Survey_of_Adult_Skills_US.pdf).

<sup>9</sup> See figures 4.17 and 4.19 in *OECD Skills Outlook 2013: First Results From the Survey of Adult Skills*, available at <http://dx.doi.org/10.1787/9789264204256-en>.

The correlation between skill level and health is stronger in the United States than in almost any other participating country. U.S. adults with lower literacy scores reported having “poor” or “fair” health more often than those with high skills. (See figure 9.)

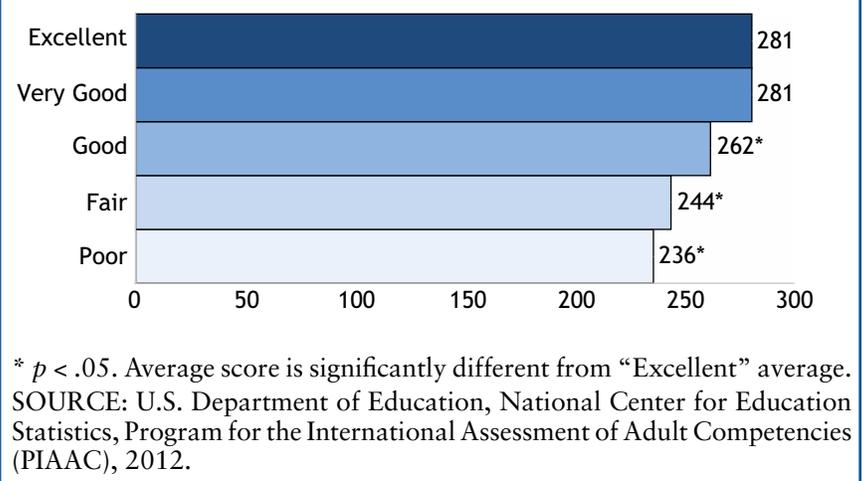
Skill level is also correlated with attitudes and behaviors that support thriving democratic institutions. Adults with lower skill levels are less likely to feel trust in others, to believe that people like themselves have a say in what the government does, and to engage in the volunteer activities that sustain a rich civil society.<sup>10</sup>

These PIAAC results confirm that skills do make a difference and suggest that we can have a substantial impact on economic success and the quality of life in the United States by enhancing skill levels across all groups within the adult population. The good news is that U.S. adults take advantage of adult education and training more than adults in most other countries do and that U.S. adults who score at the highest proficiency levels tend to participate more. Even among adults with low literacy skills in the United States, 39 percent reported participating in adult education or training in the 12 months prior to taking the assessment—a higher percentage than in almost any other participating country.<sup>11</sup>

This summary of key PIAAC results highlights some of the important issues that data from PIAAC can help illuminate. Delving more deeply into the rich PIAAC data files, using data tools provided by NCES and the OECD, will give policymakers, researchers, and leaders in the fields of business, education, health, and philanthropy an evidence-based foundation for decision making.

The information in this summary is drawn from NCES’s *First Look* PIAAC report, the OECD’s PIAAC U.S. Country Note, the OECD’s *Skills Outlook 2013*, and the OECD’s *Time for the U.S. to Reskill? What the Survey of Adult Skills Says*.

Figure 9. Literacy proficiency of U.S. adults, by self-reported health status



### More information

For more information on PIAAC, including U.S. results, please visit AIR PIAAC at <http://piaacgateway.com> and the NCES website at <http://nces.ed.gov/surveys/piaac/>.



<sup>10</sup> See *OECD Skills Outlook 2013: First Results From the Survey of Adult Skills*, available at <http://dx.doi.org/10.1787/9789264204256-en>.

<sup>11</sup> Ibid.