



# PIAAC: A Strategy to Assess and Compare Adult Foundational Skills and Their Social and Economic Impact

The **Program for the International Assessment of Adult Competencies (PIAAC)** is a large-scale international study that assesses key cognitive and workplace skills that adults need to successfully participate in 21st-century society and the global economy. PIAAC data can be used by U.S. government agencies, public and private employers, and adult and workforce education and training programs to better understand the skills of the U.S. working-age population.

PIAAC is coordinated internationally by the Organization for Economic Cooperation and Development (OECD). Within the United States, PIAAC is sponsored by the U.S. Department of Education's National Center for Education Statistics (NCES). The first round of PIAAC was conducted internationally in 2011–12. In the United States, a second round of PIAAC, called the U.S. National Supplement, was conducted in 2013–14, and a third round was conducted in 2017.

## What is PIAAC?

PIAAC is an international assessment of key cognitive and workplace skills of the adult workforce (ages 16–65). The data obtained from this rich international comparison allow the United States to develop a better understanding of its global competitiveness and benchmark how well education and training systems are meeting emerging skill demands. More than 165,000 adults were assessed in 25 countries, including the United States, during the first round of PIAAC in 2011–12. In the United States, data were collected from a nationally representative sample of 5,000 adults (ages 16–65). Results from the first round were released in October 2013.

In 2013–14, a second round of PIAAC was conducted in the United States with the same procedures, instruments, and assessments as the first round. The U.S. National Supplement collected data from a sample of 3,660 adults, oversampling groups of interest: unemployed adults (ages 16–65), young adults (ages 16–34), and older adults (ages 66–74). The combined 2012/2014 U.S. data constitute a nationally representative sample of approximately 8,700 adults residing in U.S. households. These results, including updated international comparisons, were released in March 2016.

The U.S. National Supplement also included the U.S. Prison Study, which collected data from a sample of approximately 1,300 adult inmates (ages 18–74) in federal, state, and private prisons in the United States.

The third round of U.S. PIAAC data collection took place in 2017, with a nationally representative household sample of 3,660 adults (ages 16–74). The 2017 results provide a second point in time for comparisons to the 2012/2014 results. In addition, the combined data from 2017 and 2012/2014 supported the calculation of U.S. state and county indirect estimates of literacy and numeracy.

## What does PIAAC measure?

PIAAC is an assessment of literacy in the information age. It uses a broad definition of literacy that focuses on the “interest, attitude, and ability of individuals to appropriately use socio-cultural tools, including digital technology and communication tools, to access, manage, integrate and evaluate information, construct new knowledge, and communicate with others.

PIAAC includes a cognitive assessment that directly assesses four sets of skills:

- » Literacy
- » Reading (for assessing low literacy levels)
- » Numeracy
- » Problem Solving in Technology-Rich Environments (PSTRE)

*The cognitive skills that are directly assessed in PIAAC reflect a broader range of skills proficiencies – at both the low and high ends of the skills spectrum – than those examined in previous adult assessments.*

PIAAC also includes a Background Questionnaire, which asks every participating adult about a range of background characteristics, as well as additional skills and competencies needed in the workplace:

- » communication skills
- » interpersonal skills needed for collaborative teamwork
- » planning and self-management skills
- » problem-solving skills
- » personal traits important for success in work and learning

The U.S. PIAAC 2014 Prison Study includes similar direct assessments of literacy, numeracy, and problem solving in technology-rich environments. However, the Prison Study's Background Questionnaire is tailored to address the needs and experiences of incarcerated adults. It asks about activities in prison, such as participation in academic programs and ESL classes, experiences with prison jobs, and involvement in nonacademic programs, such as employment readiness classes.

*Taken together, the information collected through the cognitive assessment and the Background Questionnaire paints a holistic, research-based picture of the strengths and weaknesses of the U.S. adult workforce.*

## What is unique about PIAAC's approach to assessment?

### **PIAAC is the first large-scale household assessment that is computer-based**

PIAAC is the first large-scale assessment of adults administered in two modes: *computer* and *paper-and-pencil*. While respondents with little or no familiarity with computers took the paper-and-pencil version of the assessment, most adults in the U.S. completed PIAAC on a laptop computer.

PIAAC's computer-based mode allows:

- » participants to respond to items that are specifically targeted to their performance levels
- » the assessment of individuals' ability to manage information and solve problems
- » the collection of information on how long it takes participants to complete items (and the strategies they use to solve problems)

*PIAAC collects information on the strategies and processes that adults use when navigating computer-based environments to conduct day-to-day tasks.*

## PIAAC contextualizes information about skills proficiencies with a rich Background Questionnaire

PIAAC's Background Questionnaire is much more extensive than those used in earlier adult assessments. In addition to collecting information about the usual range of demographic characteristics, PIAAC collects detailed information about:

- » workforce status
- » the kinds of work that individuals perform (and the salary they are paid for that work)
- » the skills required to carry out a particular job (and how frequently and extensively they are used)
- » individuals' education levels
- » the kinds of ongoing education and training that individuals participate in (and who sponsors it and the extent to which it is work-related)

In the United States, the Background Questionnaire also collects information on health status to better understand the relationships between health, skill levels, and other demographic information.

*Having information on the distribution of skills proficiencies across the adult population allows national, state, and local governments to make better decisions about how to target resources for education and training.*

### How can PIAAC inform decision-making in the United States?

Information from the Background Questionnaire can help policymakers and workforce leaders better understand the answers to important questions about skills, such as the following:

#### Distribution of skills

- » How does the U.S. adult population compare to adult populations in other countries and regions in terms of average levels of skills proficiency and skills use?
- » What proportion of the adult population has low skills proficiencies?
- » How are skills distributed among subgroups defined by sex, age group, and region? Are certain subgroups characterized by low skills proficiencies?
- » How are skills proficiencies distributed across different levels of schooling?

*PIAAC results allow businesses to make decisions about what kind of training they need to offer to foster a globally competitive workforce.*

#### Skills and employment

- » How are skills related to earnings and other indicators of labor market success?
- » Is information about skills proficiency a better predictor of employment status than educational level or credentials?

#### Skills and industry sectors

- » How are skills proficiencies distributed across sectors of industry?
- » Are certain sectors of industry characterized by particularly low levels of skills proficiencies?
- » How do the skills levels within these sectors in the United States compare to those in other countries and regions?

## Skills and lifelong learning

- » Are there differences across subgroups of the U.S. adult population in their participation in lifelong learning opportunities? What factors account for these differences?

## How can PIAAC help streamline instruction and training?

PIAAC can be used to create skills profiles of working adults in different occupations and industries. Adult education and workforce training programs can use this information to assess the effectiveness of their curricula in meeting labor market needs and to develop customized learning plans for adults to prepare them for employment in growing sectors and occupations.

Adult education and workforce training programs can also use [Education & Skills Online](#)—an online assessment tool aligned with PIAAC—to assess adults’ skills on the PIAAC measures of literacy, reading, numeracy, and problem-solving in technology-rich environments. Individuals can compare their results with the skills profiles of workers in various occupations and sectors. Training programs can use this assessment to measure adults’ progress as they move through the program or to help determine the best skills development pathways for adults, based on their workforce goals.<sup>1</sup> Adult education and workforce training programs can also use the detailed frameworks for each of the cognitive assessment modules to develop curricula and guide instruction.<sup>2</sup>

## What tools are available to access and share the PIAAC results?

- » The [OECD International Data Explorer \(IDE\)](#) is a web-based tool that produces customizable tables and graphs using PIAAC data and does not require any advanced statistical software or knowledge.
- » The [U.S. PIAAC IDE](#), developed by NCES, adds U.S.-specific variables to the IDE (such as information on race/ethnicity and preventative health practices) and organizes variables in detailed subcategories. Also available is the [IDE Training Video](#), which provides comprehensive, step-by-step instructions on how to use the IDE.
- » [Distance Learning Dataset Training \(DLDT\)](#) is an online interactive training module provided by NCES that includes an overview of the assessment design and the micro-level data files.
- » The [International Data Files](#) for each of the participating countries in PIAAC (except Australia) are available for download from the OECD website in SAS, SPSS, or CSV formats.
- » The [U.S. Public-Use Files](#) contain some additional variables beyond those in the International U.S. Public-Use File, including U.S.-specific variables and can be downloaded from the NCES website in SAS, SPSS, or ASCII formats.
- » The [U.S. Restricted-Use Files](#) contain the most comprehensive and detailed information, including U.S.-specific variables and some variables not available in the public-use file (such as more detailed information on age and occupation). Access to the U.S. Restricted-Use File requires an NCES restricted-use license.

**To access these data tools and much more, visit the following websites:**

NCES PIAAC Website:  
[nces.ed.gov/surveys/piaac](https://nces.ed.gov/surveys/piaac)

PIAAC Gateway:  
[piaacgateway.com](https://piaacgateway.com)

OECD PIAAC Website:  
[oecd.org/skills/piaac](https://oecd.org/skills/piaac)

<sup>1</sup> For more information on Education & Skills Online, visit the OECD website at: <http://www.oecd.org/skills/ESonline-assessment/abouteducationskillsonline/>

<sup>2</sup> For a summary of the assessment domains in PIAAC, see: <http://www.oecd.org/site/piaac/Summary%20of%20assessment%20domains%20in%20the%20Survey%20of%20Adult%20Skills.pdf>