THE OECD PROGRAMME FOR THE INTERNATIONAL ASSESSMENT OF ADULT COMPETENCIES (PIAAC)

Competencies in technology-rich environments

Work-place skills

Numeracy

Literacy

Problem solving skills
### OECD Countries Participating in the First Cycle of PIAAC

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### Non-Member Economies Participating in the First Cycle of PIAAC

- Estonia
- Russian Federation
Preface

Knowledge and skills are the most valuable assets to present and future generations, as governments seek to maintain global competitiveness, increase the flexibility and responsiveness of labour markets and deal with issues of population ageing. OECD’s breakthrough survey on adult competencies, PIAAC, will provide governments with a unique and effective tool to assess where they stand in terms of the quantity and quality of the knowledge and skills of their workforce. Equally important, it will provide insights into how skills relate to the social and economic well-being of individuals and nations and also benchmark how effectively education and training systems meet emerging skill demands.
PIAAC in Brief

The OECD Programme for the International Assessment of Adult Competencies (PIAAC)...  

- is the most comprehensive international survey of adult skills ever undertaken;  
- is a collaboration between governments, an international consortium of organisations and the OECD;  
- will take place across OECD and partner countries in 2011 with results published in 2013;  
- will measure the skills and competencies needed for individuals to participate in society and for economies to prosper;  
- will help governments better understand how education and training systems can nurture these skills.

The survey will be carried out by...  

- interviewing adults aged 16-65 years in their homes – 5 000 in each participating country;  
- assessing their literacy and numeracy skills and their ability to solve problems in technology-rich environments;  
- collecting a broad range of information from the adults taking the survey, including how their skills are used at work and in other contexts such as the home and the community.

PIAAC builds on previous international surveys of adult skills, allowing literacy levels to be compared over a 13-17 year period for some countries. PIAAC breaks new ground by:  

- expanding the range of skills being measured;  
- introducing a self-reported measure of the use of skills at work;  
- using computers to administer an international assessment of this kind.
A Ground Breaking New Survey of Adult Skills and Competencies

Why assess adult skills?
Over the past two decades, there has been growing interest by national governments and other stakeholders in an international assessment of adult skills that allows to monitor how well prepared populations are for the challenges of a knowledge-based society.

Directly assessing adult skills has significant advantages over previous measures of human capital, based on educational qualifications held by the working-age population, since an educational diploma does not certify a precise skill even on the day it is awarded. A certificate or diploma earned many years before is even less precise in describing someone's competencies today. PIAAC will enhance the understanding of the effectiveness of education and training systems in developing basic cognitive skills and key generic work skills. But also, as an international co-operative venture, PIAAC provides participating countries with access to high-quality expertise in the measurement of adult skills. By sharing the costs of development and pooling resources, participating countries have access to a greater level of expertise than would otherwise be the case.
What skills were assessed in previous surveys?
In the mid-1990s, three waves of the International Adult Literacy Survey (IALS) assessed the prose, document and quantitative literacy of adults in a total of 22 countries, and between 2002 and 2006, the Adult Literacy and Life skills (ALL) Survey assessed prose and document literacy, numeracy and problem-solving in eleven countries and one state. These surveys have demonstrated the feasibility of assessing internationally how well adults perform literacy, numeracy and problem-solving tasks in real-life situations.

How is this being extended in PIAAC?
PIAAC builds on previous surveys and extends the ambitions of international adult assessment beyond the more traditional measures of literacy and numeracy. There is a growing need to collect more sophisticated information that will more closely match the ambitions of governments to develop a high quality workforce able to solve problems and deal with complex information that is often presented electronically on computers.

DID YOU KNOW … even in the most economically advanced countries, large proportions of adults have low literacy skills. In countries participating in IALS, between one-quarter and three-quarters of adults failed to attain literacy Level 3, considered by IALS to be the minimum skill level required to cope with the demands of modern society.

PIAAC’s measurement of competencies in problem solving and of skills used in the workplace moves the survey well beyond conventional measurements of literacy. These two features will help to assess the extent to which adults have acquired a generic set of skills and competencies. At the same time, PIAAC looks more closely than previous surveys at whether people with low literacy levels have the basic building blocks that they need to read effectively.
What else is new about PIAAC?

PIAAC includes a large range of countries, providing a more comprehensive international picture of human capital and other aspects of adult competency. It is designed as a survey that will be repeated over time to allow policy-makers to monitor the development of human capital in their countries.

The survey is also ambitious in its analytical objectives. It not only measures the level of skills but also tries to assess how skills are associated with the success of individuals and countries. The survey also looks at how well education and training systems succeed in generating these competencies, and at how public policy might improve their effectiveness.

### Areas Assessed in Adult Skills Surveys

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<td>Problem Solving</td>
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Key:
IALS: International Adult Literacy Survey
ALL: Adult Literacy and Life Skills Survey
- - - Similar measure with common items
- - - Loosely related measure based on different conceptual frameworks
The Main Elements of PIAAC

PIAAC will assess the level of core skills possessed by adults in participating countries. It will provide information on the skills individuals use at work and about themselves and their lives.

**Which competencies will be assessed in PIAAC?**

The purpose of the assessment elements is to measure core adult competencies required in the information age.

Four types of competencies will be measured:

- problem-solving in technology-rich environments;
- literacy;
- numeracy;
- assessment of reading components.
What is meant by problem-solving in technology-rich environments in PIAAC?

This refers to the ability to use technology to solve problems and accomplish complex tasks. It is not a measurement of “computer literacy”, but rather of the cognitive skills required in the information age – an age in which the accessibility of boundless information has made it essential for us to be able to work out what information we need, to evaluate it critically and to use it to solve problems. To assess this competency it is particularly important not just to measure basic proficiency but also to identify higher-order skills – a particular goal of PIAAC overall.

How will problem-solving in technology-rich environments be measured?

The first PIAAC survey focuses specifically on assessing the ability to solve problems using multiple sources of information on a laptop computer. Unlike some problem-solving assessments, the emphasis will be on information access, evaluation, retrieval and processing. The tasks will be of varying levels of difficulty both in their cognitive demands and in the technology skills required – with some being easier on one of these criteria, but harder on the other. Of particular interest will be tasks that are demanding from both a technological and cognitive point of view; they will allow to distinguish adults with high literacy according to whether they are able or not to apply their literacy skills in tasks requiring high technological competence.

What is meant by literacy in PIAAC?

Literacy is the ability to understand and use information from written texts in a variety of contexts to achieve goals and further develop knowledge and potential. This is a core requirement for the development of higher-order skills and for positive economic and social outcomes. Previous studies have shown reading literacy to be closely linked to positive outcomes among the workforce, in social participation and in lifelong learning.
How will literacy be measured?

The assessment of reading literacy will draw heavily on previous international studies and allow for trends to be monitored. However, this assessment area will also be refined and extended in new ways. For example, PIAAC will give an overall measure of reading literacy but still allow countries to report prose and document literacy results separately. It will also build on the wide range of material introduced by ALL, drawing about 60% of the items from that survey, with the remaining 40% being new items developed for PIAAC in order to extend the framework used in earlier surveys to include electronic texts.

What is meant by numeracy in PIAAC?

Numeracy is the ability to use, apply, interpret, and communicate mathematical information and ideas. It is an essential skill in an age when individuals encounter an increasing amount and wider range of quantitative and mathematical information in their daily lives. Numeracy is a parallel skill to reading literacy, and it is important to assess how these competencies interact, since they are differently distributed across subgroups of the population.

How will numeracy be measured?

The assessment of numeracy will draw on the wide range of material introduced by ALL. Some 60% of items will be drawn from that survey, with the remaining 40% being new items developed specifically for PIAAC. Numeracy items will cover the four broad areas of content that characterise the mathematical demands placed on adults – quantity and number; dimension and shape; data and chance and pattern; relationships and change.

What is meant by reading components in PIAAC?

In order to read effectively, one requires basic skills such as word recognition, decoding skills, vocabulary knowledge and fluency: these are the building blocks of literacy and the basic reading component skills. Previous literacy surveys have found substantial proportions of the adult population unable
to demonstrate adequate levels of skills needed to retrieve and understand written information and apply it to real life situations. However, previous surveys have not been able to distinguish between those who lack basic reading component skills from those who have mastered the mechanics of reading but are not skilled at comprehension.

**How will reading components be measured?**

In PIAAC, adults demonstrating lower literacy levels will be assessed to determine the extent to which they have developed the basic reading component skills. The purpose is not to compare countries in terms of how many adults master these building blocks, but rather to help individual countries understand more about those people who are identified as having low literacy levels.

**How will the skills used at work be surveyed?**

This represents an innovative part of PIAAC. Covering only adults in employment, it will use a “Job Requirements Approach” to ask adults about the types and levels of a number of generic skills used in the workplace. These include the use of reading and numeracy skills on the job as well as the mastery of information technology, communication, presentation and team-working skills. It will ask about the requirements of the person’s main job in terms of the intensity and frequency of the use of such skills.
What background information will be collected by the PIAAC questionnaire?

The background questionnaire will collect information about each person taking part in the PIAAC survey. It will ask about:

- their demographic characteristics (age, gender, etc.);
- their educational and training background;
- how they use literacy, numeracy, and technology skills in their daily lives;
- their job history and social aspects of their lives.

What will this information be used for?

The background information collected in PIAAC is designed to answer important policy questions about the relationships between education and training with skills development, how this varies according to different sub‑groups of the population, and some of the factors which may contribute to the acquisition and decline of skills across age cohorts.

DID YOU KNOW … Some adults who do poorly on literacy surveys have been shown to have strong basic reading and writing skills, but are unable to apply these skills to real-life situations.
The Assessment Process

How will the survey be designed and delivered?
The design and implementation of PIAAC is the responsibility of an international consortium of well-established organisations from North America and Europe led by Educational Testing Service in the United States. The other partners of this consortium are Westat in the United States, cApStAn in Belgium, the Research Centre for Education and the Labour Market (ROA) at the University of Maastricht in the Netherlands, and GESIS-ZUMA Centre for Survey Research, the German Institute for International Education Research (DIPF), the Data Processing Center of the International Association for the Evaluation of Educational Achievement (IEA) in Germany, The Henry Tudor Centre of Research and The University of Luxembourg.

National authorities are responsible for drawing up samples translating survey instruments and questionnaires, administering the survey and processing data in co-operation with the Consortium. Each participating country will appoint a national co-ordinator to oversee the implementation of the survey nationally.

Who will be surveyed?
A sample of adults will be identified in each country. While 5 000 adults per country will be included, countries will be able to choose to use larger samples to obtain more detailed information, for example at the regional level or for particular groups of interest such as youth in transition from education to work or adults over the age of 65 years.

What form will the assessment take?
In taking the survey in their homes, respondents will:

- normally answer the questions via computer. Those who report or demonstrate that they are unable to use a computer will be able to take a pencil-and-paper assessment instead;
- be given different combinations of the measures, in order to assess a wide range of materials without the survey taking too long for any one participant.
A New Measure of Human Capital

What PIAAC Will Deliver

PIAAC will offer participating countries a powerful tool for the measurement and analysis of competencies among their adult populations. It is specifically designed to provide an evidence base for policy-relevant analysis.

Data and analysis from the survey will:

- **Show factors that are associated with adult competencies.** PIAAC will allow investigation of the links between key cognitive skills and a range of variables. These include demographic characteristics, educational background, success at work and use of skills in the workplace and beyond. In particular, PIAAC will improve understanding of the labour market returns to education, by measuring more directly the role played by skills and their usage. It will show to what extent skills held by individuals are actually used at work. It will also identify the role cognitive skills play in improving the labour market prospects of at-risk groups.

- **Extend the direct measurement of skills held by the working age population.** PIAAC will offer a far more complete and nuanced picture of the stock of human capital than has yet been available to policy makers in most OECD countries. Building on previous surveys of adult literacy, it will help explain more about the characteristics of adults with both low and high levels of skills. For high performers, it will show to what extent they are able to apply their cognitive skills to solve challenging problems requiring mastery of technology. For those with low literacy, it will show to what extent their difficulty is with performing basic reading functions or the extent to which the difficulty is to do with understanding and applications.
Provide a better understanding of the relative effectiveness of education and training systems. PIAAC will show to what extent individuals who have obtained qualifications from education and training systems hold relevant skills and are able to deploy them in society and the world of work. For younger groups, PIAAC will show the extent to which their performance in PISA at the age of 15 years is reflected in performance at older ages. For older adults, the survey in conjunction with earlier adult surveys will provide evidence on whether skills are lost or maintained and whether they are being enhanced by adult education and skill formation systems.

Allow comparisons across countries and over time. The PIAAC survey is designed to maximise its cross-cultural, cross-national and cross-language validity. This will provide a firm basis for comparative analysis of the outcomes of skills formation systems and for the international benchmarking of adult skills. The international report will give a picture of the distribution of the skills of the adult population, alongside levels of formal education and training achieved. For those countries that participated in the earlier International Adult Literacy Survey and/or the Adult Literacy and Lifeskills survey it will be possible in 2013 to see how human capital has evolved over time. For all countries, further cycles of PIAAC will make this monitoring possible over the longer term.

DID YOU KNOW ... The cohort of students who took part in the first PISA survey in 2000 will be aged 26 years at the time of the first PIAAC survey.

PIAAC will look at how well young adults are making the transition from education to work, and the distributions of key skills and activities in this age group.
Developing and implementation of the First Cycle of PIAAC 2007 to 2013

The following is the planned timetable for the development and implementation of the first PIAAC survey.

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<td>Develop framework for assessment</td>
<td>Pilot Job Requirements Approach survey</td>
<td>Develop survey instruments and computer platform</td>
<td>Conduct field test</td>
<td>Field test analysis Preparation for main study</td>
<td>Conduct main survey</td>
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The OECD is a unique forum where member governments share ideas and develop policies to tackle the economic, social and governance challenges of the globalised economy. PIAAC is a collaborative effort between two OECD Directorates.

The mission of the OECD Directorate for Education is to assist members and partners to achieve high quality lifelong learning for all, contributing to personal development, sustainable economic growth and social cohesion.

The Directorate’s work on indicators and analysis – notably the annual publication Education at a Glance and the PISA surveys – provides a strong base for international comparisons of all aspects of education systems. Its research and policy analyses facilitate peer learning across countries. Current priorities include vocational education and training, and higher education.

The OECD Directorate for Employment, Labour and Social Affairs helps economies to formulate policies to boost employment and improve social welfare by reforming labour markets, measuring and improving the performance of health systems, and designing policies for international migration that promote economic growth and development.

Its priority areas are: raising employment rates and labour productivity growth; modernising social protection systems to meet population ageing and extend opportunities for all; achieving high-performing health systems; upgrading workers’ skills; and managing international migration for the best interests of both sending and receiving countries.

PIAAC Consortium Organisations
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