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

PIAAC International Database Training
Prague, Czech Republic
May 13-15, 2014

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What is PIAAC?

- Programme for the International Assessment of Adult Competencies
- Assesses proficiency of adults in four information-processing skills considered essential for successful participation in the information-rich economies and societies of the 21st century:
  - ✓ Literacy
  - ✓ Numeracy
  - ✓ Problem solving in technology-rich environments (PSTRE)
  - ✓ Reading Components

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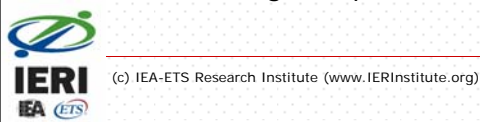
What is PIAAC?

- Assessment of information-processing skills
  - ✓ Skills that are considered essential to effectively access, understand, analyze and use text-based information, and in some cases with mathematics, information in the form of representations of various types (e.g., pictures, graphical representations)
- Purpose is to gain a picture of the distribution of the adult population over the entire spectrum of proficiency in each of the domains assessed.

What is PIAAC?

- These are key competencies (or skills) in that they are:
  - ✓ Preconditions for successful integration and participation in the labor market, education and training, and social and civic life
  - ✓ Relevant to all adults
  - ✓ Highly transferable in that they are relevant to multiple social fields and work situations
  - ✓ 'Learnable' and, therefore, subject to the influence of policy

PIAAC Survey Instruments

- Background Questionnaire
- Cognitive Assessment
    - ✓ Computer delivered
    - ✓ Paper-based option for individuals with no computer experience

PIAAC Literacy Domain

- Ability to understand, evaluate, use and engage with written texts to participate in society, to achieve one's goals, and to develop one's knowledge and potential
- Encompasses a range of skills from the decoding of written words and sentences to the comprehension interpretation, and evaluation of complex texts
- Does not involve the production of text (writing)

PIAAC Numeracy Domain

- Ability to access, use, interpret and communicate mathematical information and ideas, in order to engage in and manage the mathematical demands of a range of situations in adult life
- Involves managing a situation or solving a problem in a real context, by responding to mathematical content/information/ideas represented in multiple ways

PIAAC Problem Solving in TRE

- Defined as the ability to use digital technology, communication tools and networks to acquire and evaluate information, communicate with others, and perform practical tasks. The assessment focuses on the abilities to solve problems for personal, work and civic purposes by setting up appropriate goals and plans, and accessing and making use of information through computers and computer networks

PIAAC Background Questionnaires

- Collect a comprehensive set of information designed to support the major analytical objectives of PIAAC:
  - ✓ Determine the level and the distribution of proficiency in key information processing skills for important subgroups of the adult population
  - ✓ Better understand factors associated with the acquisition, development, maintenance and loss of proficiency over the life cycle
  - ✓ Better understand the relationship of proficiency in information-processing skills to economic and other social outcomes

PIAAC Background Questionnaires

- Collect information in five main areas:
  - ✓ Basic demographic characteristics and background of respondents
  - ✓ Educational attainment and participation
  - ✓ Labor force status and employment
  - ✓ Social outcomes
  - ✓ Literacy and numeracy practices and the use of skills

PIAAC Background Questionnaires

- Characteristics and background of respondents
  - ✓ Demographics: Age, sex, country of birth
  - ✓ Household and family structure: Number of persons in household, living with spouse or partner, activity of spouse/partner, number and age of children
  - ✓ Language background: First and second languages spoken when a child, language currently most often spoken at home
  - ✓ Immigration status: Age at which respondent immigrated, country of birth of parents
  - ✓ Social background: Highest level of education of parents, number of books in home at age 16

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PIAAC Background Questionnaires

- Educational experience and current participation in learning activities:
  - ✓ Educational experience: Highest qualification, in which country gained, field of study, age completed
  - ✓ Current study: Level of course, field of study
  - ✓ Incomplete study: Level of course, age at which left course
  - ✓ Formal studies in previous year:
    - Undertaken formal studies in previous year, how many courses, level of last course, reason for undertaking study, employed while studying, study took place inside or outside working hours, usefulness of course to work, type of employer support received

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PIAAC Background Questionnaires

- Educational experience and current participation in learning activities
  - ✓ Non-formal courses in previous 12 months: Type and frequency
  - ✓ Most recent non-formal activity: Type, relation with job, reason for participating, employer support
  - ✓ Total time in education and training activities, proportion of time in job-related activities
  - ✓ Barriers to undertaking education and training

PIAAC Background Questionnaires

- Labor force status, work history and job characteristics
  - ✓ Current activity: Labor force status (ILO definition), main current activity
  - ✓ Work history: Ever worked, had paid work in previous 12 months, age stopped working (if unemployed), total time in employment, number of employers in previous 5 years

PIAAC Background Questionnaires

- Labor force status, work history and job characteristics
    - ✓ Current job: Industry, occupation, employee or self-employed, age started with current employer, establishment size, number of employees increasing or decreasing, part of larger organization, number of employees (if self-employed), management of supervisory responsibilities, number of subordinates, type of employment contract, usual working hours, extent of flexibility regarding job tasks, job satisfaction, gross wages or salary, (if self-employed) earnings from business

PIAAC Background Questionnaires

- Labor force status, work history and job characteristics
    - ✓ Most recent job (if unemployed): Industry, occupation, employee or self-employed, when left last employer, establishment size, number of employees (if self employed), management of supervisory responsibilities, number of subordinates, type of employment contract, usual working hours, main reason for leaving last job

PIAAC Background Questionnaires

- Social participation and health
  - ✓ Trust: Trust in others, perception of others, behavior towards self
  - ✓ Political efficacy: Influence on political process
  - ✓ Volunteering: Frequency of voluntary work in previous 12 months
  - ✓ Health status: Self-assessed health status

Why Collect these Data?

- There are different but related reasons:
  - ✓ Engagement in these domains is a constituent element of the respective measurement frameworks
  - ✓ Engagement in related practices is an important correlate of proficiency in the domains
  - ✓ Policy interest in gaining information on a broader range of generic skills than provided by the direct assessment
  - ✓ Policy interest in better understanding the demand for skills and phenomena such as qualifications and skills match/mismatch related to the interaction of supply and demand

PIAAC Background Questionnaires

- Tasks and activities in work and everyday life
  - ✓ Reading
    - Read directions or instructions; letters, memos or emails; articles in newspapers, magazines or newsletters; articles in professional journals or scholarly publications; books; reference manuals or materials; bills, invoices, bank statements or financial statements; diagrams, maps, schematics
  - ✓ Writing
    - Write letters, memos or emails; articles for newspapers, magazines or newsletters; reports; fill in forms

PIAAC Background Questionnaires

- Tasks and activities in work and everyday life
  - ✓ Numeracy
    - Calculate prices, costs or budgets; use or calculate fractions, decimals or percentages; use a calculator; prepare charts, graphs or tables; use simple algebra or formulas; use advanced math or statistics
  - ✓ Problem solving
    - Solve simple problems; solve complex problems
  - ✓ Technology
    - Use computer; email; Internet for information; Internet to conduct monetary transactions; spreadsheets; word processing; write or prepare computer code; real-time discussions using Internet; overall level of computer use in terms of complexity

PIAAC Background Questionnaires

- Tasks and activities in work and everyday life
  - ✓ Interaction
    - Collaboration: Time spent collaborating; sharing of information with co-workers
    - Influencing: Selling products or services; making speeches or presentations; advising; persuading or influencing others; negotiating; instructing, training or teaching others
  - ✓ Learning
    - Learning from others; learning by doing; keeping up to date with new products or services
  - ✓ Organisation & planning
    - Planning own activities; planning activities of others; organizing own time

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PIAAC Background Questionnaires

- Qualifications and skills match/mismatch
  - ✓ Self-assessment of match of skills and job requirements: Have skills to cope with more demanding duties; require more training to cope with duties; possess sufficient computer skills to do job well; lack of computer skills affected chances of promotion, pay raise
  - ✓ Match of qualifications to job requirements: Educational qualification needed to get current job; is this qualification needed to do job; related work experience needed to get job

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PIAAC Assessment Design
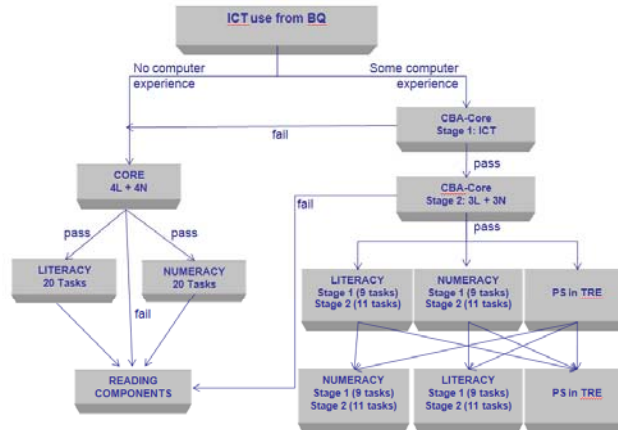
PIAAC Target Population

- Non-institutionalized population ages 16-65 residing in the country at the time of data collection, irrespective of nationality, citizenship or language status
- The normal territorial unit covered by the OECD survey of adult skills was the country as a whole

PIAAC Sampling Frames

- Three broad types
  - ✓ Population registers
    - Administrative lists of residents maintained at either national or regional level
  - ✓ Master samples
    - Lists of dwelling units or primary sampling units maintained at national level for official surveys
  - ✓ Area frames
    - A frame of geographic clusters formed by combining adjacent geographic areas, respecting their population sizes, and taking into consideration travel distances for interviewers

PIAAC Sampling Frames

- Required to cover at least 95 percent of the target population
- Limited exclusion (non-coverage) of groups in the target population
  - ✓ Hard-to-reach groups such as the populations of remote and isolated regions

PIAAC Sample Sizes

- Minimum sample size required depended on two variables:
    - ✓ Number of cognitive domains assessed
    - ✓ Number of languages in which the assessment was administered

    Participating countries had the choice of assessing all three domains or assessing literacy and numeracy only
- Minimum sample size for one language required:
    - ✓ 5,000 completed cases if all three domains were assessed
    - ✓ 4,500 if only literacy and numeracy were assessed

PIAAC Sample Sizes

- To fully report results in more than one language, the required sample size was either 4,500 or 5,000 cases per reporting language
- When not reporting results separately by language, the required sample size was at least 5,000 (or 4,500) completed cases collected in the principal language
- A completed case is defined as an interview in which the respondent provided answers to key background questions, including age, gender, highest level of schooling and employment status, and completed the 'core' cognitive instrument

PIAAC Administration

✓ PIAAC was administered under the supervision of trained interviewers either in the respondent's home or in a location agreed upon between the respondent and the interviewer
✓ Following the identification of the sampled person, the administration of the survey involved two stages
  • Completion of the Background Questionnaire
  • Completion of the cognitive assessment

PIAAC Proficiency Scales

• Results from PIAAC are reported on a scale ranging between 0 and 500
  ✓ Test takers and test items are located on the scale in terms of their proficiency and their difficulty respectively
• Scores assigned to respondent were in the form of plausible values (more on this later…)
• Proficiency levels are defined for each of the domains

PIAAC Proficiency Levels

- **Numeracy and Literacy Scale**
  - ✓ 376: Level 5
  - ✓ 326: Level 4
  - ✓ 276: Level 3
  - ✓ 226: Level 2
  - ✓ 176: Level 1
- **Problem Solving in Technology Rich Environments Scale**
  - ✓ 341: Level 3
  - ✓ 291: Level 2
  - ✓ 241: Level 1

Thank You!

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