Module Objectives

- Introduce users to the data collected through PIAAC and the resulting micro-level data files
- Describe the resources available to learn more about the survey data documentation and data files
PIAAC Micro-level Data Files

- Organization for Economic Cooperation and Development (OECD) International Public-use File (International PUF)
- National Center for Education Statistics (NCES) U.S. National Public-use Files (PUF)
- National Center for Education Statistics (NCES) U.S. National Restricted-use Files (RUF)

All data files contain
- Responses to background questionnaire and cognitive assessment
- Plausible values and weighting variables

Note: Additional information specific to the 2012/14 U.S. Household files and U.S. Prison files can be found in Considerations for the U.S. PIAAC National Supplement

PIAAC Micro-level Data Files (Continued)

- Variable naming conventions are as follows
  - BQ variables: BQ section + Question # (e.g., B_Q01a)
    - Trend items with IALS and ALL end in "_T"
  - Cognitive items
    - Computer-based items begin with "C", "D", or "E"
    - Paper-based items begin with "P" (e.g., P924037R)
    - PS-TRE items begin with "U" (e.g., U01a000S)

- Naming conventions for derived variables vary

Note: Additional information specific to the 2012/14 U.S. Household files and U.S. Prison files can be found in Considerations for the U.S. PIAAC National Supplement
PIAAC Micro-level Data Files (Continued)

Data in the OECD and NCES PUFs that were suppressed for U.S. respondents include
- Detailed earnings data
- Occupational data, including detailed occupation codes, job title, and work responsibilities
- Sampling selection variables

<table>
<thead>
<tr>
<th>Slide 6 of 24</th>
</tr>
</thead>
</table>

**OECD Micro-level Data Files**

- [OECD International PUFs](#) are publicly available in SPSS and SAS formats for all countries except Australia
- Data are stored in separate files by country
  - Separate country files can be merged using the IEA International Database (IDB) Analyzer
- Data file names are stored as "prgXXXp1", where XXX is each country's three-letter country code
  - For example, "prgUSAp1" for the United States
NCES Micro-level Data Files

- NCES U.S. (national) PUF and RUF are available in 3 formats
  - ASCII
  - SPSS
  - SAS
- The U.S. PUF and RUF include U.S.-only variables, in addition to all the variables in the International PUF (Note: Additional information specific to the 2012/14 U.S. Household files and U.S. Prison files can be found in Considerations for the U.S. PIAAC National Supplement)

NCES Public-use Files

- U.S.-only variables focus on: education, country of origin, language, race/ethnicity, training courses, occupation, health, work and earnings
- Include data for the U.S. routing of questions for those variables that differ from the international routing
- Background questionnaire items are named as follows
  - International variables adapted for the U.S. context end in "US" (e.g., D_Q03US)
  - U.S.-only variables end in "USX" (e.g., B_Q01bUSX)
NCES Restricted-use Files

- Besides variables in the U.S. PUF, the U.S. RUF also contains variables suppressed in the PUFs
- The RUF contains responses for variables at the same level of detail as they were asked in the survey
- The RUF can be accessed through a restricted-use license agreement with NCES

OECD PIAAC Data Documentation

Documentation for the OECD micro-data files includes

- International technical report
- International data codebook
- Data analysis manuals or help text for SAS and Stata
- SAS macros and Stata macros
- Data compendia for background variables and cognitive variables
International Technical Report

- **OECD Technical Report** of the Survey of Adult Skills describes
  - Assessment and Instrument Design
  - Platform Development
  - Field Operations and Quality Control
  - Sampling and Weighting
  - Data Analysis and Data Products
- The **NCES Technical Report** provides U.S.-specific details on sampling, field operations, and platform development

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International Codebook

- Describes the layout of the variables in the data file
- Documents values associated with response options for each survey question

### International Codebook Table

<table>
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<th>Code</th>
<th>Name</th>
<th>Label</th>
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OECD PIAAC **SAS** and **Stata** Data Analysis Manuals and Help Text

- Provide instructions for using the [SAS macros](#) and [Stata macros](#)
- Contain detailed explanations of the options and parameters in the macros
- Macros can be used to
  - Calculate statistically valid estimates of percentages, means, proficiency levels, and percentiles
  - Conduct regression analysis

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OECD PIAAC Data Compendia

- Comprised of sets of tables that provide previously computed, weighted summary statistics for cognitive items and categorical background variables by country
- Support PUF users in gaining knowledge of PUF contents
- Useful for
  - Elaborating upon your hypothesis
  - Checking results of your own computations
  - Searching for variables
- Comparisons of cognitive item statistics across countries for reporting purposes is not appropriate
OECD PIAAC Data Compendia (Continued)

- Information for categorical background variables
  - Sample size (Weighted N)
  - Weighted percent of responses by category
  - Percent missing, skipped, or refused responses

- Information for cognitive items
  - Sample size (Weighted N)
  - Weighted percent of correct and incorrect responses
  - Percent of respondents missing or not reached

Sample Data Compendia Table
NCES PIAAC Data Documentation

- U.S. Technical Report
- U.S. PUF and RUF Codebooks
- PIAAC International Data Explorer (IDE) Help Guide
  - Provides instructions for using the PIAAC IDE, as well as detailed information on variables

PIAAC Data Tools

Web-Based Tools

- OECD International Data Explorer (IDE) allows users to easily create statistical tables and charts
  - Contains national data files for all countries except Cyprus
- NCES International Data Explorer is similar to the OECD IDE but includes U.S.-only variables in addition to the international variables
  - Contains U.S. national data as well as data for all countries except Australia and the Russian Federation
- NCES PIAAC Web Portal provides ready-made tables and charts for the most common PIAAC data analyses
PIAAC Data Tools (Continued)

Micro-Data Tools
- **International Database (IDB) Analyzer** (used with SPSS or SAS)
- **SAS and Stata macros** developed by the OECD
- **AM Statistical Software** developed by AIR
- **R-package**

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NCES International Data Explorer (IDE)

- Web-based tool that produces customizable tables and charts using PIAAC data
- A point-and-click method for producing custom results
  - Does not require any advanced statistical knowledge or software
  - Produces statistically valid results
- Can be used to calculate estimates of percentages, means, proficiency levels, and percentiles, and to conduct regression analysis and gap analysis
IDB Analyzer

- A stand-alone software program using SPSS or SAS as the computational engine for analyzing data from PIAAC
- Allows for creation of analysis datasets by
  - Combining specific country data files
  - Selecting specific subsets of variables
- Accounts for complex sample design with plausible values methodology, including correct calculation of standard errors
- Can be used to
  - Calculate estimates of percentages, means, proficiency levels, and percentiles
  - Conduct regression analyses

Linking PIAAC with IALS and ALL

- Micro-data files containing data from the International Adult Literacy Survey (IALS) and the Adult Literacy and Life Skills Survey (ALL) can be ordered from Statistics Canada using the following links
  - International Adult Literacy Survey micro-data files
  - Adult Literacy and Life Skills Survey micro-data files
- These files contain results for literacy (IALS and ALL) and numeracy (ALL) on the same scales as the results from the Survey of Adult Skills (PIAAC)
- The process for linking results from PIAAC and those from IALS and ALL is described in Chapter 17.4.2 of the OECD Technical Report
- Both the NCES and OECD PIAAC IDEs contain trend data from IALS and ALL as well
Module Summary

- Introduced users to the data collected through PIAAC and the resulting micro-level data files
- Described the resources available to learn more about the survey data documentation and data files

Module Resources

- International Public-use File (International PUF)
- U.S. National Public Use File (PUF)
- U.S. National Restricted Use File (RUF)
- Restricted-use license agreement
- OECD International Technical Report
- International Data Codebook
- SAS Data Analysis Manual
- Stata Help Text
- SAS macros
- Stata macros
- Background variables
- Cognitive variables
- NCES U.S. Technical Report
- NCES International Data Explorer
- OECD International Data Explorer
- NCES PIAAC Web Portal
- International Database (IDB) Analyzer
- SAS and Stata macros
- AM Statistical Software
- R-package
- International Adult Literacy Survey micro-data files
- Adult Literacy and Life Skills Survey micro-data files