



Researching education, improving learning

Open Research Data: Dissemination of IEA Data

Panel at AERA's annual meeting
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1. The IEA
2. FAIR Data Principles
3. IEA Open Research Data

International Association for the Evaluation of Educational Achievement (IEA)

- Large-scale comparative studies of educational achievement and other aspects of education
- IEA has conducted 25 studies since 1958
 - A total of 100 countries have participated in IEA studies
 - Surveys, tests, paper and digital, various sources
- The IEA is committed to promote that IEA data is used by the scientific community



FAIR data principles

- The FAIR principles identify four sets of issues deemed relevant to maximizing the use of Open Research Data (Wilkinson et al., 2016).
- All projects funded by the European Commission must develop Data Management Plans that outline how the FAIR principles will be met.

FAIR data principles

Findable

The first step in (re)using data is to find them. Metadata and data should be easy to find for both humans and computers.

Accessible

Once the user finds the required data, they need to know how they can be accessed.

Interoperable

The data must be in such a form that it can be processed for further analysis or integrated with other data.

Reusable

The ultimate goal of FAIR is to optimise the reuse of data. To achieve this, metadata and data should be well-described.

IEA Open Research Data: Findable

- IEA and national websites (e.g., NCES)
- Conferences (IRC, Beyond Results, IEA booth at the AERA exhibition)
- ILSA-Gateway.org
 - A single entry point to major international assessments
 - Studies conducted by different organizations (e.g., IEA, OECD, World Bank, UNESCO)
 - Metadata on theme, design, and scope

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The screenshot shows the ILSA Gateway website. At the top left is the ILSA Gateway logo with the tagline "Sharing insights, Inspiring education research". To the right are navigation links: "ABOUT | ILSA IN EDUCATION | GLOSSARY | NEWS". Further right is the IEA logo with the tagline "Researching education, Improving learning".

The main header features a large image of a smiling young girl with glasses. Below the image is the text: "GAIN AN OVERVIEW" followed by a paragraph: "The gateway presents comprehensive information on international large-scale assessments (ILSAs) in education in a standardized format and provides links to numerous study-related documents and materials. Browse or search for information by choosing one of the following navigational paths: by study, by theme, or through an ILSA search."

Below the header are two main sections: "NAVIGATE BY STUDY" and "NAVIGATE BY THEME".

NAVIGATE BY STUDY includes a "STUDIES" section with a graduation cap icon and a "MORE INFO >" button. The text below reads: "The gateway offers a central point of entry to comprehensive information on ILSAs in education - regardless of whether they include a cognitive assessment component - conducted by IEA and other organizations, including but not limited to CONFEMEN, IDB, OECD, SACMEQ, UNESCO, and the World Bank."

NAVIGATE BY THEME is a grid of eight categories, each with an icon, a title, a brief description, and a "MORE INFO >" button:

- FACT SHEETS**: Basic information on each study in a standardized format and links to study websites.
- FRAMEWORKS**: Theoretical and conceptual foundations of assessments, questionnaires, and surveys.
- DESIGNS**: Sampling, data gathering, translation, and quality control approaches.
- RESULTS**: Explanations about scale creation, lists of scales, overview of main findings.
- DATA**: Procedures of analysis, characteristics of ILSA data, types and formats of data files.
- PAPERS**: Articles on secondary analyses or other issues related to the various ILSAs.
- MATERIALS**: Visual presentations, such as video files and infographics, accompanying the studies.
- ORGANIZATION**: Initiators and directors, funding and management, contact details, authors.

On the right side, there is a "NEWS" section with two articles:

- IEA ICSS 2022 Assessment Framework**: The ICSS 2022 assessment framework provides a conceptual underpinning to the measurement of antecedents, processes, and outcomes of civic and citizenship education undertaken in the third cycle of this study. [Read more](#)
- New Rosetta Stone Analysis Reports: Establishing a Concordance Between ERCE and TIMSS/PIRLS, and Between PASEC and TIMSS/PIRLS**: Rosetta Stone is a collaborative project between the UNESCO Institute for Statistics (UIS), IEA, and the TIMSS & PIRLS International Study Centre that enables countries to measure SOG 4 indicator 4.1.1. [Read more](#)

At the bottom of the news section, there is a date "23 Aug 2022 - 26 Aug 2022" and the title "ECER 2022 and ECER Plus Conferences". Below that, it says "European Conference on Educational Research (ECER) is an annual event organized by the European Educational Research Association (EERA) with the support of the European Commission (EC)."

IEA Open Research Data: Accessible

- Public Use Files are published very quickly after data collection
- IEA Data Repository (iea.nl/data-tools/repository)
 - Easy access without registration → one click

IEA Open Research Data: Interoperable

- Standardized and harmonized procedures and conventions for coding and naming of data (files, variables, values)
- Provision of different commonly used file formats (SPSS, SAS)

IEA Open Research Data: Reuseable

- Rich metadata
 - Technical reports richly describe sample, design, instruments and other technical issues
 - Fully labeled datasets
- Secondary use support
 - User Guides
 - Specializes software to ease analyses
 - Workshops and individual consulting

Conclusion and Outlook

- Addressing the areas identified in the FAIR Principles requires financial and time resources.
- Open Research Data is an evolving topic
 - New assessments and surveys formats (e.g., digital and interactive)
 - New data formats (e.g., process data)
 - New software (e.g., R)

Any comments and
suggestions are welcome!

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