



Researching education, improving learning

# IEA TIMSS & PIRLS



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in sub-Saharan Africa

*Knowledge sharing and needs assessment*

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# TIMSS – Background

- TIMSS: Trends in International **M**athematics and **S**cience **S**tudy
- Data collection: every 4 years
- Countries are currently administering TIMSS 2019 Field Test; this will be the sixth cycle of TIMSS (administered previously in 1995, 1999, 2003, 2007, 2011, 2015)
- Assessment domains: mathematics, science
- eTIMSS
- Target population: students in Grade 4 and Grade 8
- For 2019, 69 countries and 3 benchmarking entities are enrolled
- Study framework (summary): curriculum in mathematics and science (overarching concept)
  - As intended to be taught — intended curriculum
  - As implemented in the classroom — implemented curriculum
  - As learned by students — achieved curriculum

# TIMSS – Objectives

- Monitor system-level trends in student achievement in mathematics and science at Grades 4 and 8 in a global context
- Gather and provide information and data for improving learning and teaching in mathematics and science
- Gain a better understanding of education and educational systems and enable countries to make informed decisions for improving their education policies
- Compare education systems worldwide in terms of their organization, curricula, instructional resources, and practices related to their students' achievement, thus allowing them to learn from the experiences of others in designing effective education policy

# PIRLS – Background

- PIRLS: **Progress in International Reading Literacy Study**
- Data collection: every 5 years
- Currently preparing for PIRLS 2021; this will be the fifth cycle of PIRLS (administered previously in 2001, 2006, 2011, 2016)
- Assessment domain: reading literacy
- Target population: students in Grade 4
- In 2016, 50 countries and 11 benchmarking entities participated
- Study framework (summary): reading framework
  - Purposes for reading
    - ✓ Literary experience
    - ✓ To acquire and use information
  - Processes of comprehension
    - ✓ Focus on and retrieve explicitly stated information
    - ✓ Make straightforward inferences
    - ✓ Interpret and integrate ideas and information
    - ✓ Evaluate and critique content and textual elements

# PIRLS – Objectives

- Monitor system-level trends in student achievement in reading at Grade 4 in a global context
- Gather and provide information and data for improving learning and teaching in reading
- Help improve the teaching of reading and the acquisition of reading skills around the world
- Gain a better understanding of education and educational systems and enable countries to make informed decisions for improving their education policies
- Compare education systems worldwide in terms of their organization, instructional resources, and practices related to their students' reading achievement, thus allowing them to learn from the experience of others in designing effective education policy

# Policy relevance – addressing inequality

- Participating countries and students, as well as their parents, teachers, and school principals, complete background questionnaires about home and school learning environment, experiences and instruction
- Achievement data can therefore be analyzed in tandem with background factors, helping to identify potential areas of focus or need
- Data from the questionnaires can raise important issues about the implementation of educational policies and practices
- Countries can learn from other successful initiatives which have reduced inequality or improved achievement of particular groups
- Assessing Grade 4 students can provide an early warning for necessary curricular reforms, and the effectiveness of reforms can be further monitored at Grade 8 in the case of TIMSS (benefit of the quasi-longitudinal design)

# Disseminating data – types of support

Governments, education ministries, and researchers use TIMSS and PIRLS data to:

- **Measure** the effectiveness of educational systems in a global context
- **Identify** gaps in learning resources and opportunities
- **Pinpoint** any areas of weakness and **stimulate** curriculum reform
- **Measure** the impact of new educational initiatives
- **Train** researchers and teachers in assessment and evaluation

To these ends, IEA provides **support** throughout the studies:

- For **Sampling** and **Within-school Sampling** (manuals, trainings, and country support)
- In **Data Collection** (both online and paper, throughout the assessment period)
- In **Data Entry, Processing** and **Coding** (survey operations procedures [manuals and guidelines], software [data management trainings], country support)
- In **Data Analysis** and **Reporting** (including state-of-the-art data analysis methods, support in presenting findings)
- Other **Trainings** tailored to fit individual country contexts

# Challenges and new developments

- International “horse race” rankings historically criticized for encouraging climate of competition and arbitrary distinction between countries – true of all ILSAs?
- Resulting push to adhere to study curricula sometimes seen as detrimental to national priorities
- Cost can be prohibitive
- Cognitive level of assessment too high for some countries
- Solutions:
  - National adaptations and translations for all countries
  - Training in policy briefing and use of the data: users are always encouraged to consider local context when interpreting data
  - Both data and International Database Analyzer (IDB Analyzer) provided free of charge globally for research and policy
- eTIMSS and ePIRLS: improving measurement, increasing operational efficiency
- Room for growth: LaNA (**L**iteracy and **N**umeracy **A**ssessment)

# What's next? LaNA

- LaNA is intended for countries where TIMSS and PIRLS may be too difficult to implement
- Can provide a more cost-efficient and targeted means of data collection and associated data usage
- Enables countries to obtain information that can reveal important policy relevant variables, relationships between background characteristics and achievement between regions within a country, and allow comparisons with other countries
- Link to TIMSS and PIRLS: LaNA targets students in Grade 4
- Piloted in the country of Haiti and in the Punjab province of Pakistan
- For developing education systems who participate in LaNA, the study can serve as a stepping stone for participation in future IEA TIMSS and PIRLS cycles

# Thank you!



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