

# IEA's Rosetta Stone Implementation and Methodology

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Learning (GAML)  
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# Objectives

- In general, provide data on proportions of primary school students achieving established proficiency levels in literacy and numeracy
- Specifically, by establishing **a concordance** between regional assessment results at the end of primary education and the TIMSS and PIRLS international low benchmarks for literacy and numeracy
  - This concordance aims at showing confidence regions for regional assessment results projected onto the TIMSS mathematics and PIRLS reading scales - thereby connecting the regional assessments with TIMSS and PIRLS and with each other
- Collaboration between the International Association for the Evaluation of Educational Achievement (IEA), the TIMSS & PIRLS ISC at Boston College, and the coordination centers for regional studies

# Implementation (1)

- The intention is to include the Rosetta Stone Project in all five regional studies (ERCE, PASEC, SACMEQ, SEA-PLM, PILNA)
- The project required the implementation in a subset of countries per region for creating a concordance table
- As a first step, the Rosetta Stone Project was implemented in two Latin American countries (ERCE) and three African countries (PASEC)



## Implementation (2)

- Selected booklets from TIMSS 2015 and PIRLS 2016 where administered at the same time as regional assessments
- That is, the same students took their regional assessments followed by TIMSS and PIRLS booklets in a separate session (equivalent sample design)
- The combined data will be used to construct “Rosetta Stone” concordance tables

# Rosetta Project Status

## **ERCE:**

- Administration in Guatemala and Colombia in 2019
- Data received from all countries by October, 20<sup>th</sup>
- Sample sizes:
  - Guatemala: 5,340 students
  - Colombia: 3,144 students

## **PASEC:**

- Successful administration in Senegal, Guinea, and Burundi between April and July 2019 (in spite of delays due to Covid-19)
- Data received from all countries by October, 15<sup>th</sup>
- Sample sizes:
  - Senegal: 2,068 students
  - Guinea: 2,237 students
  - Burundi: 2,275 students
- Data review and processing ongoing

## Next steps

- IEA's Rosetta Stone is a new project that requires scientific research with the data obtained in order to determine:
  - The psychometric quality of the items
  - The measurement accuracy (measurement error)
  - The measurement validity (interpretation)
  - The quality of the data base for comparison between national and international assessments
- This is done using data quality control procedures, statistical analysis and psychometric models

# Technical Background – Data Quality and Analysis

- 1) Data Quality will be evaluated
  - Item-level nonresponse and response variability
  - Item statistics (percent correct, item-total correlations)
- 2) Scales will be evaluated through IRT modeling
  - Comparability of the measured constructs across regional assessments and TIMSS and PIRLS blocks
  - Fit of TIMSS and PIRLS item parameters for Rosetta Stone participants
  - Comparability of the difficulty targets of regional and international assessments
  - Uncertainty (measurement error)
  - Reliability and construct coverage of the constructed scales

## Technical Background – Reporting

- Concordance tables will be provided to translate national and international results
- Confidence intervals or proficiency levels will be reported to account for measurement error
- In addition to the concordance tables, the percent of students per country that reach the TIMSS and PIRLS low benchmarks will be reported
- The focus is on group level reporting (no individual scores for students)
- Technical documentation of all results will be provided



## Timeline for the remainder of Rosetta

<b>Year</b>	<b>Activity</b>
Q4, 2020	Data Review and Processing with the original RAW data/ preparing the data files for scaling
Q1/2, 2021	Submission of the final cleaned raw and scaled PASEC and ERCE data from the regional study centers/ psychometric analysis and concordance tables from the TIMSS & PIRLS International Study Center
Q3, 2021	Produce reports and technical documentation

# Thank you for your attention!

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