IEA’s Rosetta Stone
Implementation and Methodology

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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
  
  o 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\textsuperscript{th}
- 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\textsuperscript{th}
- 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:
  o The psychometric quality of the items
  o The measurement accuracy (measurement error)
  o The measurement validity (interpretation)
  o 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
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

<table>
<thead>
<tr>
<th>Year</th>
<th>Activity</th>
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<tbody>
<tr>
<td>Q4, 2020</td>
<td>Data Review and Processing with the original RAW data/ preparing the data files for scaling</td>
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<tr>
<td>Q1/2, 2021</td>
<td>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 &amp; PIRLS International Study Center</td>
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<tr>
<td>Q3, 2021</td>
<td>Produce reports and technical documentation</td>
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Thank you for your attention!

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