

Review of International and Regional Educational Assessment Programs

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What are we talking about?

Assessment programs involving several countries or education systems that

- Describe student achievement in ways that estimate levels in the system as a whole
- Provide policy makers, educators, others with information on their system relative to others



PIRLS
(IEA)

Grade 4

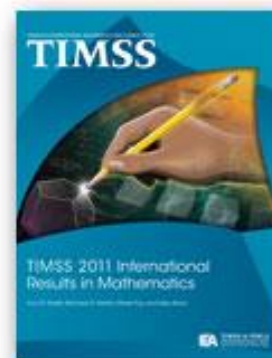
Reading



TIMSS
(IEA)

Grade 4
Grade 8

Math
Science



PISA
(OECD)

15 year
olds

Reading
Math
Science



LLECE
(UNESCO-
OREALC)

Grade 3
Grade 6

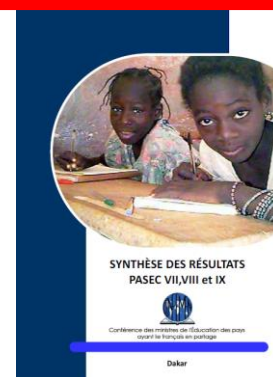
Reading
Math
Science
Writing



PASEC
(CONFEMEN)

Grade 2
Grade 6

Reading
Math



SACMEQ
(SACMEQ,
UNESCO-IIEP)

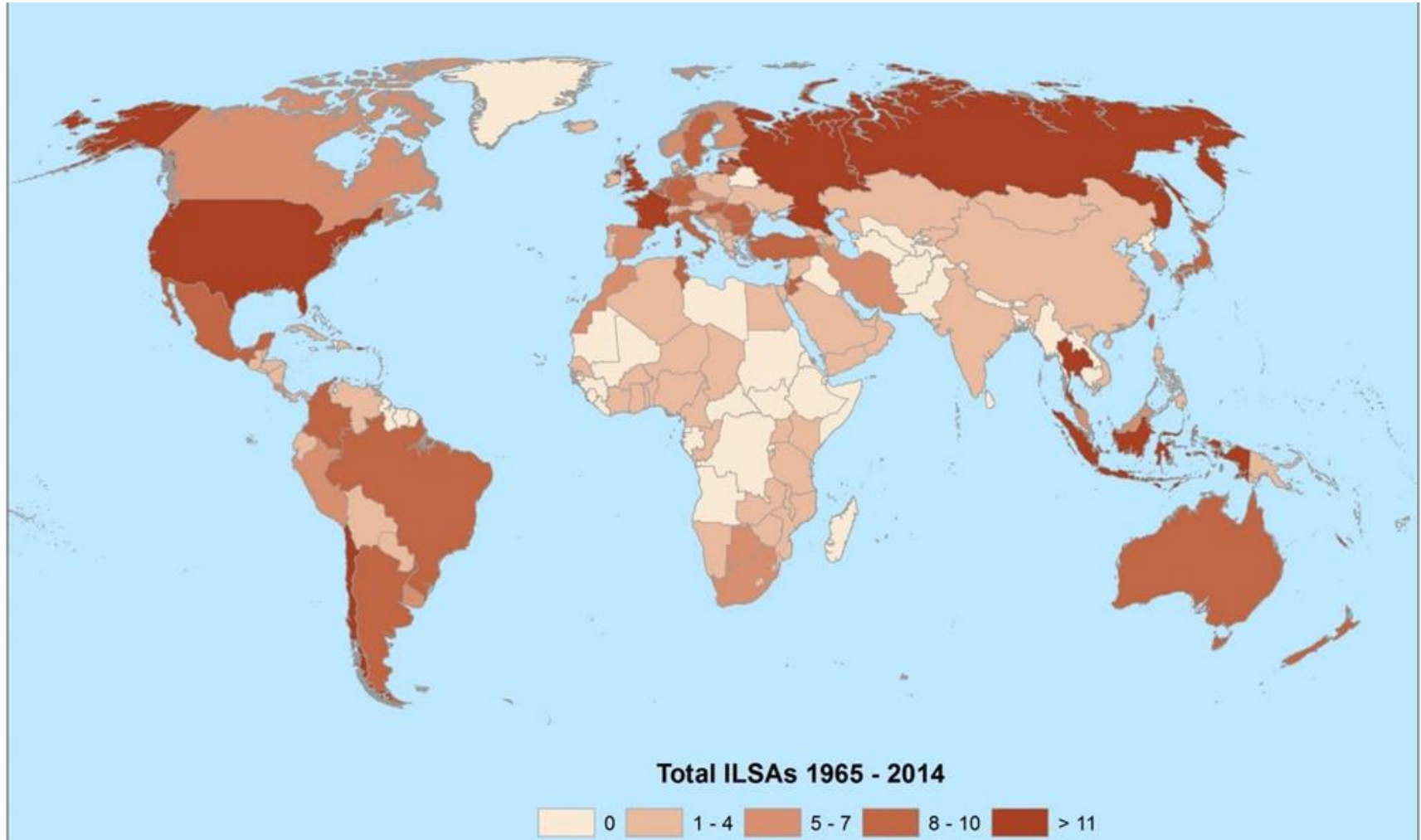
Grade 6

Reading
Math
Health



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Steady increase in countries participating in international and regional assessments



4 QUALITY EDUCATION



GOAL 4



ENSURE INCLUSIVE AND EQUITABLE QUALITY EDUCATION AND PROMOTE LIFELONG LEARNING OPPORTUNITIES FOR ALL

SUSTAINABLE DEVELOPMENT GOALS

More at sustainabledevelopment.un.org/sdgsproposal

4.1 By 2030, ensure that all girls and boys complete free, equitable and quality primary and secondary education leading to relevant and effective learning outcomes



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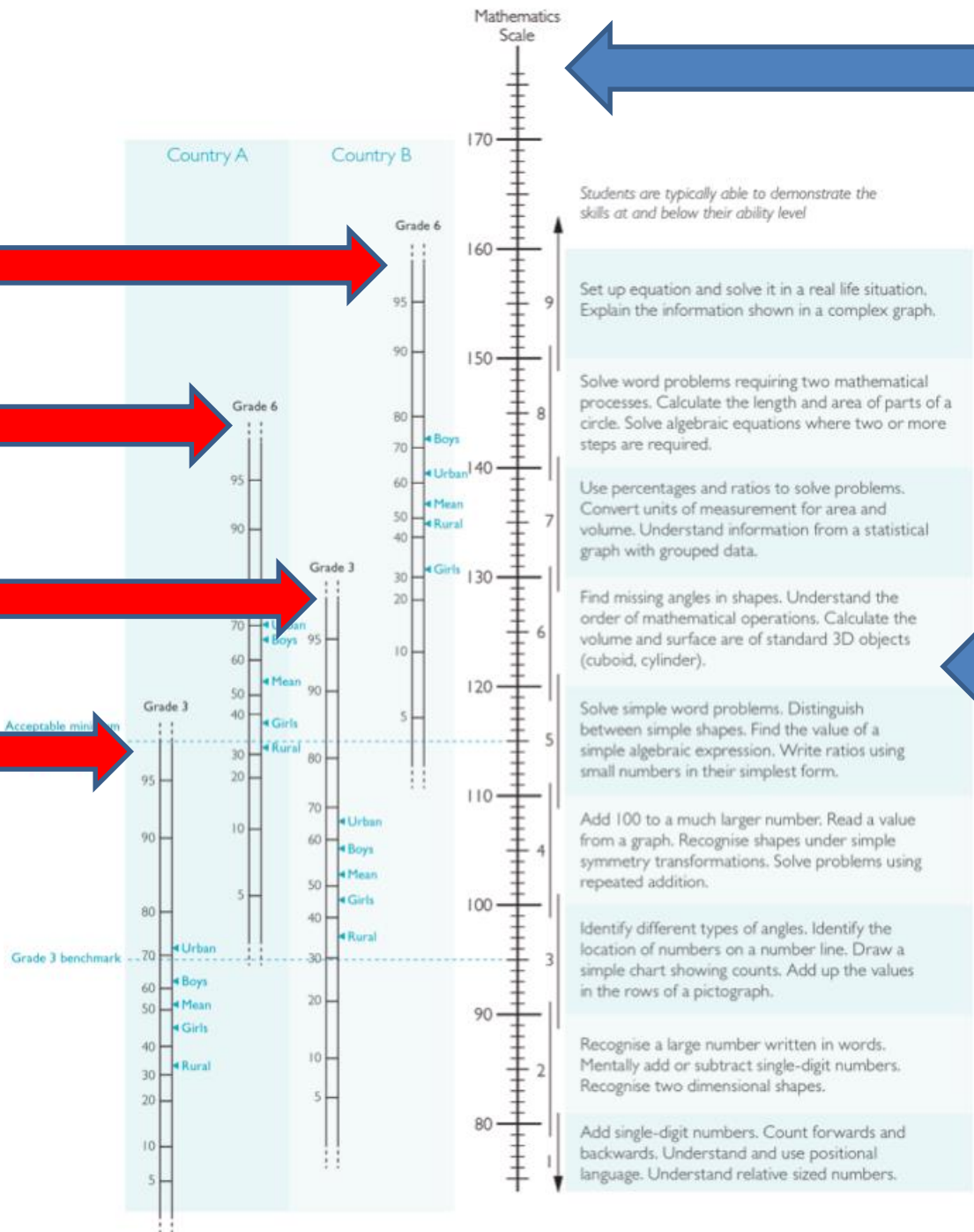
“Universal” math scale

Test D

Test C

Test B

Test A



Descriptions of what students know and can do at different levels of the scale



Two key questions

1. How similar are these international and regional assessments of reading and math?
2. How useful for supporting improved quality and learning outcomes?



Two key questions

1. How similar are these international and regional assessments of reading and math?

- *Study commissioned by World Bank and OECD*
- *Analyzed **coverage**, **content and format**, **analysis and reporting***
- *Report to be released in November*



How similar in coverage?

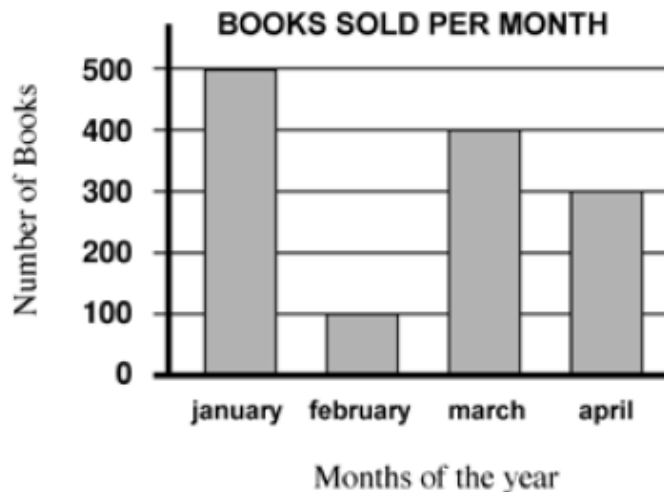
	Countries	Target Population	Frequency
PISA	70	15 year olds	3-year cycle (6)
TIMSS	77	Grades 4, 8	4-year cycle (6)
PIRLS	49	Grade 4	5-year cycle (3)
LLECE	15	Grades 3, 6	No fixed cycle (3)
SACMEQ	15	Grade 6	No fixed cycle (4)
PASEC	10	Grades 2, 6	No fixed cycle (?)

How similar in test content and format?

	Curriculum -based	Reading or Math	Computer or Paper	MCQ or CRQ
PISA	No	Both	Both	Both
TIMSS	Yes	Math	Paper	Both
PIRLS	Yes	Reading	Paper	Both
LLECE	Yes	Both	Paper	Both
SACMEQ	Yes	Both	Paper	MCQ?
PASEC	Yes	Both	Paper/Oral	MCQ?

LLECE, grade 3 math item

The following graph shows the number of books sold in a bookstore in the first months of the year



Which month shows the highest book sale?

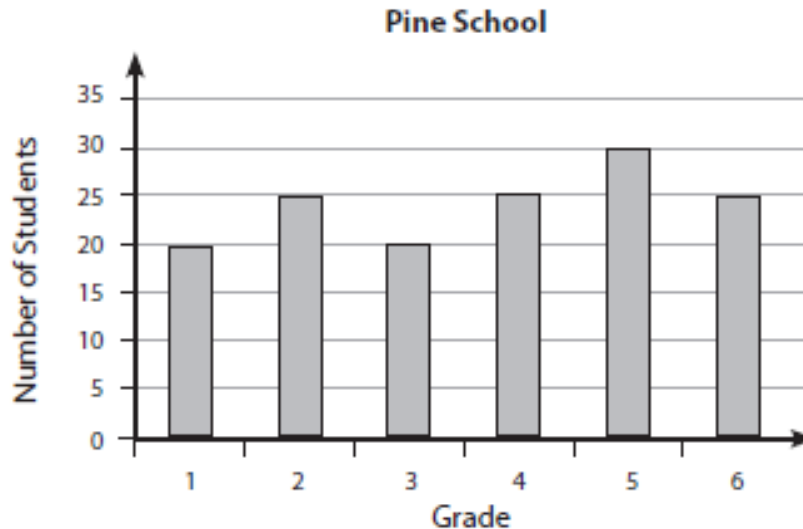
- A January.
- B February.
- C March.
- D April.

75.64% correct responses



TIMSS grade 4 math item

The graph shows the number of students at each grade in the Pine School.



In the Pine School there is room in each grade for 30 students. How many more students could be in the school?

- A. 20
- B. 25
- C. 30
- D. 35**

54% correct responses



How similar in analysis and reporting?

	Analytical approach	Proficiency levels	Background data on learning, language, home	Comparable across systems, trends
PISA	IRT (1)	6	Yes	Both
TIMSS	IRT (3)	4	Yes	Both
PIRLS	IRT (3)	4	Yes	Both
LLECE	IRT (R)	4	Yes	Partially
SACMEQ	IRT (R)	8	Yes	Both
PASEC	2014 onwards	2014 onwards	Yes	2014 onwards

SACMEQ grade 6 math results for Botswana

Table 2(b): Percentages of Pupils Reaching Various Levels of Competence in Mathematics

Level	Description	Mathematics Skill Levels	2000	2007	Change
		Skill/Competency	%	%	%
1	Pre-Numeracy	Applies single step addition and subtraction.	3.3	1.5	-1.8
2	Emergent Numeracy	Applies a two-step addition and subtraction involving carrying.	25.8	20.9	-4.9
3	Basic Numeracy	Translates verbal information into arithmetic operations.	35.8	34.0	-1.8
4	Beginning Numeracy	Translates verbal or graphic information into simple arithmetic problems.	19.6	27.2	+7.6
5	Competent Numeracy	Translates verbal, graphic, or tabular information into an arithmetic form in order to solve a given problem.	10.2	9.2	-1
6	Mathematically Skilled	Solves multiple-operation problems (using the correct order) involving fractions, ratios, and decimals.	3.8	6.0	+2.2
7	Concrete Problem Solving	Extracts and converts information from tables, charts and other symbolic presentations in order to identify, and then solve multi-step problems	1.2	0.9	-0.3
8	Abstract Problem Solving	Identifies the nature of an unstated mathematical problem embedded within verbal or graphic information and then translate this into symbolic, algebraic or equation form in order to solve a problem.	0.2	0.4	+0.2

Two key questions

1. How similar are these international and regional assessments of reading and math?

2. How useful for supporting improved quality and learning outcomes?

- *PISA as case study*
- *Study commissioned by World Bank and OECD on middle income country experiences in PISA, 2000-2015*
- *Report to be released in November*



How useful? Evidence of policy impact

- PISA results have informed some education policy in middle-income countries
 - More limited effects compared to HICs
 - Curriculum change, teacher training
 - Less public discussion of results
 - Policy influence is mainly through private dialogue



How useful? Analysis of correlates

- Multi-level analyses of correlates of achievement
 - 2012 PISA mathematics results
 - 18 middle-income countries
 - 6 Latin American
 - 6 Eastern Europe/Central Asia
 - 4 East Asia
 - 2 Middle East/North Africa



Latin America, Europe/Central Asia, East Asia, Middle East/Africa

Argentina



Brazil



Bulgaria



Colombia



Costa Rica



Indonesia



Jordan



Kazakhstan



Mexico



Montenegro



Malaysia



Peru



Romania



Serbia



Thailand



Tunisia



Turkey



Vietnam



Student-level variables important in > 6 countries

Variable	Number of Countries
Grade	18
Socio-economic background	17
Gender	17
Repeater	15
Preschool	11
Language	8



School-level variables important in > 6 countries

Variable	Number of Countries
School average socio-economic background	18
More learning time	18
Positive disciplinary climate	13
Less student absenteeism	8
Size	7



Conclusions

1. How similar are these international and regional assessments of reading and math?
 - All measure reading and math, but differ in coverage, technical robustness, reporting, transparency
 - Possibility of “talking” to each other under right conditions
2. How useful for supporting improved quality and learning outcomes?
 - PISA case suggests private influence on policy in MICs
 - Analyses of data provide insights on correlates of achievement, but also suggest limitations in relevance of background variables for MICs



Suggestions: Questions to ask

1. What questions or issues do you want to address?
2. To whom or to what do you want to compare yourself? How frequently?
3. Is computer-based assessment an option?
4. What kinds of background factors would be most useful for understanding correlates of achievement?
5. Are you able to invest the time and resources required?
6. Are you willing and ready to disseminate and discuss the results with stakeholders?



Reports

1. Cresswell, J. et al. (in press). **“Review of Component Skills Assessed and Contextual Data Collection Used in Relevant International Assessments.”** OECD/World Bank.
2. Lockheed, M. et al. (in press). **“The Experience of Middle-Income Countries Participating in PISA 2000-2015.”** OECD/World Bank.

Will be available on World Bank and OECD websites before end of 2015.



Thank you!

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