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EdData II
Education Data for Decision Making

EGRA EGMA: Tools to measure and improve student learning

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About the Presentation

- This presentation was prepared for the World Bank, Washington DC, 12/5/2012.
- The USAID Education Data for Decision Making (EdData II) project is led by RTI International under Blanket Purchase Agreement EHC-E-00-04-00004-00.

Background

- International assessments (PISA, PIRLS, TIMSS)
 - Some countries perform in the lowest 3rd percentile in math and reading
- Math and reading are foundational skills that support learning throughout the life of an individual
- EGRA and EGMA were developed to:
 - Identify difficulties early in children's school experience
 - Provide the opportunity for remediation in the early grades

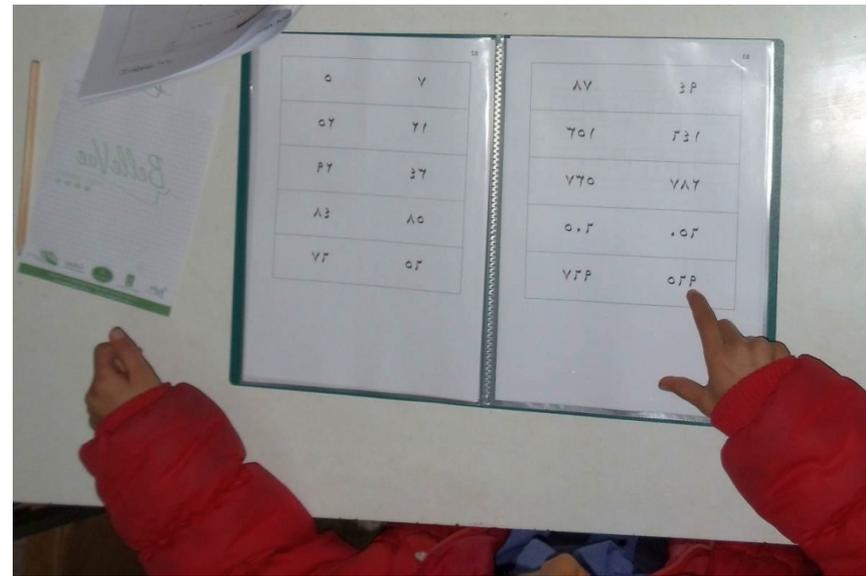
EGMA/EGRA – Characteristics of the instruments

- Quick (under 20 minutes)
- High face validity
- Allow for parallel/multiple forms
- Result in reliable, valid data
- Oral assessments in a language the child can understand
- Easy to score
- Publically available at:
<https://www.eddataglobal.org>



EGMA/EGRA – Criteria for subtasks

- Represent a progression of foundational skills that support proficiency in mathematics / in reading
- Research indicates predictive power
- Common in many curricula for early grades
- Teachable
- EGMA: Includes measures of both conceptual understanding and procedural fluency
- EGRA: includes separate measures of oral and written language



EGMA – detail of the subtasks

| Name | Description | Example | | |
|------------------------------------|---|---------------------------|-----------|-----------|
| Number Identification | Student is presented with a series of numbers and asked to say what the numbers are. | 12 | 6 | 9 |
| | | 2 | 16 | 25 |
| Quantity Discrimination | Students are presented with two numbers and asked to choose the one that is bigger. | 10 | | 4 |
| | | 8 | | 12 |
| Missing Number (Patterns) | Students are presented with a series of numbers, with one number missing, and asked what number should be there. | 16, 17, ____, 19 | | |
| | | 10, 20, 30, ____ | | |
| Addition and Subtraction – Level 1 | Student is presented with a series of simple addition and subtraction problems and asked to solve them. | 4 + 5 = | | |
| | | 8 - 3 = | | |
| Addition and Subtraction – Level 2 | Student is presented with a series of more challenging addition and subtraction problems and asked to solve them. | 13+6= __; 18+7= __ | | |
| | | 19 -6=__; 25-7= __ | | |
| Word Problems | Students listens to a simple addition and/or subtraction story problem and is asked to solve it. | | | |

EGRA – detail

- Phonics skills (print to sound)
- Word reading skills (automaticity)
- Text level reading & reading comprehension
- Oral language (listening) comprehension
- Writing (sound to print)

- Provides two measures:
 - accuracy of reading (% correct)
 - fluency (correct per minute)

Use of EGRA & EGMA

- Assess student performance on the most fundamental and predictive competencies that students need for future success.
- Use
 - National or System Level Evaluation – How are students doing generally?
 - Inform programs and interventions – What are the areas of weakness that need to be addressed? How can it be improved?
 - Evaluation of particular programs/interventions – Is the program/intervention working?



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National / System Level Evaluation

Linking student/teacher/school data allows policy makers to:

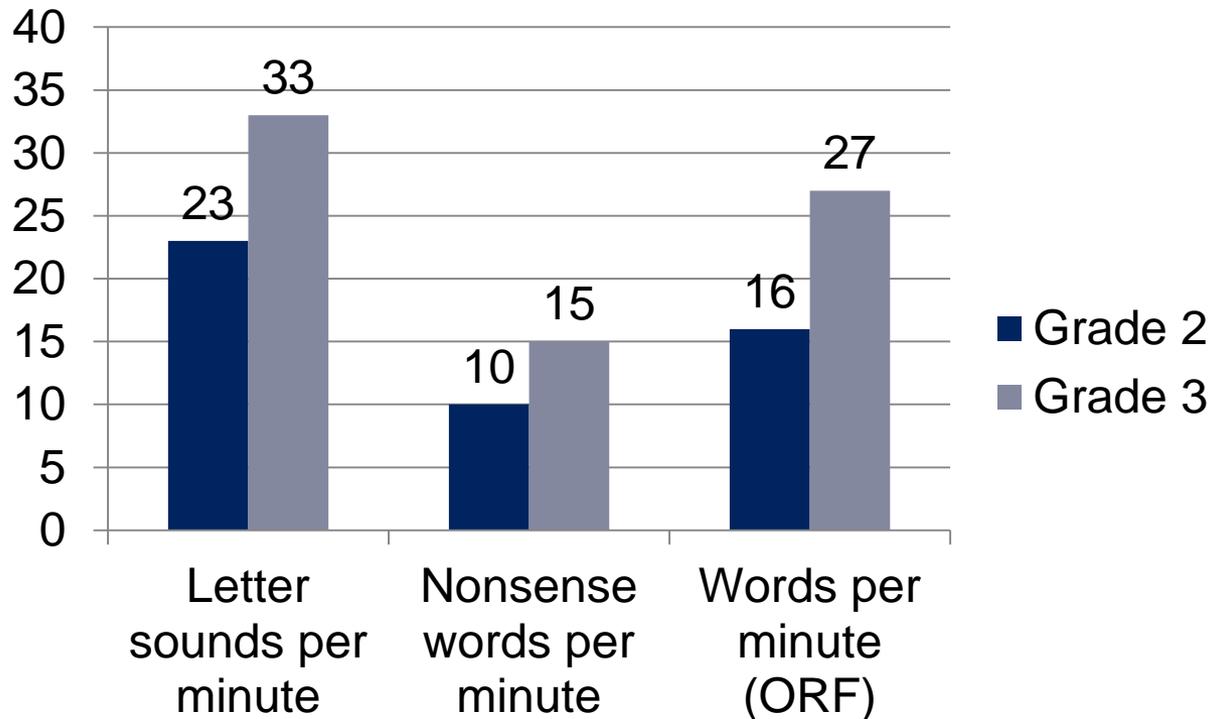
- Better understand why some schools succeed while others do not
- Identify reforms needed to help ensure that schools are working as effectively as possible

The Snapshot for School Management Effectiveness: multifaceted picture of school management practice in a country or region. To date, the SSME has been administered in 17 countries.

Morocco – Classroom observation – reading lesson

Observers recorded that little instructional time was spent on letter sounds (2%) or word reading (4%)

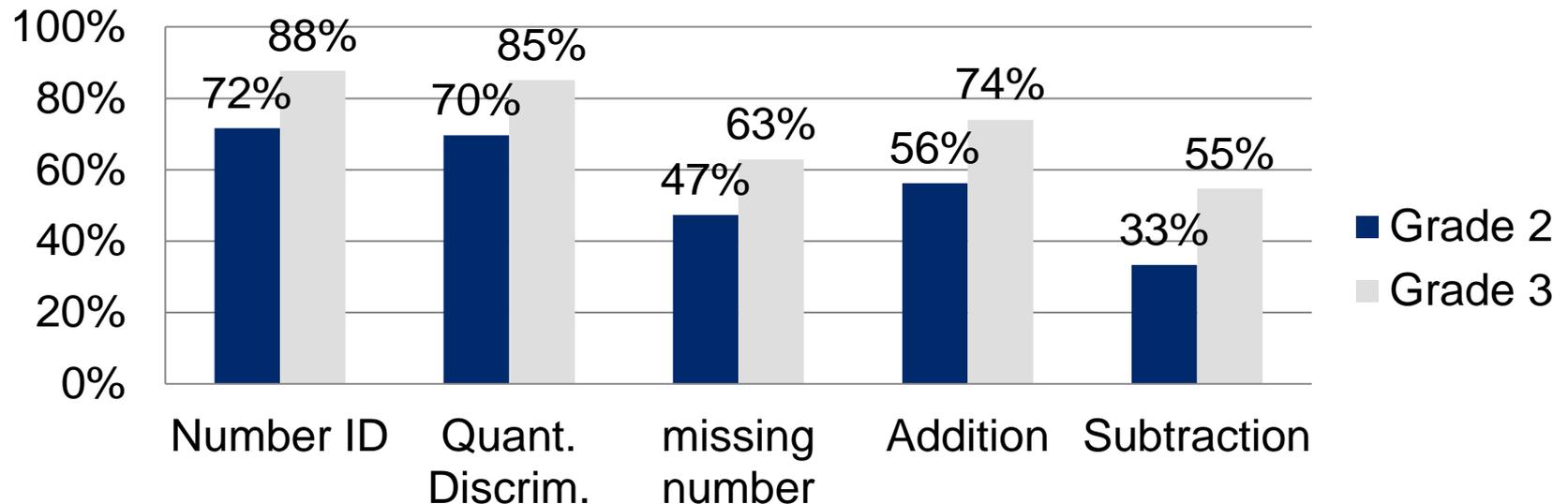
EGRA Correct Responses



Morocco – Classroom observation – math lesson

Observers recorded that little instructional time was spent on subtraction. Most time was spent on addition and multiplication. However, the EGMA showed that many students were unable to succeed on the missing number subtask.

EGMA Percent Correct Among Attempted Responses



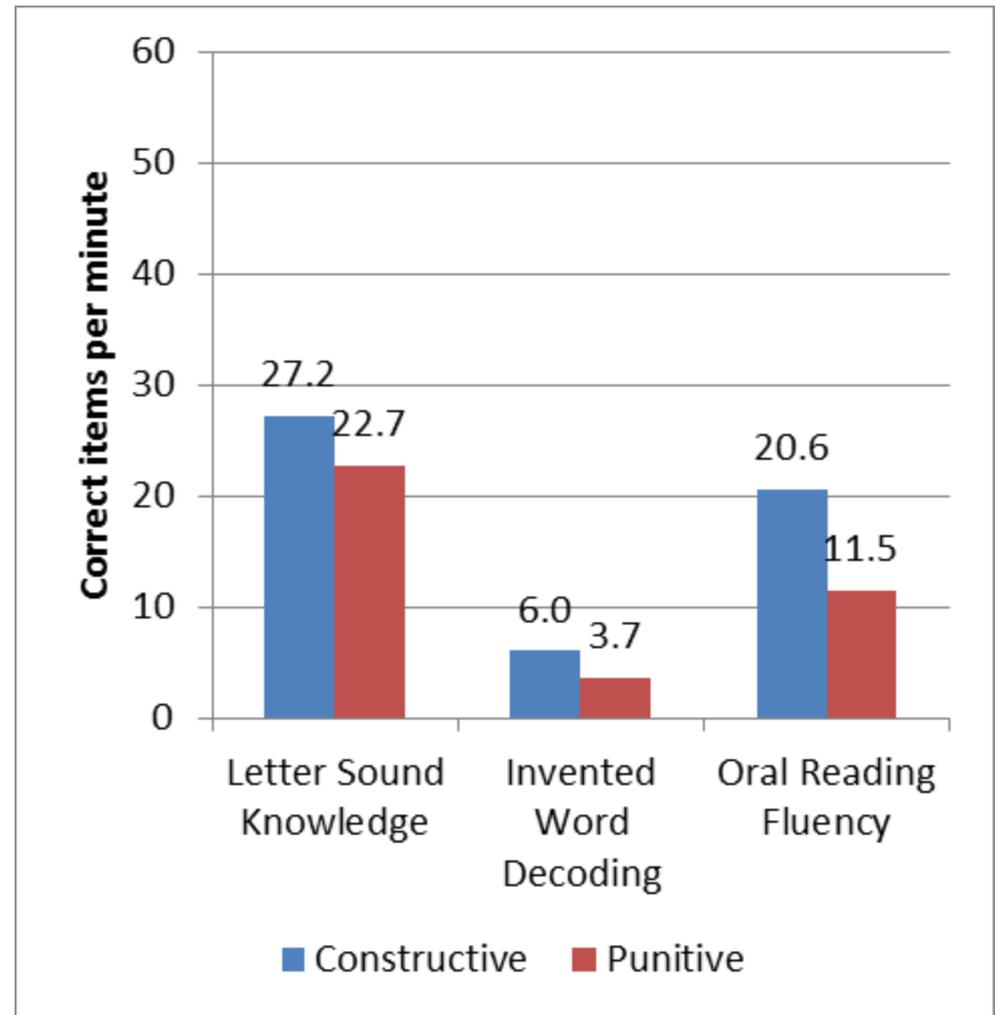
Good / Weak Readers in Morocco

| Scores | Level | Average |
|---|---------------------|-------------|
| Correct letters per minute (sounds) | <i>Good Readers</i> | 66 |
| Correct invented words per minute | <i>Good Readers</i> | 37 |
| Oral Reading Fluency (correct words per minute) | <i>Good Readers</i> | 61 |
| Correct responses, reading comprehension | <i>Good Readers</i> | 5.65 |
| Correct responses, listening comprehension | <i>Good Readers</i> | 6 |

| Level | Average |
|---------------------|-------------|
| <i>Weak Readers</i> | 7 |
| <i>Weak Readers</i> | 1 |
| <i>Weak Readers</i> | 0 |
| <i>Weak Readers</i> | 0 |
| <i>Weak Readers</i> | 1.47 |

Teachers from high performing classrooms in Jordan

- Responded more constructively and less punitively to students' mistakes
- Had students who completed more of their exercise books
- Were more likely to have received specific pre-service training in how to teach reading and math
- Gave homework and worksheets to assess students
- Used non-textbook reading books in their classrooms.



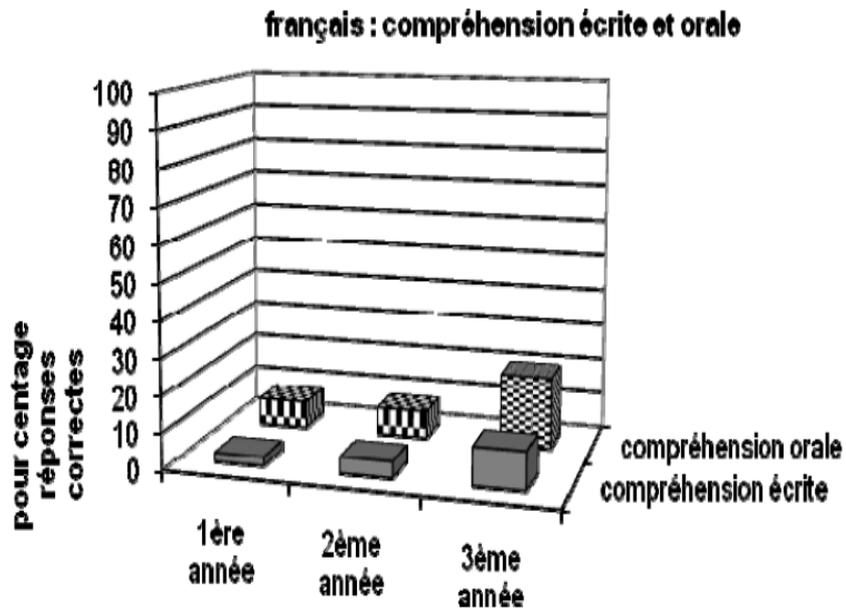


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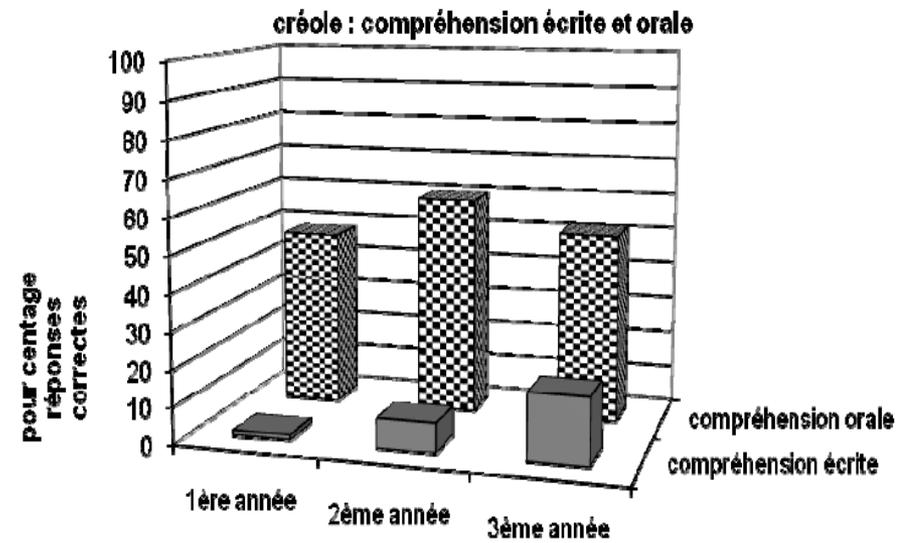
Inform programs and interventions

Haiti

French



Haitian Creole



EGMA - Jordan

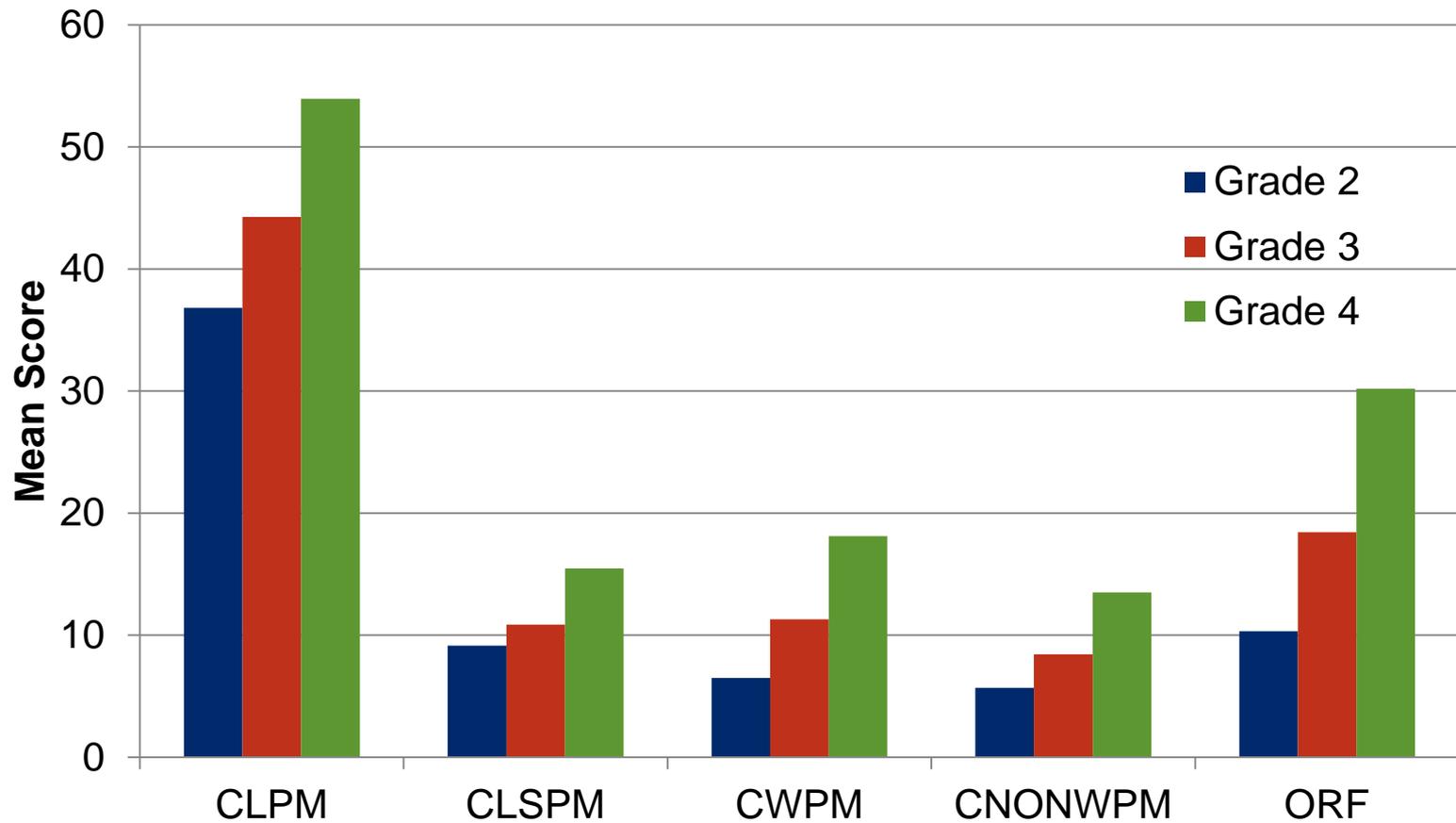
| Subtasks | Grade 2 | | Grade 3 | |
|-------------------------|----------------------|-------------------------|----------------------|-------------------------|
| | # Correct/ Minute | % Correct/ Attempted | # Correct/ Minute | % Correct/ Attempted |
| Number identification | 32.1 | 88.6% | 37.8 | 92.6% |
| Quantity discrimination | 8.7 | 70.9% | 10.6 | 77.5% |
| Missing number | 4.8 | 56.6% | 6.0 | 64.8% |
| Addition (level 1) | 13.6 | 83.6% | 14.6 | 81.6% |
| Addition (level 2) | 2.4 | 52.7% | 2.9 | 54.8% |
| Subtraction (level 1) | 11.4 | 79.4% | 12.1 | 75.9% |
| Subtraction (level 2) | 1.3 | 32.0% | 1.8 | 35.3% |
| Word problems | -- | 39.2% | -- | 52.2% |



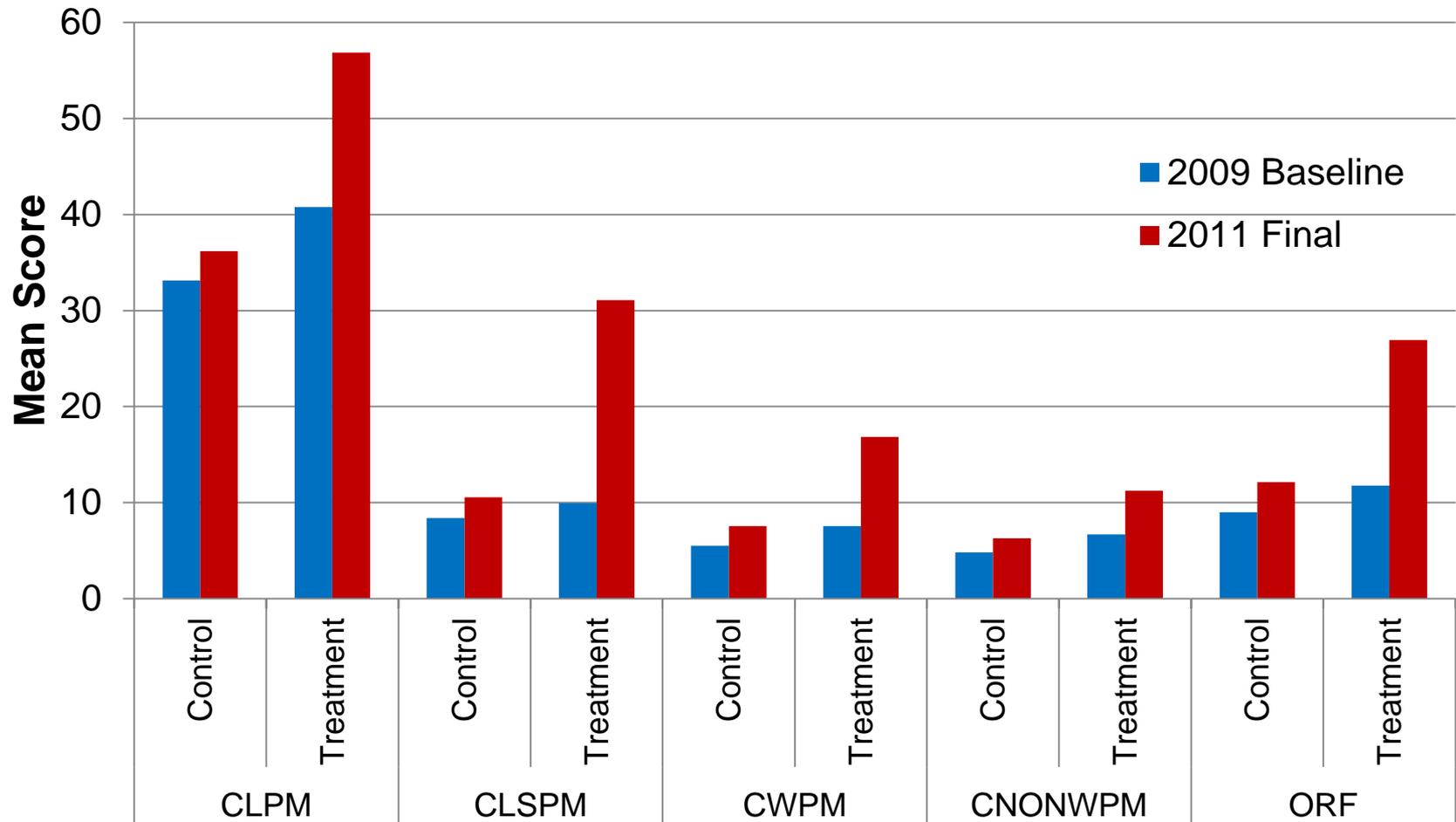
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Evaluation of particular programs/interventions

Assessment: Baseline Results in Egypt



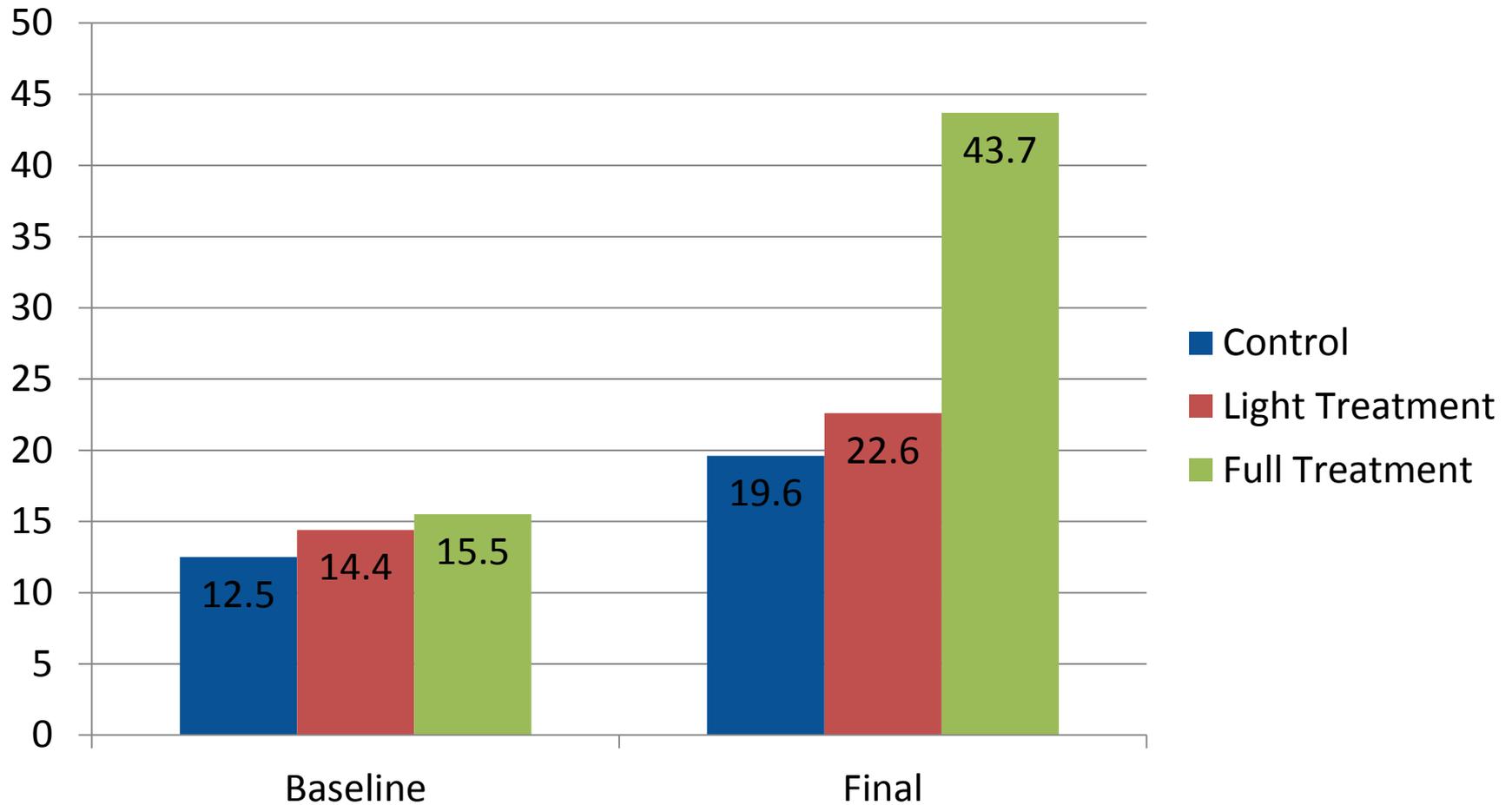
GILO-Egypt: G2 Results EGRP



EGRA Plus-Liberia

- Status of literacy in Liberia circa 2008
 - Post-conflict setting
 - Teachers with little training, limited support
 - WB-funded EGRA: very low reading levels
- EGRA Plus
 - RCT impact evaluation:
 - Control schools
 - Light treatment: community mobilization only
 - Full treatment: teacher support for RI + community mobilization

EGRA Plus-Liberia: Oral Reading Fluency



EGRA Plus-Liberia: Fluency Growth Rates

