Progress in International Reading Literacy Study (PIRLS)

The workshop aims are to understand:
- the PIRLS assessment framework
- the key findings from PIRLS 2016 national level report
- how to use PIRLS assessment data formatively (for school level improvement)

Chris Jenkinson – International Assessment Division (AD)
Progress in International Reading Literacy Study

‘An assessment of reading comprehension that has been monitoring trends in G4 student achievement at five-year cycles since 2001.’

International Association for the Evaluation of Educational Achievement (IEA)
• Assessments are conducted on a random sample of students

• The selected cohort of pupils represent the full population of students in the target grades

• The findings from the International Assessment Studies are used to inform education policy and thus improve teaching and learning

• Results are not, however, distributed to the pupils/schools selected for the study.
### What is PIRLS?

<table>
<thead>
<tr>
<th>PIRLS</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Full name</strong></td>
<td>Progress in International Reading Literacy Study (PIRLS)</td>
</tr>
<tr>
<td><strong>Assesses</strong></td>
<td>Emphasis is shifting from demonstrating fluency and basic comprehension to demonstrating the ability to apply what is understood, or comprehended, to new situations or projects.</td>
</tr>
<tr>
<td><strong>Age</strong></td>
<td>10</td>
</tr>
<tr>
<td><strong>Grade</strong></td>
<td>Grade 4</td>
</tr>
<tr>
<td><strong>Frequency</strong></td>
<td>Every 5 years, since 2001</td>
</tr>
<tr>
<td><strong>Last assessment</strong></td>
<td>2016</td>
</tr>
<tr>
<td><strong>Next assessment</strong></td>
<td>2021</td>
</tr>
<tr>
<td><strong>When</strong></td>
<td>March-June</td>
</tr>
<tr>
<td><strong>Purpose</strong></td>
<td>Measures trends in reading comprehension achievement. Describes educational context, including, home resources, parents’ attitude to reading, economic background, pre-primary education, early literacy activities &amp; early literacy tasks, reading resources, teacher conditions, school leadership, discipline and safety</td>
</tr>
<tr>
<td><strong>Focus</strong></td>
<td>Trends in reading literacy (and the relationship with TIMSS subjects; maths &amp; science)</td>
</tr>
<tr>
<td><strong>Supplementary information</strong></td>
<td>PIRLS reports at four points on the scale – Advanced, High, Intermediate, &amp; Low. PIRLS scale has a range of 0-1000. The center point on the scale is 500, which remains constant.</td>
</tr>
<tr>
<td><strong>Organisation</strong></td>
<td>International Association for the Evaluation of Educational Achievement (IEA)</td>
</tr>
<tr>
<td><strong>Countries</strong></td>
<td>49 countries and 9 benchmarking entities</td>
</tr>
<tr>
<td><strong>Test length</strong></td>
<td>72 minutes at Grade 4; plus 30 minute background questionnaire</td>
</tr>
<tr>
<td><strong>Number of learners assessed</strong></td>
<td>325,000 students</td>
</tr>
</tbody>
</table>
What does PIRLS Assess?

How does PIRLS define reading literacy?

“Reading literacy is the ability to understand and use those written language forms required by society and/or valued by the individual. Readers can construct meaning from texts in a variety of forms. They read to learn, to participate in communities of readers in school and everyday life, and for enjoyment.”

<table>
<thead>
<tr>
<th>Purposes for Reading</th>
<th>Processes of Comprehension</th>
</tr>
</thead>
<tbody>
<tr>
<td>Literary Experience (50%)</td>
<td>Focus on and Retrieve Explicitly Stated Information (20%)</td>
</tr>
<tr>
<td>Acquire and Use Information (50%)</td>
<td>Make Straightforward Inferences (30%)</td>
</tr>
<tr>
<td></td>
<td>Interpret and Integrate Ideas and Information (30%)</td>
</tr>
<tr>
<td></td>
<td>Evaluate and Critique Content and Textual Elements (20%)</td>
</tr>
</tbody>
</table>

**Literary Experience**

Literary texts include complete short stories; contemporary and traditional stories of around 800 words. The passages include a range of styles and language features.

**Acquire and Use Information**

Information texts are non-continuous texts of around 600-900 words. They include presentation features such as diagrams, maps, illustrations, photographs, or tables. The range of material includes scientific, biographical, historical, and practical information and ideas.

*Note:* for ePIRLS the total number of words is around 1000 and for PIRLS Literacy, the texts are around 400 words.
This passage presents information about African rhinos and oxpecker birds and describes how two animals depend on one another for food and survival.

### Passage

| African Rhinos & Oxpecker Birds | 449 | 4.7 |

<table>
<thead>
<tr>
<th>Passage</th>
<th>Percent Of Students Who Liked The Passage A Lot Or A Little</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall</td>
<td>Girls</td>
</tr>
<tr>
<td>African Rhinos &amp; Oxpecker Birds</td>
<td>93 (0.5)</td>
</tr>
</tbody>
</table>

Rhinos and oxpeckers are animals that are very different from each other. The rhinoceros is a very large land animal. Only the elephant is larger. The oxpecker bird is very tiny.

Rhinos and oxpeckers live together and help each other. The oxpeckers live on the backs of rhinos.
Testing time

The amount of time required to complete an item should be consistent with the time allotment for items in the overall test design.

As a general rule:
- a multiple choice item is expected to require about 1 minute or less to complete
**The chart below shows some facts about rhinos and oxpeckers.**

<table>
<thead>
<tr>
<th>RHINOCEROS</th>
<th>OXPECKER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Color: Gray</td>
<td>Color: Brown</td>
</tr>
<tr>
<td>Weight: 8,000 pounds</td>
<td>Weight: 2 ounces</td>
</tr>
<tr>
<td>Height: 6 feet</td>
<td>Height: 8 inches</td>
</tr>
<tr>
<td>Food: Grass and leaves</td>
<td>Food: Insects and ticks</td>
</tr>
</tbody>
</table>

**Rhinoceros**

Rhinoceros are most famous for their large horns. In fact, the name rhinoceros means "nose horn." Some people believe the horn is valuable as medicine, but this is not true.

Still, rhinos are in great danger from hunters. Even though rhinos are protected by law from being killed, they are still hunted for their horns.

**CR Item**

Look at the chart. How much does an oxpecker weigh?

**Coding**

**Process: Focus on and retrieve Explicitly stated Information**

1 – **Acceptable Response**

The response recognizes that an oxpecker weighs 2 ounces. It must include an indication of the unit of measurement.

0 – **Unacceptable Response**

The response does not recognize that an oxpecker weighs 2 ounces.

Example:

- 2.

**Testing time**

As a general rule:

- constructed-response items are allocated 1-3 minutes.
The ticks bite the rhino, fill themselves up with the rhino’s blood, and make the rhino very itchy. Rhinos have very thick skin that may look tough, but their skin is very sensitive. Rhinos spend a lot of time scratching on trees and rocks trying to get rid of their ticks.

Ticks are very small, but they need blood to live. A tick attaches itself to the skin of an animal and sucks blood. There are hundreds of kinds of ticks on the planet, and they can be found almost everywhere.

Text

Explain why ticks are a problem for rhinos.

Coding

Process: Make straight forward inferences.

2 – complete Comprehension
The response shows a complete understanding of why ticks are a problem for rhinos by including two of the following points:
• Ticks bite rhinos/suck their blood.
• This makes the rhinos feel itchy/uncomfortable.
• They have sensitive skin.

Examples:
- The ticks suck the rhinos’ blood and make the rhinos feel itchy.
- Rhinos have sensitive skin and don’t like the ticks biting them.

1 – Partial Comprehension
The response shows a partial understanding of why ticks are a problem for rhinos by giving just one of the points above.

Example
- They suck the rhino’s blood.
- Rhinos get itchy.

0 – Unacceptable Response
The response does not show understanding of why ticks are a problem for rhinos. It may be vague, unrelated to the texts, or repeat words in the question.

Example:
- Their skin is too tough.
**How do the pearl fishers find the finest pearls?**
A. They dive for them in the sea.
B. They buy them from a merchant.
C. They search for them in seaside towns.
D. They travel far away for them.

**Why does Reuben think Josh is generous?**
A. because Josh played with Reuben as a child
B. because Josh waved goodbye when Reuben left
C. because Josh gave Reuben a beautiful pearl
D. because Josh still lived in the town by the sea

**How does Reuben become a wealthy man?**

Reuben travelled to the lands where pearl fishers went diving in the sea for the finest pearls – some silvery pale, others glowing rosy pink.

He became a wealthy man. Other merchants would travel anywhere in the world to meet him and trade their pearls.

But although Reuben was rich, he was not happy. He thought more and more about the seaside town where he played as a child. He thought about his friend Josh, and how generous he had been in giving Reuben his first pearl.
ePIRLS 2016

ePIRLS is computer based – an innovative assessment of on-line reading which simulates an authentic science and social studies school-like Internet environment.
Any questions on the PIRLS & ePIRLS (digital PIRLS) assessment framework?
PIRLS Data 2016
(National Level - UAE Trends)

International Achievement in Reading

- Russian Federation
- Singapore
- Hong Kong SAR
- Ireland
- Finland
- Poland
- Northern Ireland
- Norway
- Chinese Taipei
- England
- Latvia
- Sweden
- Hungary
- Bulgaria
- United States
- Lithuania
- Italy
- Denmark
- Macao SAR
- Netherlands
- Australia
- Czech Republic
- Canada
- Slovenia
- Austria
- Germany
- Kazakhstan
- Slovak Republic
- Israel
- Portugal
- Spain
- Belgium (FI)
- New Zealand
- France
- Belgium (Fr)
- Chile
- Georgia
- Trinidad and Tobago
- Azerbaijan
- Malta
- United Arab Emirates
- Bahrain
- Qatar
- Saudi Arabia
- Iran
- Islamic Rep. of
- Oman
- Kuwait
- Morocco
- Egypt
- South Africa

Fourth grade students in the Russian Federation and Singapore had the highest average reading achievement, followed by Hong Kong SAR, Ireland, Finland, Poland, and Northern Ireland.

Trends at Fourth Grade Show Increases in Achievement Around the World

Trends 2011-2016: 41 Countries

Intermediate International Benchmark

- When reading a mix of simpler and relatively complex **Literary Texts**, students can:
  - Independently locate, recognize, and reproduce explicitly stated actions, events, and feelings
  - Make straightforward inferences about the attributes, feelings, and motivations of main characters
  - Interpret obvious reasons and causes, recognize evidence, and give examples
  - Begin to recognize language choices

- When reading a mix of simpler and relatively complex **Informational Texts**, students can:
  - Locate and reproduce two or three pieces of information from text
  - Make straightforward inferences to provide factual explanations
  - Begin to interpret and integrate information to order events
PIRLS Data 2016
(International, National, & Nationality)

<table>
<thead>
<tr>
<th>Country</th>
<th>2011</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Russian Federation</td>
<td>568</td>
<td>581</td>
</tr>
<tr>
<td>Singapore</td>
<td>567</td>
<td>575</td>
</tr>
<tr>
<td>Hong Kong</td>
<td>571</td>
<td>569</td>
</tr>
<tr>
<td>Ireland</td>
<td>552</td>
<td>567</td>
</tr>
<tr>
<td>Finland</td>
<td>568</td>
<td>566</td>
</tr>
<tr>
<td>UAE</td>
<td>439</td>
<td>450</td>
</tr>
<tr>
<td>Bahrain</td>
<td>425</td>
<td>446</td>
</tr>
<tr>
<td>Qatar</td>
<td>430</td>
<td>442</td>
</tr>
<tr>
<td>Saudi Arabia</td>
<td>391</td>
<td>418</td>
</tr>
<tr>
<td>Oman</td>
<td>386</td>
<td></td>
</tr>
<tr>
<td>Kuwait</td>
<td></td>
<td>393</td>
</tr>
</tbody>
</table>
PIRLS Data 2016
(by School and Gender)

### Benchmarking in ePIRLS and PIRLS

<table>
<thead>
<tr>
<th>Benchmarking in ePIRLS and PIRLS</th>
<th>PIRLS</th>
<th>ePIRLS</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number of schools</td>
<td>Score</td>
<td>Number of schools</td>
</tr>
<tr>
<td>Below Low International Benchmark (&lt;400)</td>
<td>140</td>
<td>352</td>
<td>93</td>
</tr>
<tr>
<td>Low International Benchmark (400-475)</td>
<td>151</td>
<td>433</td>
<td>161</td>
</tr>
<tr>
<td>Intermediate International Benchmark (475-550)</td>
<td>107</td>
<td>514</td>
<td>129</td>
</tr>
<tr>
<td>High International Benchmark (550-625)</td>
<td>68</td>
<td>573</td>
<td>81</td>
</tr>
<tr>
<td>Advanced International Benchmark (&gt;625)</td>
<td>2</td>
<td>637</td>
<td>1</td>
</tr>
<tr>
<td>Grand Total</td>
<td>468</td>
<td></td>
<td>465</td>
</tr>
</tbody>
</table>

### Country Comparison

<table>
<thead>
<tr>
<th>Country</th>
<th>Girls</th>
<th>Boys</th>
<th>Difference (Absolute Value)</th>
<th>Gender Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percent of Students</td>
<td>Average Scale Score</td>
<td>Percent of Students</td>
<td>Average Scale Score</td>
<td></td>
</tr>
</tbody>
</table>

- United Arab Emirates: 49 (2.1) 465 (4.2) 51 (2.1) 436 (4.5) 30 (5.8)
- Kuwait: 52 (1.8) 410 (4.8) 48 (1.8) 376 (6.4) 34 (7.7)
- Qatar: 50 (2.4) 460 (1.9) 50 (2.4) 424 (3.4) 36 (4.0)
- Egypt: 49 (1.2) 349 (5.6) 51 (1.2) 312 (6.6) 37 (4.8)
- Bahrain: 50 (1.5) 468 (2.8) 50 (1.5) 424 (3.5) 43 (3.8)
- Iran, Islamic Rep. of: 47 (1.1) 452 (4.5) 53 (1.1) 407 (5.1) 46 (5.9)
- Oman: 50 (0.7) 442 (3.2) 50 (0.7) 395 (3.9) 46 (3.0)
- South Africa: 48 (0.7) 347 (4.0) 52 (0.7) 295 (5.1) 52 (3.0)
- Saudi Arabia: 48 (2.6) 464 (5.4) 52 (2.6) 399 (5.8) 65 (7.5)
- International Avg.: 49 (0.2) 520 (0.4) 51 (0.2) 501 (0.5) 19 (0.5)
Any questions about the PIRLS & ePIRLS 2016 data?
When Analysing PIRLS Results, Schools Should Align Data to the PIRLS Scale of Skills

**PIRLS**

**Intermediate** International Benchmark

475

*When reading a mix of simpler and relatively complex Literary Texts, students can:*

- Independently locate, recognize, and reproduce explicitly stated actions, events, and feelings
- Make straightforward inferences about the attributes, feelings, and motivations of main characters
- Interpret obvious reasons and causes, recognize evidence, and give examples
- Begin to recognize language choices

*When reading a mix of simpler and relatively complex Informational Texts, students can:*

- Locate and reproduce two or three pieces of information from text
- Make straightforward inferences to provide factual explanations
- Begin to interpret and integrate information to order events

**PIRLS 2016 (468 score - sample school)**

**ePIRLS**

**High** International Benchmark

550

*When reading and viewing relatively complex Online Informational Texts, students can:*

- Make inferences to distinguish relevant information and provide comparisons
- Interpret and integrate information within and across webpages with interactive features to provide examples and make contrasts
- Evaluate how graphic elements and language choices support content

**ePIRLS 2016 (492 score - sample school)**

**PIRLS**
Formative data - Using Assessment to Improve Teaching and Learning

School Level - Using International Studies in a Formative Assessment Cycle:

- Develop data processes - analyse results and write a development plan
- Identify ‘gaps’ and set reading targets
- Establish sustainable models of professional development
- Use assessment results to develop pedagogy (to improve teaching and learning in reading literacy)
- Assess the impact on targeted ‘gaps’; through lesson observations and work samples
Any questions on the use of PIRLS 2016 data for formative assessment?
Aligning Reading Literacy Skills to Professional Development

Engaged in Reading Lessons:
- Provide students with reading material that they like to read
  - Give students interesting learning activities
  - Provide students with clear learning goals
    - Check for student understanding
- Ask students to express their opinions about what they learned from reading
  - Use data to show students what they learned
- Provide feedback for students who make mistakes
  - Use a variety of teaching strategies
- Use computers and tablets for reading at school
Factors Affecting International Performance

What can schools learn from the background survey questions?

How can data from the background survey inform school development plans?

How can good practice in reading literacy be developed across the whole school?

How can school attendance be improved?
School Emphasis on academic success:
  o Provide teachers with curricular goals
  o Use data to determine the degree of success in implementing the curriculum
    o Insist on high expectations for student achievement
  o Create a school culture that inspires students to learn to read
    o Create a school culture that respects academic excellence
      o Involve parents in school activities
  o Ask for parent commitment to ensure their child is ready to learn
Any questions on the use of PIRLS questionnaire data for whole school development?
Where to Find Important Links for PIRLS