International Students Assessment in Indonesia

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Indonesia

HD Learning Week
Washington DC, February 6-7, 2013
Overview

- Indonesia participated in PIRLS, PISA, TIMSS, & IBT to map educ. standards compared to the global ones
- IBT (2009) focusing on limited sample of schools: Math (Grade 10): 607
- Results have grown issues of discussion among educ. authorities & prompted a review of educ. policy.
Reasons to participate

- **Main reasons:** To monitor educ. quality & to understand determinant factors & observed differences of students achievement

- Program proposed by the Center of National Education Assessment (CNEA); the decision to participate by the Nat. Educ. Research and Dev. Body, the MoEC.

- Implementation by the CNEA. Experts from universities involved in preparation, implementation, and monev.

- **The opponent arguments:**
  - Sample representativeness
  - Out-of-context (test items/questionnaires)
  - Inappropriate translation
  - To worsen the image of educ. system internationally
Managing the Results

- Analysis of results by experts in academic meetings facilitated by the CNEA
- Seminars were held to discuss the results involving all stakeholders and recommend a policy
- Results were exposed to policy makers in national, provincial, and local levels
- Hearings with the House of Representatives to discuss aspects of educational policy
- The most impact: exposure to policy makers in the House of Representatives, national, provincial, and local authorities
- Results publication as a reference book
Improving the education system

- Results have grown awareness and issue of discussion among the MoEC and House of Representatives
  - Quoting results in formal and informal meetings
  - Becoming issues in mass media
- Results prompted a review of education policy
  - Curriculum 2013 refers to PIRLS/TIMSS curriculum
  - Data from previous international assessments
- Program development: Indonesian National Assessment Program (INAP):
  - Using Indonesian and local contexts
  - Referring to content standards in the curriculum
The Challenges

- Existing curriculum:
  - Reading literacy is not the basis for Math & Science Dev.
  - Reading Curriculum not changed since 1994, not a separate curriculum area, no reading teachers
  - Lowest Instructional time (15%)
  - No emphasis on reading engagement/enjoyment
  - Not focused on certain cognitive processes, does not include highest cognitive process, i.e., examining content
  - Evaluation is not based on research
  - Only 32% of TIMSS sample have chemistry subject, resulting in the lowest among science strand
  - Geography is not in science but social science strand
  - Less contextual & rational thinking process
The Challenges

- Teacher preparation is not yet sufficient
  - Teachers are directly from teacher college program
  - No completion of probationary teaching period
  - No completion of mentoring or induction program

- Lowest ESCS (Economic-Social-Cultural Status) Index
  - The increase 1 point in ESCS will improve 17 points in students performance
  - ESCS influences reading engagement: enjoyment in reading contributes 43% and diversity of materials influences 60%
  - ESCS influences also students learning strategy: memorization & elaboration strategies contribute 34% and 25%
Factors Influencing School Background
(PISA 2009)

School resources, school size, and teachers quality influence significantly school social-economy index which has impact on the students performance.
The Opportunity

- The National Exam held by the MoEC (2009-2011):
  - Significant improvement in Science & English
  - Decrease in Math & Indonesian but scores are above international achievement
  - Test items with local contexts get better results than those with international contexts

- The International Benchmark Test (IBT):
  - Highest score in Math (Grade 10): 753, the lowest 523, average 607
  - 1300 schools of this category (out of 182.538 schools with 58 million students) all over the country
## National Exam (Grade-9)

<table>
<thead>
<tr>
<th>Subject</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>score</td>
<td>sd</td>
<td>score</td>
</tr>
<tr>
<td>Mathematics</td>
<td>7.60</td>
<td>1.57</td>
<td>7.53</td>
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<tr>
<td>Science</td>
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<td>1.28</td>
<td>7.32</td>
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<tr>
<td>Indonesian</td>
<td>7.38</td>
<td>1.19</td>
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<tr>
<td>English</td>
<td>7.14</td>
<td>1.45</td>
<td>7.14</td>
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</table>
International Benchmark Test (IBT)

- Designed by ACER (Australian Council for Educational Research) to assess students performance against local, national and international standards
  - The tests: English, Math, and Science.
  - The Math strands: chance and data, measurement, number, and space.
  - The English strands: comprehension, punctuation, spelling, grammar, and vocabulary.
  - The Science strands: physical science, earth science, and life science.

- Results are compared with TIMSS 2007 for:
  - Mathematics in Years 4, 5, 8 and 9
  - Science in Years 4, 5 and 8
## IBT Results

<table>
<thead>
<tr>
<th>No.</th>
<th>Subjects</th>
<th>Test Level</th>
<th>Schools</th>
<th>Grade</th>
<th>No. of students</th>
<th>Mean score</th>
<th>Score range</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Math</td>
<td>10</td>
<td>SMAN 8 Pekanbaru</td>
<td>10</td>
<td>242</td>
<td>607</td>
<td>523 – 735</td>
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<tr>
<td>2.</td>
<td>Math</td>
<td>9</td>
<td>SMAN 1 Mataram</td>
<td>10</td>
<td>212</td>
<td>614</td>
<td>419 – 749</td>
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<tr>
<td>3.</td>
<td>Math</td>
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<td>SMAN 1 Mataram</td>
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<td>61</td>
<td>618</td>
<td>513 – 687</td>
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<tr>
<td>4.</td>
<td>Math</td>
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<td>SMAN 1 Mataram</td>
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<td>647</td>
<td>559 – 759</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Total</td>
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<td></td>
<td></td>
<td>419 – 759</td>
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<tr>
<td>5.</td>
<td>English</td>
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<td>SMAN 8 Pekanbaru</td>
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<td>422 – 627</td>
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<td>SMAN 1 Mataram</td>
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<tr>
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<td>SMAN 1 Mataram</td>
<td>12</td>
<td>46</td>
<td>557</td>
<td>490 – 661</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Total</td>
<td>537</td>
<td></td>
<td></td>
<td>319 – 661</td>
</tr>
</tbody>
</table>
This is to certify that

IDA AYU KADE SANTI P
Class 1U
This student completed the Class 9 level test
SMU 1 Mataram

has participated in the International Benchmark Test
in MATHEMATICS (Level 2)
November 2009

This report compares your child’s performance to students participating in the Trends in International Mathematics and Science Study (TIMSS) a large-scale international study of mathematics and science at Grades 4 and 8. Fifty-nine countries participated in the 2007 study. The dot under “Your Result” indicates your child’s score. The line drawn across a selection of participating countries shows how your child’s performance compared to students from those countries. To enable this comparison to TIMSS, ACER acknowledges the International Association for the Evaluation of Educational Achievement (IEA) for the use of a number of released items from the TIMSS 2007 study.

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IBT Results

Name: ARIVA PERMATASARI

Percentile Rank

<table>
<thead>
<tr>
<th>School percentile</th>
<th>Indonesia percentile</th>
<th>International percentile</th>
</tr>
</thead>
<tbody>
<tr>
<td>100.0</td>
<td>100.0</td>
<td>97.9</td>
</tr>
</tbody>
</table>

Scaled Score: 739

Student Mathematics Report for International Benchmark Test

Name: ARIVA PERMATASARI
School: SMAN 8 PEKANBARU
Student ID: 1471000052  Grade: 10  Date: March 2011

This IBT report provides:
- your performance on each question
- a summary of your performance in each strand
- your overall percentile rank with national and international comparisons
- your scaled score with national comparisons

Your Performance on Each Question
This report provides a description of each question and associated strand, your answer, whether questions you answered correctly and the correct answer.

Summary of Results by Strand
The breakdown by strand shows the total number of questions answered correctly in each strand by total correct and percent correct. You can compare your results against all students and where you have performed well and identify areas where you may need to do some additional work.
Lesson Learned for Other Countries

- International assessments have been used to monitor and compare the quality of education locally and internationally and to understand factors influencing the students' achievement.
- The program has become issues of discussion among the MoEC, House of Representatives, and scholars. Results have been used to review education policy.
- The opponents’ arguments: particularly on the sample representativeness, the quality of test materials, and the unexpected results to worsen the image of educ. quality internationally.
Lesson Learned...

- The need to reform the curriculum:
  - Results of international-level studies might be accounted for by differences in curriculum rather than intellectual differences among students
  - Reading has to be a separate curriculum area. There should be more reading teachers
  - Instructional time devoted to reading has to be increased
  - More emphasis on reading for enjoyment
  - Focus on certain cognitive processes, to include process of examining content, language and textual elements
  - More research in implementation of reading curriculum
Lesson Learned...

- Reading literacy is the basis for Math and Science literacy development:
  - More comprehensive approach to reading instruction
  - More professional development for subject teachers, including the use of research-based reading instruction
  - Classroom-based strategies for improving students’ reading comprehension strategies across the curriculum
  - More professional initial and continuing teacher education:
    - International Reading Association recommendation: primary teachers have 280 hours of instruction in reading and how to teach it
Lesson Learned...

- A need of continuing teacher education and appropriate ongoing professional development in reading, math, and science.
- An effective intervention for children experiencing difficulties.
- As of the sample of the next study:
  - Focus purposively on a certain type of schools as a benchmark or a model of school development
  - PIRLS & TIMSS are more influential than PISA
  - PRE-PIRLS (Grade 6) seems more appropriate
  - Alternative small scale assessment: IBT
Thank you very much

Terima kasih

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Dr. Suhendra Yusuf

- Project Director *International Benchmark Test (IBT)*, Institut Asesmen Indonesia (IAI) in collaboration with Australia Council for Educational Research Australia
- *International Quality Control Monitor* for the implementation of PIRLS 2006 & 2011
- Researcher PISA & PIRLS 2000 – 2011
- Associate Professor and vice Rector Nusantara Islamic University Bandung
- Author *Benchmark Internasional Mutu Pendidikan* (co-authored with Bahrul Hayat, Bumi Aksara, 2010)