Measuring learning progress in Indonesia: Ways to answer the challenges

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GAML5
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Hamburg, Germany
## Indonesia Education in Number

<table>
<thead>
<tr>
<th></th>
<th>schools</th>
<th>pupils</th>
<th>teachers</th>
</tr>
</thead>
<tbody>
<tr>
<td>kindergarten</td>
<td>88,381</td>
<td>4,605,809</td>
<td>329,102</td>
</tr>
<tr>
<td>special school</td>
<td>2,070</td>
<td>121,244</td>
<td>24,657</td>
</tr>
<tr>
<td>primary school</td>
<td>147,503</td>
<td>25,618,078</td>
<td>1,586,127</td>
</tr>
<tr>
<td>junior secondary school</td>
<td>37,763</td>
<td>10,145,416</td>
<td>622,781</td>
</tr>
<tr>
<td>senior secondary school</td>
<td>13,144</td>
<td>4,659,542</td>
<td>294,872</td>
</tr>
<tr>
<td>vocational school</td>
<td>13,236</td>
<td>4,682,913</td>
<td>276,099</td>
</tr>
<tr>
<td>islamic kindergarten</td>
<td>27,865</td>
<td>7,791,691</td>
<td>79,475</td>
</tr>
<tr>
<td>islamic primary school</td>
<td>24,765</td>
<td>1,956,722</td>
<td>235,024</td>
</tr>
<tr>
<td>islamic junior secondary school</td>
<td>17,201</td>
<td>3,279,584</td>
<td>239,372</td>
</tr>
<tr>
<td>islamic senior secondary school</td>
<td>8,038</td>
<td>3,933,545</td>
<td>118,049</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>379,966</strong></td>
<td><strong>66,794,544</strong></td>
<td><strong>3,805,558</strong></td>
</tr>
</tbody>
</table>

**Coloured by number of pupils**

- **34 provinces**
- **514 districts**
- **17,504 islands**
- **652 local language**
- **300 ethnic groups**
Challenges

- Assessing million students, with diverse geographic situation.

Illustration of exam paper distribution in one province

Large Disparities on Abilities (needs broader range of measurement)

Motivation vs Validity (high stake assessment leads to low integrity)

<table>
<thead>
<tr>
<th></th>
<th>Number</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>IIUN Tinggi</td>
<td>2876040</td>
<td>57.42</td>
<td>13.92</td>
</tr>
<tr>
<td>IIUN Rendah</td>
<td>1210941</td>
<td>72.07</td>
<td>11.09</td>
</tr>
</tbody>
</table>

- Large Disparities on Abilities
  (needs broader range of measurement)

- Motivation vs Validity
  (high stake assessment leads to low integrity)
<table>
<thead>
<tr>
<th>Grade</th>
<th>Assessment System</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grade 12</td>
<td>National exam and National standardized school exam (census, annually)</td>
<td>Bahasa Indonesia, Math, English plus 1 subject of program study (15 choices for high school and 198 choices for vocational school-100 % from national center). Civic, religion (75% district)</td>
</tr>
<tr>
<td>Grade 10</td>
<td>AKSI (survey, 2020, piloting 2018)</td>
<td>Reading, writing, math, physics, biology, chemistry, background questionnaire</td>
</tr>
<tr>
<td>Grade 9</td>
<td>National exam and National standardized school exam (census, annually)</td>
<td>Bahasa Indonesia, mathematics, science, English (100% from national center) civics, social science, religion (75% district)</td>
</tr>
<tr>
<td>Grade 8</td>
<td>AKSI (survey, 2019-piloting 2017)</td>
<td>Reading, mathematics, science (computerized test, multi formats), background questionnaire</td>
</tr>
<tr>
<td>Grade 6</td>
<td>National exam and National standardized school exam (census, annually)</td>
<td>Bahasa Indonesia, mathematics, science (multiple choice + essay). 25% items from national center, 75% from district</td>
</tr>
<tr>
<td>Grade 4</td>
<td>AKSI (survey, 2016)</td>
<td>Reading, mathematics, science, background questionnaires</td>
</tr>
<tr>
<td>Grade 1-3</td>
<td>Literacy and Numeracy (project based survey)</td>
<td>Reading, writing, basic math (individualized test)</td>
</tr>
</tbody>
</table>
Example of assessment Results

Disparity Issue

Content & Cognitive

Competency bands and its performance descriptor

- data nilai 10% teratas
- data nilai 10% bawah

Kalimantan Selatan - 7.4
Jawa Timur - 21.1
Kepulauan Riau - 1.0
Jawa Barat - 5.0
Kalimantan Utara - 25.5
Aceh - 19.0
Gorontalo - 21.4
Sumatera Barat - 16.7
Sulawesi Tenggara - 12.3
Sulawesi Utara - 13.0
Papua - 11.2
Bali - 2.0
Jambi - 14.8
DKI Jakarta - 11.6
Sulawesi Barat - 17.9
Bangka Belitung - 12.3
Papua Barat - 20.0
Sulawesi Tengah - 17.9
Maluku Utara - 38.1

- skor <400
- skor 400-500
- skor 500-<600
- skor >600
Since 2015 the test blueprint explicitly stated cognitive level for all subjects. Since 2018, 10% of the items turn into constructed response format. Since 2015, gradually the test administration has been switching to computerized based test.

Since 2017, AKSI grade 8 and 10 moved to computerized based assessment. Test blueprint also changed by introducing technology enhanced items format. This format influences the performance descriptor (for example in reading: students are able to navigate).

Since 2017, final school exam based on standardized test blue print. 75% items developed by district, while 25% anchor from national center. The item format is no longer multiple choice only, but 10% of the items are constructed response.
Students can interpret implicit meaning of literary passages by integrating information within passage.

In 2015, national exam majority done by paper and pencil. However, in 2015, we were starting to determine minimal number of higher order thinking skills items.
Students can interpret the message of a unit by integrating information from multiple screens.

In 2018, AKSI introduced reading unit with hyperlink, multiple screen and interactive screen. These kind of stimulus make the performance descriptor elaborate the navigation skills within the descriptor.
A lot more to come

2017, recent, developing automatic essay scoring to be able to assess essay items in large scale assessment. Encourage students on critical thinking

2018, developing automatic item generation to reduce item writers’ workload. The aim is to get more critical thinking items

2018, capacity building on developing collaborative problems solving assessment

2019, developing digital reading assessment for primary school students

2019, elaborate financial, civics and moral domain into AKSI grade 10
Thank you!

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