Contents

I Introduction: Education System in Korea

II Student Assessment at
- School level
- National level
- International level

III Reflections
I. Education System

Compulsory education

G1~G6

G7~G9: Lower Secondary
G10~G12: Upper Secondary
I. Education System

Student Assessment Framework

International
- IEA: TIMSS, ICILS
- OECD: PISA

National
- National Assessment of Educational Achievement (NAEA)
- College Scholastic Ability Test (CSAT)

Metropolitan/Provincial offices of Education (17)
- Learning Diagnostic Test
- Pre-CSAT

Student Assessment within School
(Paper & Pencil, Performance)
## II. Student Assessment

### 1. School Level

<table>
<thead>
<tr>
<th>School</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>• Administering performance tests and paper-pencil tests (midterm and final exam)</td>
<td></td>
</tr>
<tr>
<td>• Recording each student’s achievement on NEIS (National Education Information System)</td>
<td></td>
</tr>
<tr>
<td>• Student Assessment based on curriculum</td>
<td></td>
</tr>
<tr>
<td>• Performance test and paper and pencil test</td>
<td></td>
</tr>
<tr>
<td>• Extra Curriculum Activity</td>
<td></td>
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<tr>
<td>• Creativity Activity</td>
<td></td>
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<tr>
<td>• Behavior Development</td>
<td></td>
</tr>
<tr>
<td>• Character, Convergence, integration</td>
<td></td>
</tr>
</tbody>
</table>
II. Student Assessment

2. National Level

Investigate national accountability of public education
based on national curriculum according to school levels, gender, regional sizes, provincial educational agencies, etc.

Check out academic performance level of individual student
to guarantee all students’ progress toward achieving basic knowledge and skills

Suggest educational policy based on empirical research results
between educational context variables and academic achievement of each school level and student background

NAEA plays an important role to support educational policy in national level
II. Student Assessment

Purpose of NAEA

Continuous Implementation and Improvement

- EXPLORING New research design & methods
- GUIDING the school toward better assessment methods
- DIAGONOSING the educational achievement
- PROVIDING Data for Improving a curriculum
- IMPOVING the teaching & learning method

NAEA
II. Student Assessment

NAEA Characteristics

• **Assessment Based on National Curriculum**

• **Criterion-Referenced Assessment based on Achievement Standards (cf. CCSS)**
  - statements specifying the objectives and content of the national curriculum to guide teaching and learning activities

• **Achievement levels**
  - Advanced, Proficient, Basic, Below-Basic

• **Scaling and Equating procedures**
  - Common items
  - Standard Setting for the revision of National Curriculum
  - Trend of student performance over time.
## II. Student Assessment

### Assessment Framework of NAEA

<table>
<thead>
<tr>
<th>GRADE</th>
<th>Grade 9, 11</th>
</tr>
</thead>
<tbody>
<tr>
<td>SUBJECT</td>
<td>Korean, Mathematics, English Social Studies, Science (9th sample only)</td>
</tr>
<tr>
<td>TEST</td>
<td>Social Studies, Science and English Multiple-choice items and performance-based items</td>
</tr>
<tr>
<td></td>
<td>Korean and Math multiple-choice items and short-answer items</td>
</tr>
<tr>
<td></td>
<td>Korean and English Listening test</td>
</tr>
<tr>
<td>Questionnaires</td>
<td>Students, Teachers, Schools (Principals)</td>
</tr>
</tbody>
</table>
II. Student Assessment

Questionnaires of NAEA

STUDENTS
- Personal and Family Background
- Extracurricular Activities
- Learning Method and Attitude
- School Life
- Learning Related to Each Subject, etc.

TEACHERS
- Personal Background
- Teaching Activities Related to Each Subject
- Job’s Satisfaction, etc.

SCHOOLS
- School Features
- School Facilities
- School-Level Curriculum Management
- School Climate, etc.
II. Student Assessment

Achievement Levels of NAEA

**ADVANCED**
Superior academic performance of required knowledge and skills
(Above 80% reached to the desired performance that must be achieved in each content and grade)

**PROFICIENT**
Solid academic performance of required knowledge and skills
(50 – 80% reached to the desired performance that must be achieved in each content and grade)

**BASIC**
Partial mastery of required knowledge and skills
(20 – 50% reached to the desired performance that must be achieved in each content and grade)

**BELOW BASIC**
II. Student Assessment

Monitoring of Student Achievement

“Zero Below-Basic Plan” & “Upward Equalization”

Grade 9 (2010 ~ 2014)

Percentage(%) Below basic Basic Proficient Advanced

<table>
<thead>
<tr>
<th>Year</th>
<th>Korean Language</th>
<th>Math</th>
<th>English</th>
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</thead>
<tbody>
<tr>
<td>'10</td>
<td>23,1</td>
<td>6,1</td>
<td>13</td>
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<td>'11</td>
<td>31</td>
<td>4</td>
<td>5,1</td>
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<td>'12</td>
<td>31,1</td>
<td>44</td>
<td>5,7</td>
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<td>30</td>
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<td>'14</td>
<td>26,5</td>
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<tr>
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<th>Math</th>
<th>English</th>
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<tbody>
<tr>
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<td>17,2</td>
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<td>'12</td>
<td>15,2</td>
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<td>12,6</td>
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<td>'14</td>
<td>10,7</td>
<td>31,5</td>
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<td>30</td>
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<td>13</td>
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<tr>
<td>'14</td>
<td>26,5</td>
<td>53,9</td>
<td>13</td>
</tr>
</tbody>
</table>
II. Student Assessment

Monitoring of Student Achievement

Trends of Student rates at above basic and below basic

Gender difference at lower and upper secondary level
II. Student Assessment

3. International Level

- **PISA**: The OECD Programme for International Student Assessment
- **TIMSS**: Trends in International Mathematics and Science Study
- **ICILS**: International Computer and Information Literacy Study
## II. Student Assessment

### PISA Results

<table>
<thead>
<tr>
<th>Reading</th>
<th>Mean</th>
<th>PISA 2000 (43)</th>
<th>PISA 2003 (41)</th>
<th>PISA 2006 (57)</th>
<th>PISA 2009 (75)</th>
<th>PISA 2012 (65)</th>
<th>PISA 2015 (70)</th>
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<tbody>
<tr>
<td>OECD</td>
<td>6</td>
<td>525</td>
<td>534</td>
<td>556</td>
<td>539</td>
<td>536</td>
<td>517</td>
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<tr>
<td>ALL</td>
<td>7</td>
<td>534</td>
<td>556</td>
<td>539</td>
<td>536</td>
<td>517</td>
<td>517</td>
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</table>

<table>
<thead>
<tr>
<th>Math</th>
<th>Mean</th>
<th>PISA 2000 (43)</th>
<th>PISA 2003 (41)</th>
<th>PISA 2006 (57)</th>
<th>PISA 2009 (75)</th>
<th>PISA 2012 (65)</th>
<th>PISA 2015 (70)</th>
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</thead>
<tbody>
<tr>
<td>OECD</td>
<td>2</td>
<td>547</td>
<td>542</td>
<td>547</td>
<td>546</td>
<td>554</td>
<td>524</td>
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<tr>
<td>ALL</td>
<td>3</td>
<td>542</td>
<td>547</td>
<td>546</td>
<td>554</td>
<td>524</td>
<td>524</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Science</th>
<th>Mean</th>
<th>PISA 2000 (43)</th>
<th>PISA 2003 (41)</th>
<th>PISA 2006 (57)</th>
<th>PISA 2009 (75)</th>
<th>PISA 2012 (65)</th>
<th>PISA 2015 (70)</th>
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</thead>
<tbody>
<tr>
<td>OECD</td>
<td>1</td>
<td>552</td>
<td>538</td>
<td>522</td>
<td>538</td>
<td>538</td>
<td>516</td>
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<tr>
<td>ALL</td>
<td>1</td>
<td>538</td>
<td>522</td>
<td>538</td>
<td>538</td>
<td>516</td>
<td>516</td>
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</tbody>
</table>

Notes:
1. Mean reading scores range from 525 to 556.
2. OECD ranking shows improvement from 6th to 1st place.
3. ALL ranking shows fluctuation from 7th to 4th place.
4. Math scores range from 542 to 547, with consistent OECD rankings.
5. Science scores range from 522 to 552, with variable rankings.

OECD and ALL rankings are based on comparative data across different years.
II. Student Assessment

PISA Proficiency Level

Reading  Mathematics  Science
II. Student Assessment

Gender Difference in PISA

- Reading
- Mathematics
- Science
II. Student Assessment

Student Attitude towards Science

<table>
<thead>
<tr>
<th>Korea</th>
<th>OECD</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.14</td>
<td>0.04</td>
</tr>
<tr>
<td>0.03</td>
<td>-0.02</td>
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<tr>
<td>-0.07</td>
<td>-0.02</td>
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<tr>
<td>-0.05</td>
<td>-0.25</td>
</tr>
<tr>
<td>-0.15</td>
<td>-0.35</td>
</tr>
</tbody>
</table>

- **Enjoyment**
- **Science Interest**
- **Instrumental motivation**
- **Science self-efficacy**
- **Science activities**
- **Epistemic belief**
## II. Student Assessment

### TIMSS Results

<table>
<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td><strong>Math</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>G4</td>
<td>Mean</td>
<td>581</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>605</td>
</tr>
<tr>
<td></td>
<td>Rank</td>
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<td>-</td>
<td>-</td>
<td>-</td>
<td>2</td>
</tr>
<tr>
<td>G8</td>
<td>Mean</td>
<td>581</td>
<td>587</td>
<td>589</td>
<td>597</td>
<td>613</td>
</tr>
<tr>
<td></td>
<td>Rank</td>
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<td>2</td>
<td>2</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td><strong>Science</strong></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>G4</td>
<td>Mean</td>
<td>576</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>587</td>
</tr>
<tr>
<td></td>
<td>Rank</td>
<td>1</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>G8</td>
<td>Mean</td>
<td>546</td>
<td>549</td>
<td>558</td>
<td>553</td>
<td>560</td>
</tr>
<tr>
<td></td>
<td>Rank</td>
<td>4</td>
<td>5</td>
<td>3</td>
<td>4</td>
<td>3</td>
</tr>
</tbody>
</table>
II. Student Assessment

Gender Difference in TIMSS G8

**Mathematics**

- Boys:
  - T95: 571
  - T99: 585
  - T03: 586
  - T07: 595
  - T11: 610
  - T15: 606

- Girls:
  - T95: 588
  - T99: 590
  - T03: 592
  - T07: 599
  - T11: 616
  - T15: 605

**Science**

- Boys:
  - T95: 557
  - T99: 538
  - T03: 549
  - T07: 564
  - T11: 557
  - T15: 554

- Girls:
  - T95: 530
  - T99: 552
  - T03: 563
  - T07: 559
  - T11: 559
  - T15: 557
II. Student Assessment

Student Confidents in Math and Science

Korea  International Average

Mathematics

Very Confident: 8%  7%
Confident: 14%  22%
Not Confident: 81%  70%

Science

Very Confident: 55%  39%
Confident: 43%  33%
Not Confident: 4%  31%
What makes students perform well?

- Motivation
- Curiosity etc.
- Quality of Teachers College
- Job Condition (stability, salary, pension...)
- Professional development
- Hope for success via child
- Belief: education = success

III. Reflections

- Systemic monitoring
- Quality assurance of Curri & Eval
- Supporting teacher’s professional development

Great enthusiasm for education
III. Current Issues and Thoughts

What have we missed?

1) Collaboration - too much focused on competition

2) Student’s interest, passion, creatives – cramming for test

3) Inquiry, Process - Results/Rank oriented

4) Holistic growth – only focusing on score
III. Reflections

What do we go for?

1) Integrative approach – Cognitive & Non-Cognitive

2) Assessment for Learning – Process oriented assessment
   Eg) critical thinking, communication, social responsibility etc.

3) Competency based Assessment

4) Alignment of Teaching, Learning, & Assessment
Thank you.

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