The Evolution of PISA from Perspective of Participating Countries

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Overview

- PISA in Canada
- PISA for Development
- PISA in Ukraine
- PISA in the Future
### Assessments

- Provincial Examinations – in some provinces
- Third International Mathematics and Science Study – Repeat (TIMSS-R)
- National Longitudinal Survey of Children and Youth (NLSCY)
- School Achievement Indicators Program (SAIP)

### Uses

- Individual high-stakes decisions
- Limited Academic research
- Limited Policy Research
- Public reporting focused on comparisons of mean scores
# Large Scale Assessment Research, 1999-2001

| New sampling and psychometric paradigms | Matrix sampling  
| School-level imputation  
| Plausible values |
| New research paradigms | Ecological effects  
| Random effects  
| Data visualization |
| New PC Computing Capacity | Windows 2000 (4Gb RAM!!!!)  
| Intel Pentium (>1GHz!!!!) |
| New analysis software | Multilevel modeling  
| Structural Equation modeling  
| Matrix algebra with graphics |
Chapter 1  International Student Achievement in Mathematics
Chapter 2  Performance at International Benchmarks
Chapter 3  Average Achievement in the Mathematics Content Areas
Chapter 4  Students' Backgrounds and Attitudes Towards Mathematics
Chapter 5  The Mathematics Curriculum
Chapter 6  Teachers and Instruction
Chapter 7  School Contexts for Learning and Instruction

## Implementation of PISA 2000

<table>
<thead>
<tr>
<th>Category</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Scope</strong></td>
<td>All OECD countries</td>
</tr>
<tr>
<td></td>
<td>Multiple content domains</td>
</tr>
<tr>
<td></td>
<td>Innovative content domain definitions</td>
</tr>
<tr>
<td><strong>Stakeholder Engagement</strong></td>
<td>Board of Participating Countries</td>
</tr>
<tr>
<td></td>
<td>Technical Advisory Group</td>
</tr>
<tr>
<td><strong>Statistical and Psychometric</strong></td>
<td>NPM workshops</td>
</tr>
<tr>
<td><strong>Methods</strong></td>
<td>Invited researchers within Canada</td>
</tr>
<tr>
<td><strong>Reporting</strong></td>
<td>Data Visualization</td>
</tr>
<tr>
<td></td>
<td>Comparison of outcomes and relative effect sizes across regions</td>
</tr>
</tbody>
</table>
Canada PISA 2000 Public Report

- Canada performs well internationally
- Girls outperformed Boys in reading
- Socio-economic status has a weaker relationship to performance in Canada than in most other countries
- Student, family and school characteristics have independent effects on performance
- Rural student perform poorly compared to urban students*
- Minority language students performed less well*
Distributions vs Means

The Distribution of Reading Scores in Canada, Finland and the United States

Setting Research Agenda

Training researchers in appropriate methods

Encouraging independent research

Encouraging use of results for decision making
Unexpected consequences of PISA

- Provinces drop out of TIMSS
- Changes to curricula
- Provincial assessments emulate PISA
- National assessment coordinates with PISA
Emergent Issues: PISA 2000-2006

- Ambiguity about results from minor domains
- Ambiguous trend data
- Complacency
- Importance of sustained engagement
- Importance of purpose
**Example, Ireland PISA 2009**

**Figure 4.1: Difference in reading score between 2000 and 2009 for the 39 schools who participated in both PISA cycles**

Average = -36
Median = -28.6
Q1 = -5.7
Q3 = -58.4
OECD
Developed, mostly Western European countries

Non-OECD
Developed non-OECD countries

Administrative Regions
Hyper-developed, urban economies

Diverse Income
Middle income and developing economies

Changing composition of PISA participants
Development of Needs Assessment Framework

- PISA documents
- SABER-SA ILSA
- Lessons learned from other large-scale assessments

Piloting PISA-D tools

- Zambia
- Senegal
- Cambodia
Capacity Building Planning

Capacity Building Element A

Capacity Building Element B

Capacity Building Element C
Monitoring and Evaluation

- Capacity Building Element A
- Capacity Building Element B
- Capacity Building Element C
Capacity Building Planning Complicating factors

- Multiple agents
- Multiple interests
- Variable scope
- Varying timelines
Ideal Model

1. Project scope (OECD)
2. Needs Assessment (OECD+Country)
3. Capacity Building Planning (OECD+Country)
4. Implementation Planning (OECD+Country)
Interests vs Commitment

Funding Arrangements and Development Goals


Funding Scope (Gov. + DP) ← Capacity Building Planning (OECD+Country) ← Project scope (OECD)
PISA Contractors

Contractors

Funding Scope (Gov. + DP)

Capacity Building Planning (OECD+ Country)

Project scope (OECD)

Implement. Planning (OECD+ Country)

Needs Assessment (OECD+ Country)
Competing same-sector projects

- Contractors
- Funding Scope (Gov. + DP)
- Project scope (OECD)
- Capacity Building Planning (OECD+ Country)
- Implement. Planning (OECD+ Country)
- Needs Assessment (OECD+ Country)

Limited funds
Limited human resources
International Coordination

- Contractors
- Capacity Building Planning (OECD+ Country)
- Implement. Planning (OECD+ Country)
- Needs Assessment (OECD+ Country)
- Project scope (OECD)
- Funding Scope (Gov. + DP)

- Feasibility
- Differing needs
- Limited human resources
- Compromise

Limited funds
Lessons Learned for Ukraine

- Capacity building on an international timeline is hard!
- Clarify stakeholder interests and constraints
- Share the Big Picture early and often
- Plan for an iterative process
- Collaborate continuously with stakeholders
- Insist on commitments to capacity building within the project scope
Needs Assessment Rating #7. Effect of political climate on implementation

<table>
<thead>
<tr>
<th>Programme output</th>
<th>Country capacity in assessment, analysis and use of results for monitoring and improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current status</td>
<td>(Established) Political climate does not adversely affect the project</td>
</tr>
<tr>
<td>Target status</td>
<td>(Advanced) All relevant political bodies (government and opposition) actively support the project</td>
</tr>
</tbody>
</table>

**Justification:** Many key stakeholder groups are aware of PISA and perceive it to be useful in terms of increasing international co-operation and providing a more competency-based review of the quality of learning in Ukraine. However, the dynamic nature of politics and economics in Ukraine tend to focus attention on more immediate issues and implementing existing political agendas. Most stakeholders have not incorporated PISA implementation, data or analysis results into their existing agendas. As a result, the existing support does not manifest into advocacy for the project.
### Needs Assessment Rating #17. Perceptions of external survey-based large-scale assessment (LSA) of lower-level stakeholders

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<tr>
<td><strong>Current status</strong></td>
<td>(Latent) No knowledge of external LSA or assume that LSA is used to evaluate specific student or school performance</td>
</tr>
<tr>
<td><strong>Target status</strong></td>
<td>(Established) Recognise a clear washback effect from the results of LSA and the policies and practices affecting learning</td>
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</table>

**Justification:** School teachers, principals, students and parents are not aware of LSA beyond the ZNO, which is used to evaluate individuals and, to a lesser extent, facilitate comparisons between schools. Historically high levels of corruption in secondary level assessment are associated with the use of results at individual levels. To prevent these factors from influence data from both the cognitive and contextual instruments, the NC will need to communicate the purpose of sample-based LSA and how the results will be used.
## Capacity Building Elements

<table>
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<tr>
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<tbody>
<tr>
<td>1</td>
<td>Project management</td>
</tr>
<tr>
<td>2</td>
<td>External data access and independent inquiry</td>
</tr>
<tr>
<td>3</td>
<td>Competency-based education and assessment</td>
</tr>
<tr>
<td>4</td>
<td>Coordination of PISA implementation partners</td>
</tr>
<tr>
<td>5</td>
<td>Psychometric capacity</td>
</tr>
<tr>
<td>6</td>
<td>Data utilization and evidence-based decision making</td>
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<tr>
<td>7</td>
<td>Development of data infrastructure to support analysis</td>
</tr>
<tr>
<td>8</td>
<td>Analysis Capacity</td>
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<tr>
<td>9</td>
<td>Coordination of stakeholders</td>
</tr>
<tr>
<td>10</td>
<td>Item and question banking</td>
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</table>
Next Steps

1. Evaluate capacity development
2. Adjust capacity targets
3. Incorporate lessons learned
4. Modify plan
5. Implement revised plan
Potential Future Improvements

Use of technology for better dialogue between participating countries, implementation partners, and OECD

Policy-relevant sampling

Country-specific content
• Nuanced assessments
• Policy-relevant questionnaire content