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International Large-Scale Assessments in a National Context: Challenges and Options for the Future

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PISA

- “PISA is an **international study** that was launched by the OECD in 1997. It aims to evaluate education **systems** worldwide every three years by assessing 15-year-olds' competencies in the key subjects: reading, mathematics and science. To date over 70 countries and economies have participated in PISA (OECD web page)”

PIAAC (1)

- "Knowledge and skills are the most valuable assets to present and future generations, as governments seek to maintain global competitiveness, increase the flexibility and responsiveness of labour markets and deal with issues of population ageing. OECD's breakthrough survey on adult competencies, PIAAC, will provide **governments** with a unique and effective tool **to assess where they stand in terms of the quantity and quality of the knowledge and skills of their workforce.** (Angel Gurría, OECD Secretary *General*)".

PIAAC (2)

- „Equally important, it will provide insights into how skills relate to the social and economic well-being of individuals and nations and also benchmark how effectively education and training systems meet emerging skill demands (Angel Gurría) ”.

Question to be addressed in this presentation

- How can we optimize the benefits of system-level international studies at a national level and *across levels*?

National synergies to be reached in several ways

- At the time of study design and implementation
- Based on the analysis of international and national results
- In R&D activities along the life cycle of and international assessment programme

Synergies at the time of study design and implementation

- National extensions:

Oversampling and/or design modifications

- Germany: PISA 2000
- Canada: PIAAC

PISA 2000 - Germany

- An age-based sample was extended to include a grade-based sample. In addition to the 15-year-olds, ninth-grade students who were not 15 years old were also tested.
- In order to better represent the situation in the individual German States, the school sample was extended beyond the stipulated international framework. In Germany close to 1,500 schools took part in PISA 2000.
- A second testing day was organized in all schools, during which national tests and questionnaires were used.

PIAAC - Canada

Oversampling in each provinces and territories.

Oversampling for targeted population:

Immigrants

Aboriginals

Youth

Linguistic minority (Anglophones in Québec, Francophone outside Québec)

PIAAC - Canada

Sample size of 25,000 completed cases

Allows for

National, Provincial and territorial estimations

Estimations for recent immigrants

At the national level

At the provincial level for Ontario and British
Columbia

PIAAC - Canada

Estimations for aboriginals

At the national level

At the provincial level for Ontario, Manitoba,
Saskatchewan and British Columbia (Métis and
non-métis in Ontario)

PIAAC - Canada

Estimations for Francophones outside Québec and
Anglophones in Québec

At the national level

At the provincial level for New Brunswick,
Québec, Ontario, Manitoba

Estimations for youth in British Columbia and
Québec

Synergies based on the analysis of international and national results

- TIMSS-Video
- The German Reaction to the „PISA shock“

TIMSS Video

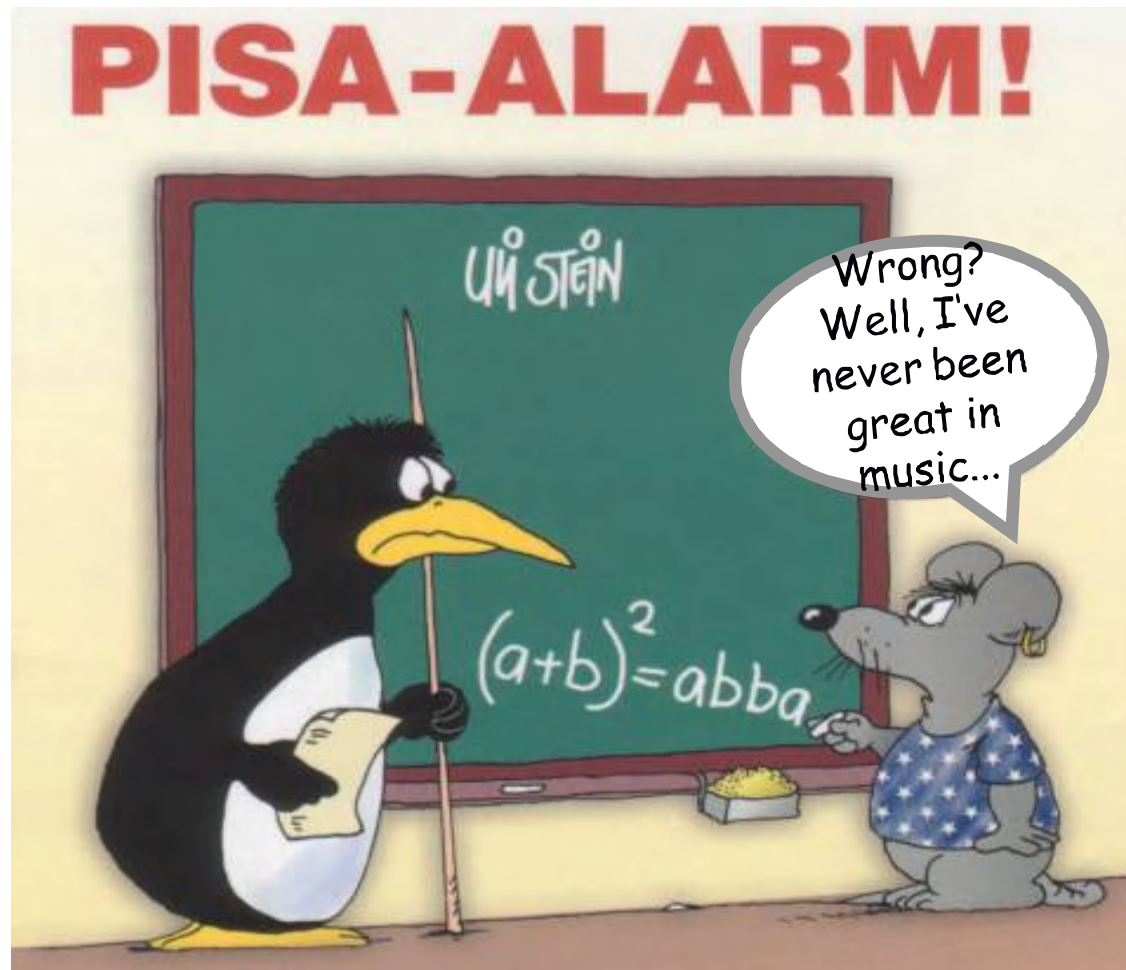
- Poor results of United States and Germany in TIMSS as compared to Japan and other countries
- Joint effort of United States, Japan and Germany to do further „explanatory“ research
- Video studies in classrooms → Bridging the levels



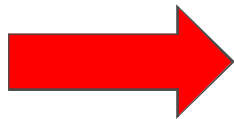




The German Reaction to the „PISA shock“



PISA (2000) Mathematics



Country	Mean	SD
Japan	557	87
Korea	547	84
New Zealand	537	99
Finland	536	80
Australia	533	90
Canada	533	85
Switzerland	529	100
United Kingdom	529	92
Belgium	520	106
France	517	89
Austria	515	92
Denmark	514	87
Iceland	514	85
Sweden	510	93
Ireland	503	84
<i>OECD Average</i>	500	100
Norway	499	92
Czech Republic	498	96
USA	493	98
Germany	490	103
Hungary	488	98
Spain	476	91
Poland	470	103
Italy	457	90
Portugal	454	91
Greece	447	108
Luxembourg	446	93
Mexico	387	83

Seven fields of action (Conference of the ministers for education, 2001)

- (1) Improve language competencies already in preschool
- (2) Connections between preschool and primary school
- (3) Improve primary school reading literacy
- (4) Promotion of low SES and migration students
- (5) Quality assurance and quality development in schools on the basis of standards and outcome related evaluation**
- (6) Improve professional (e.g. diagnostic or didactical) competencies of teachers
- (7) Expansion of full-time schools



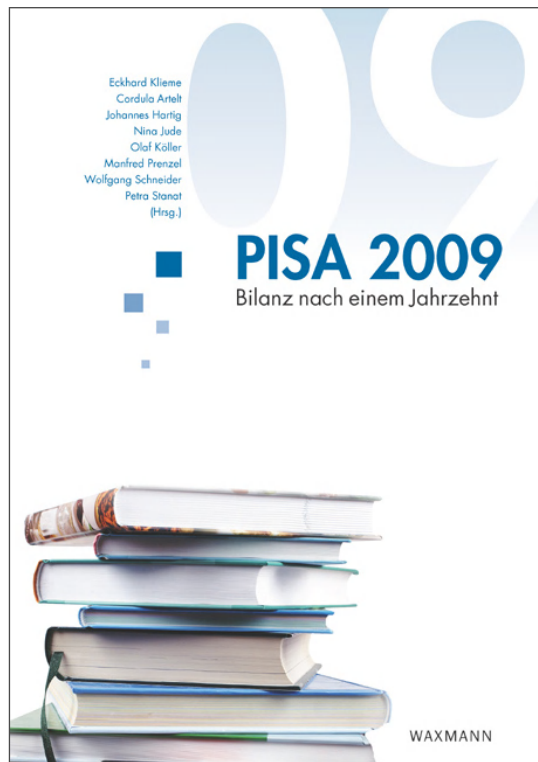
Three types of cyclic school achievement tests in Germany



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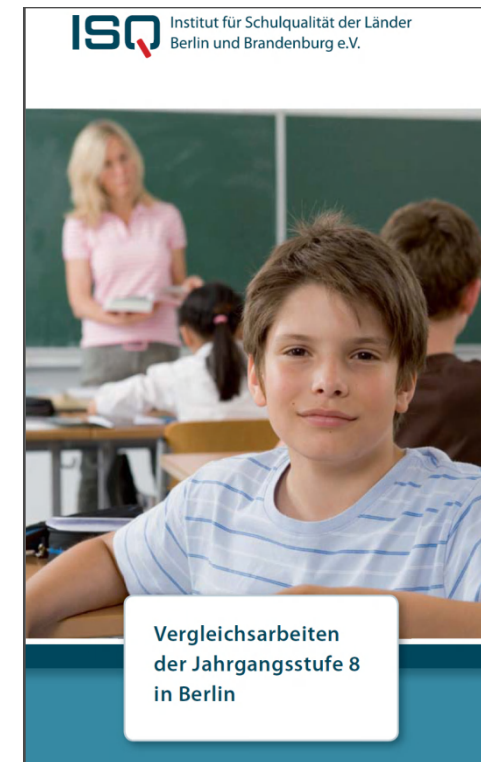
International



National



State-wide



Differences between the three assessments in Germany

	<i>International</i> <i>PISA, PIRLS, TIMSS</i>	<i>National IQB-Tests</i> <i>16-state comparisons</i>	State-wide IQB-Tests <i>within-state</i>
Standards-based tests?	No	Yes	Yes
Data Base	Sample-based	Sample-based (approx. 40-60,000)	Population-based
Frequency	3 years, 5 years	6 years, 5 years	Every year
Main Purpose	System monitoring	System monitoring	School & teaching improvement
Who is accountable? ("High Stakes")	Federal Ministry of Education; 16 State Ministries of Education	16 State Ministries of Education and their school authorities	Principals, teachers

Synergies through R&D activities along the life cycle of an international assessment programme

- Initial PISA idea as discussed in the OECD Network A
 - Recurrent assessment of reading literacy, mathematical literacy and scientific literacy
 - Cross-curricular competencies: Problem-Solving as THE candidate among several, but rejected for PISA 2000 because of conceptual and feasibility issues

Problem-Solving

- In parallel: Assessment of Problem Solving successfully implemented in the „Adult Literacy and Life Skills Survey (ALL)“ → Project Approach (Paper&Pencil)
- PISA 2003 Problem Solving and Mathematical Literacy (Paper &Pencil)

Problem-Solving

- PISA 2009 Technological break-through: „Electronic Reading Assessment“
- Subsequently: convergence of technological progress and conceptual elaboration
 - Problem Solving in Technology-Rich Environments in the PIAAC study
 - Problem Solving in PISA 2012
 - Collaborative Problem Solving (in PISA 2015)

Conclusions

- International Large-Scale Assessments can be used „as they are“, and provide valuable input for political decision-making
- National extensions and subsequent national studies exploit the full power of these assessment at a meaningful country level
- Continuous accompanying research offers the option to shape the international studies and to prepare the ground for a sound interplay between research and decision making



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Thank you for your attention!

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