The role of educational monitoring, assessment, and standards in school reform

New policy strategies in the German speaking countries

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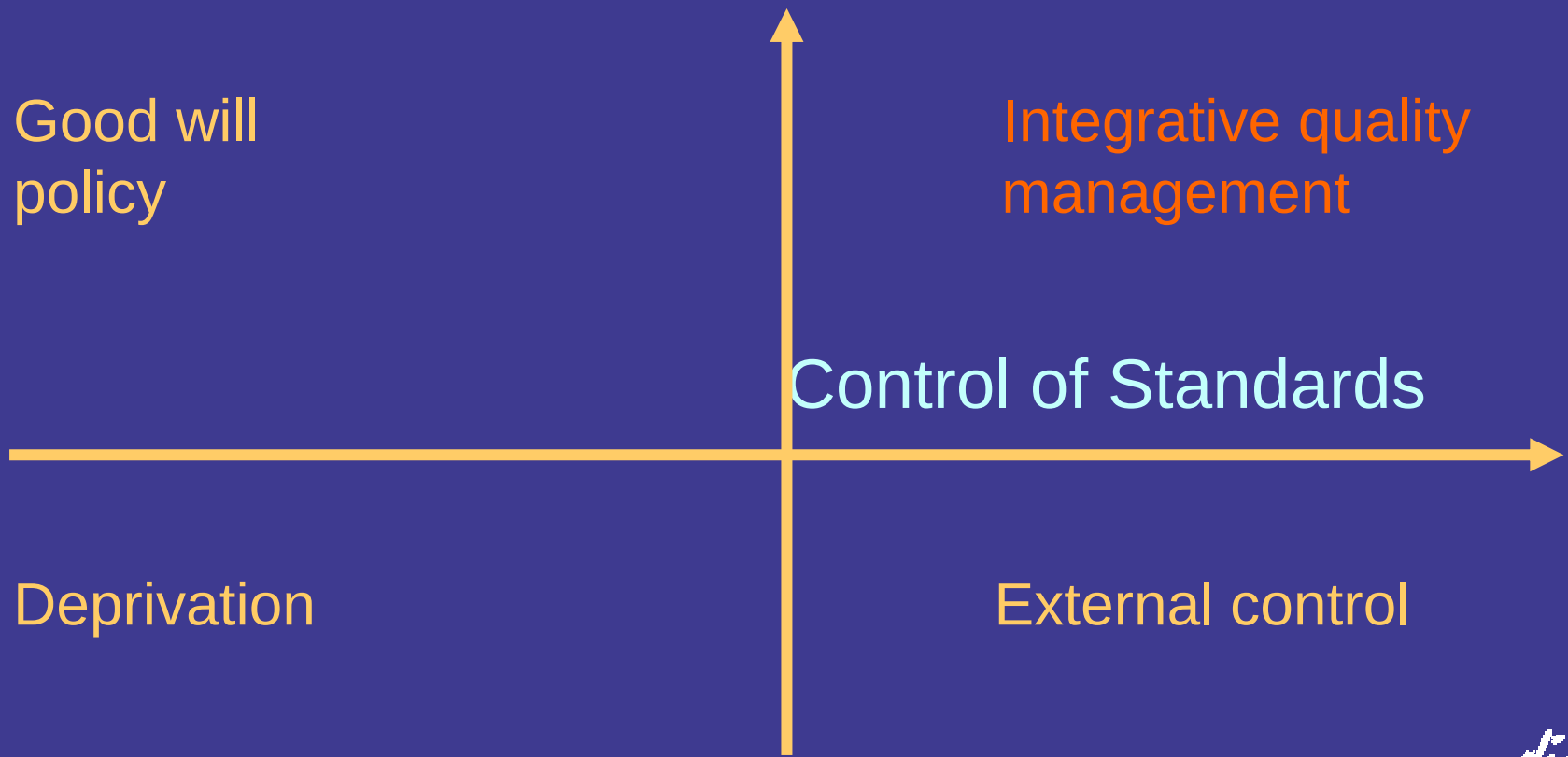
Graduate School of Education, The University of Tokyo

1. The „PISA shock“ and beyond
2. The new policy strategy: standard-based quality management
3. Issue # 1: Models of competence - The core of educational standards
4. Issue #2: School accountability - Multiple perspectives on evaluation

A typology of educational cultures (Helmut Fend)

Support structures for teachers and schools



Educational Traditions in Germany

- Normative basis: „Bildung“ as process of personal development + cultural participation
- Teacher as autonomous professional, introducing students into the core ideas of his subject
- 3 tracks in lower secondary scools: different mixture of „Bildung“ and vocational training
- No Market; equality assumed
- No centralized test system

Thesis on inter-national comparison

- Gross level in educational performance is determined by general cultural and socio-economic factors.
- Structure of the educational system determines (a) between-school-variation and (b) SES impact
- Educational and instructional culture determines profile of outcomes (relative strengths and weaknesses)

➔ Comparative research has to study relations and profiles rather then levels.

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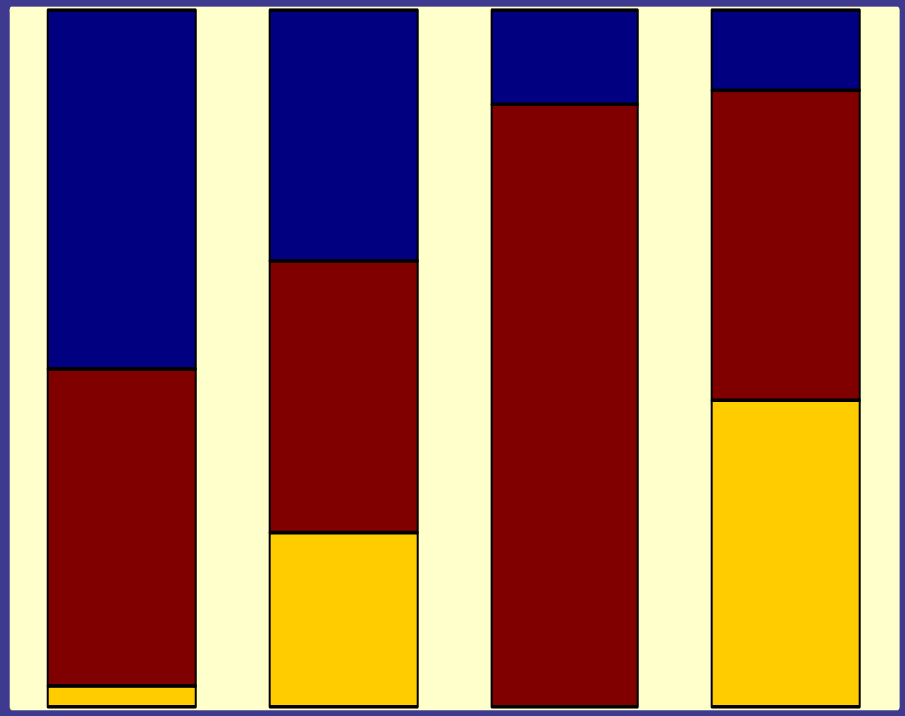
Relative Strengths and Weaknesses in Mathematics

identified by differential item functioning (DIF) parameters in TIMSS and PISA, correlated with demands

Country	Strengths	Weaknesses
Japan Switzerland	Geometry	Extra-mathematical contexts; graphs
Sweden	-	Technical skills
France	Technical skills	
UK USA	„realistic mathematics“	
Germany	Combining representational formats	-

PISA vs. TIMSS
different concepts of mathematical competence



Source: Expert ratings in PISA 2000/Germany

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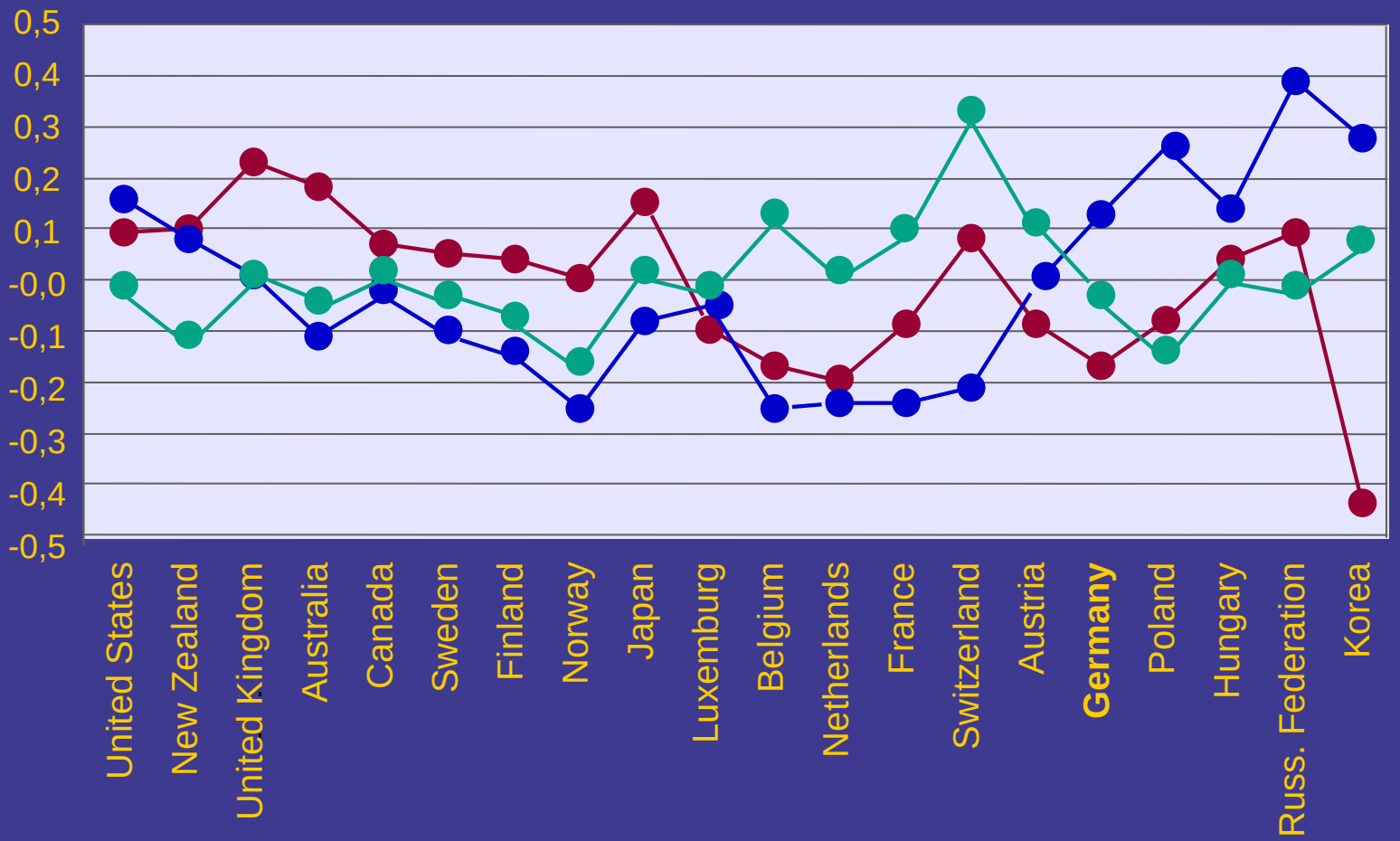
From PISA 2000 to PISA 2003

Rank orderings of countries are no valid indicator of changes.
Equating of test scores from PISA 2000 and 2003 shows for Germany:

\+ science
\+ „functions“ / = „space“ in mathematics
= reading

Interpretation:
Reforms stimulated by TIMSS (and later also by PISA 2000) show first effects.

School climate (PISA 2000)



Impact of school factors in PISA 2000

Country	N of schools	Regression coefficient (beta) for...					R^2
		SES	Disciplinary problems	Teacher support	Quality of relation	Achieve-ment press	
USA	152	.70 ***	-.09	-.25 ***	.11 *	.00	.534
Finland	155	.35 ***	-.20 **	.08	-.25 **	-.24 **	.234
Japan	135	.41 ***	-.36 **	-.13	.18	.06	.372
Switzerland	279	.43 ***	-.12 *	-.26 ***	.12	-.16 **	.377
Germany	1.473	.71 ***	-.18 ***	-.21 ***	.06 **	-.02	.702
Austria	212	.67 ***	-.03	.02	-.08	.03	.450
Korea	146	.18 ***	-.27 ***	-.24 **	.10	.55 ***	.548

Summary of main issues in PISA 2000/Germany:

- low achievement and high SES impact
- unsatisfactory profile of achievement and school climate
- large differencies between German Länder
- large variations in grading requirements

!!!!!!!!! Linked by empirical arguments from PISA and SER ????

Policy reactions in Germany:

- new pedagogical initiatives:
  foster reading, deal with heterogeneity
- all-day schooling
- professionalization, esp. for elementary teachers
- national standards, system monitoring, and evaluation

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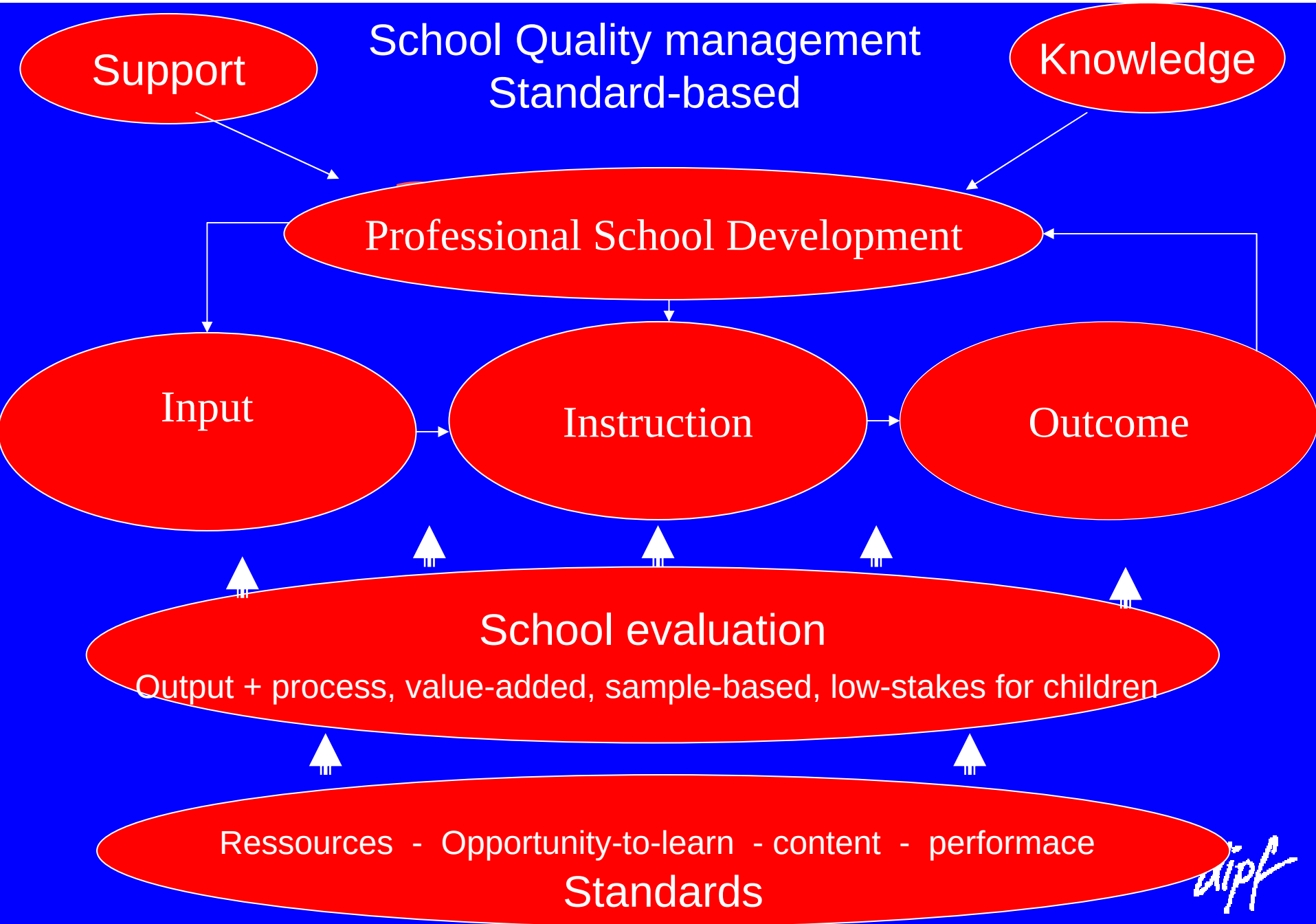
School Quality management
Standard-based
Support
Knowledge
Professional School Development
Input
Instruction
Outcome
School evaluation
Output + process, value-added, sample-based, low-stakes for children
Ressources - Opportunity-to-learn - content - performace
Standards

Standards for Student Competencies (Klieme et al. 2003)

- are aligned to general educational aims
- describe competencies and their levels by constructing models of competence
- operationalize levels of competence by tasks and test items
- specify expected levels for certain grades
- serve as criteria for school accountability

The economics and politics of standard-based educational reform (Klieme et al. 2003)

Complex models of competence: new orientation for teacher

Complex assessment (including cross-curricular tasks, student portfolios etc.)

System monitoring – School evaluation – student diagnostics aligned, but not identical (no high stakes testing)

Grading and certification done by the teacher

School development: Focus on professional development

School evaluation: Multiple perspectives and methods

Issue # 1: Models of competence – The core of educational standards

Chomsky/Piaget: competence = generic mental structure

Functional concept of competence (e.g., Bandura 1990) :
using knowledge and abilities in ill-defined, unpredictable, stress-inducing situations

Issue # 1: Models of competence – The core of educational standards

Vocational education: The search for generic skills, which support employability & life long learning

„Schlüsselqualifikationen“ (Mertens)
Key competencies (NL, EU)
Core competencies (UK, USA: SCAN)
Life skills (OECD, DeSeCo)

- Basic competencies (reading, numeracy, ICT)
- Transferable competencies (problem solving)
- Competencies which support transfer (self regulation)

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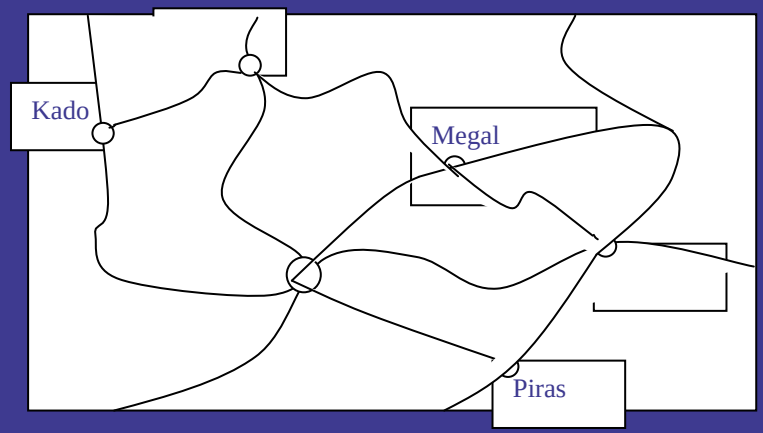
Issue # 1: Models of competence – The core of educational standards

Weinert(2001, S. 27f.): Definition of „competencies“

skills and abilities required to to solve certain kinds of problems,

connected to motivational, volitional, and social abilities and intentions required to apply problem solutions within a wider range of situations

Instruments: Analytical Problem solving (PISA 2003)



	Angaz	Kado	Lapat	Megal	Nuben	Piras
Angaz						
Kado	550					
Lapat	500	300				
Megal	300	850	550			
Nuben	500		1000	450		
Piras	300	850	800	600	250	

Instruments: Analytical Problem solving (PISA 2003)

3 levels of problem solving competence in PISA

Comprehend a system or device, indentify parts/variables and constraints, induce features
(step-by-step reasoning, mainly small discrete systems)

Make a decision with resp. to a well-defined set of criteria or analyse a system, combine representations
(constraint-based reasoning, continuous systems)

Design a system as a whole or make a diagnose / propose a solution, reflect and communicate
(causal or combinatorial reasoning, complex qualitative systems)

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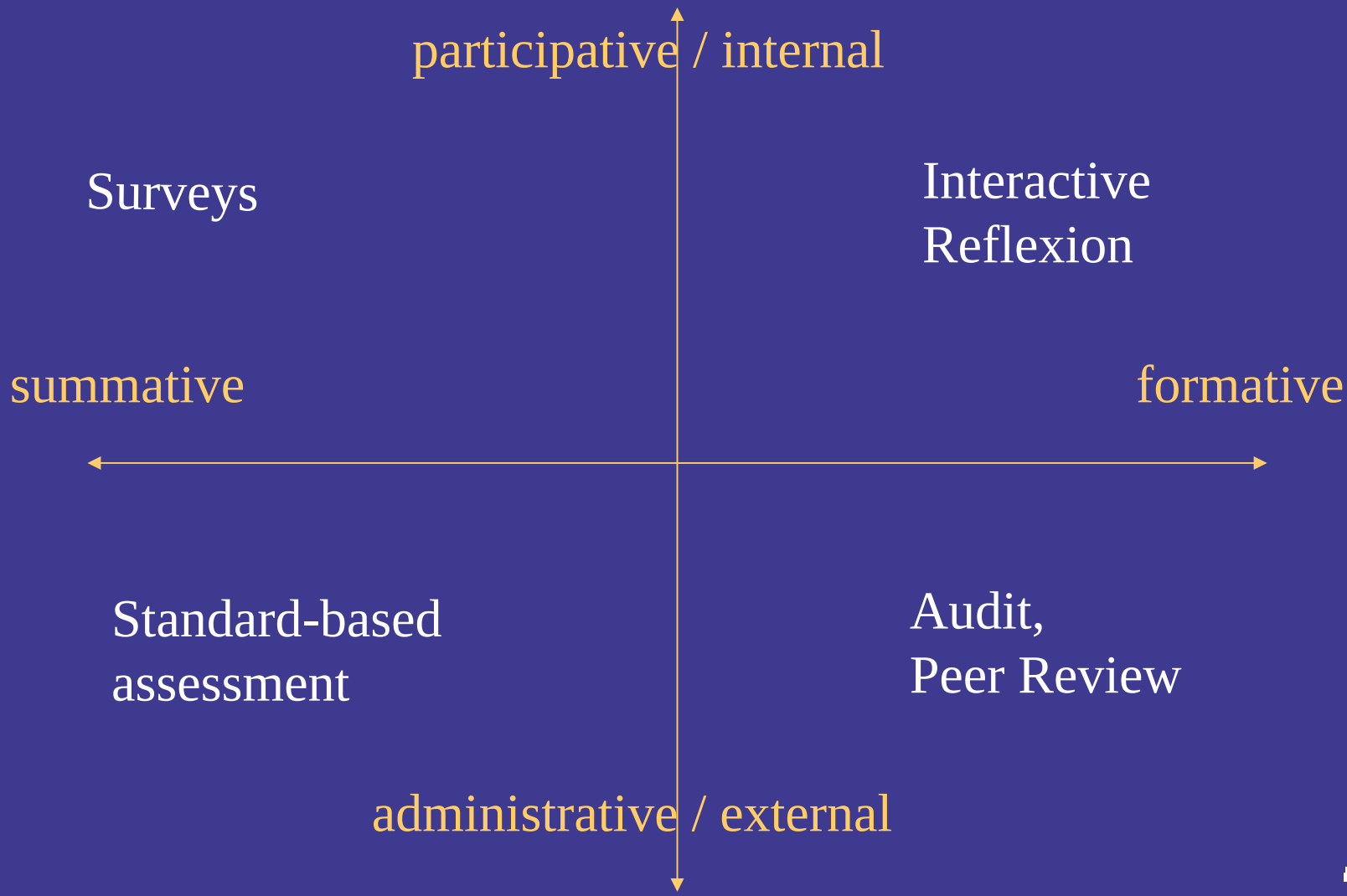
Issue #2: School accountability
Multiple perspectives on evaluation



Knowledge Base (based on Scheerens & Bosker 1997): School effectiveness and instructional quality

Context

School structure, Curriculum, pedagogical traditions and orientations, teacher education, budgeting and regulation, socio-econimical and cultural context

INPUT	PROCESS	OUTPUT
Ressources: Teacher-student-rate, student population, parent commitment	School leadership, teacher cooperation, cohesion, norms and values, school climate, evaluation	School level
Students per class, taecher competencies	Instructional quality: -- classroom management -- student orientation -- cognitive activation	Classroom level
SES, social and cuktural capital, family support, gender, language and migration background, general intellectual ability, pre-knowledge	Motivation and interest, self concept, learning strategies, self regulation, time invested	Individual level

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Needed: Empirical Research on effects of strategic reforms

Donald Campbell 1969
(American Psyhologist, 24, 409-429)

Reforms as Experiments

„It is one of the most characteristic aspects of the present situation that specific reforms are advocated as though they were certain to be successful.“

„We must help create a political climate that demands more rigorous and less self-deceptive reality testing.“

The DIPF

German Institute for International Educational Research
Deutsches Institut für Internationale Pädagogische Forschung

(I) founded in 1951 with U.S. support to build a democratic school system by fostering empirically based pedagogics

(II) outstanding for comparative educational research, esp. in qualitative and historical paradigms

(III) since 1999 restructured as Centre for

a) Information on educational issues to the public

b) Evaluation and system monitoring (incl. international comparisons)

c) Research on quality of education on the system, school, and instructional level