

Programme for International Student Assessment

Zukunft Bildung Schweiz

Schweizerisches Schulsystem im Vergleich

Andreas Schleicher, 21 Juni 2012

PISA

OECD Programme for
International Student Assessment



Das schweizerische Schulsystem im internationalen Kontext und Vergleich

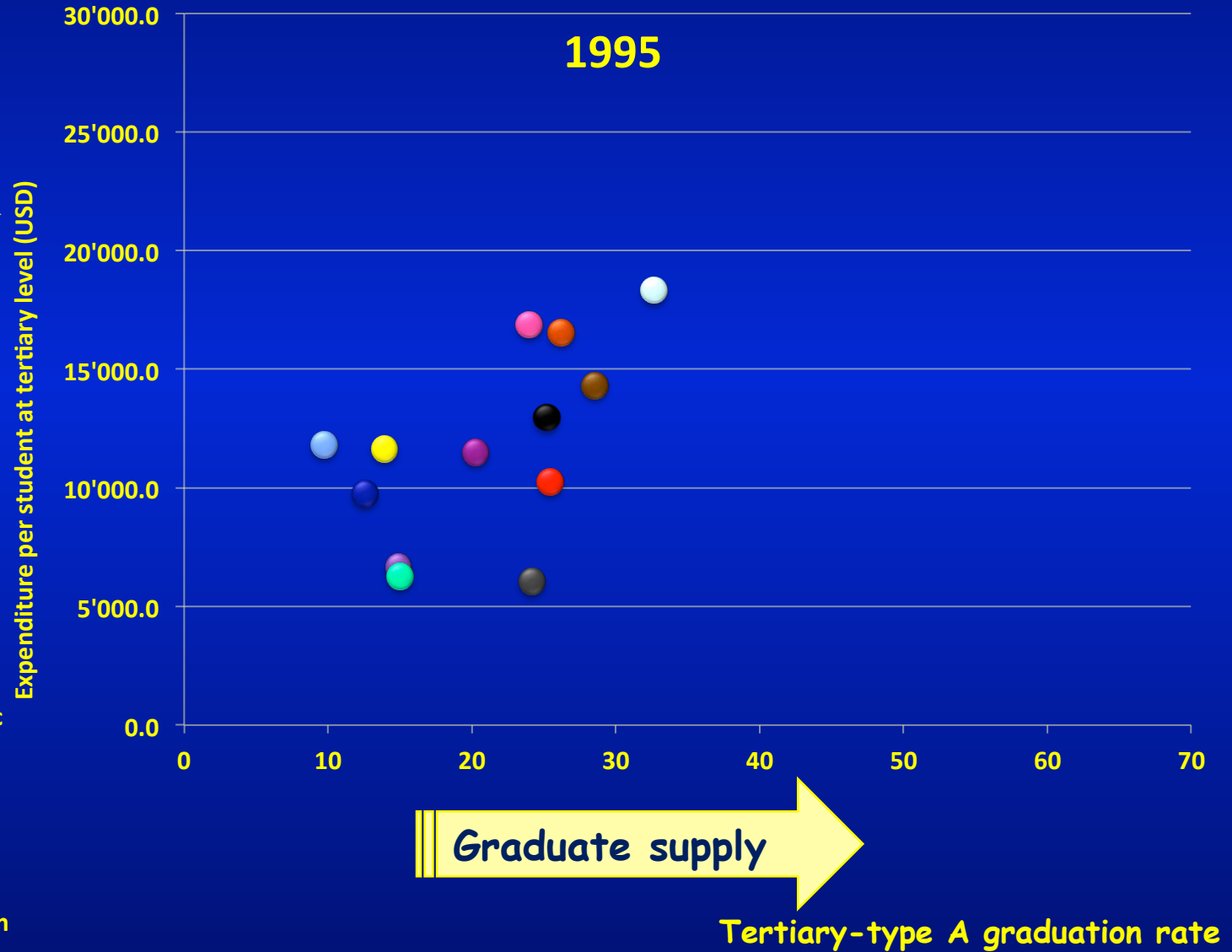
Thun, 21. Juni 2012

Andreas Schleicher

Special advisor to the Secretary-General on Education Policy
Head of the Indicators and Analysis Division, EDU

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A world of change - higher education

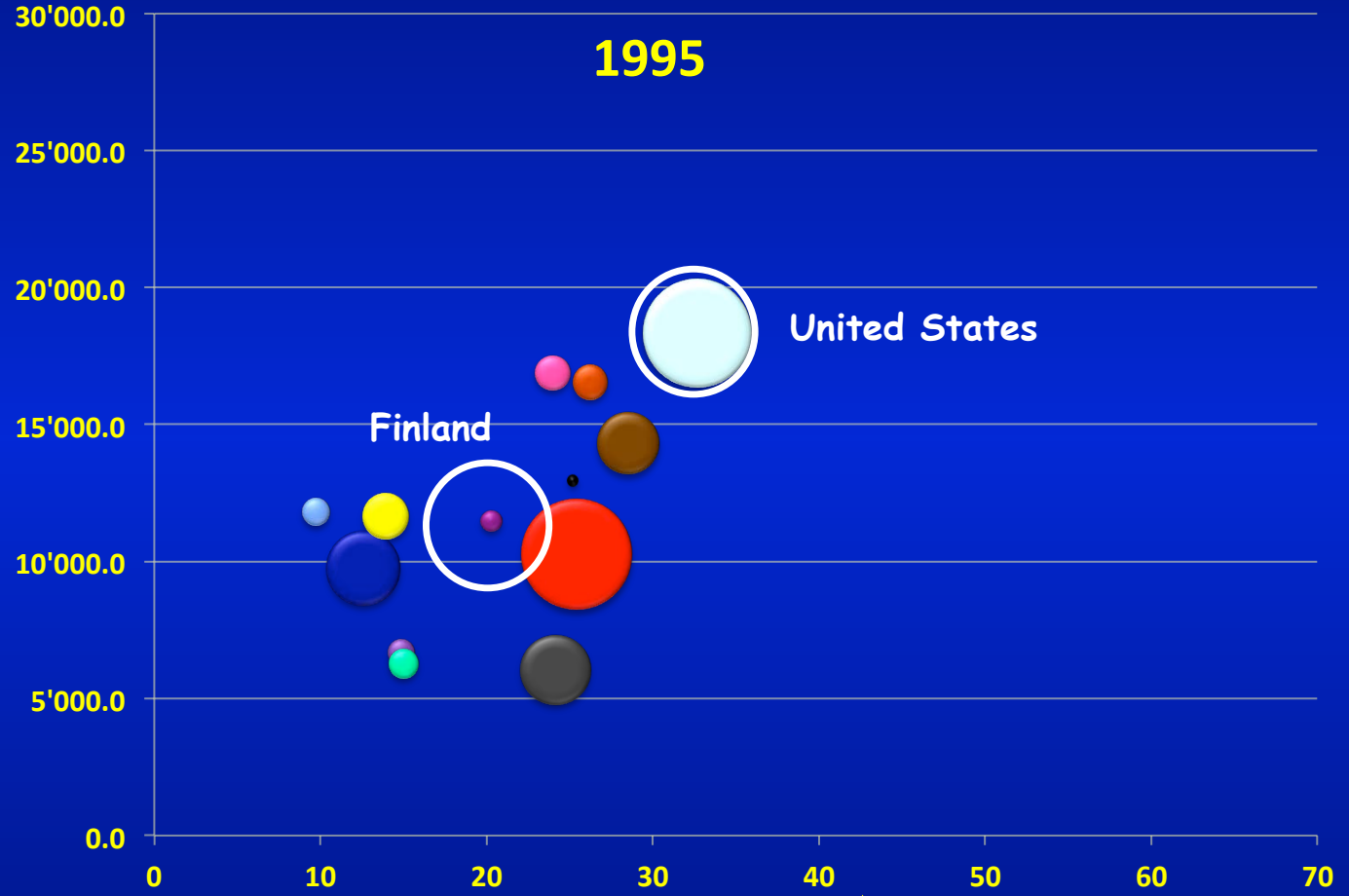


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A world of change - higher education

Cost per student

Expenditure per student at tertiary level (USD)

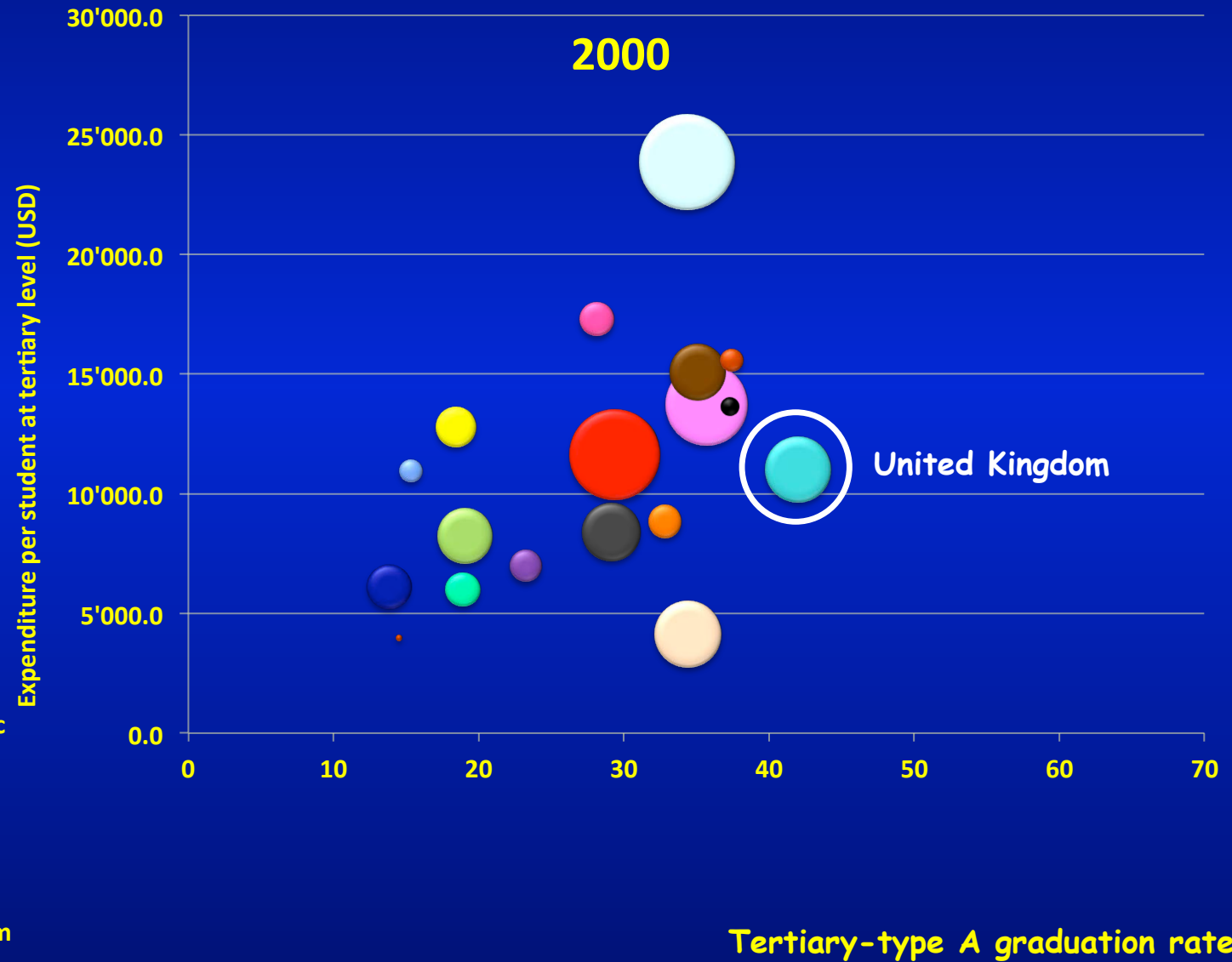


Graduate supply

Tertiary-type A graduation rate

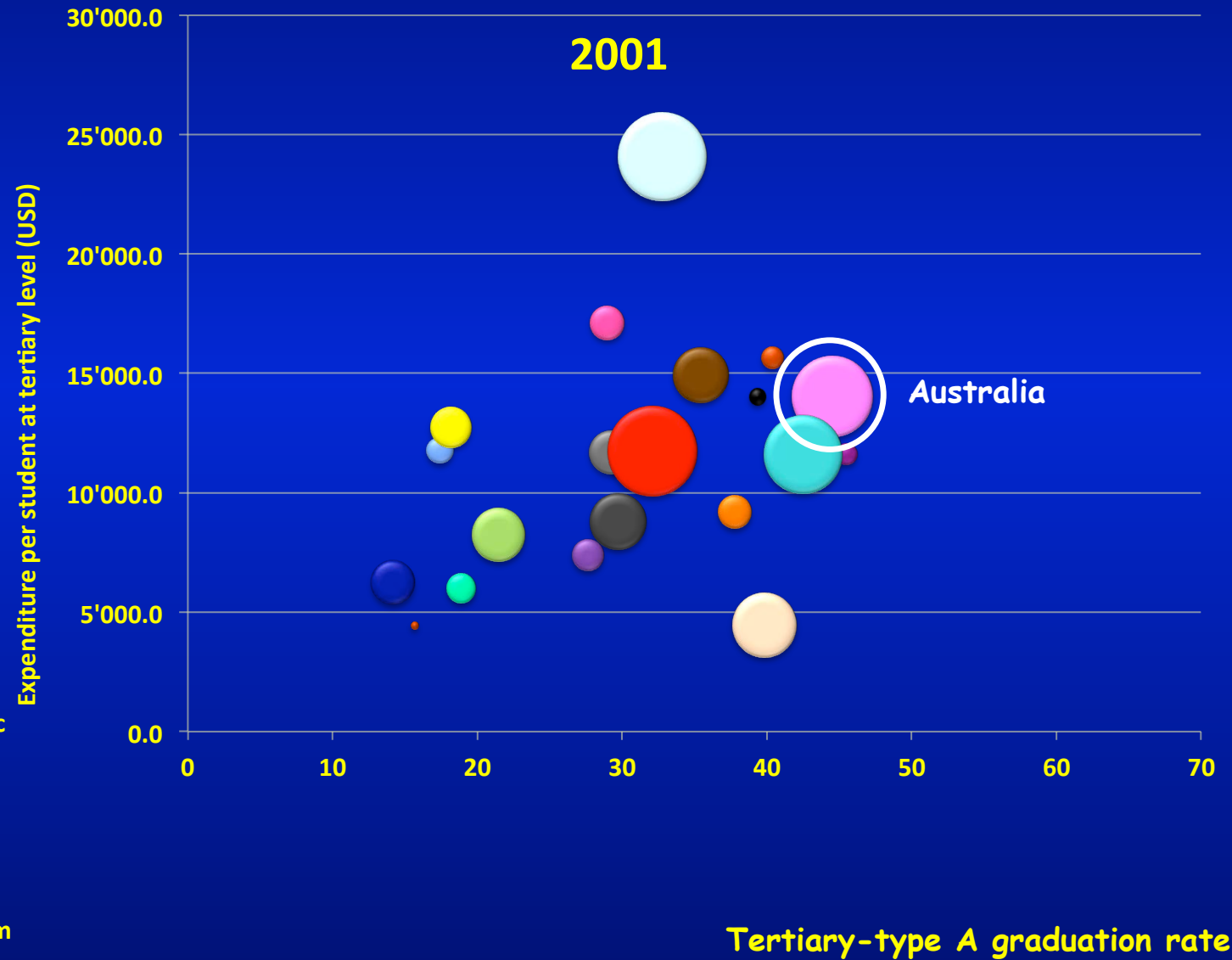
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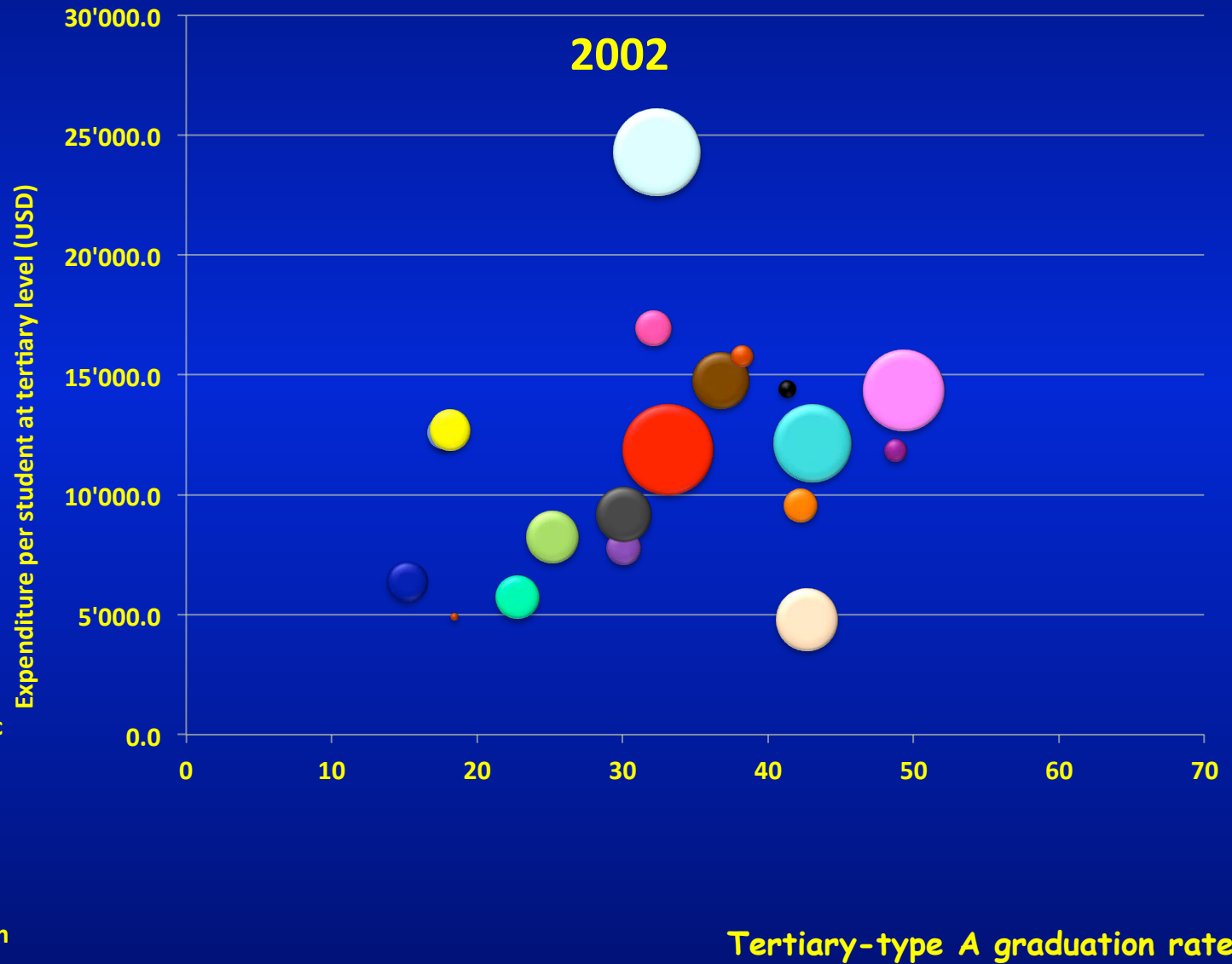
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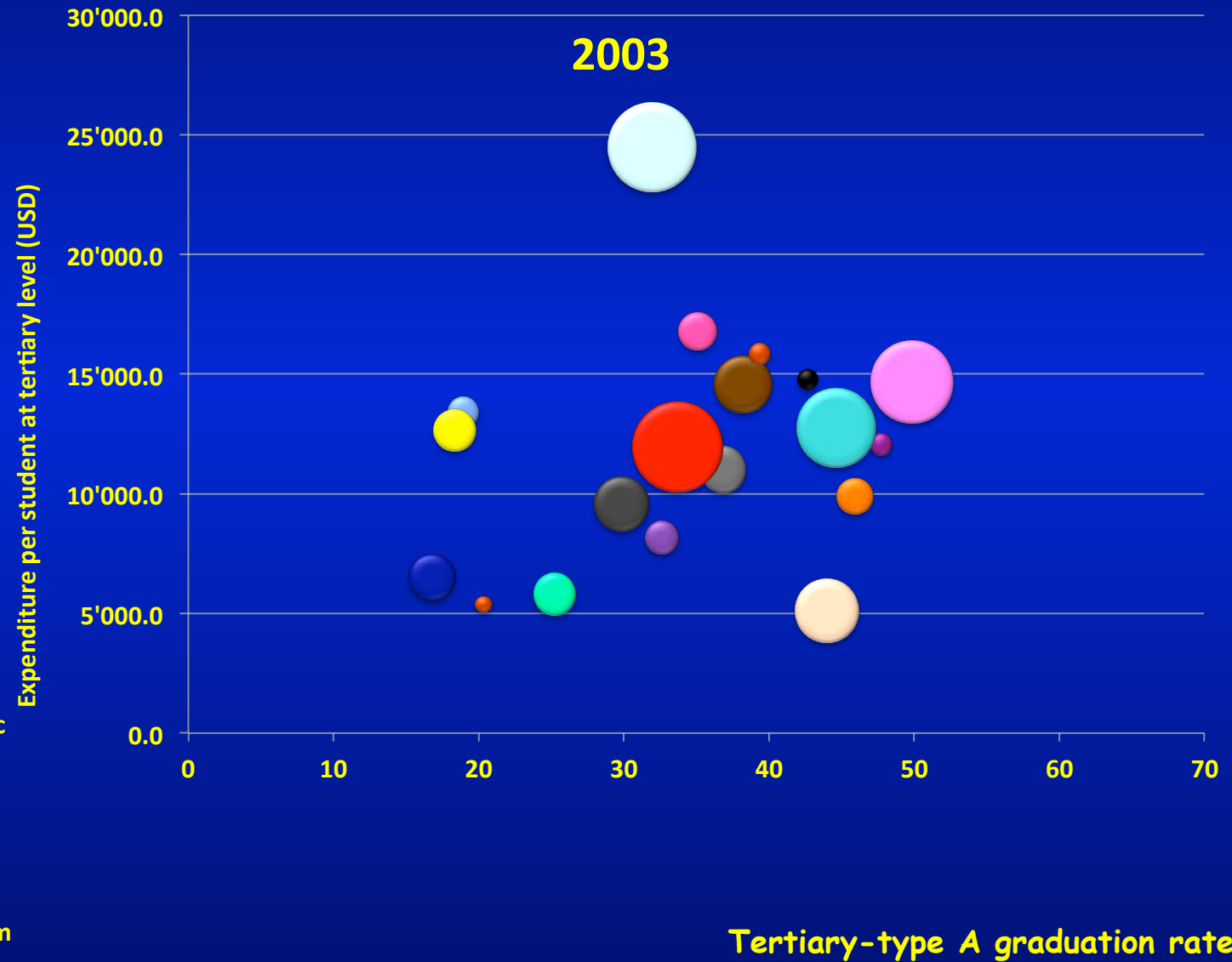
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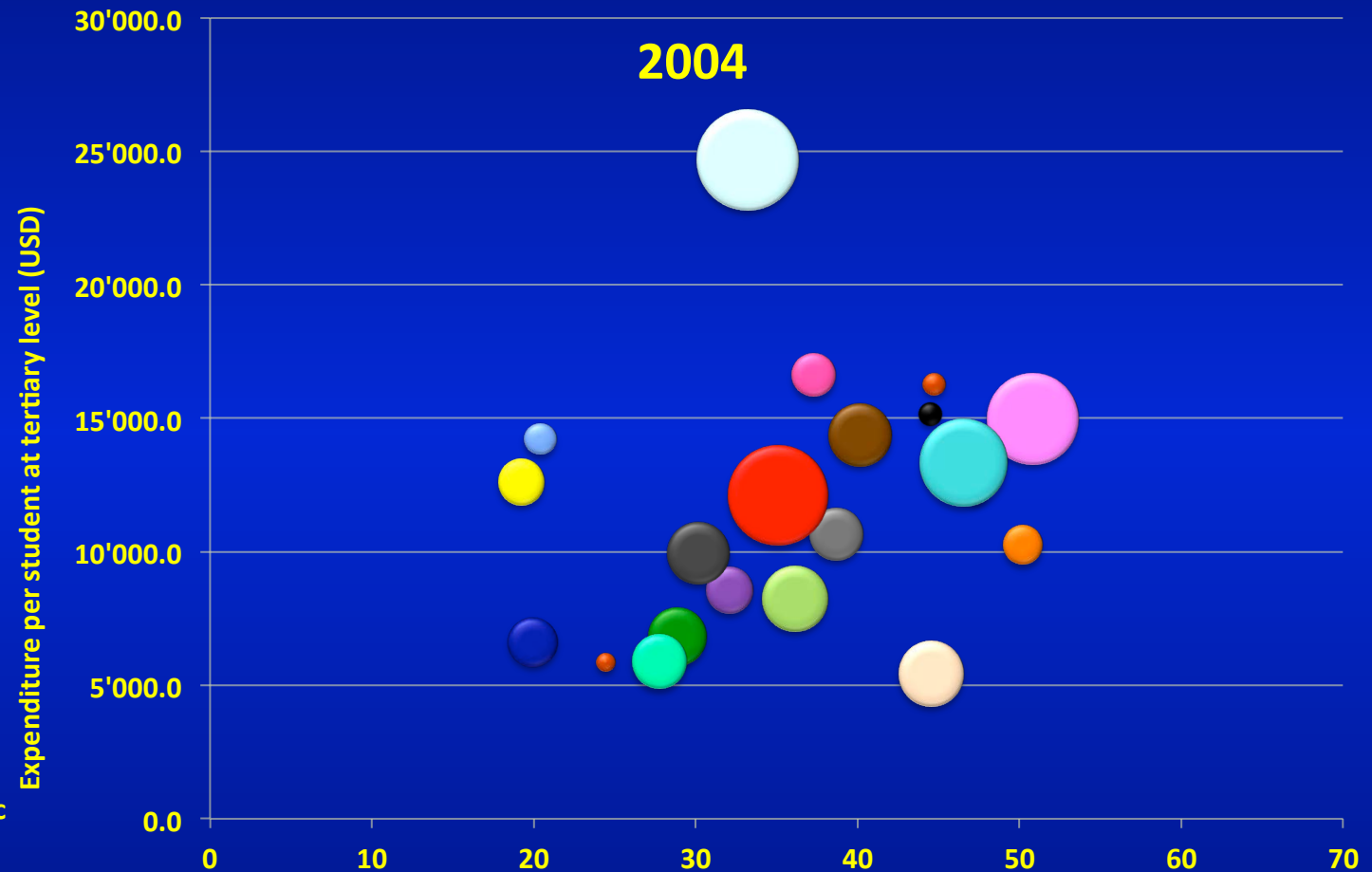
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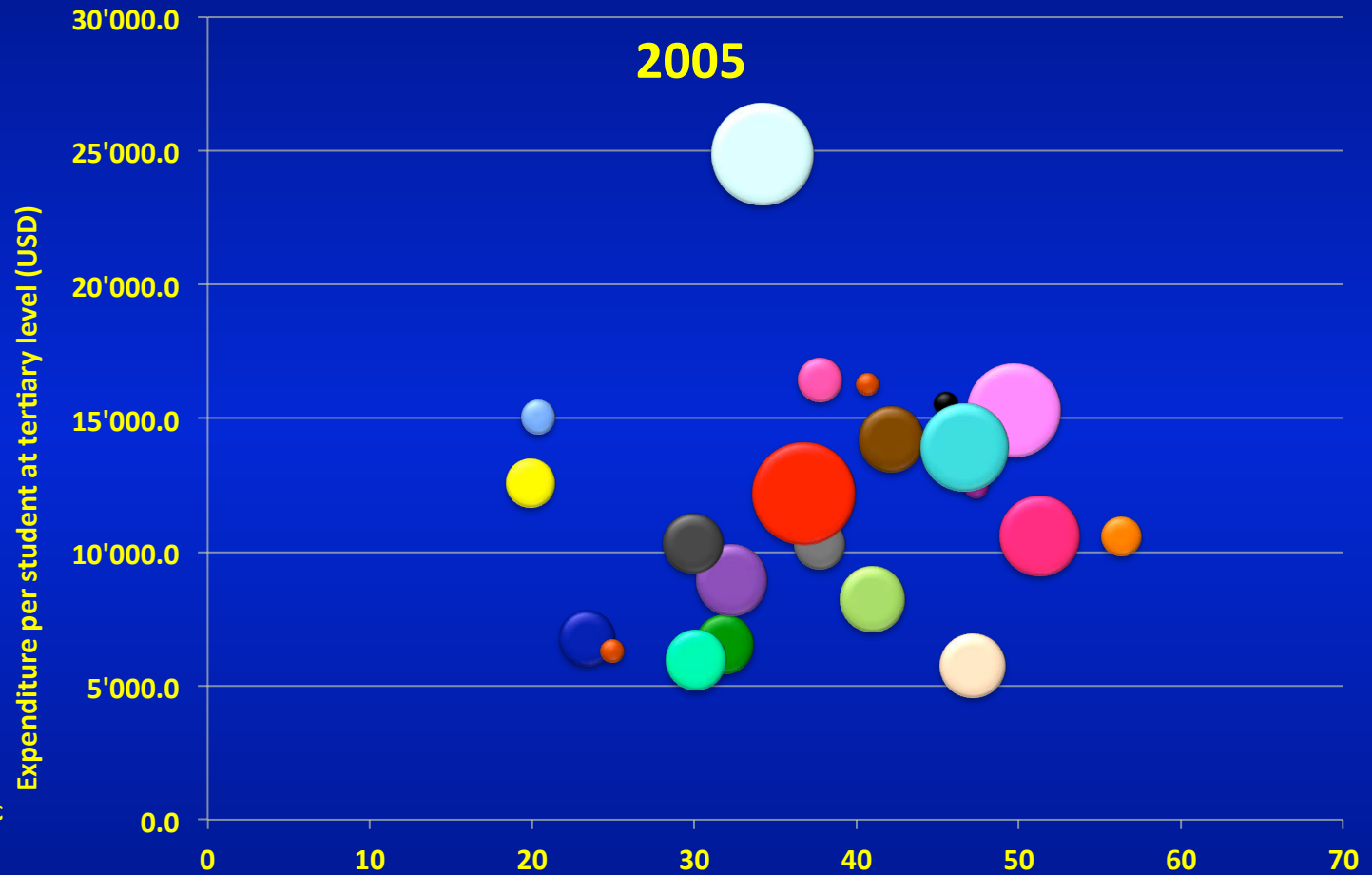
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Tertiary-type A graduation rate

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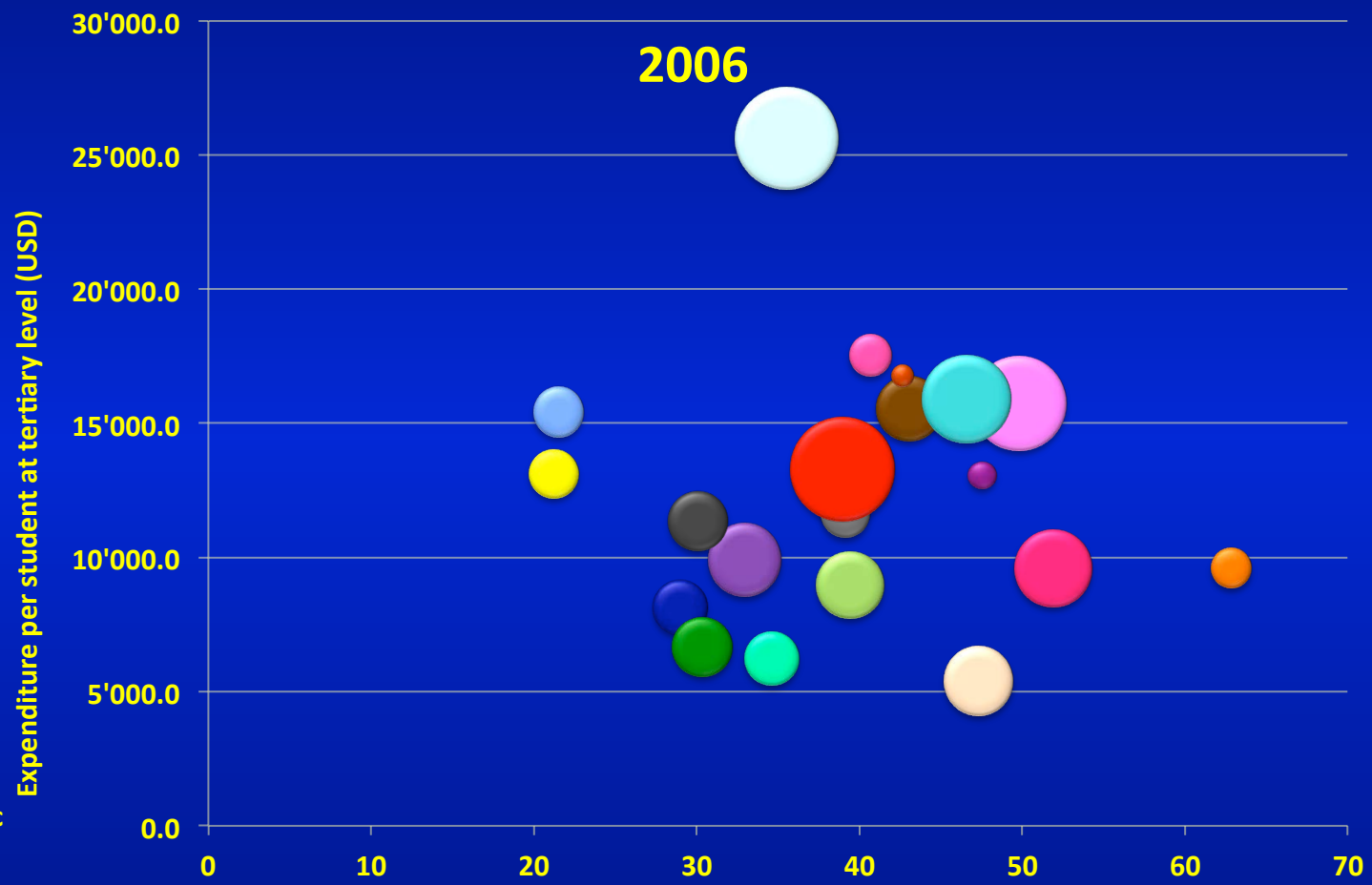
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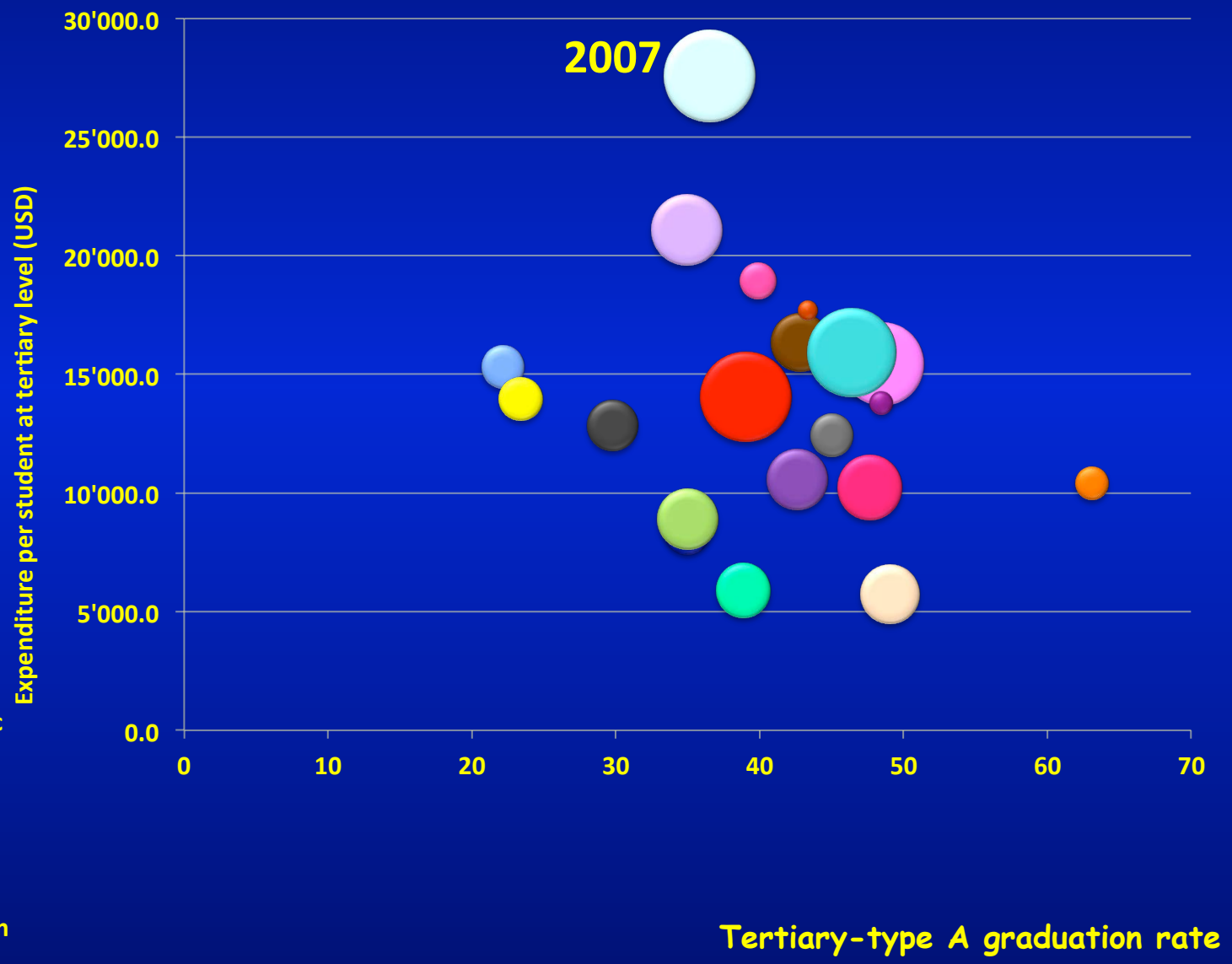
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Tertiary-type A graduation rate

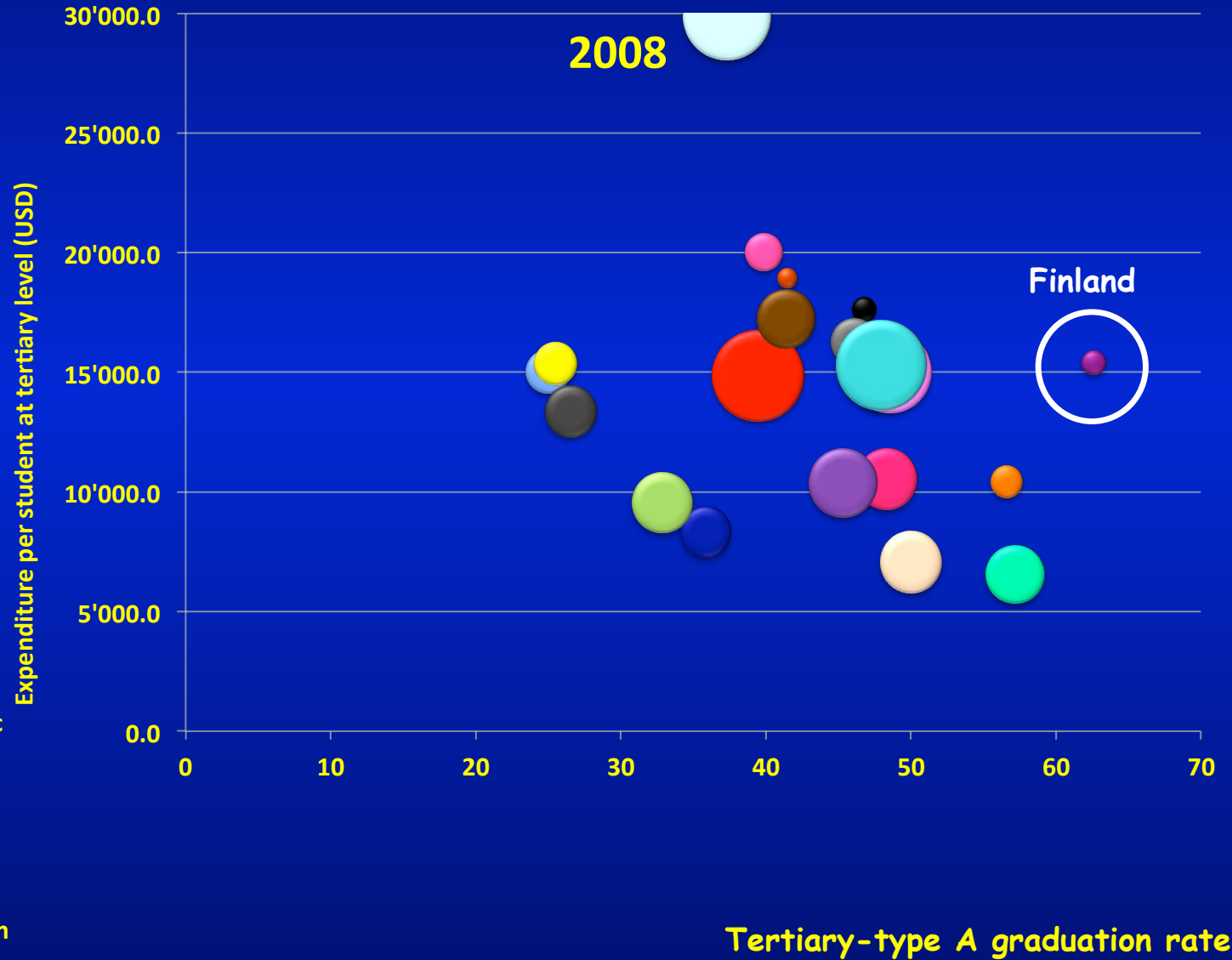
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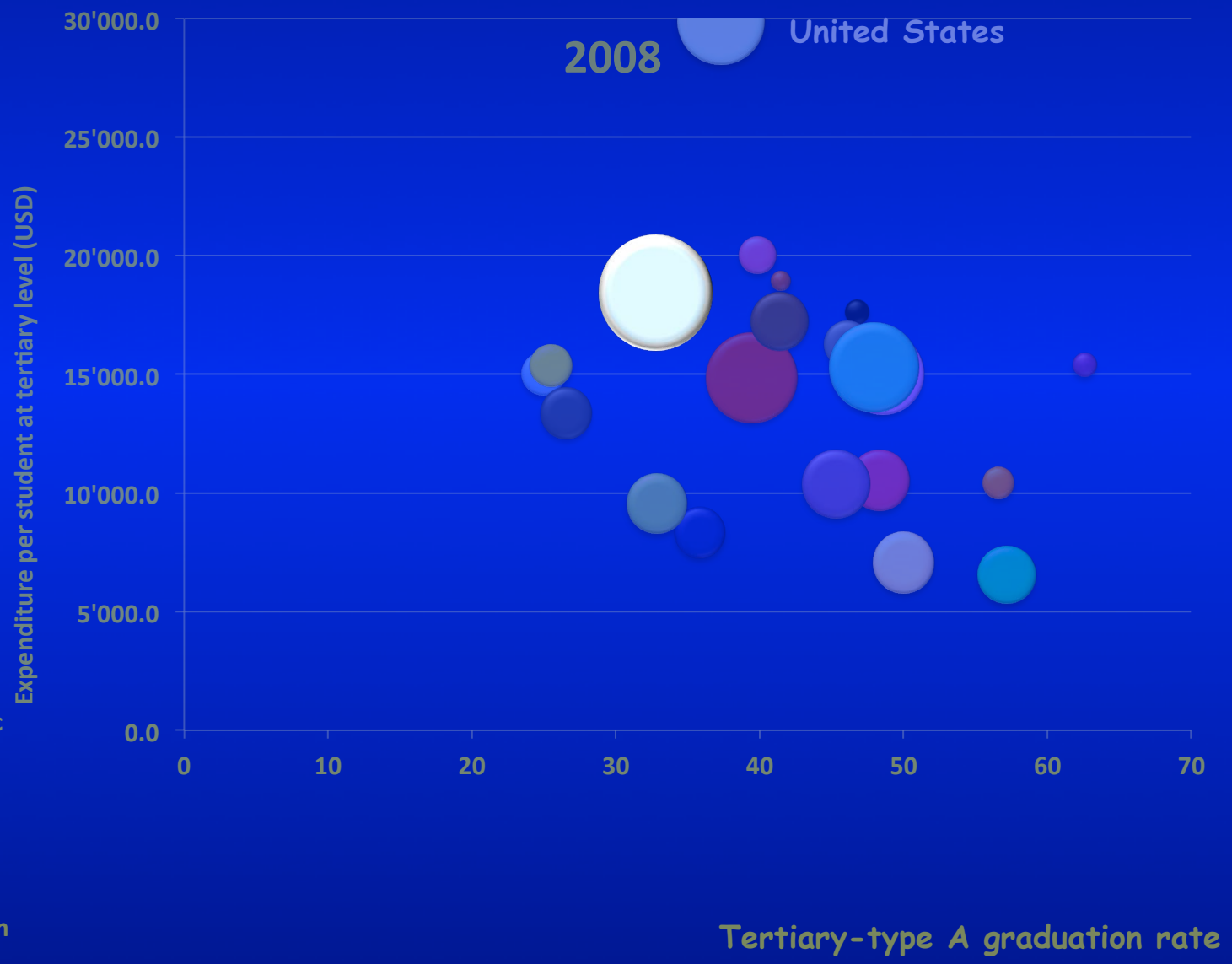
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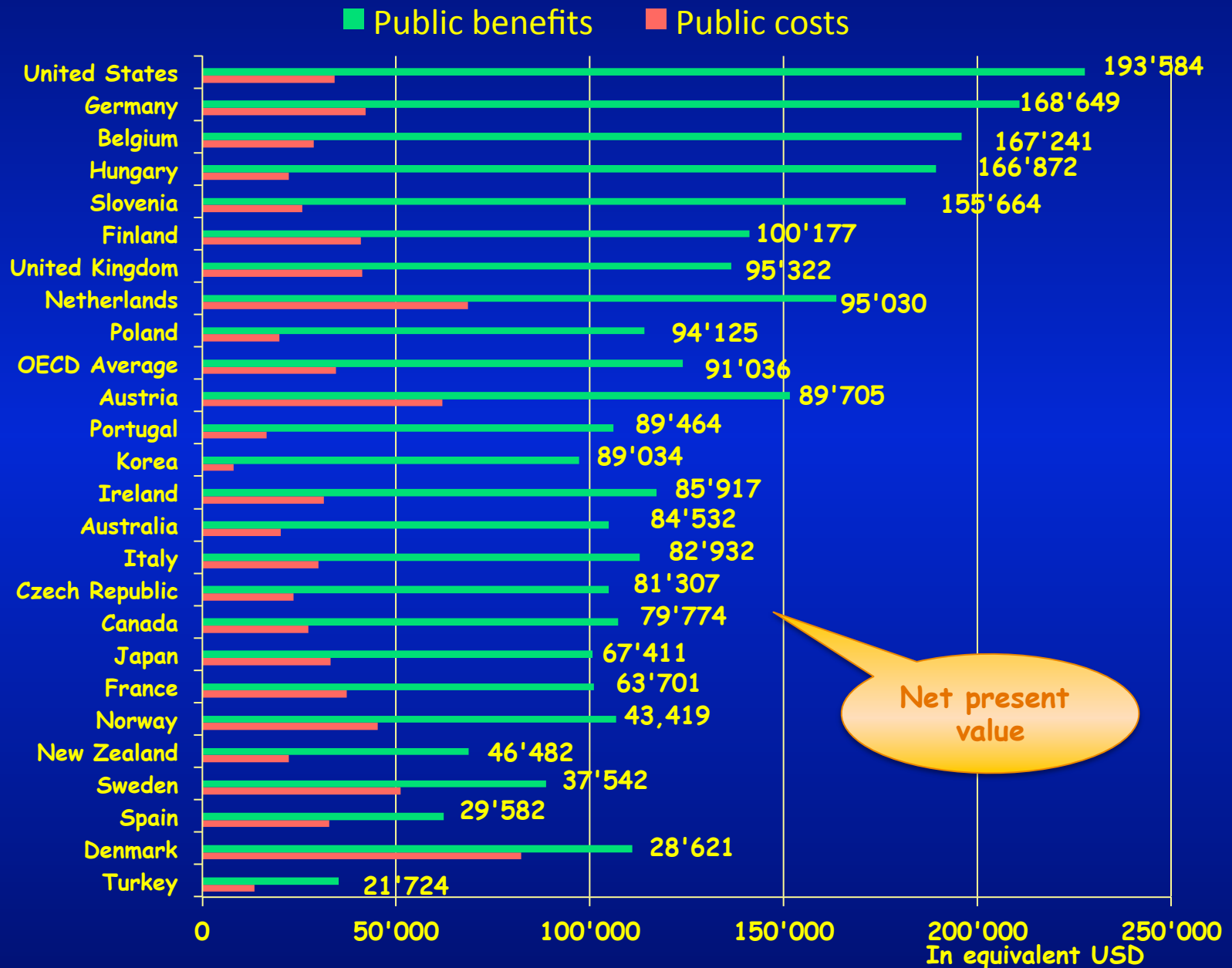


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A world of change - higher education

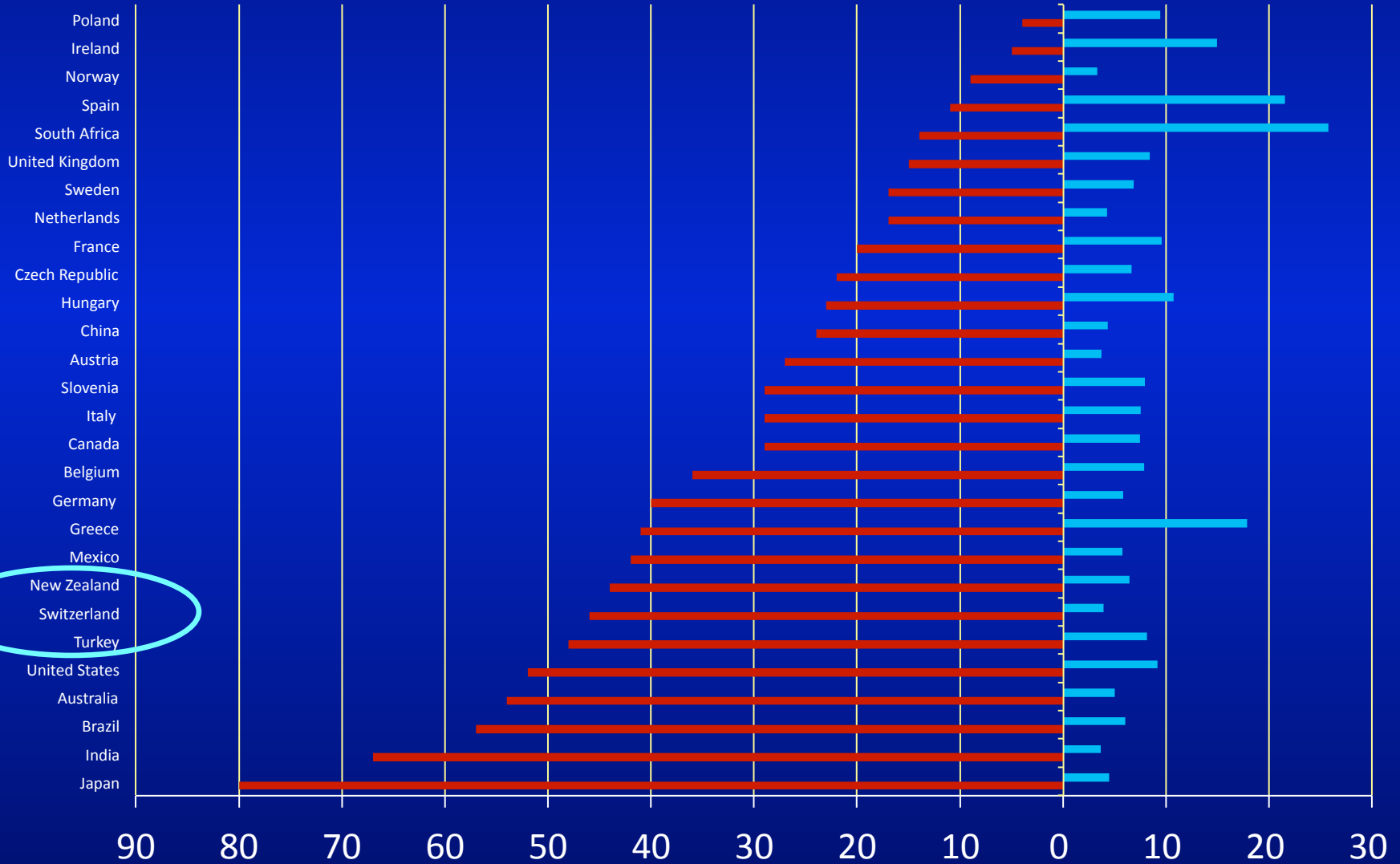


Public cost and benefits for a man obtaining tertiary education (2007 or latest available year)



Skills shortages and unemployment coexist

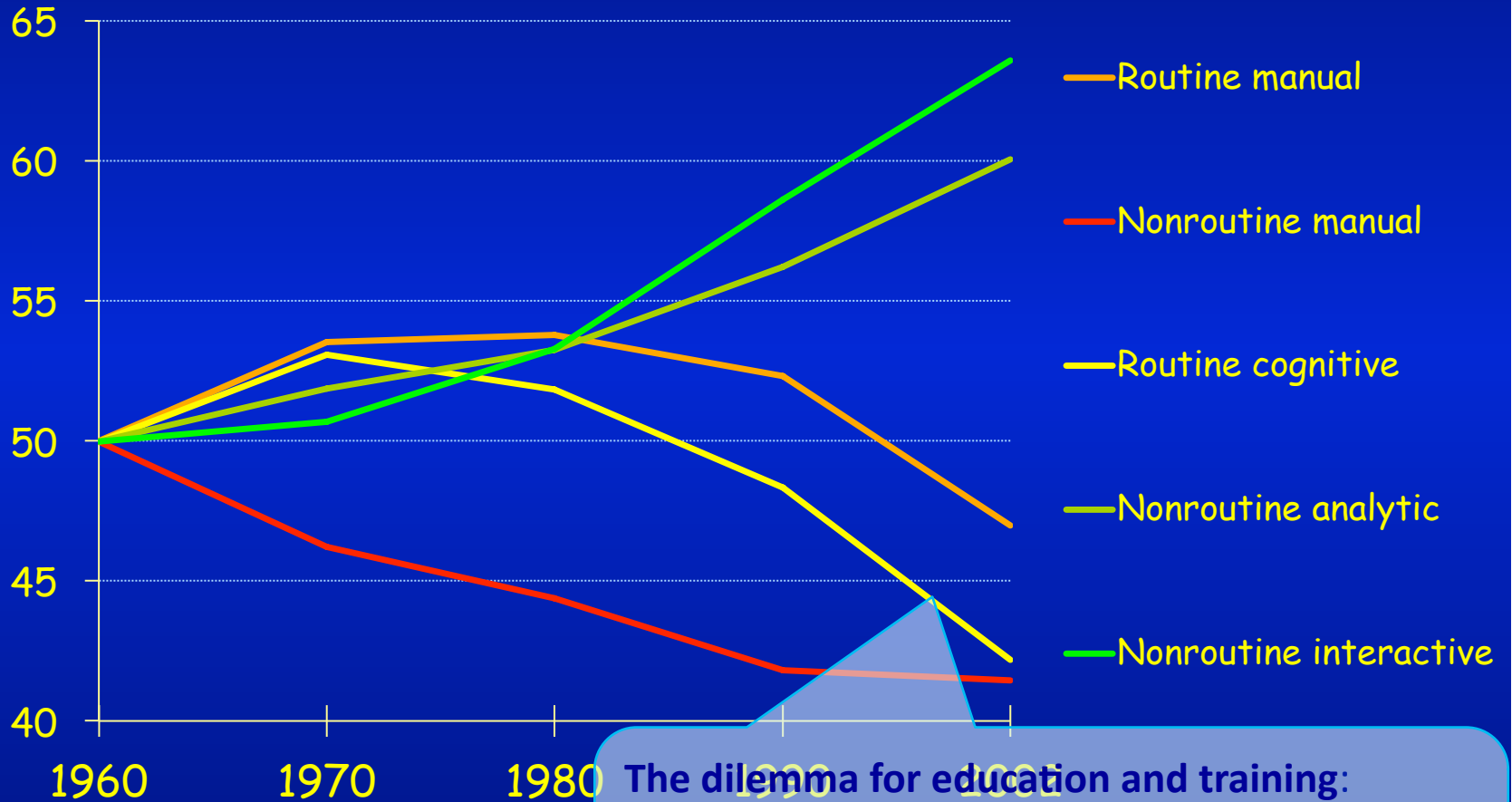
■ Unemployment rates (2011) ■ Share of employers reporting recruitment difficulties



How the demand for skills has changed

Economy-wide measures of routine and non-routine task input (US)

Mean task input as percentiles of the 1960 task distribution



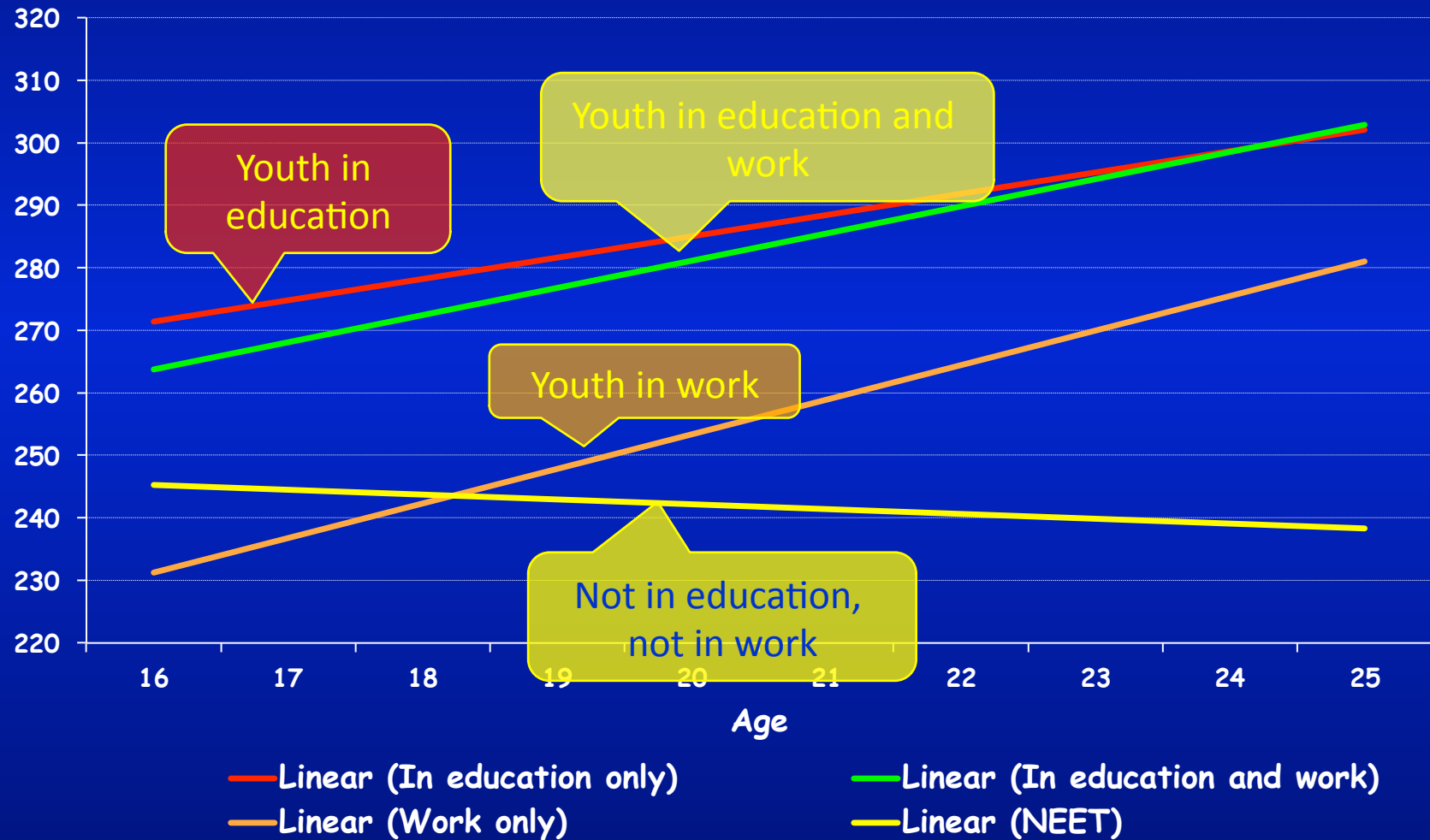
(Levy and Murnane)

The dilemma for education and training:
The skills that are easiest to teach and test are also the ones that are easiest to digitise, automate and outsource

Learning beyond school

Cross-sectional skill-age profiles for youths by education and work status

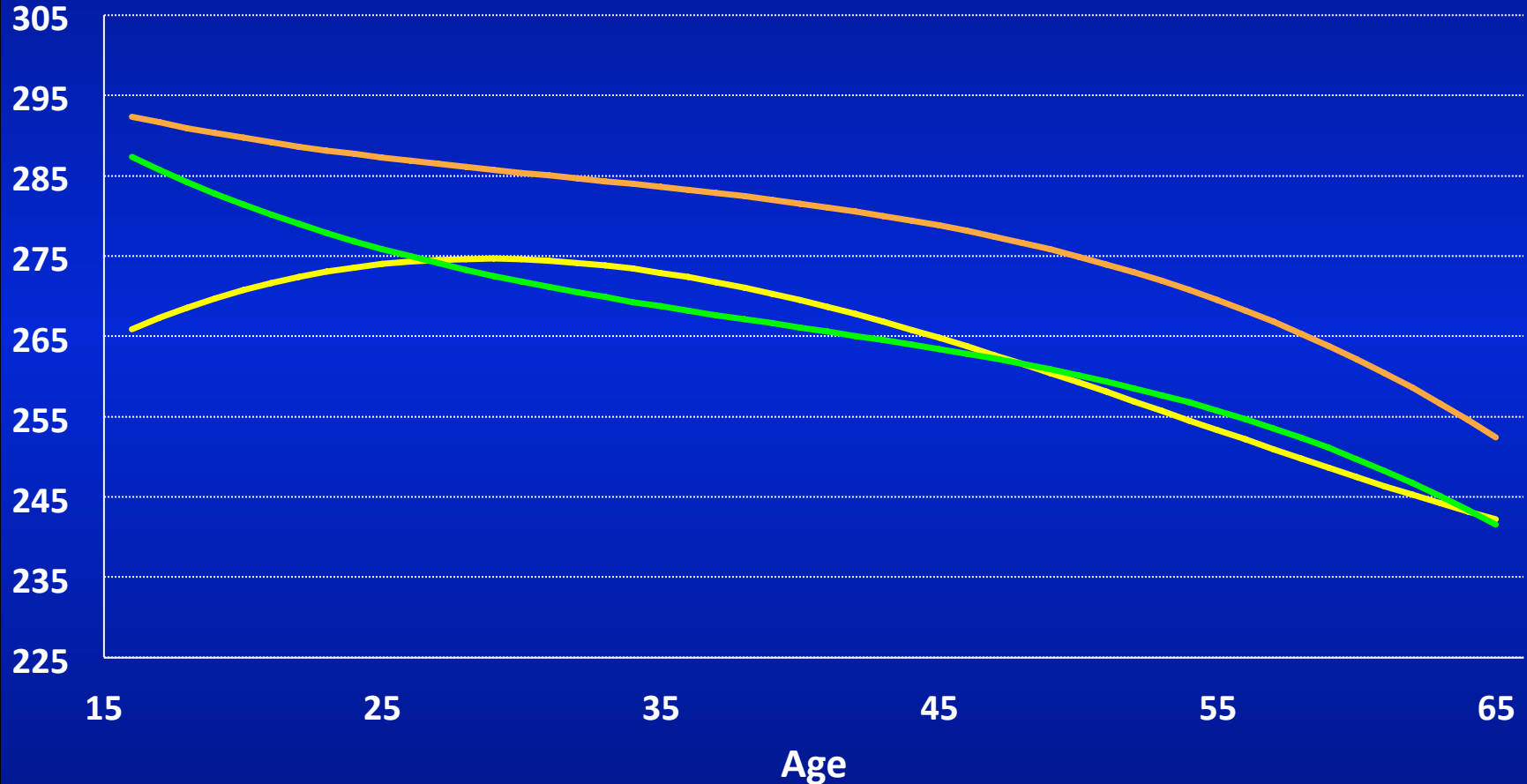
Mean skill score



Making lifelong learning a reality

Skills by age

Skill score



— No adjustment

— Adjusted for immigrant status and education

— Adjusted for immigrant status, education and reading engagement

Proportion of 15-29 year-olds unemployed (2009)

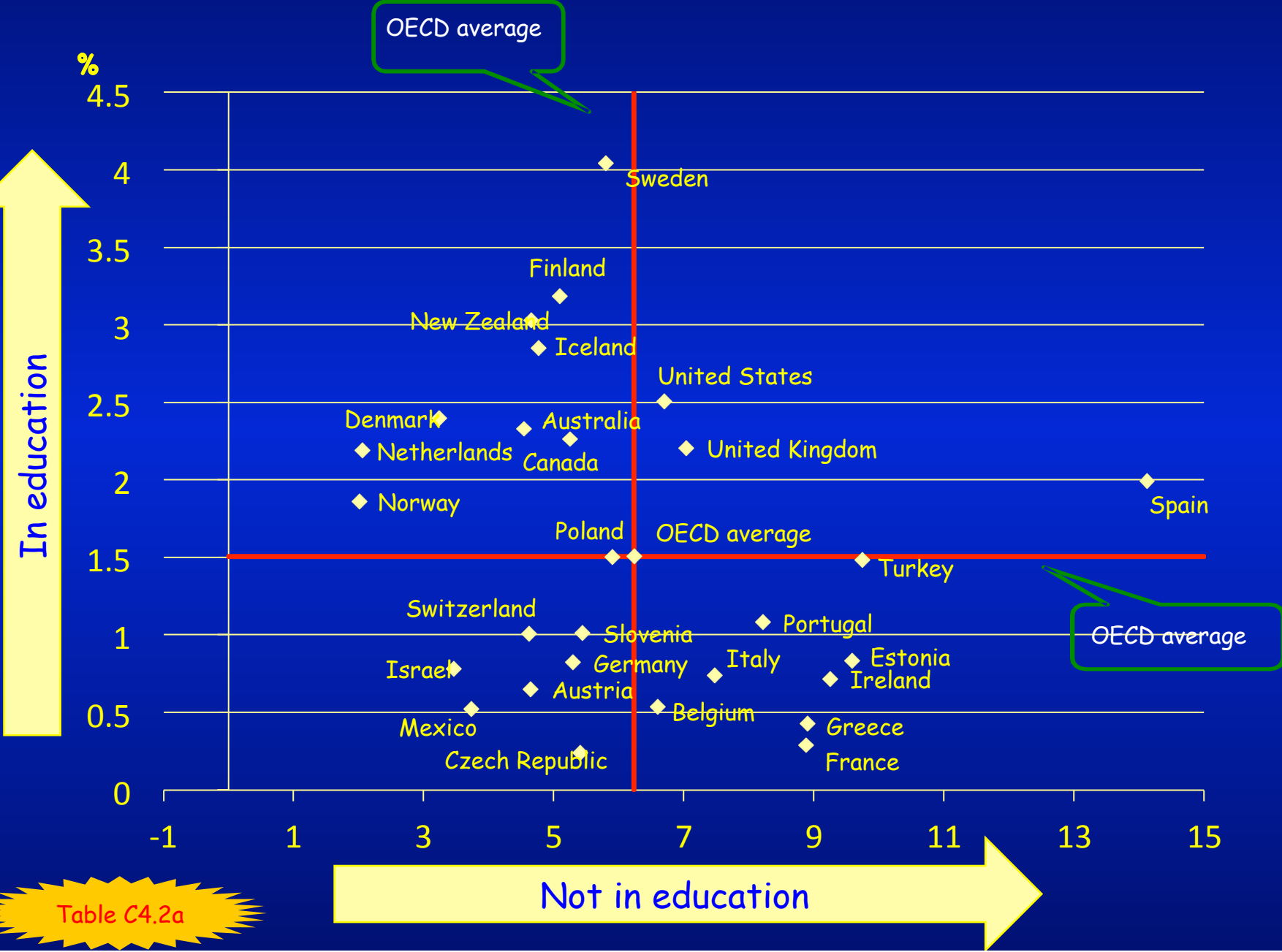


Table C4.2a

PISA 2009 in brief

PISA countries in 2009

□ Over half a million students...

- representing 28 million 15-year-olds in 74* countries/economies

... took an internationally agreed 2-hour test...

- Goes beyond testing whether students can reproduce what they were taught...
- ... to assess students' capacity to extrapolate from what they know and creatively apply their knowledge in novel situations

... and responded to questions on...

- their personal background, their schools and their engagement with learning and school

□ Parents, principals and system leaders provided data on...

- school policies, practices, resources and institutional factors that help explain performance differences.

* Data for Costa Rica, Georgia, India, Malaysia, Malta, Mauritius, Venezuela and Vietnam will be published in December 2011

PISA 2009 in brief

□ Key principles

- 'Crowd sourcing' and collaboration
 - PISA draws together leading expertise and institutions from participating countries to develop instruments and methodologies...
... guided by governments on the basis of shared policy interests
- Cross-national relevance and transferability of policy experiences
 - Emphasis on validity across cultures, languages and systems
 - Frameworks built on well-structured conceptual understanding of assessment areas and contextual factors
- Triangulation across different stakeholder perspectives
 - Systematic integration of insights from students, parents, school principals and system-leaders
- Advanced methods with different grain sizes
 - A range of methods to adequately measure intended constructs with different grain sizes to serve different decision-making needs
 - Productive feedback, at appropriate levels of detail, to fuel improvement at multiple levels.

What 15-year-olds can do

55

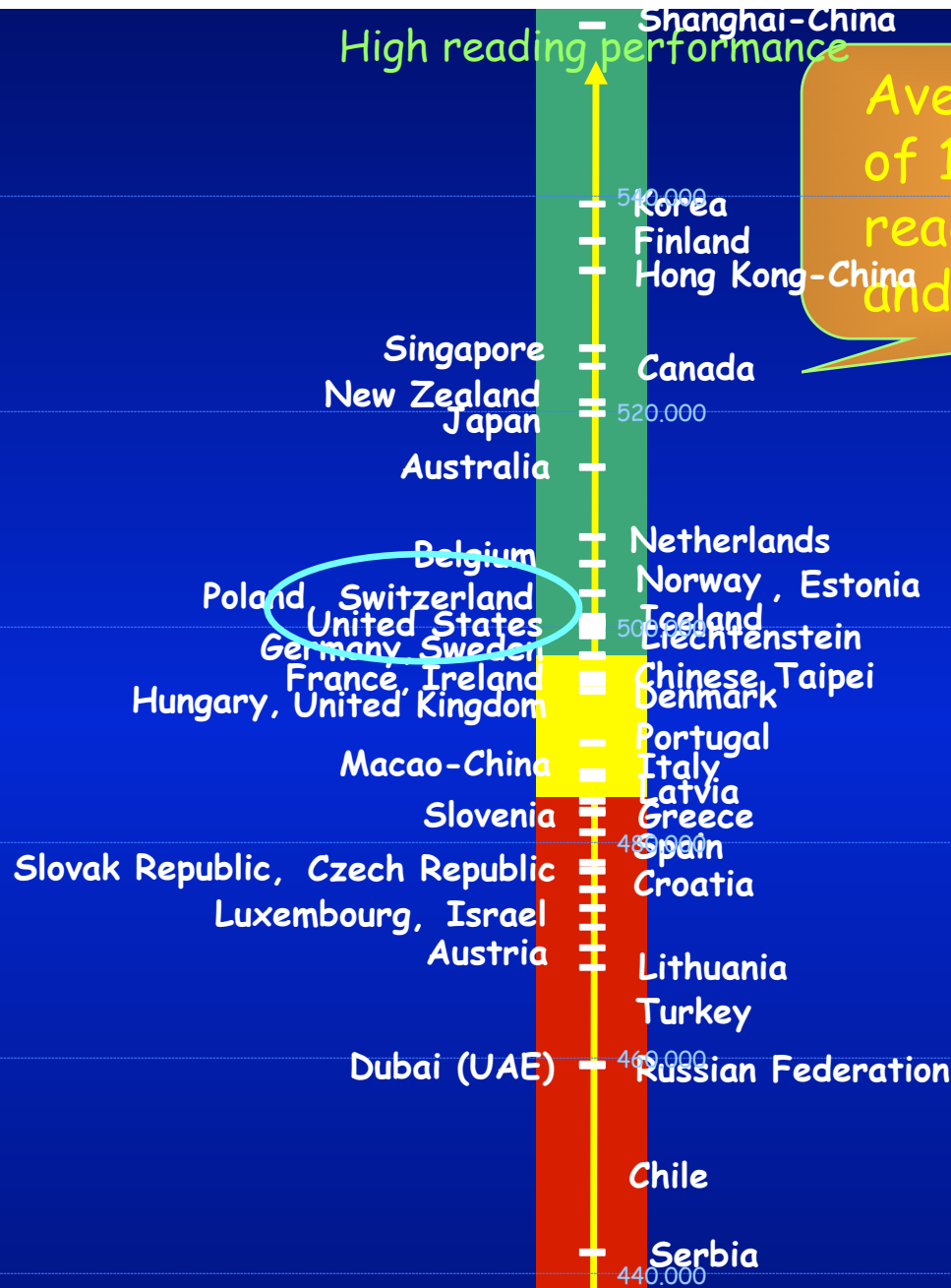
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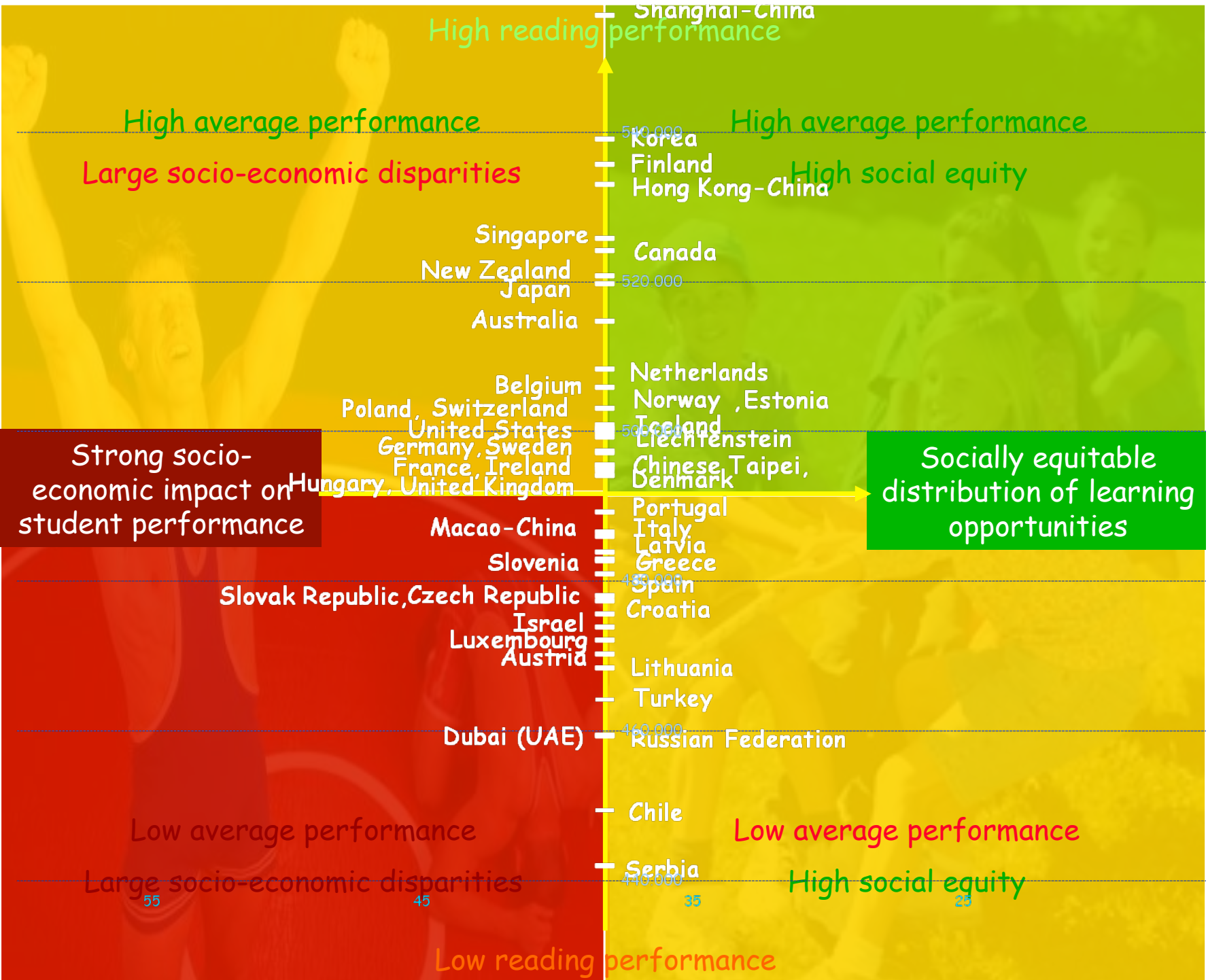
High reading performance

Average performance of 15-year-olds in reading - extrapolate and apply

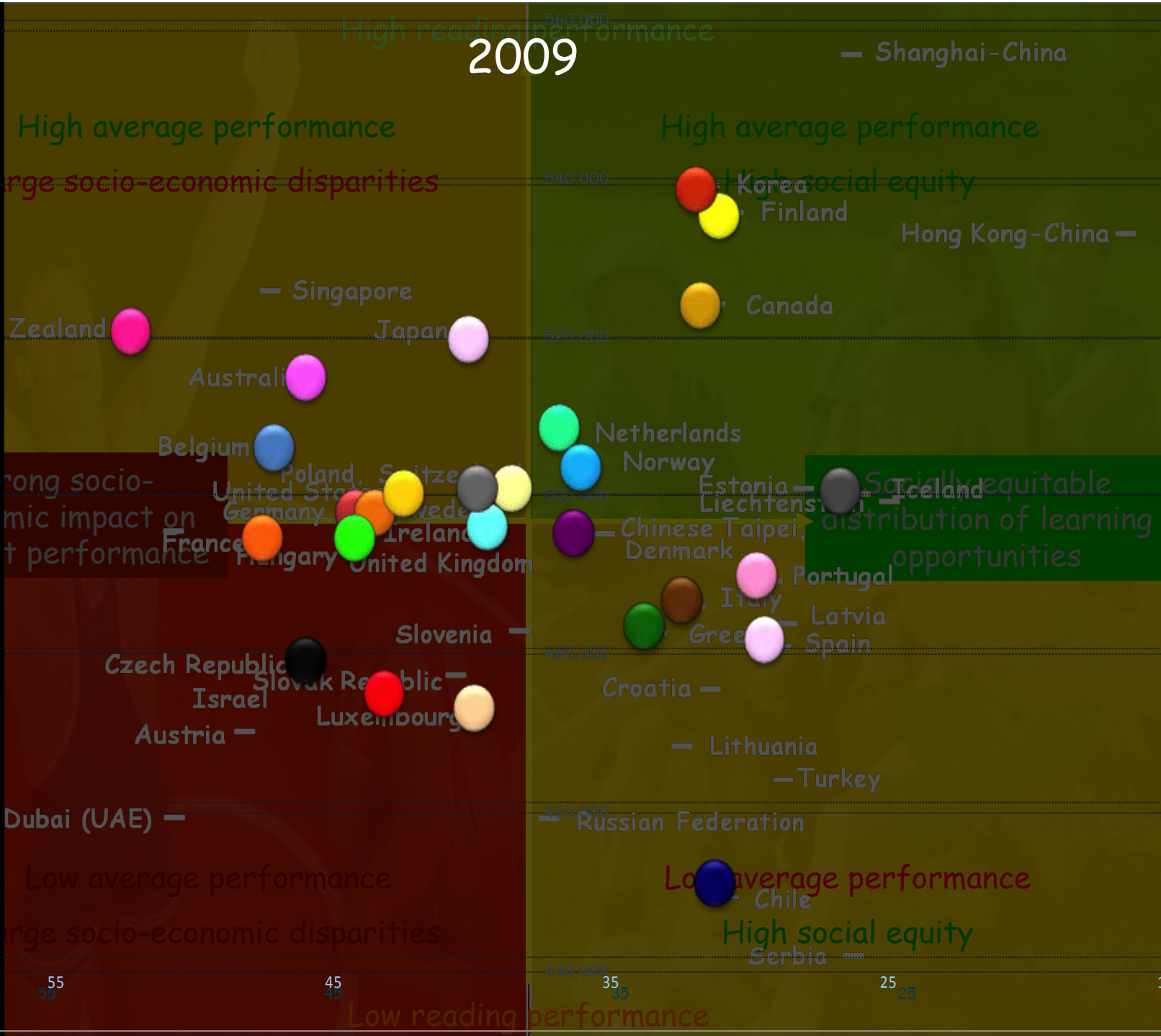


... 17 countries perform below this line

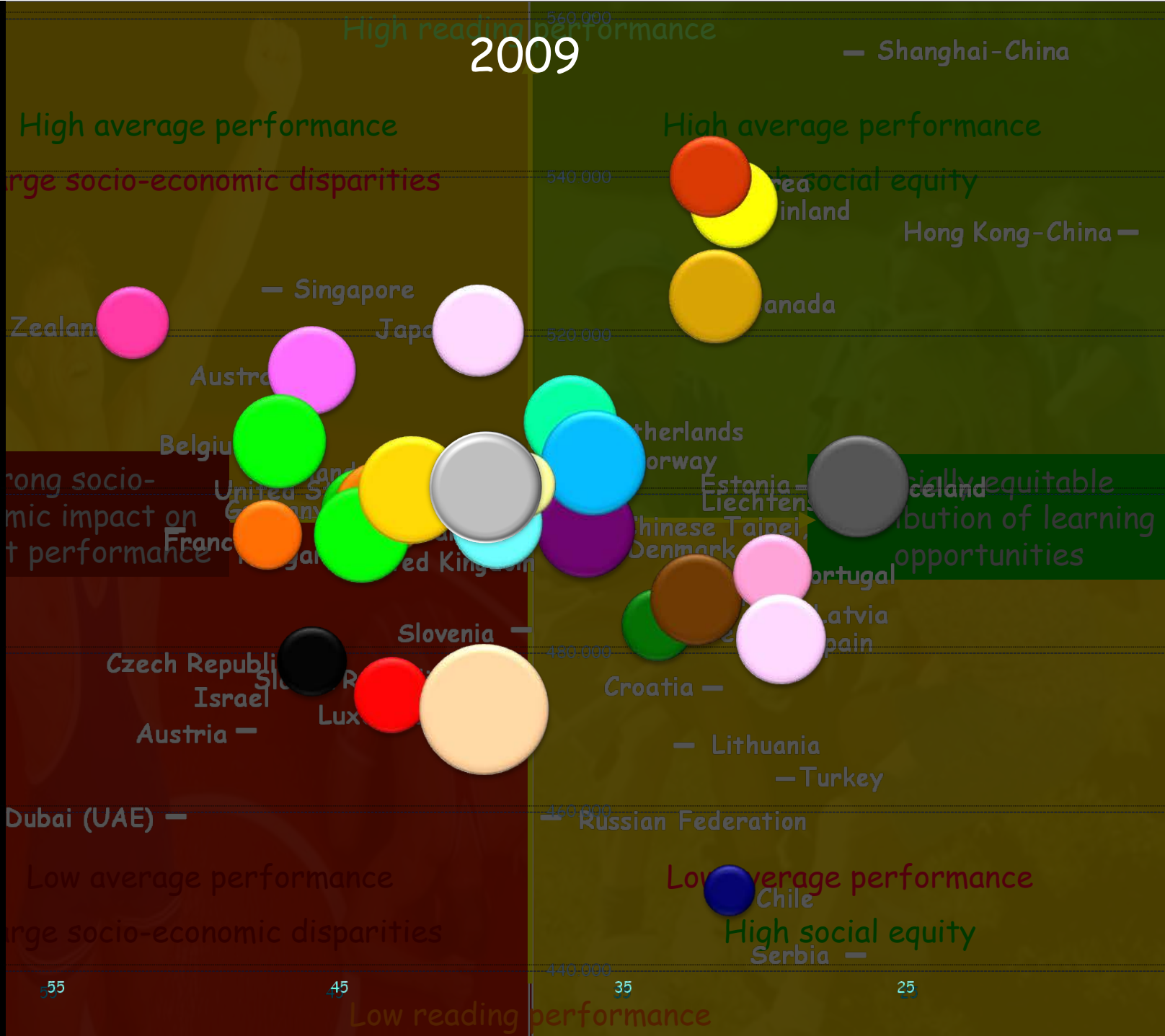
Low reading performance



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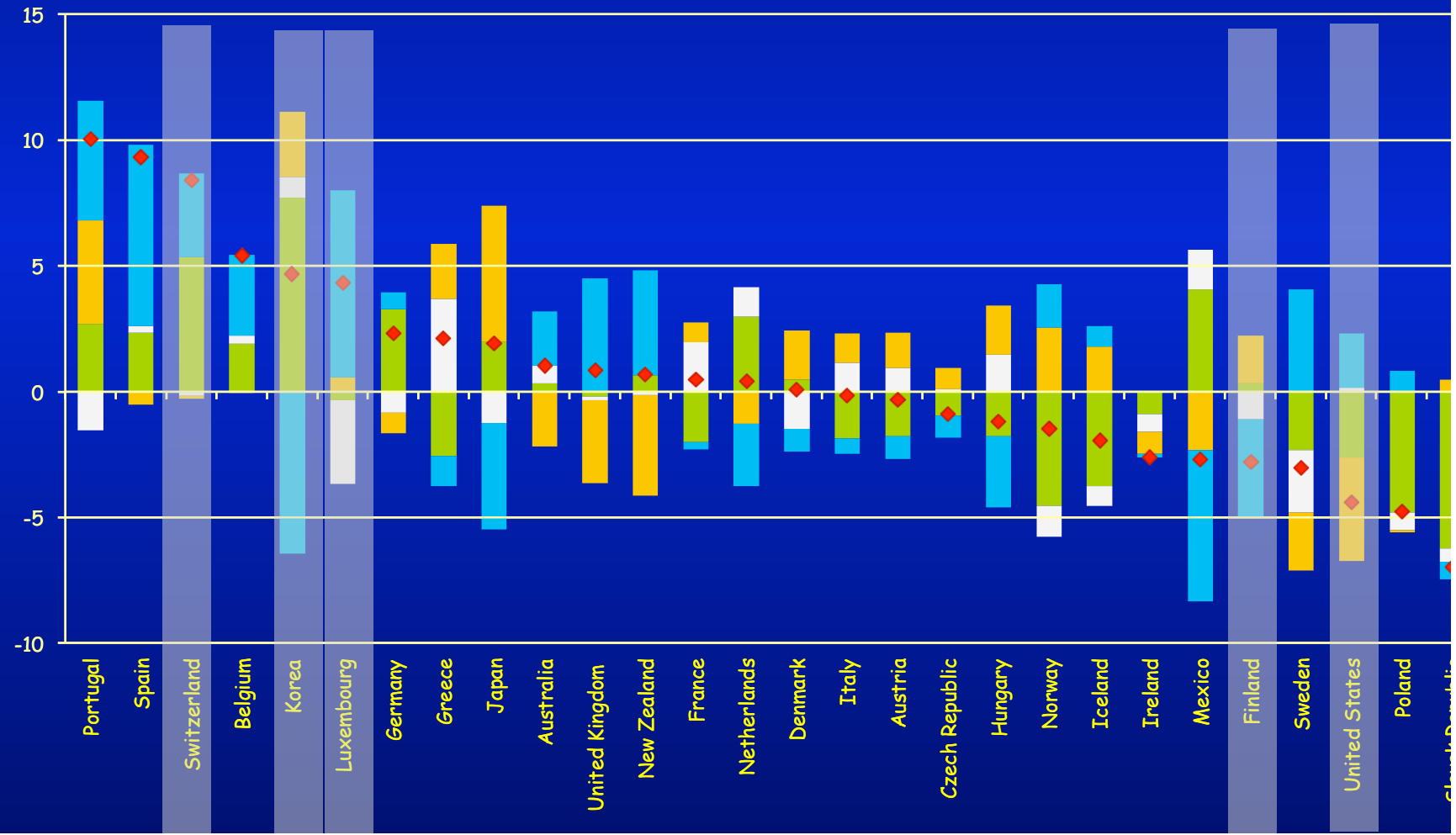


High performing systems often prioritize the quality of teachers over the size of classes

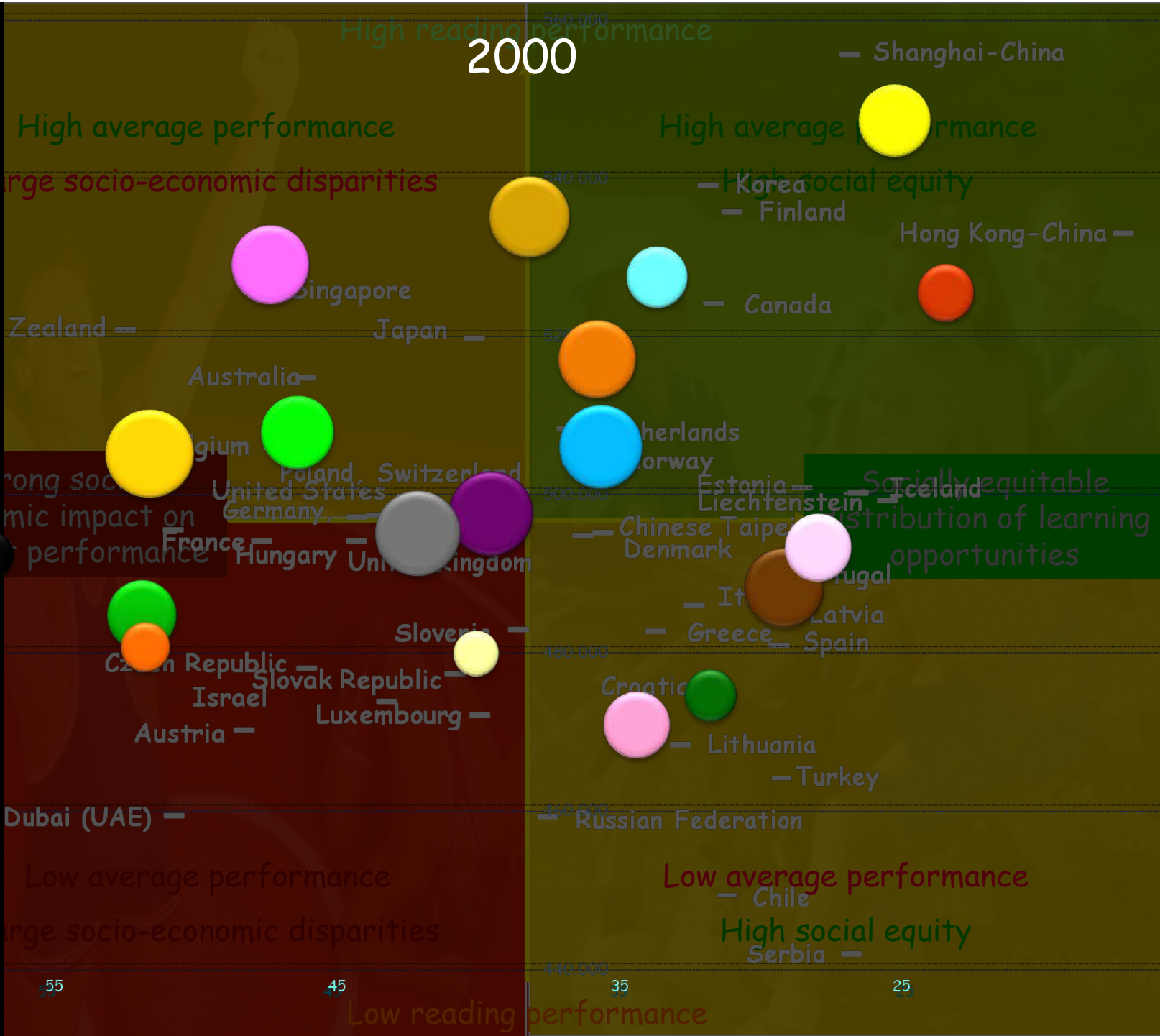
Contribution of various factors to upper secondary teacher compensation costs per student as a percentage of GDP per capita (2004)

■ Salary as % of GDP/capita
 ■ Instruction time
 ■ 1/teaching time
 ■ 1/class size
◆ Difference with OECD average

Percentage points

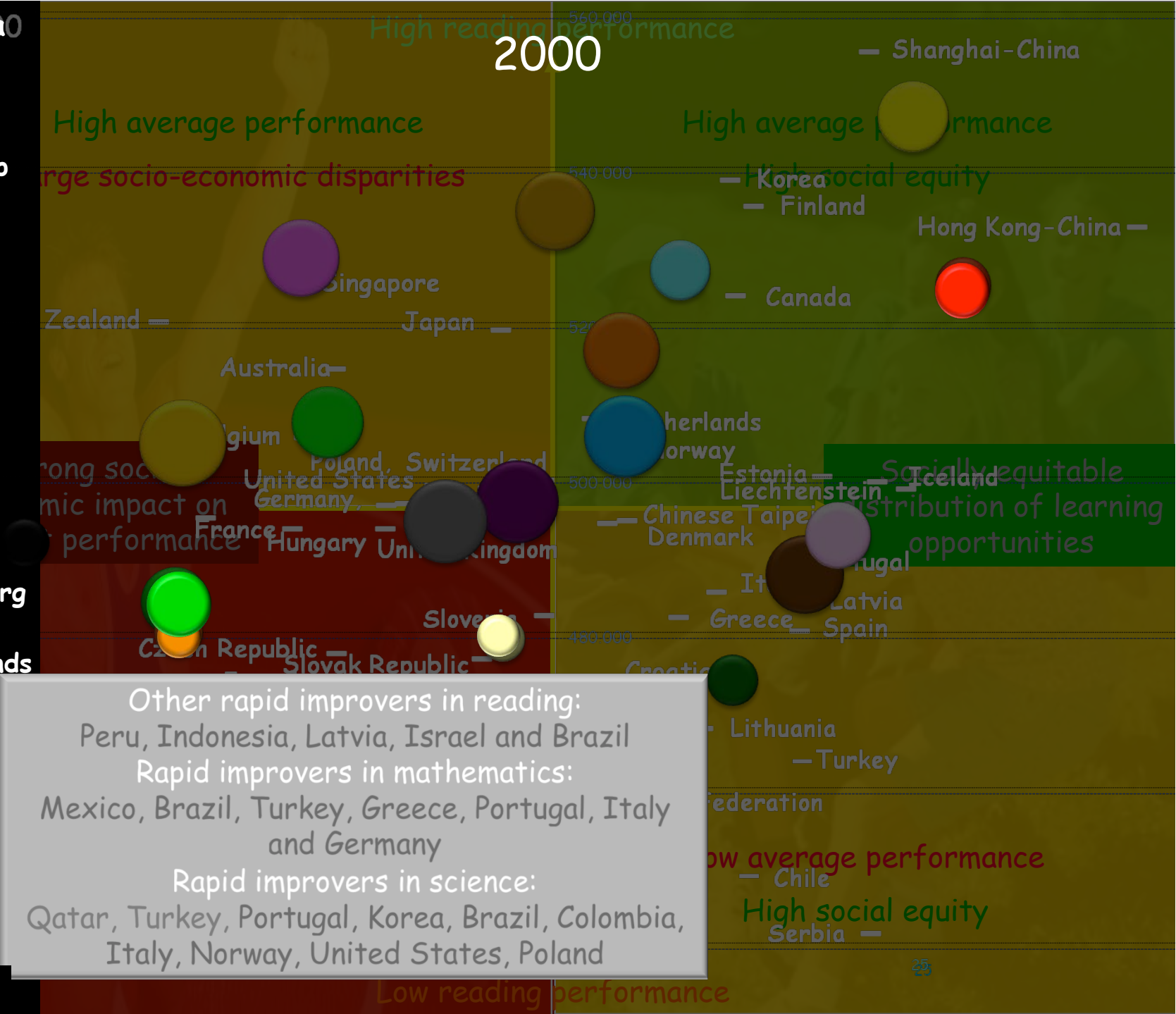


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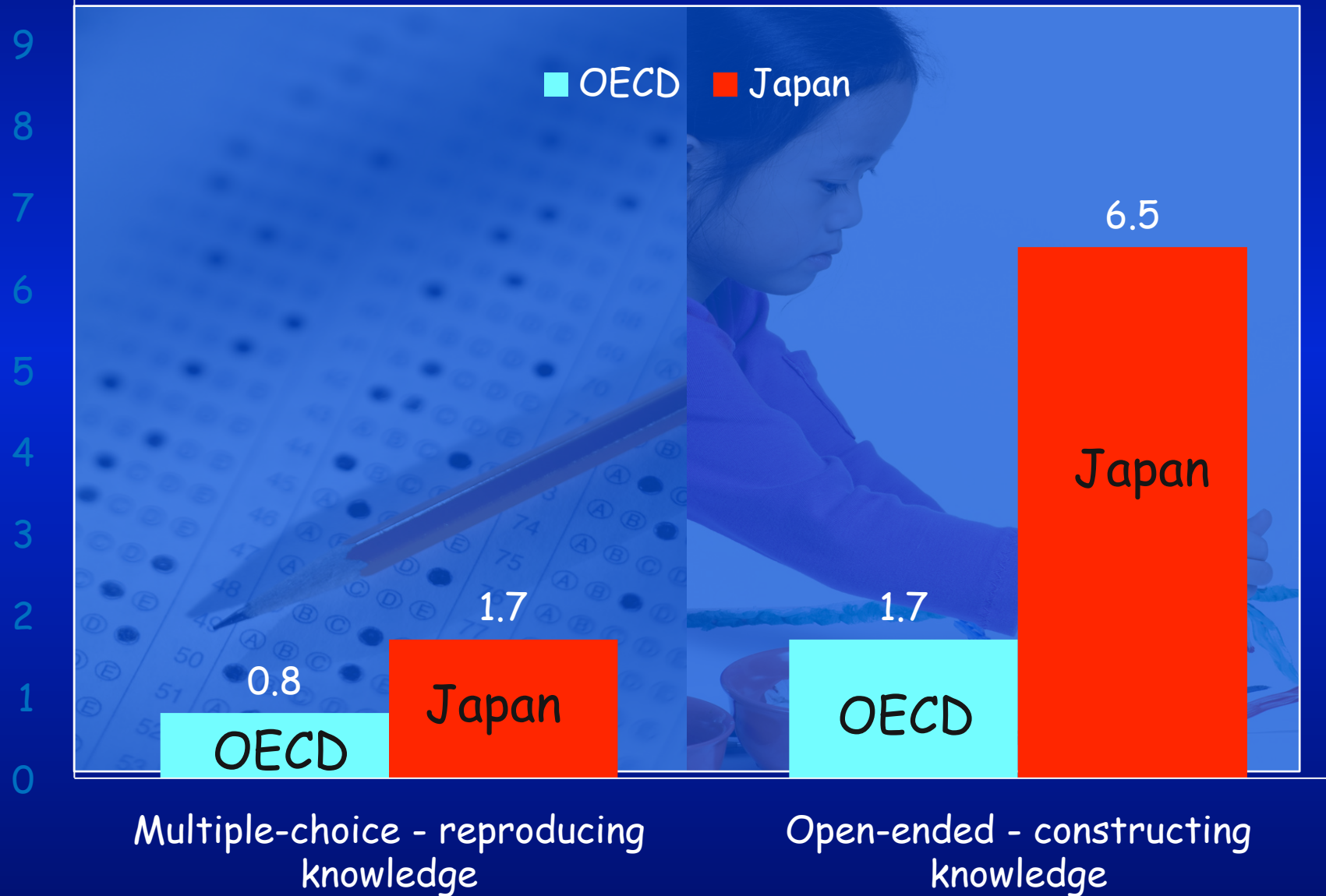
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2000



Changes in performance by type of task

Increase
in percentage correct



Percentage of students reading for enjoyment

Percentage

100

90

80

70

60

50

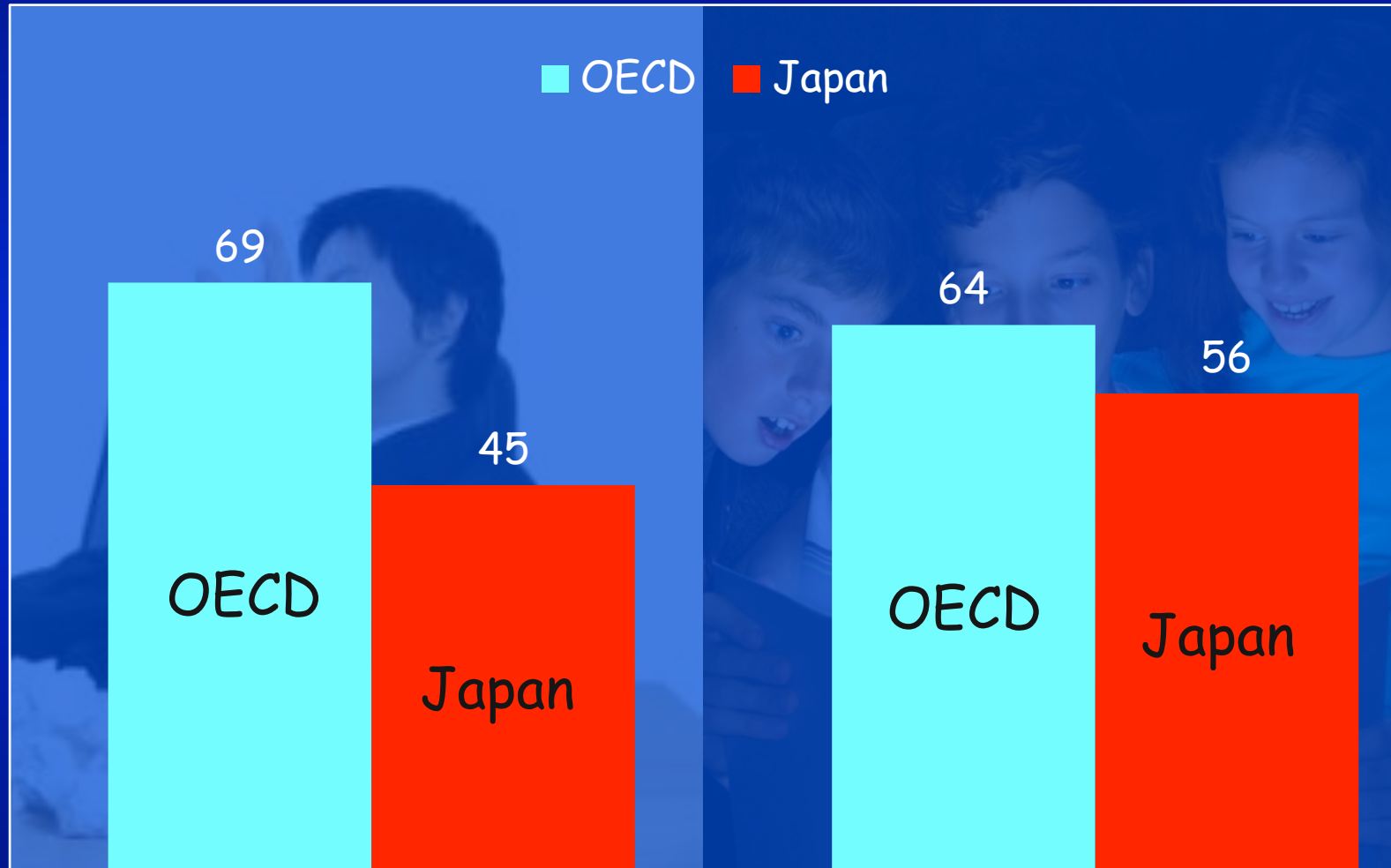
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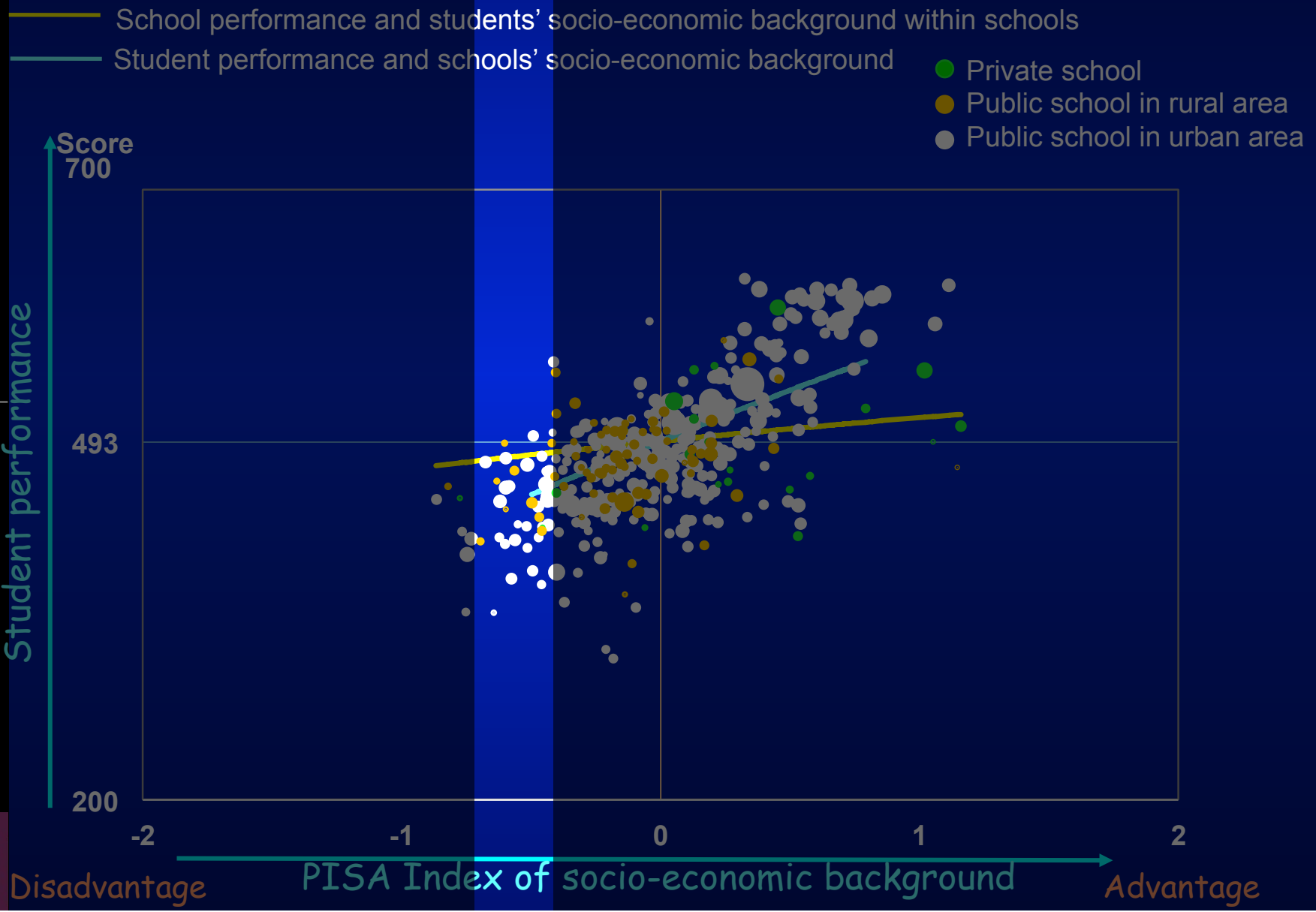
2000

2009

School performance and socio-economic background Switzerland

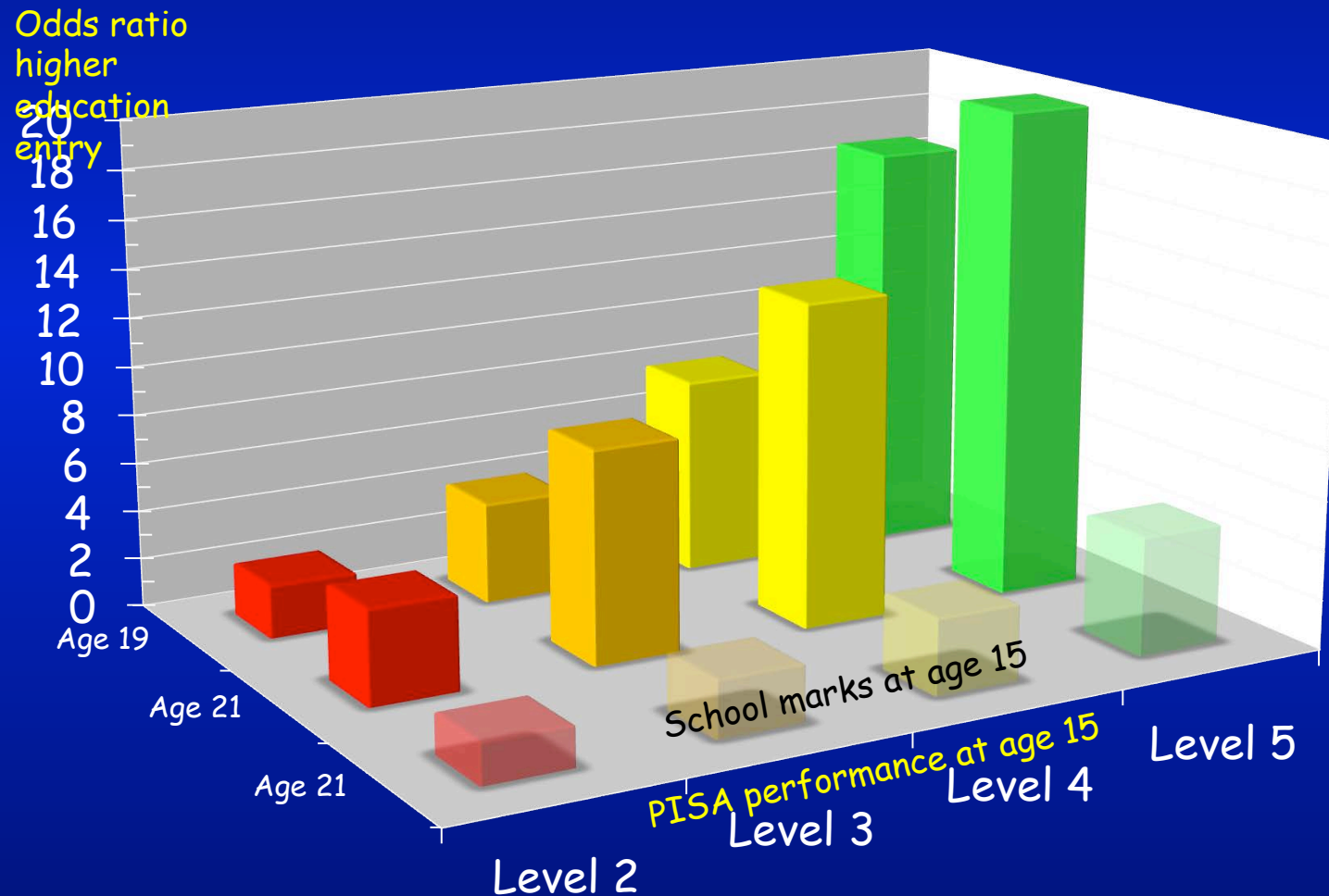
Zukunft Bildung Schweiz
Schweizerisches Schulsystem im Vergleich
Andreas Schleicher, 21. Juni 2012

PISA
OECD Programme for
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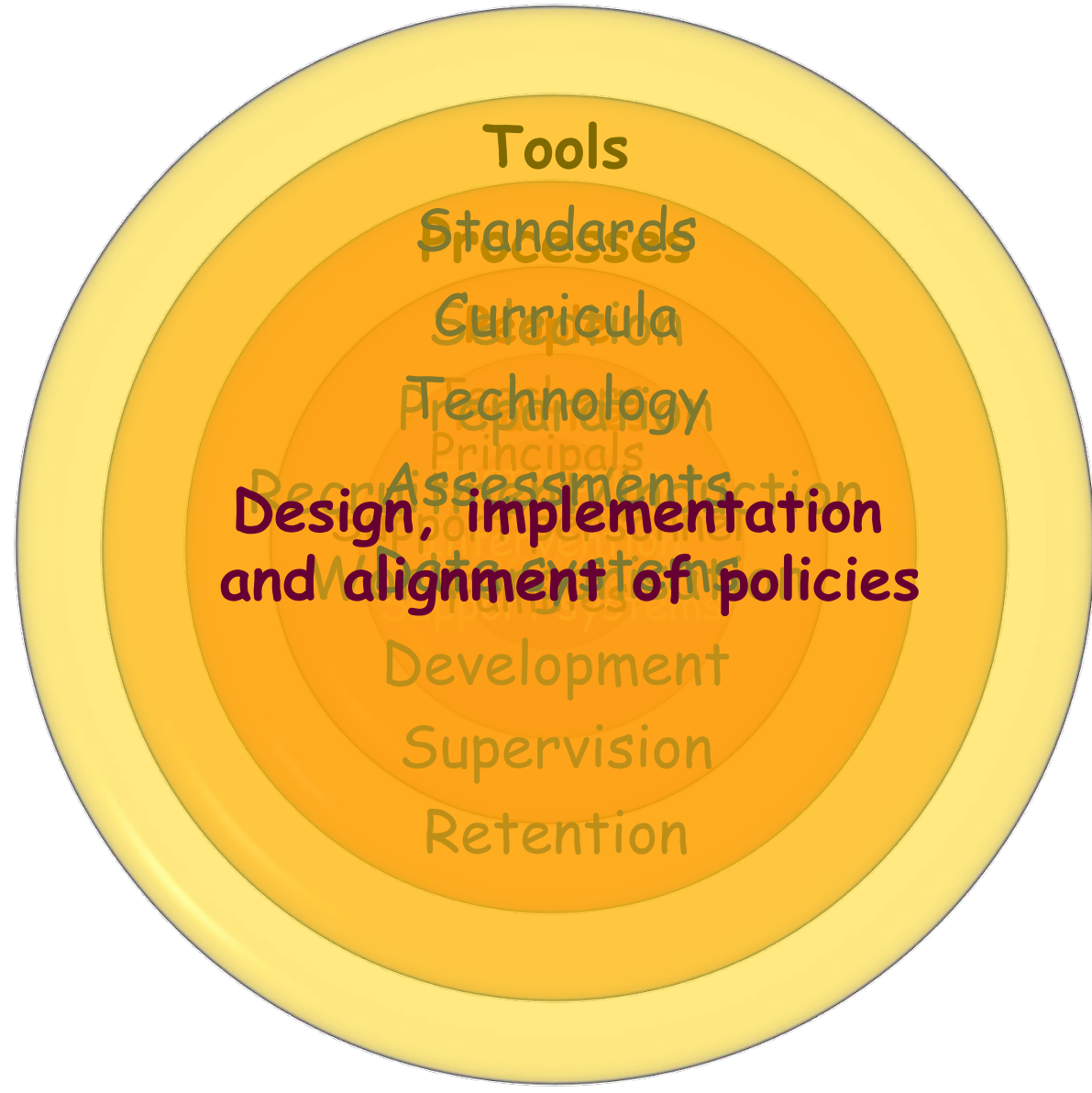


Does it all matter?

Increased likelihood of postsec. particip. at age 19/21 associated with PISA reading proficiency at age 15 (Canada) after accounting for school engagement, gender, mother tongue, place of residence, parental, education and family income (reference group PISA Level 1)



What does it all mean?



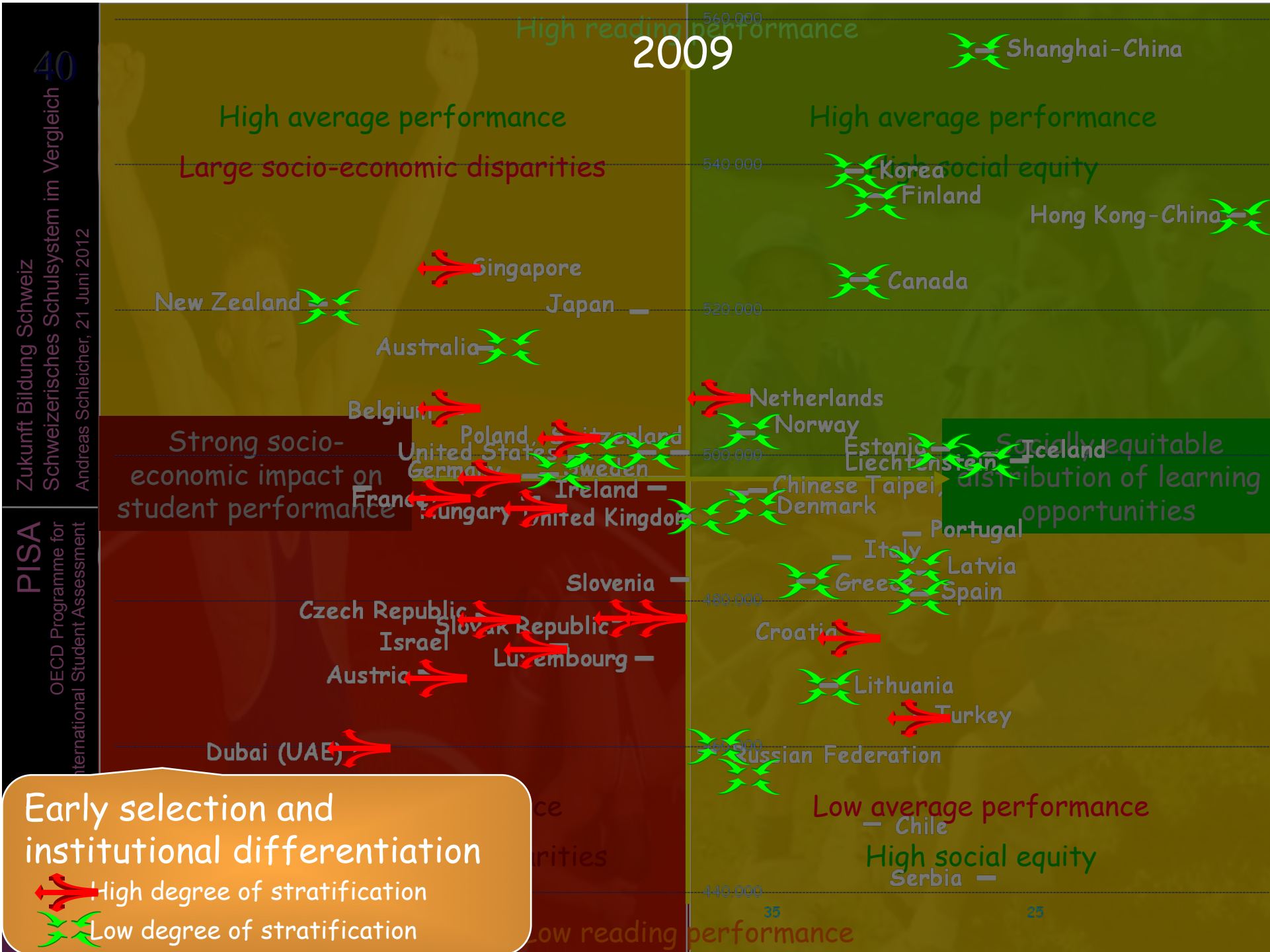
	Policy	R System	R School	E Equity
Policies and practices				
Learning climate				
Discipline			😊	
Teacher behaviour			😊	
Parental pressure			😊	
Teacher-student relationships			😊	
Dealing with heterogeneity				
Grade repetition		😞	😞	😞
Prevalence of tracking				😞
Expulsions		😞	😞	😞
Ability grouping (all subjects)		😞	😞	😞
Standards /accountability				
Nat. examination		😊		

- A commitment to education and the belief that competencies can be learned and therefore all children can achieve
 - Universal educational standards and personalisation as the approach to heterogeneity in the student body...
... as opposed to a belief that students have different destinations to be met with different expectations, and selection/stratification as the approach to heterogeneity
 - Clear articulation who is responsible for ensuring student success and to whom

Resources
where they
yield most

Incentives
and
accountability

at
f
ry



How schools...

Schools transferring students due to low achievement or behavioural problems: 15%, and where students are grouped by ability for all subjects: 8%

Schools transferring students due to low achievement or behavioural problems: 33%, and where students are grouped by ability for all subjects: 38%

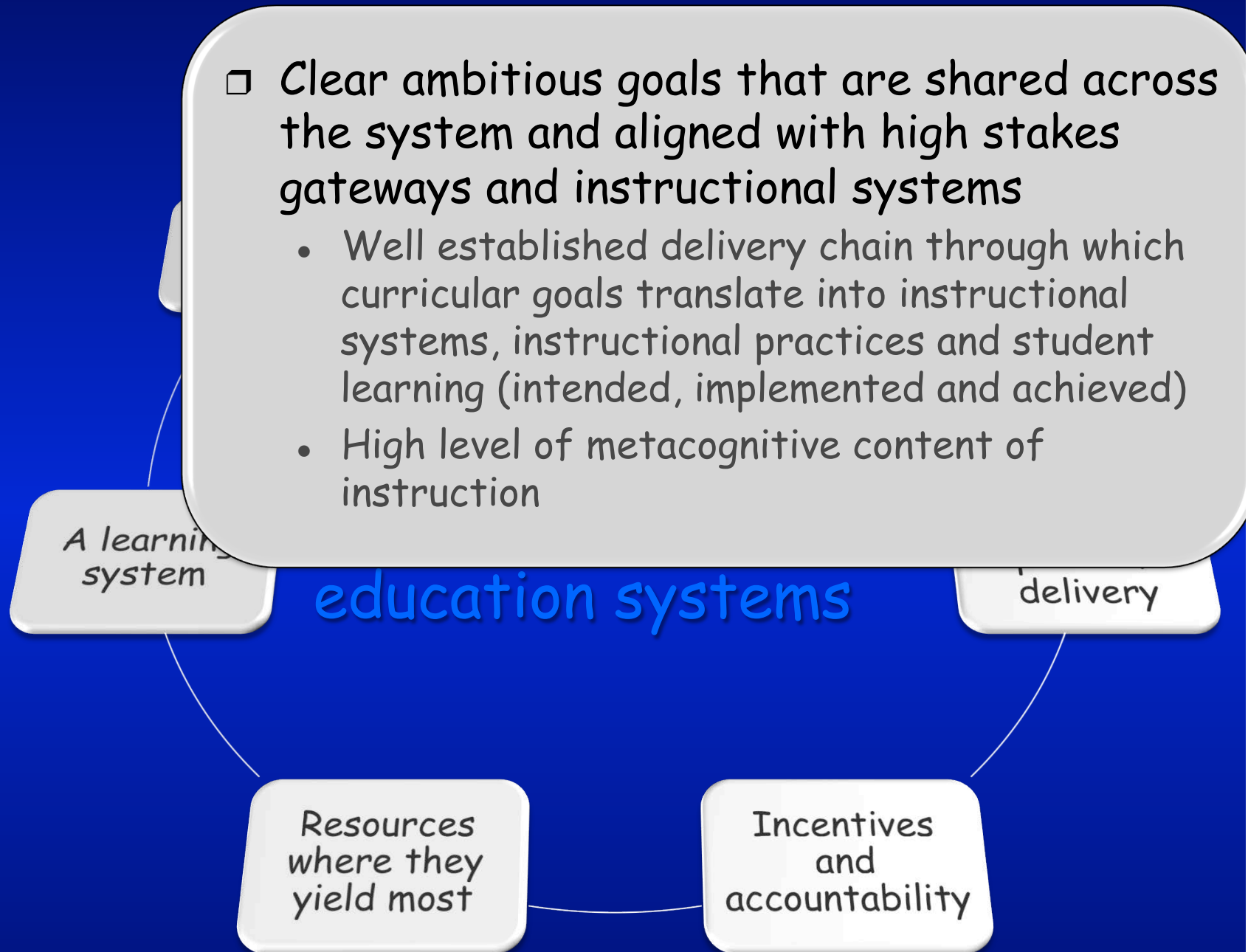
Number of programmes: 1.1
 First age of selection: 15.8
 Selective schools: 17%

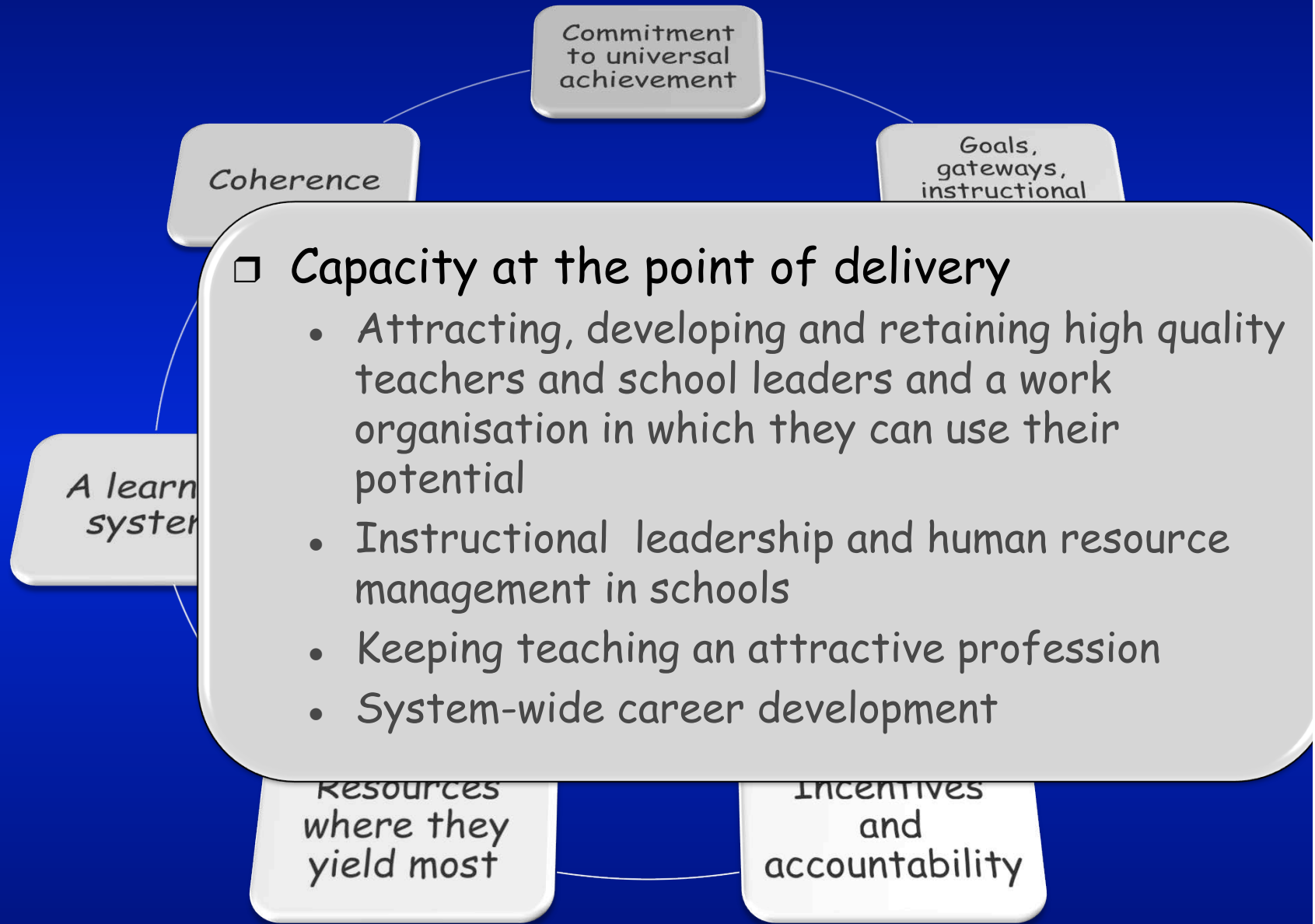
Number of programmes: 3.0
 First age of selection: 14.5
 Selective schools: 42%

Number of programmes: 4.3
 First age of selection: 11.2
 Selective schools: 61%

	Low horizontal differentiation at the school level	High horizontal differentiation at the school level	Low horizontal differentiation at the school level	High horizontal differentiation at the school level
Low horizontal differentiation at the system level	Australia, Canada, Denmark, Estonia, Finland, Greece, Iceland, New Zealand, Norway, Poland, Sweden, United States, United Kingdom, Kazakhstan, Latvia, Lithuania, Russian	Jordan	Spain, Argentina, Brazil, Tunisia, Uruguay	Chile, Colombia, Peru
Medium horizontal differentiation at the system level	Slovenia, Albania, Azerbaijan, Dubai (UAE), Hong Kong-China, Montenegro, Shanghai China	Indonesia, Kyrgyzstan, Qatar, Romania, Chinese Taipei	Mexico, Portugal	Luxembourg, Macao-China, Panama
High horizontal differentiation at the system level	Hungary, Slovak Republic, Croatia, Liechtenstein, Singapore	Turkey, Bulgaria, Serbia	Belgium, Germany, Trinidad and Tobago	Netherlands, Switzerland

Grade repetition: 29%
 Students out of modal age: 11%

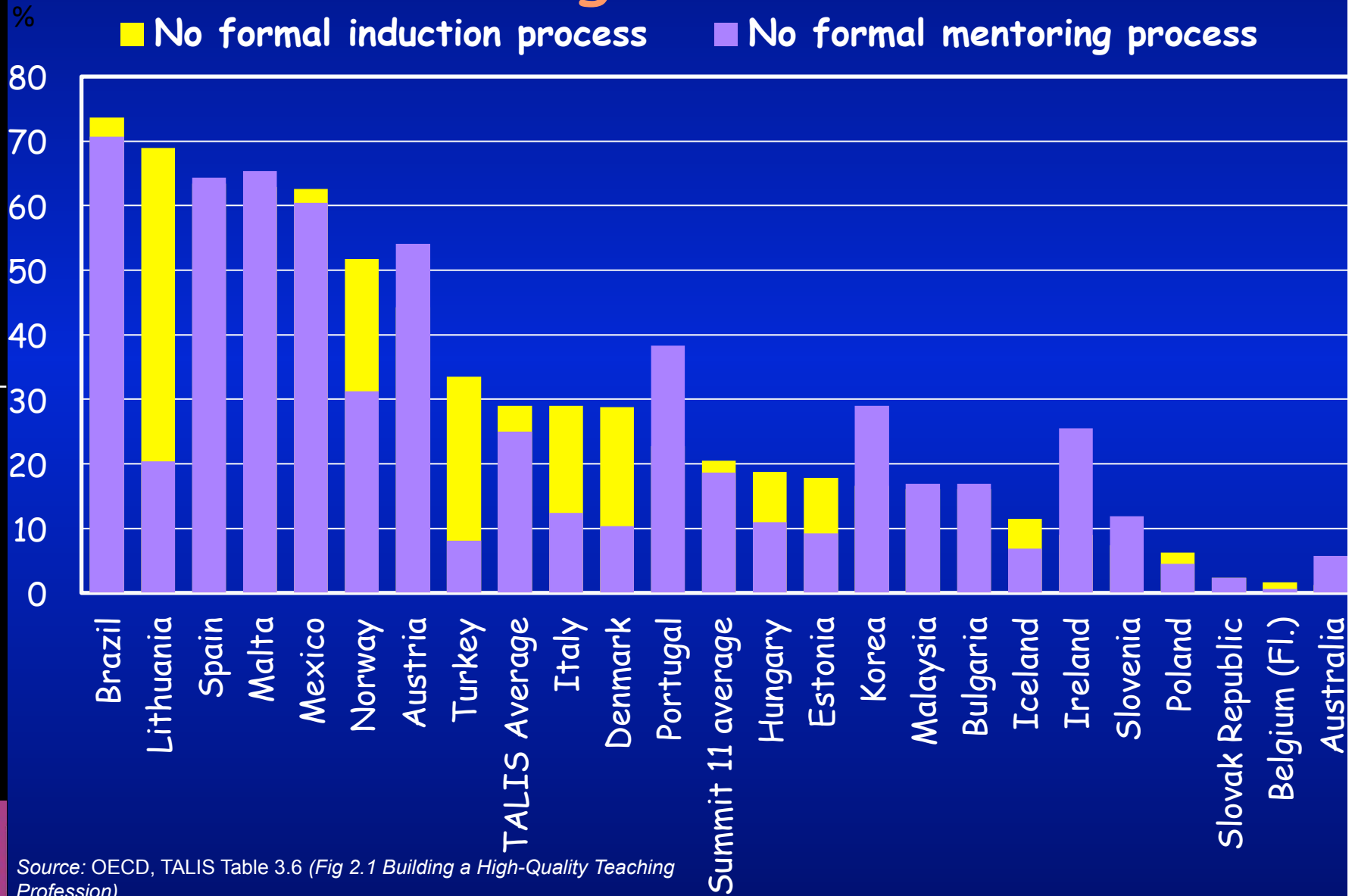




Teacher in-service development

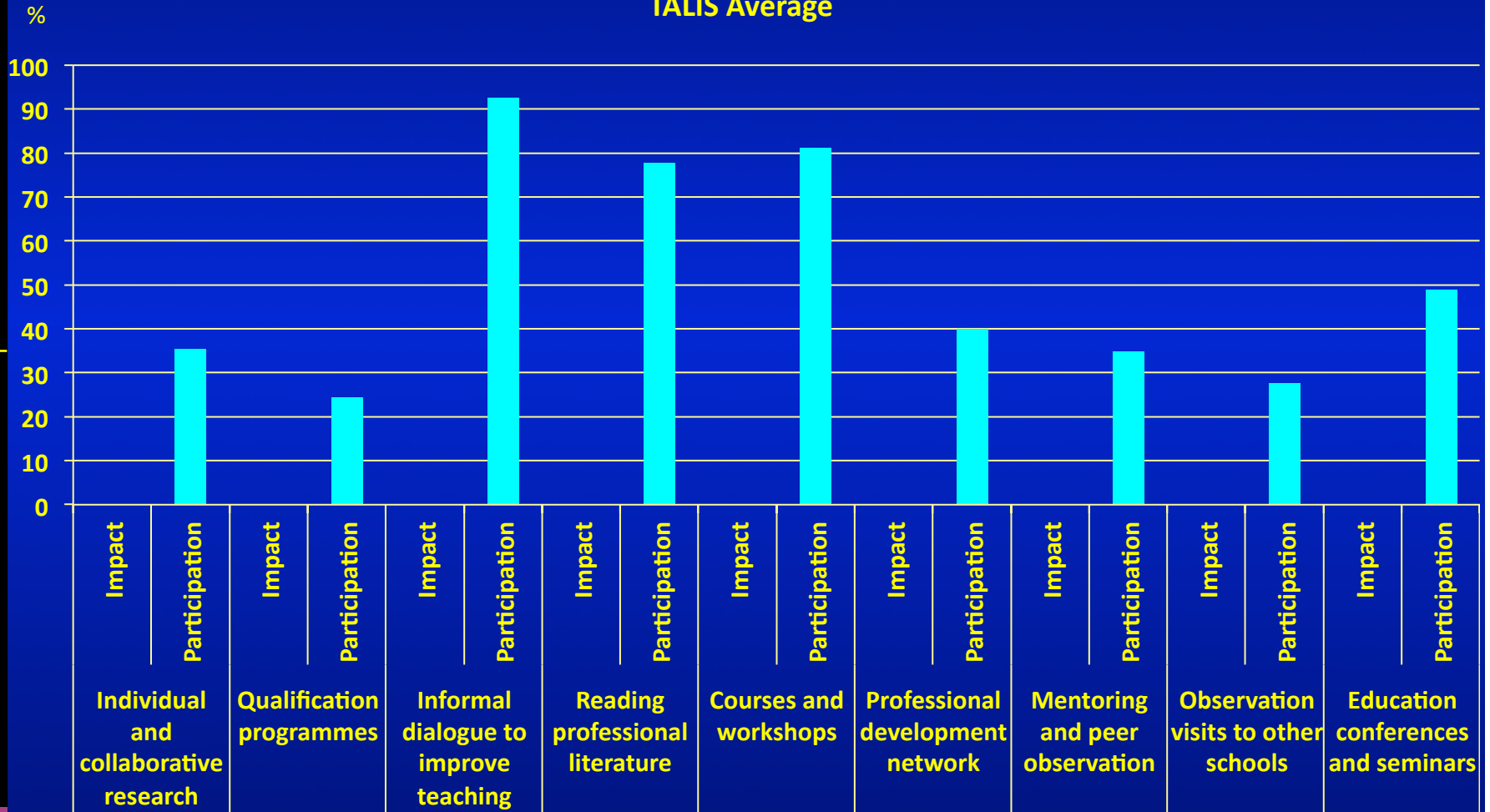
- ❑ **No matter how good the pre-service education for teachers is**
 - ... it cannot prepare teachers for rapidly changing challenges throughout their careers
- ❑ **High-performing systems rely on ongoing professional to...**
 - ... update individuals' knowledge of a subject in light of recent advances
 - ... update skills and approaches in light of new teaching techniques, new circumstances, and new research
 - ... enable teachers to apply changes made to curricula or teaching practice
 - ... enable schools to develop and apply new strategies concerning the curriculum and teaching practice
 - ... exchange information and expertise among teachers and others
 - ... help weaker teachers become more effective .
- ❑ **Effective professional development is on-going...**
 - ... includes training, practice and feedback, and adequate time and follow-up support

Percentage of teachers without mentoring and induction



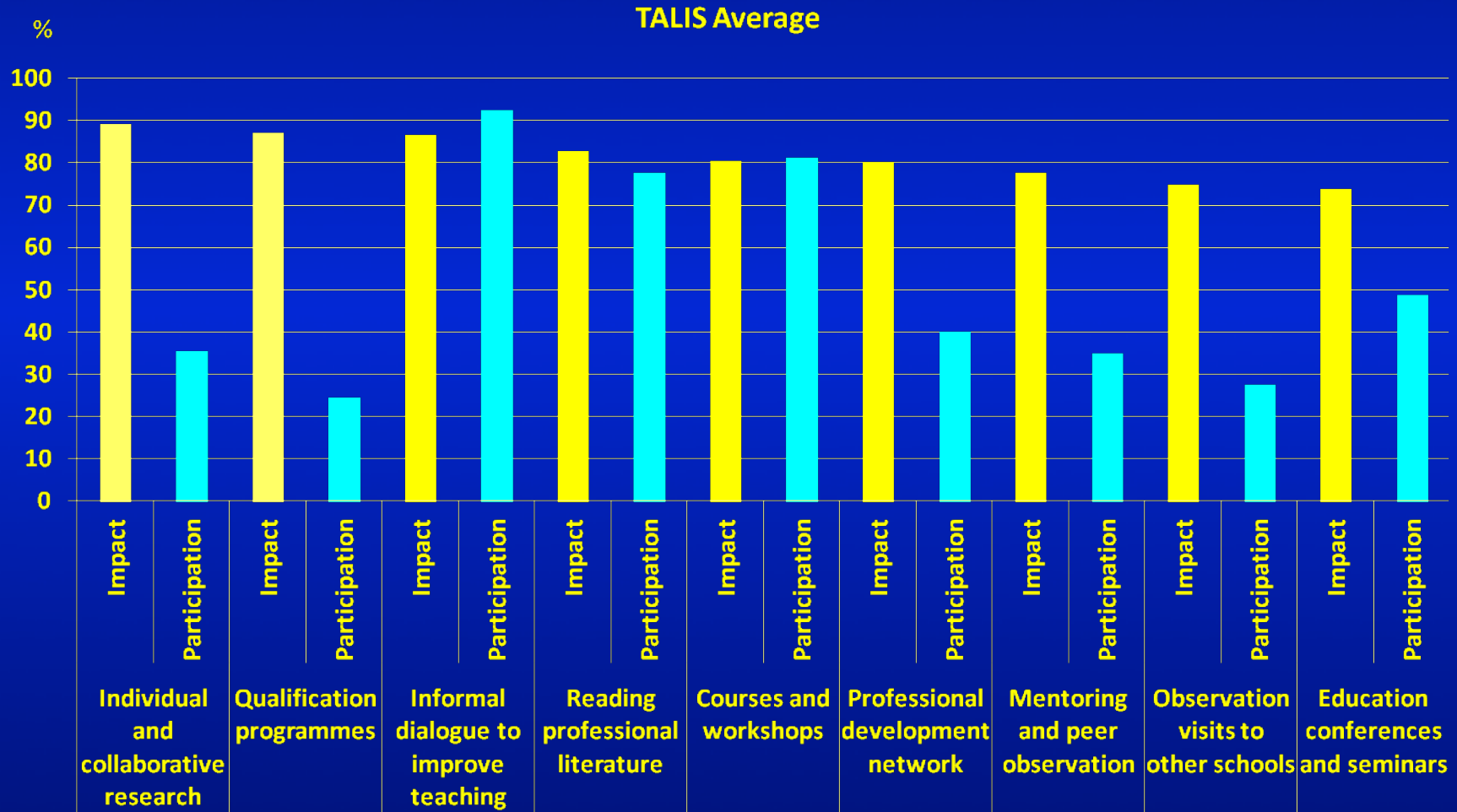
Relatively few teachers participate in the kinds of professional development which they find has the largest impact on their work
Comparison of teachers participating in professional development activities and teachers reporting moderate or high level impact by types of activity

TALIS Average



Relatively few teachers participate in the kinds of professional development which they find has the largest impact on their work

Comparison of teachers participating in professional development activities and teachers reporting moderate or high level impact by types of activity



□ Incentives, accountability, knowledge management

- Aligned incentive structures

For students

- How gateways affect the strength, direction, clarity and nature of the incentives operating on students at each stage of their education
- Degree to which students have incentives to take tough courses and study hard
- Opportunity costs for staying in school and performing well

For teachers

- Make innovations in pedagogy and/or organisation
- Improve their own performance and the performance of their colleagues
- Pursue professional development opportunities that lead to stronger pedagogical practices
- A balance between vertical and lateral accountability
- Effective instruments to manage and share knowledge and spread innovation - communication within the system and with stakeholders around it
- A capable centre with authority and legitimacy to act

How school systems are governed

	Less school choice	More school choice
Less school autonomy in curriculum and assessment	<p>Schools competing with other schools: 73% Private schools: 8%</p> <p>Establishing student assessment policies: 61% Choosing which textbooks are used: 55% Determining course content: 14%</p>	<p>Schools competing with other schools: 89% Private schools: 52%</p> <p>—</p>
More school autonomy in curriculum and assessment	<p>Austria, Canada, Czech Republic, Denmark, Estonia, Finland, Germany, Hungary, Iceland, Israel, Italy, Japan, Luxembourg, New Zealand, Norway, Poland, Slovak</p> <p>Establishing student assessment policies: 92% Choosing which textbooks are used: 97% Determining course content: 85%</p>	<p>Australia, Belgium, Chile, Ireland, Korea, Netherlands, Dubai (UAE), Hong Kong-China, Indonesia, Macao-China, Chinese Taipei</p>

How school systems differ

Schools competing with other schools: 73%
Private schools: 8%

Schools competing with other schools: 89%
Private schools: 52%

Establishing student assessment policies: 61%
Choosing which textbooks are used: 55%
Determining course content: 14%
Deciding which courses are offered: 18%

Frequent use of achievement data for benchmarking and information purposes identified below

Infrequent use of achievement data for decision making

Finland, Greece, Ireland, Luxembourg, the Netherlands, Switzerland, Liechtenstein, Austria, Belgium, Germany

Hungary, Norway, Turkey, Montenegro, Tunisia, Slovenia

Frequent use of achievement data for decision making

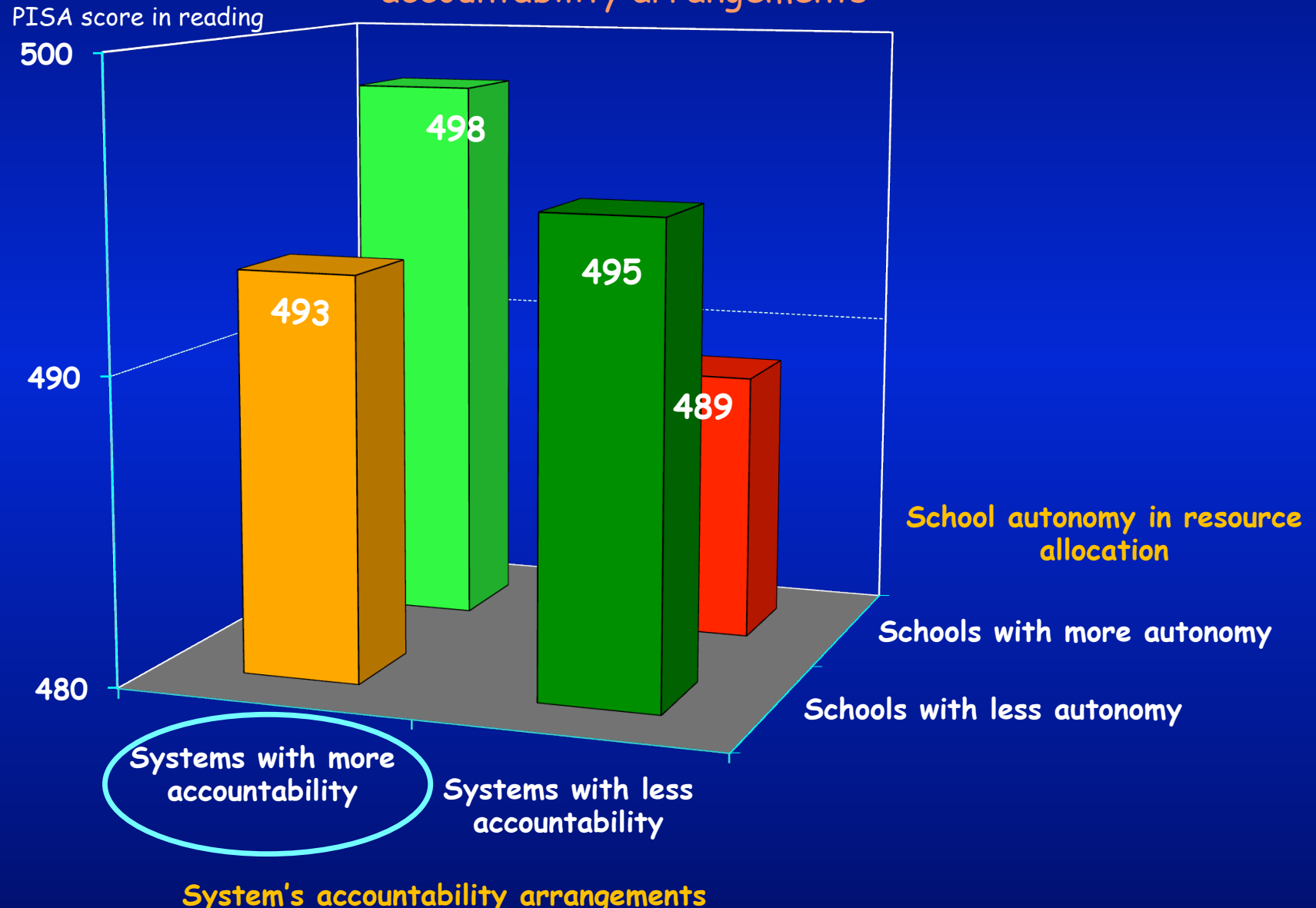
Denmark, Italy, Japan, Argentina, Macao-China, Chinese Taipei, Spain, Uruguay

Australia, Canada, Chile, Czech Republic, Estonia, Iceland, Israel, Korea, Mexico, New Zealand, Poland, Portugal, Slovak Republic, Sweden, United Kingdom, United States, Albania, Azerbaijan, Brazil, Bulgaria, Colombia, Croatia, Dubai (UAE), Hong Kong-China, Indonesia, Jordan, Kazakhstan, Kyrgyzstan, Latvia, Lithuania, Panama, Peru, Qatar, Romania, Russian Federation, Shanghai-China, Singapore, Thailand, Trinidad and Tobago, Serbia

Establishing student assessment policies: 92%
Choosing which textbooks are used: 97%
Determining course content: 85%
Deciding which courses are offered: 87%

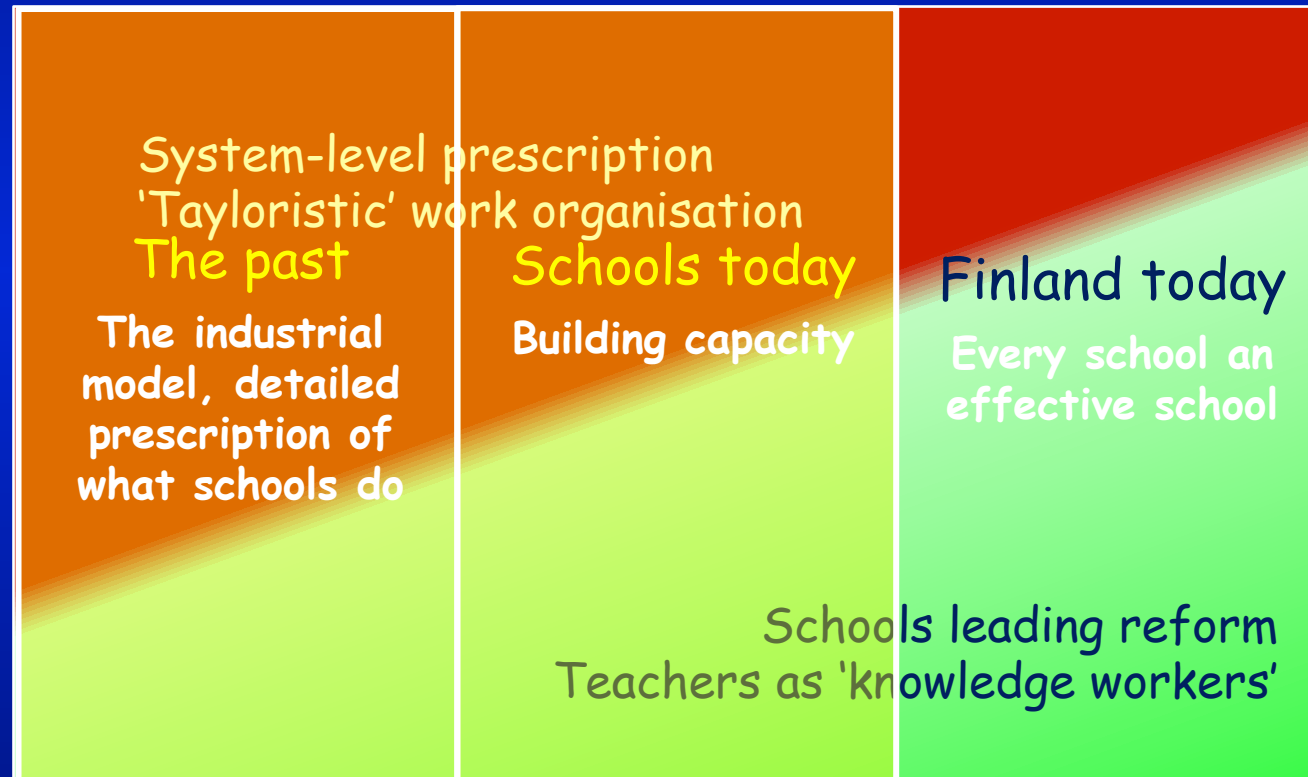
School autonomy, accountability and student performance

Impact of school autonomy on performance in systems with and without accountability arrangements



Local responsibility and system-level prescription

Trend in OECD countries



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Zukunft Bildung Schweiz
Schweizerisches Schulsystem im Vergleich
Andreas Schleicher, 21 Juni 2012

PISA

OECD Programme for
International Student Assessment



Public and private schools

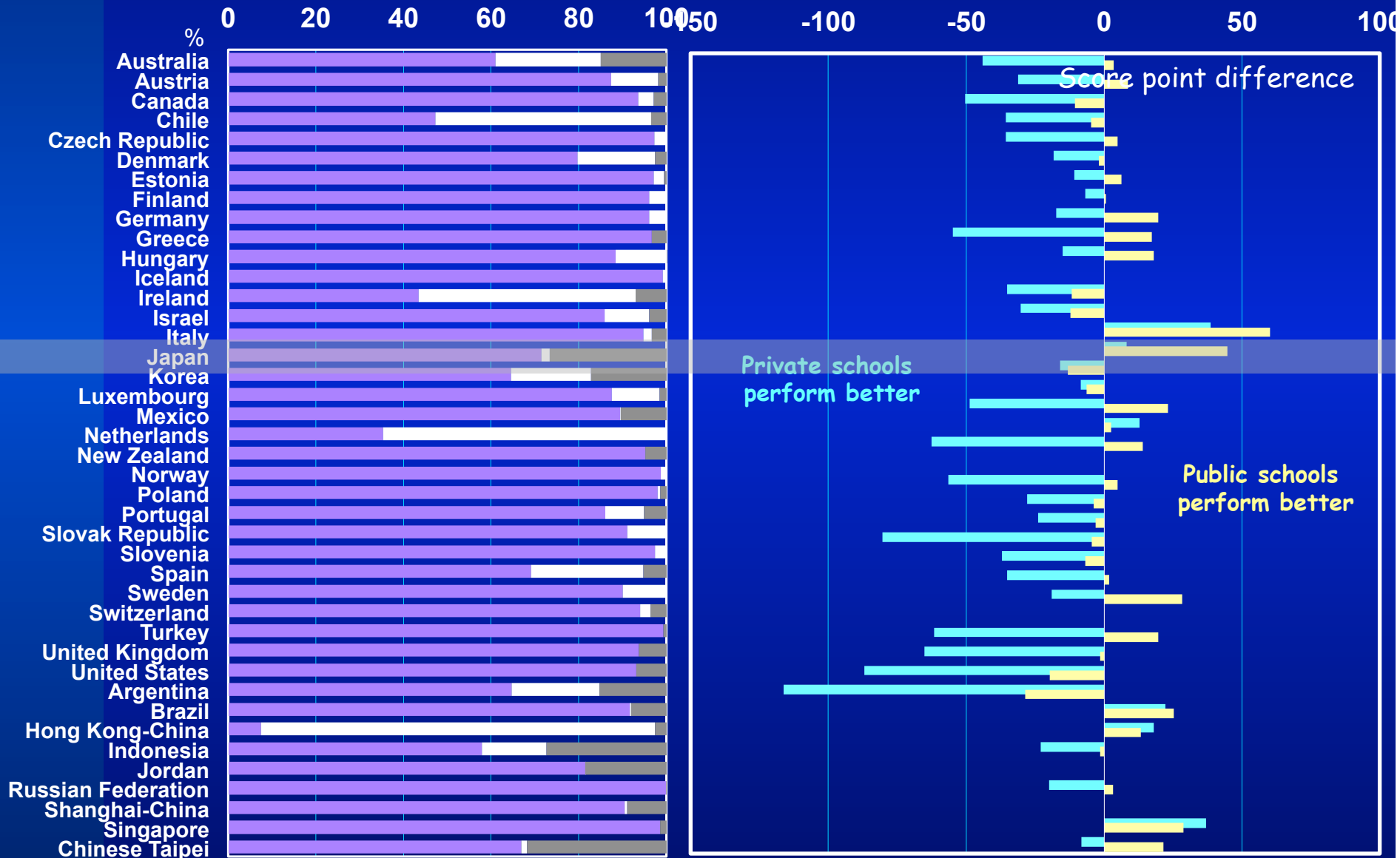
■ Government schools

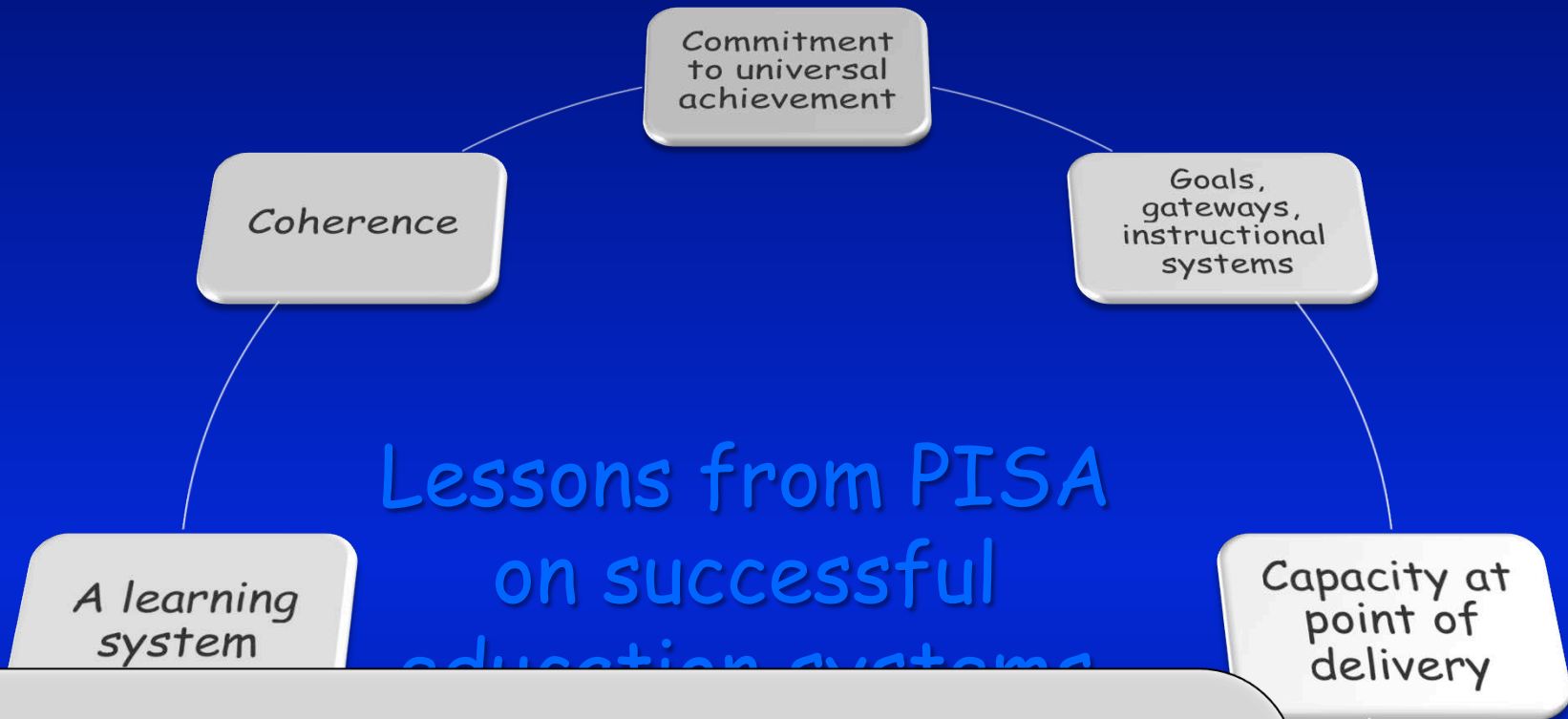
■ Observed performance difference

■ Government dependent private

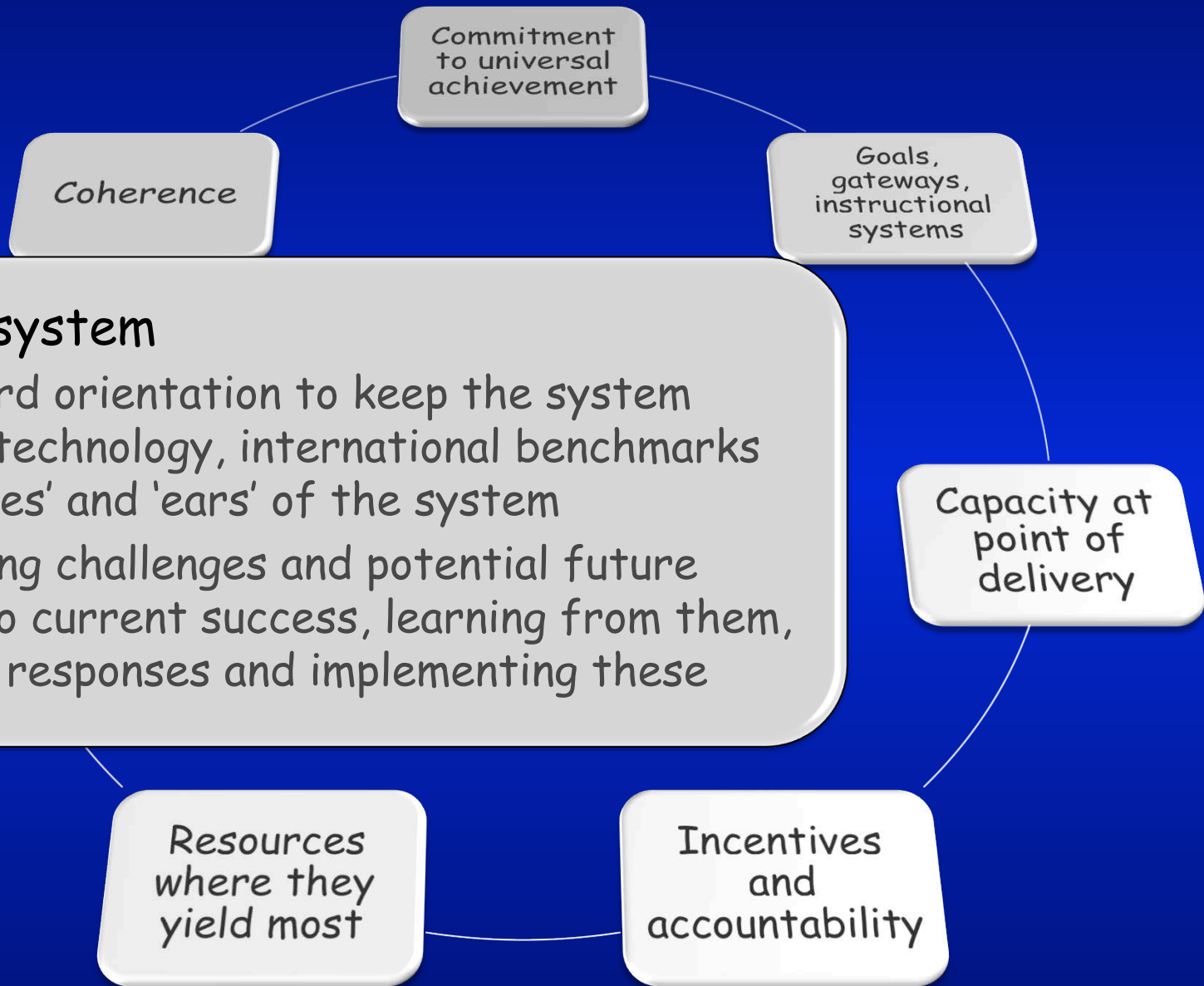
■ Difference after accounting for socio-economic background of students and schools

■ Government independent private





- ❑ Investing resources where they can make most of a difference
 - Alignment of resources with key challenges (e.g. attracting the most talented teachers to the most challenging classrooms)
 - Effective spending choices that prioritise high quality teachers over smaller classes

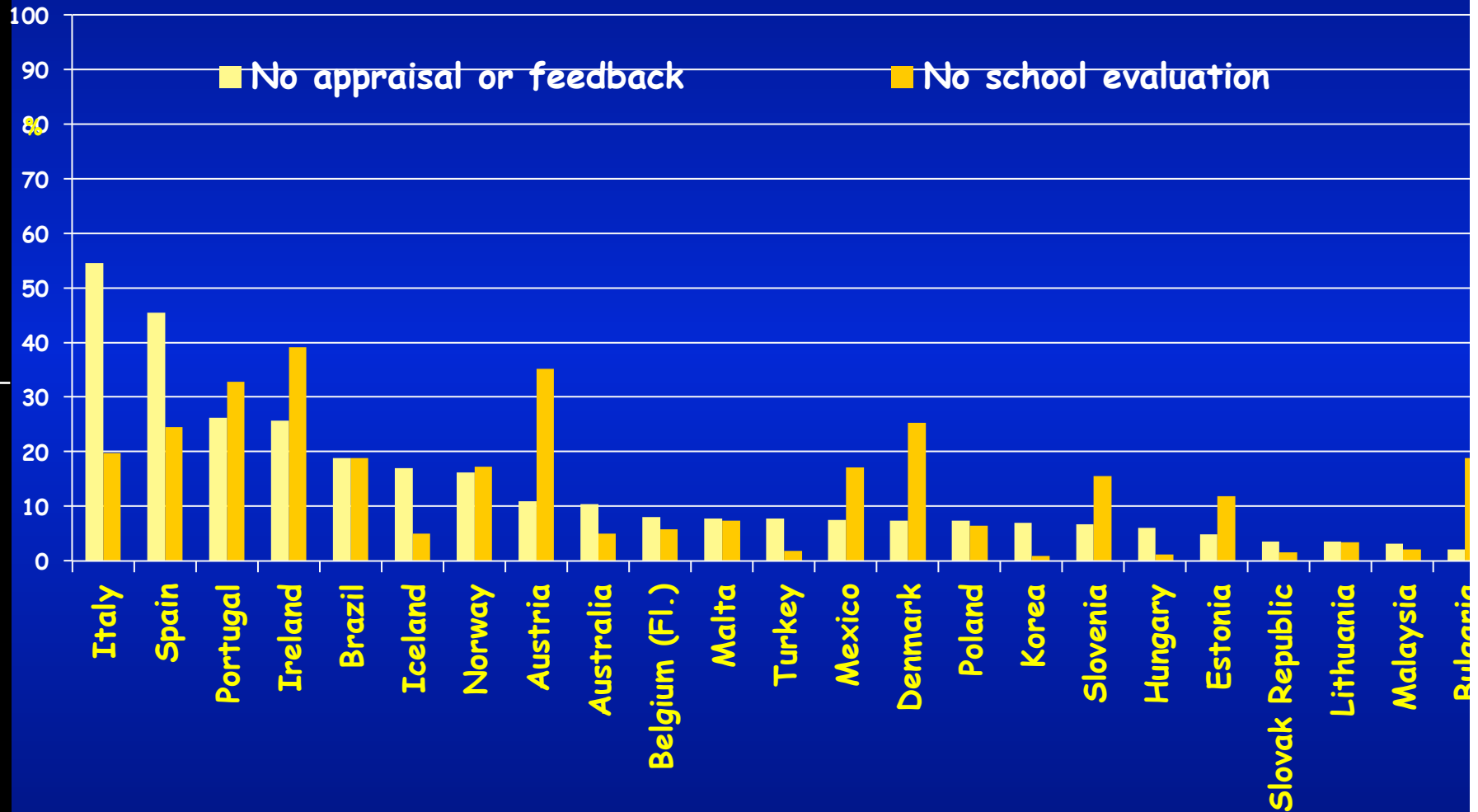


□ A learning system

- An outward orientation to keep the system learning, technology, international benchmarks as the 'eyes' and 'ears' of the system
- Recognising challenges and potential future threats to current success, learning from them, designing responses and implementing these

Some teachers are left alone

Teachers who received no appraisal or feedback and teachers in schools that had no school evaluation in the previous five years



Countries are ranked in descending order of the percentage of teachers who have received no appraisal or feedback.
Source: OECD. Table 5.1 and 5.3

❑ Coherence of policies and practices

- Alignment of policies across all aspects of the system
- Coherence of policies over sustained periods of time
- Consistency of implementation
- Fidelity of implementation (without excessive control)

Goals,
gateways,
instructional
systems

Capacity at
point of
delivery

A learning
system

on successful
education systems

Resources
where they
yield most

Incentives
and
accountability

Average school systems

Some students learn
at high levels

Uniformity

Curriculum-centred

Learning a place

Low status of the
teaching profession

Prescription

Delivered wisdom



High performers in PISA

All students learn
at high levels

Embracing diversity

Learner-centred

Learning an activity

Countries attract and develop
high quality teachers

Informed profession

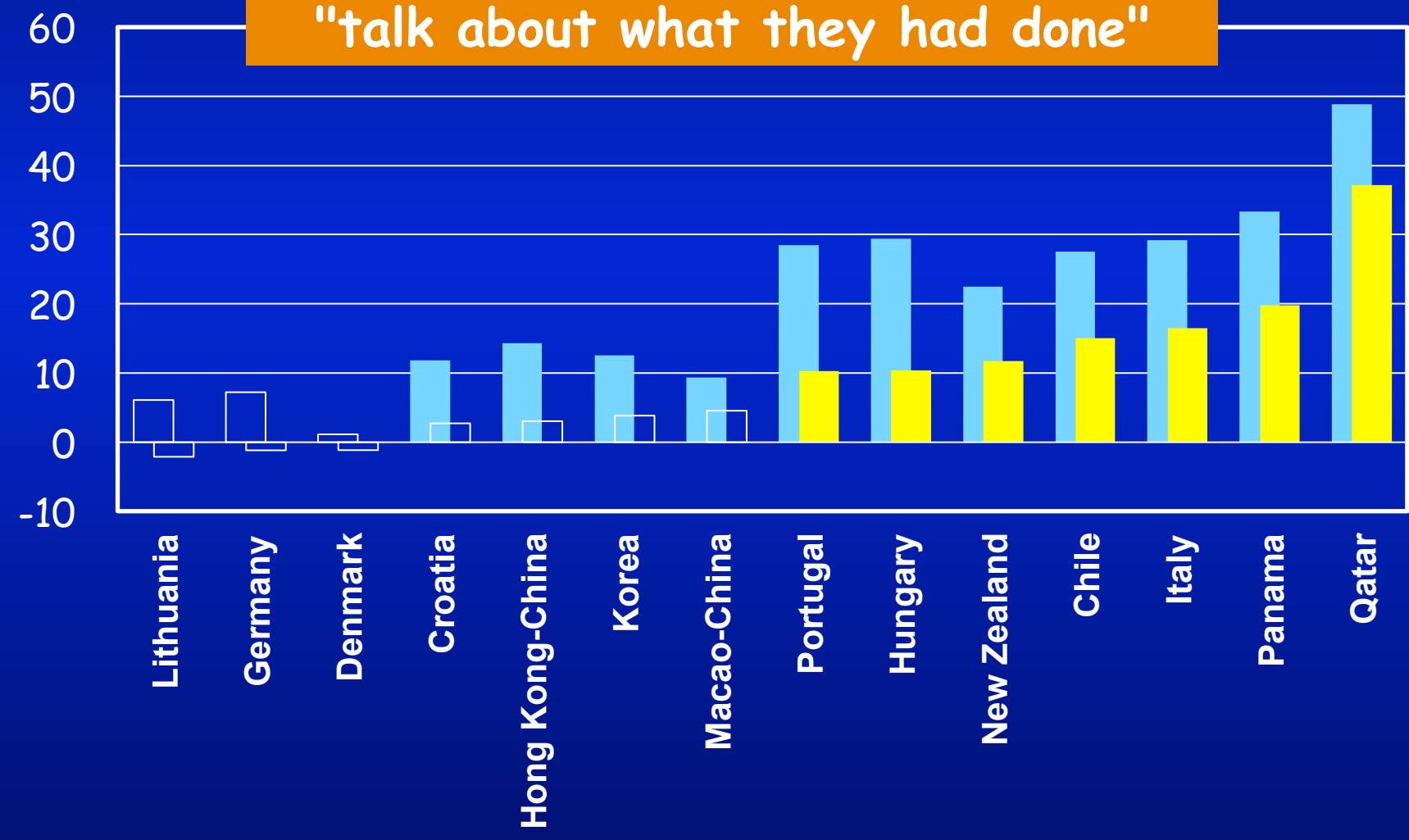
User-generated wisdom

Beyond schooling

Parental support at the beginning of primary school

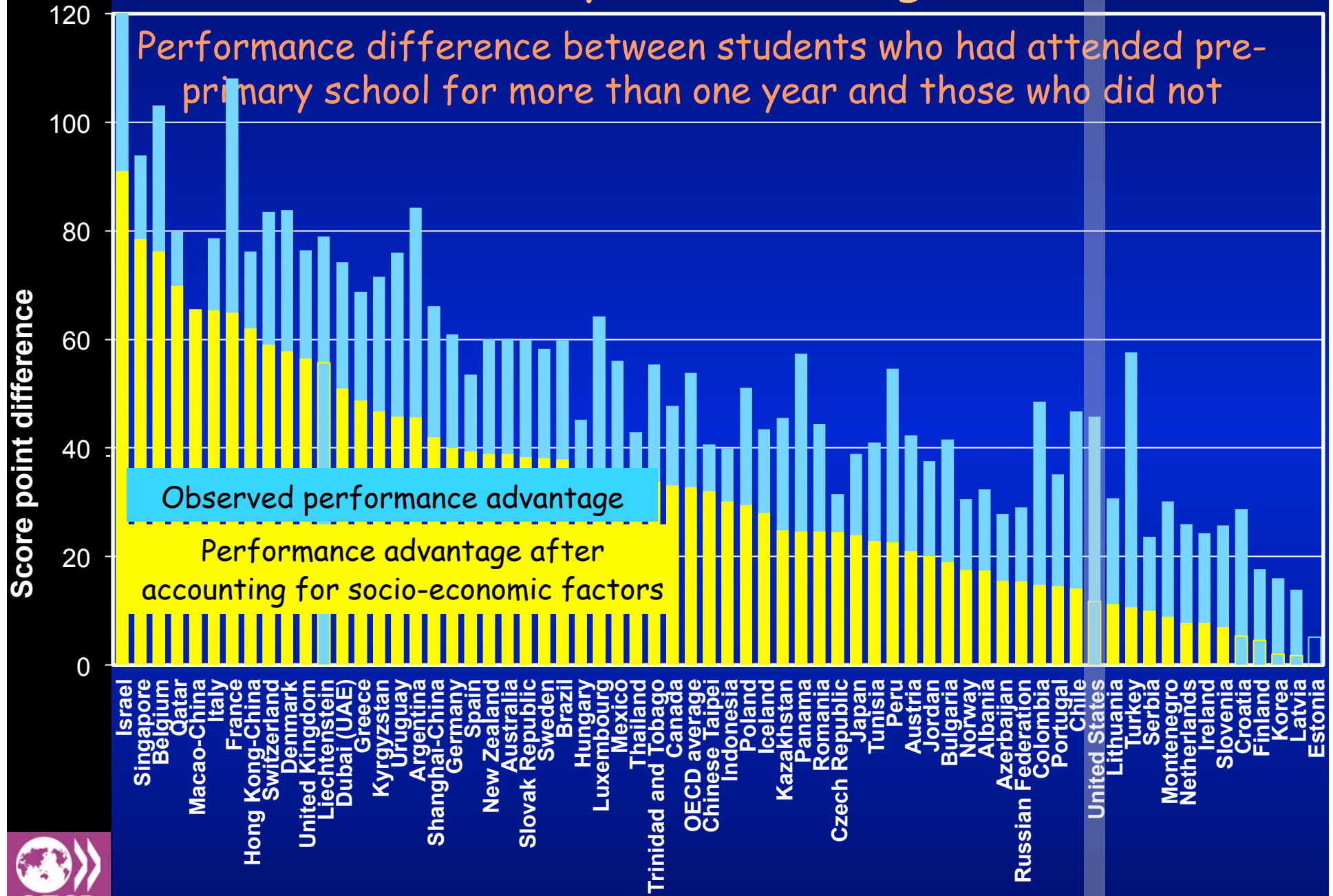
Score point difference between students whose parents often do (weekly or daily) and those who do not:

"talk about what they had done"



Beyond schooling

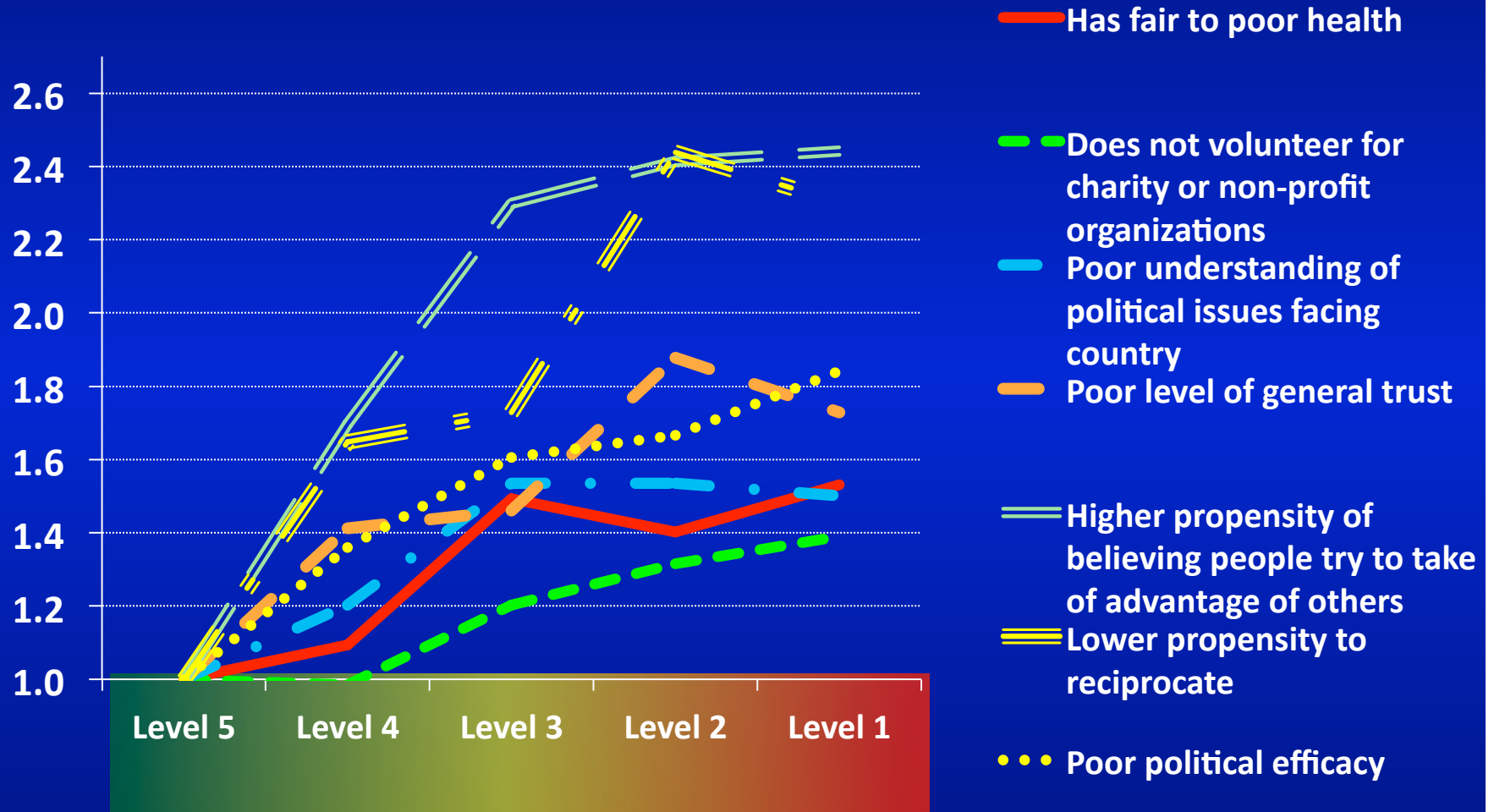
Performance difference between students who had attended pre-primary school for more than one year and those who did not





Low skills and social outcomes

Odds ratios



Odds are adjusted for age, gender, and immigration status.

Education reform trajectories

The old bureaucratic system

Student inclusion

The modern enabling system

Some students learn at high levels

All students need to learn at high levels

Curriculum, instruction and assessment

Routine cognitive skills, rote learning

Learning to learn, complex ways of thinking, ways of working

Teacher quality

Few years more than secondary

High-level professional knowledge workers

Work organisation

'Tayloristic', hierarchical

Flat, collegial

Accountability

Primarily to authorities

Primarily to peers and stakeholders

Find out more about PISA at...

- OECD www.pisa.oecd.org
 - All national and international publications
 - The complete micro-level database

- Email: Andreas.Schleicher@OECD.org

... and remember:

Without data, you are just another person with an opinion

Thank you!