Programme for International Student Assessment

PISA 2009

Evaluating systems to improve education

The yardstick for success is no longer improvement by national standards alone but the best performing education systems

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

OECD

PISA 2009 in brief

- 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 .

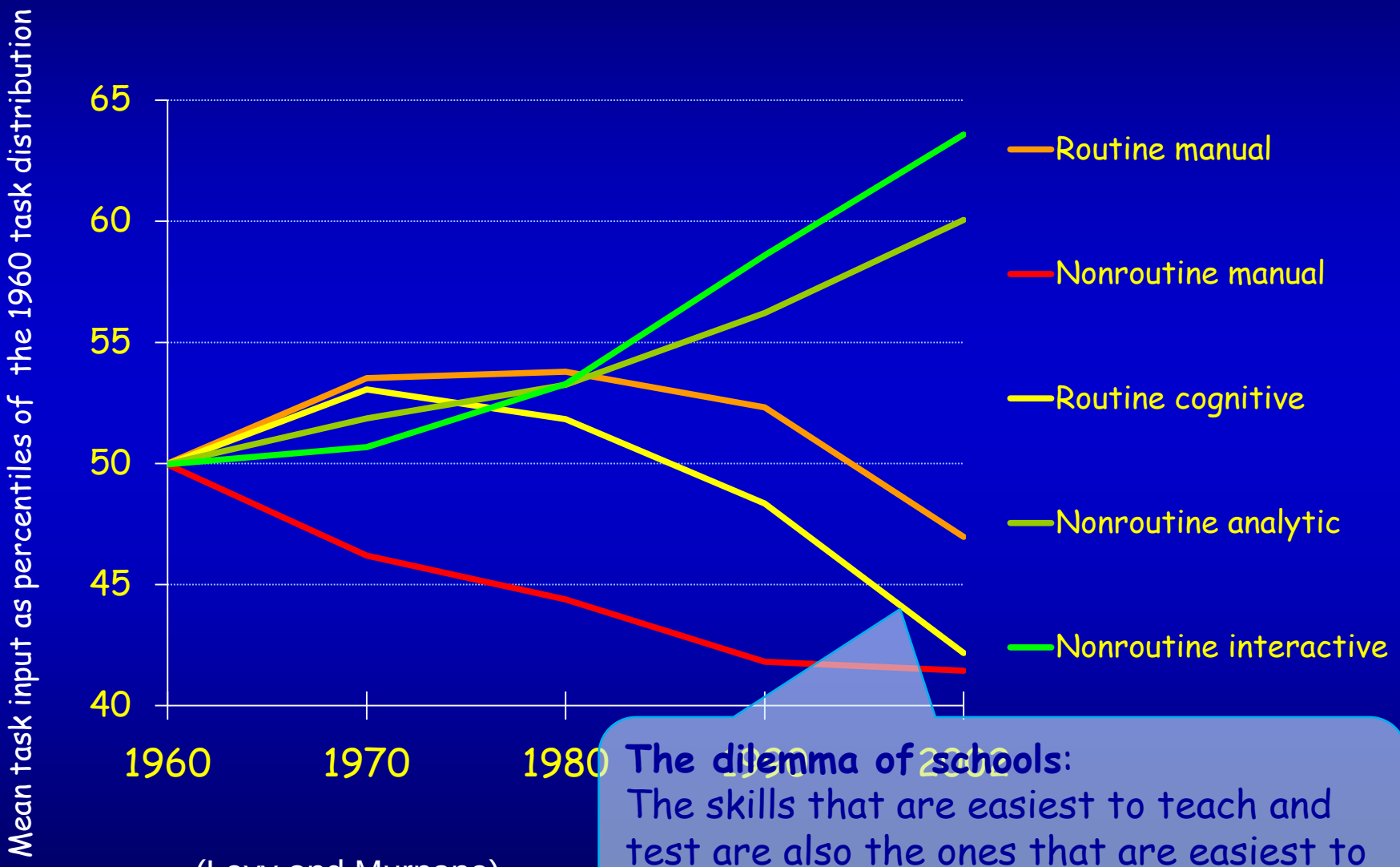
* Data for Costa Rica, Georgia, India, Malaysia, Malta, Mauritius, Venezuela and Vietnam will be published in December 2011

PISA 2009 in brief

- PISA seeks to…
  - … Support governments to prepare students…
    - … to deal with more rapid change than ever before…
    - … for jobs that have not yet been created…
    - … using technologies that have not yet been invented…
    - … to solve problems that we don't yet know will arise
  - … Provide a basis for policy dialogue and global collaboration in defining and implementing educational goals, policies and practices
    - Show countries what achievements are possible
    - Help governments set policy targets in terms of measurable goals achieved elsewhere
    - Gauge the pace of educational progress
    - Facilitate peer-learning on policy and practice .

How the demand for skills has changed

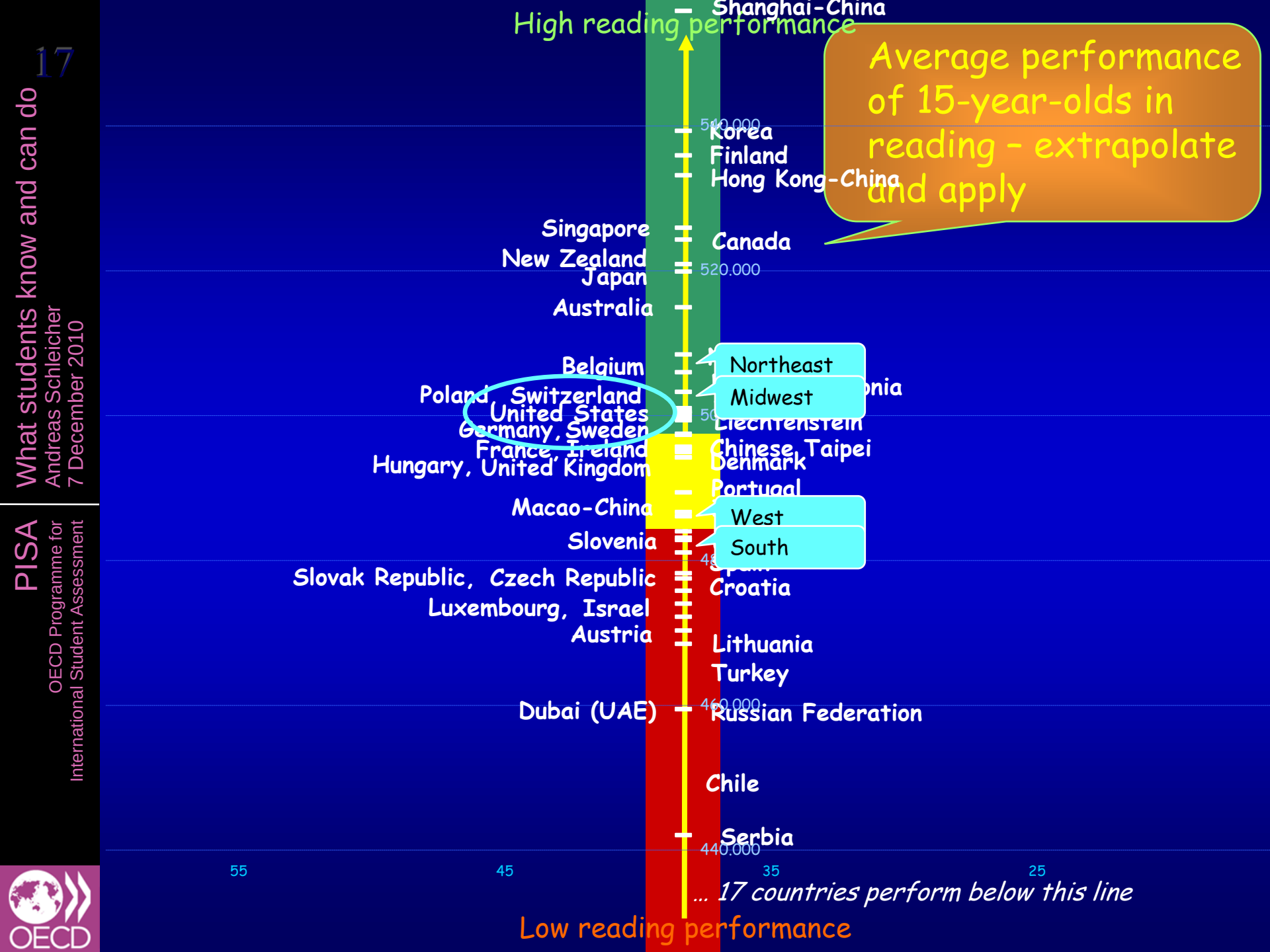
Economy-wide measures of routine and non-routine task input (US)



(Levy and Murnane)

The dilemma of schools:
The skills that are easiest to teach and test are also the ones that are easiest to digitise, automate and outsource

What 15-year-olds can do


High reading performance
Average performance of 15-year-olds in reading – extrapolate and apply
Shanghai-China
Korea
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Singapore
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New Zealand
Japan
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Northeast
Poland
Switzerland
Midwest
United States
Germany, Sweden
Liechtenstein
France, Ireland
Chinese Taipei
Hungary, United Kingdom
Denmark
Portugal
Macao-China
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Luxembourg, Israel
Austria
Lithuania
Turkey
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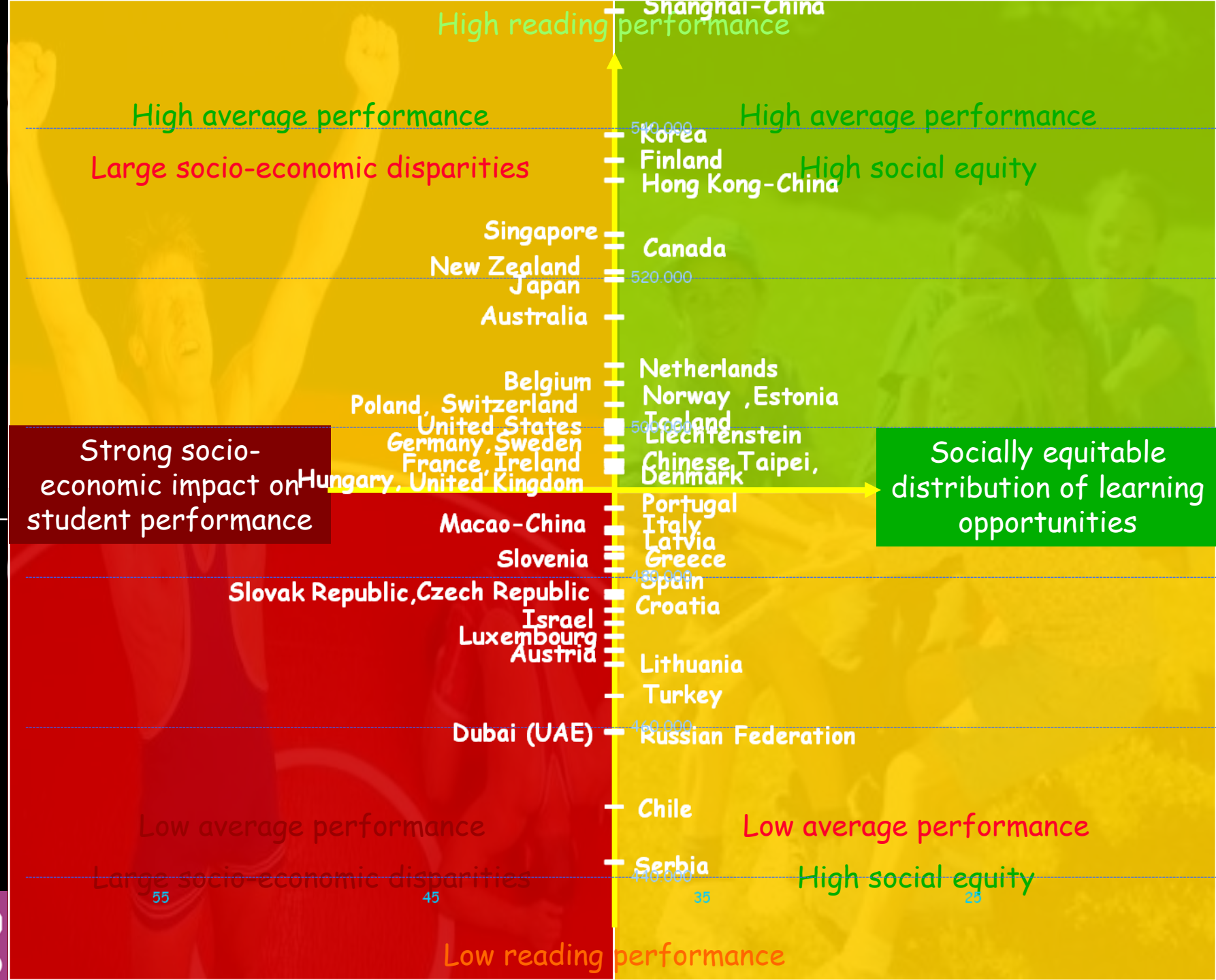
... 17 countries perform below this line
Low reading performance


High reading performance
High average performance
Large socio-economic disparities
High average performance
High social equity
Shanghai-China
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Russian Federation
Chile
Serbia
Low average performance
Large socio-economic disparities
Low average performance
High social equity
Low reading performance
Strong socio-economic impact on student performance
Socially equitable distribution of learning opportunities
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45
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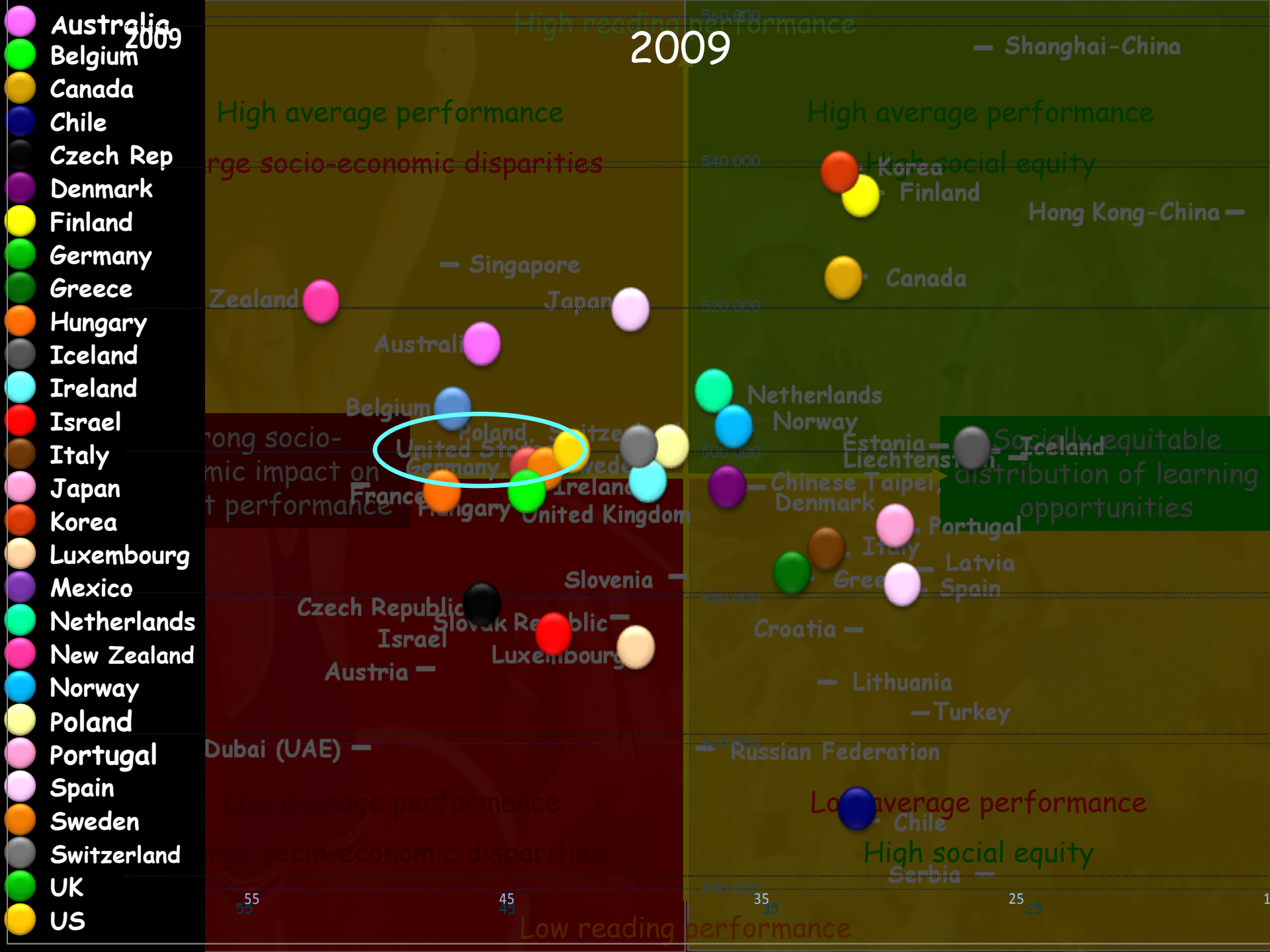
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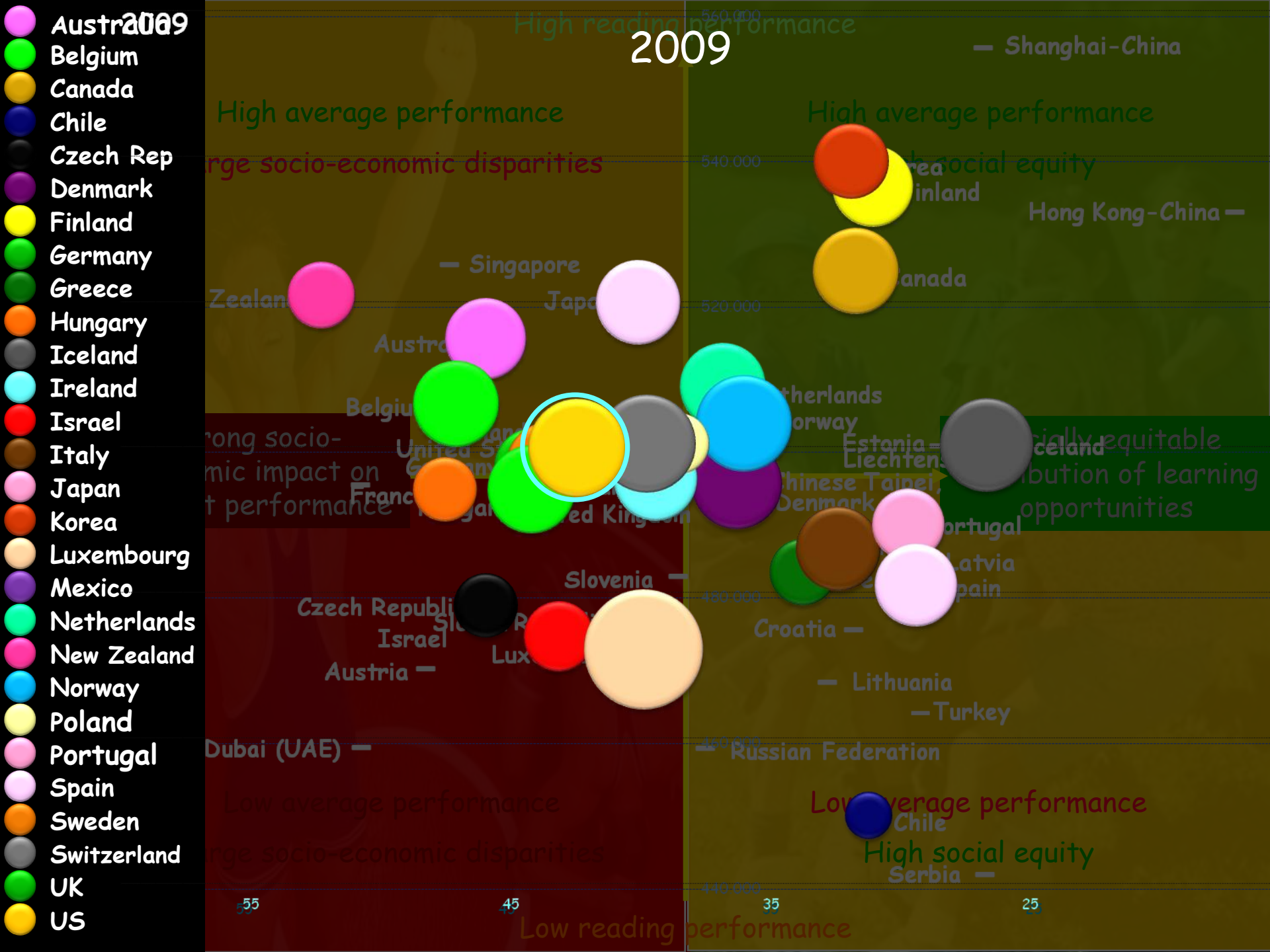
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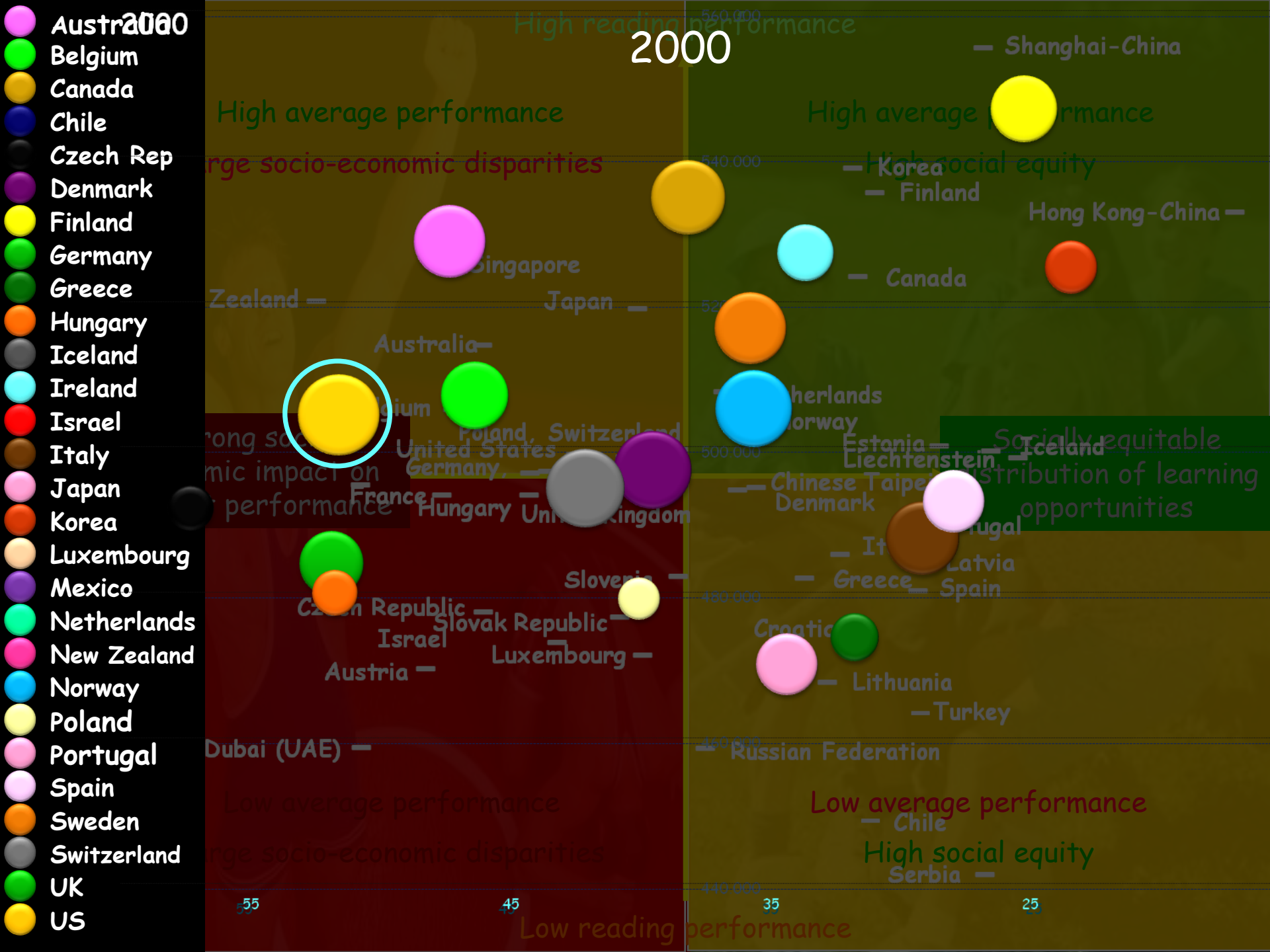
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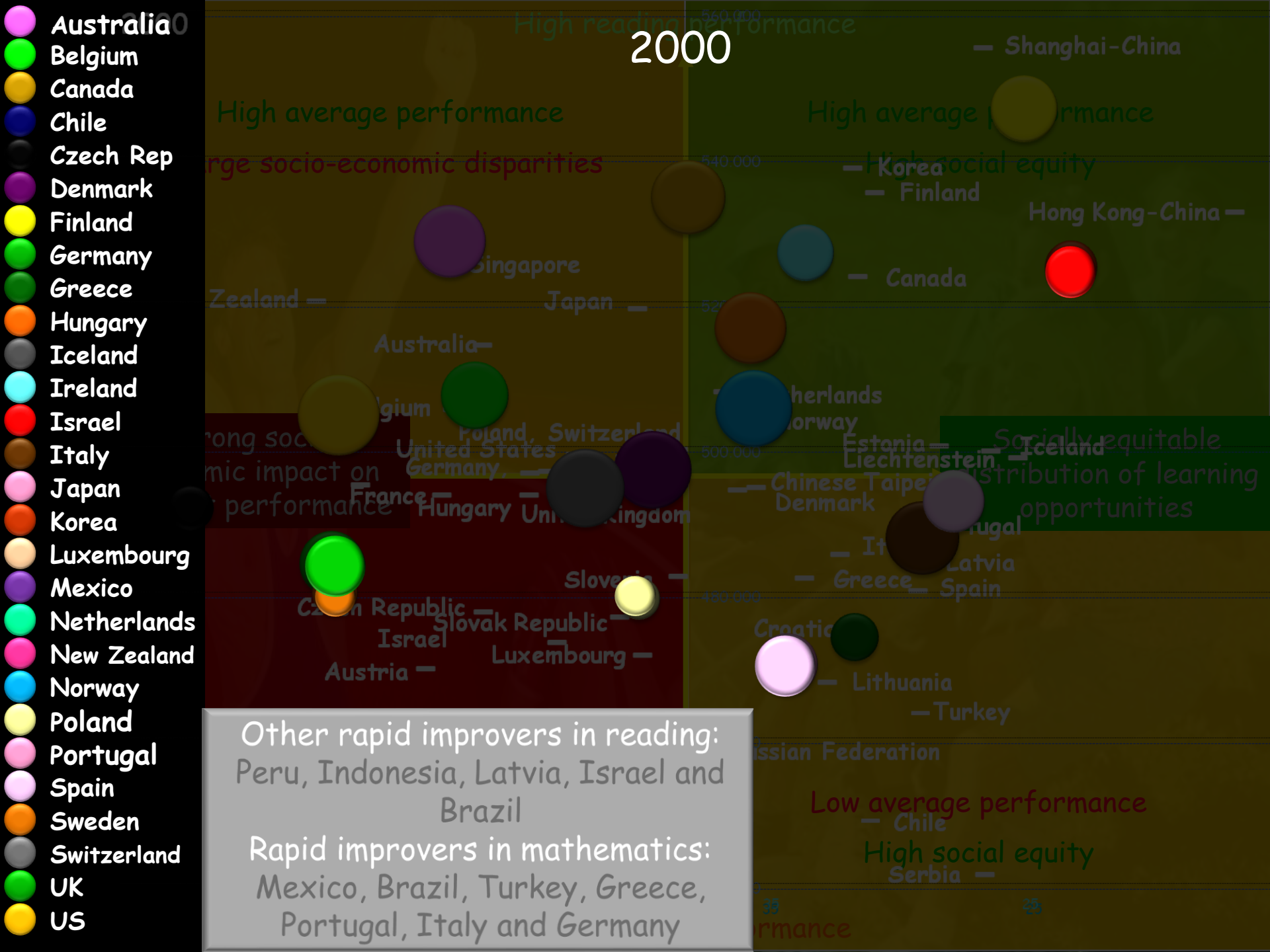
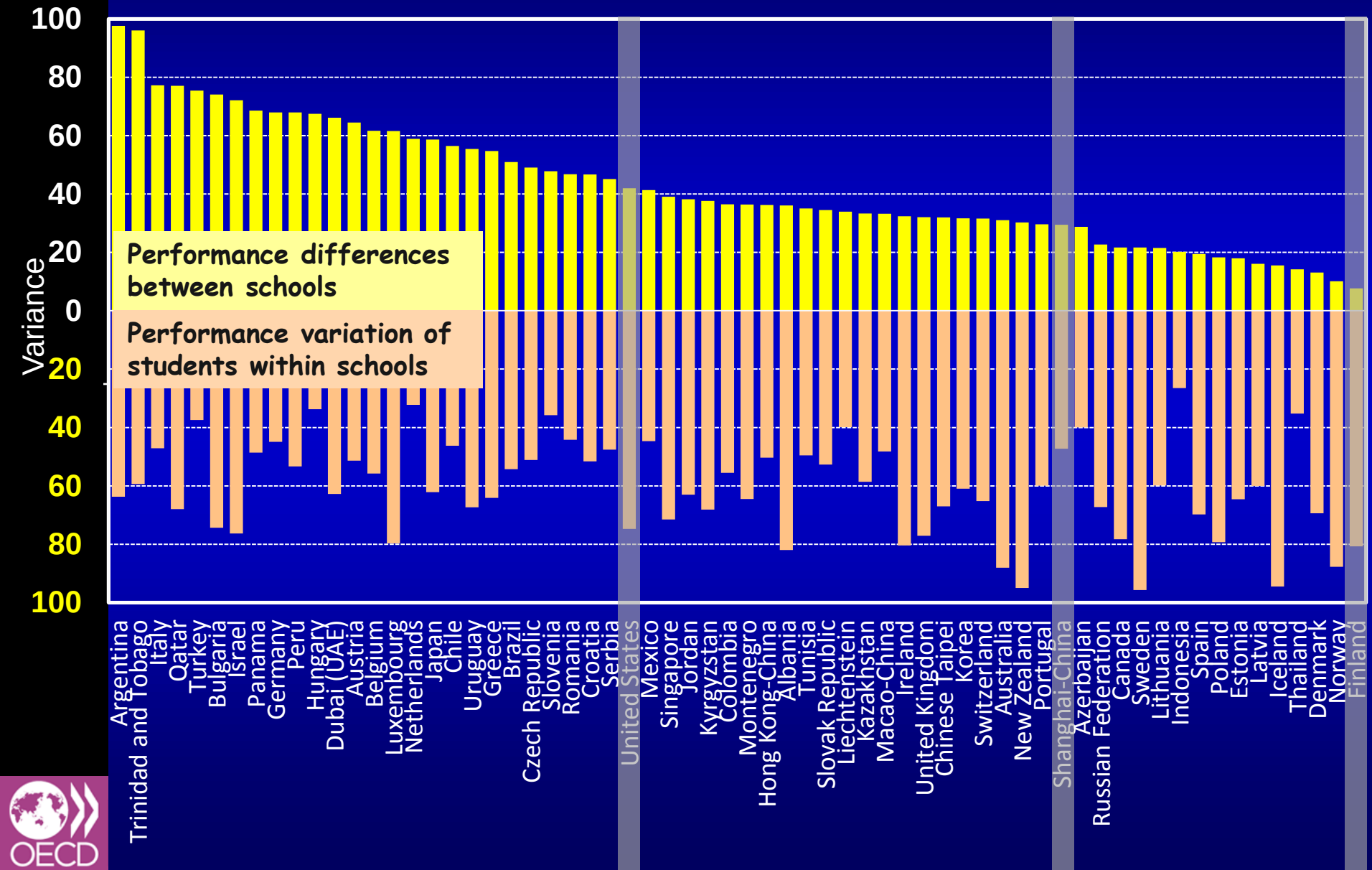


Other rapid improvers in reading:
Peru, Indonesia, Latvia, Israel and Brazil
Rapid improvers in mathematics:
Mexico, Brazil, Turkey, Greece, Portugal, Italy and Germany

Quality differences between schools

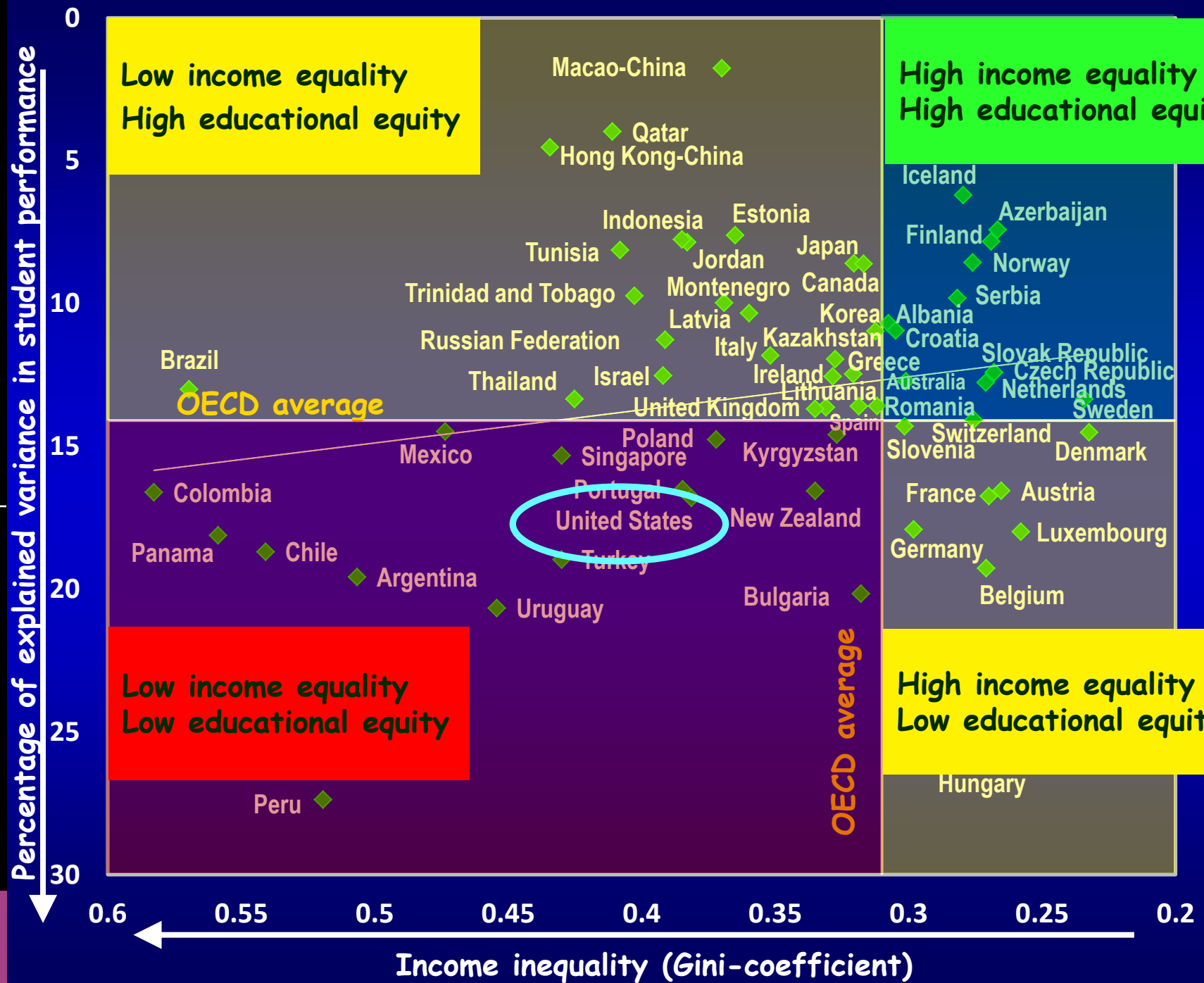
Variability in student performance between and within schools



Does a more unequal society necessarily imply a more inequitable education system ?

What students know and can do
Andreas Schleicher
7 December 2010

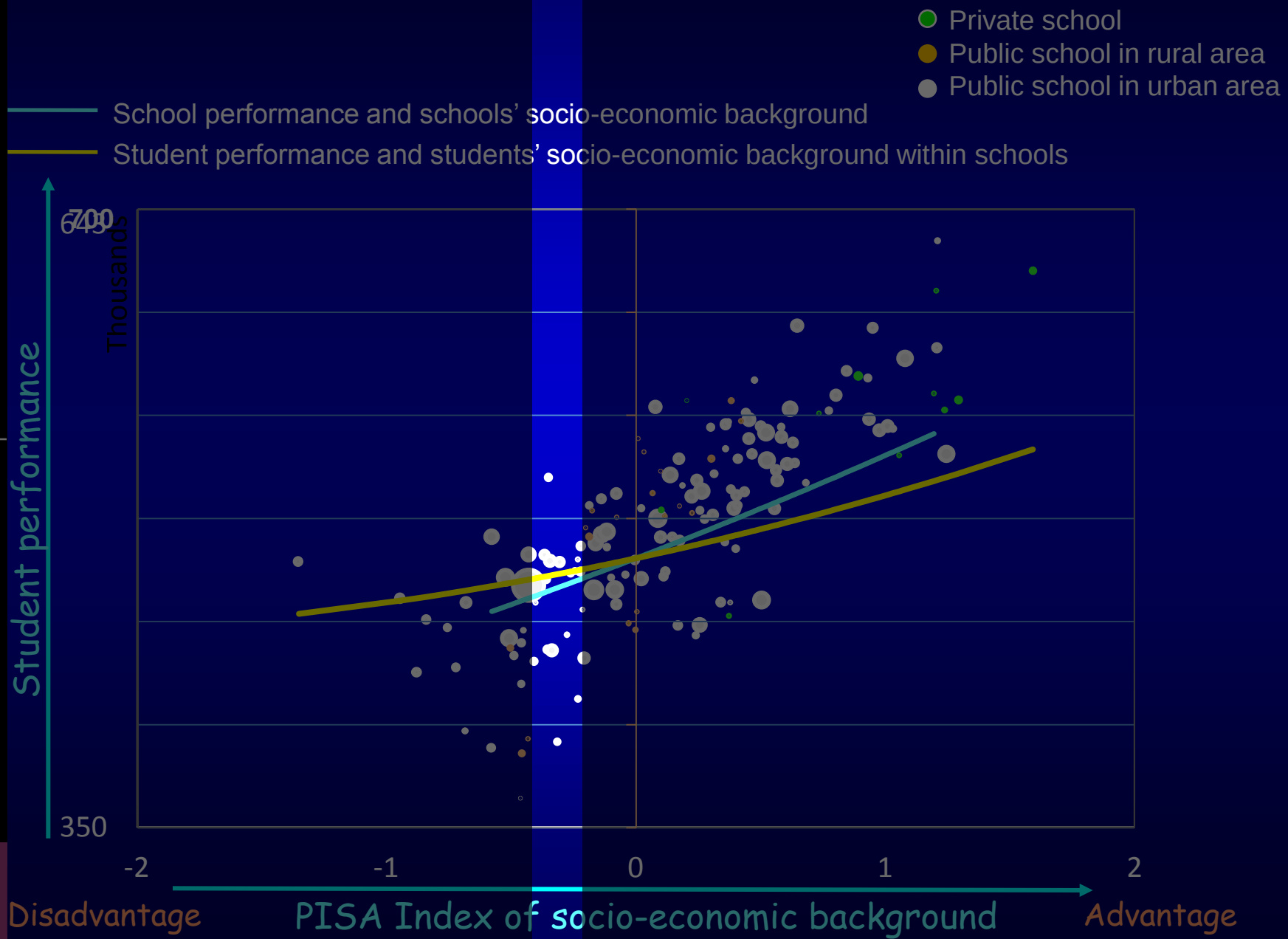
PISA
OECD Programme for International Student Assessment



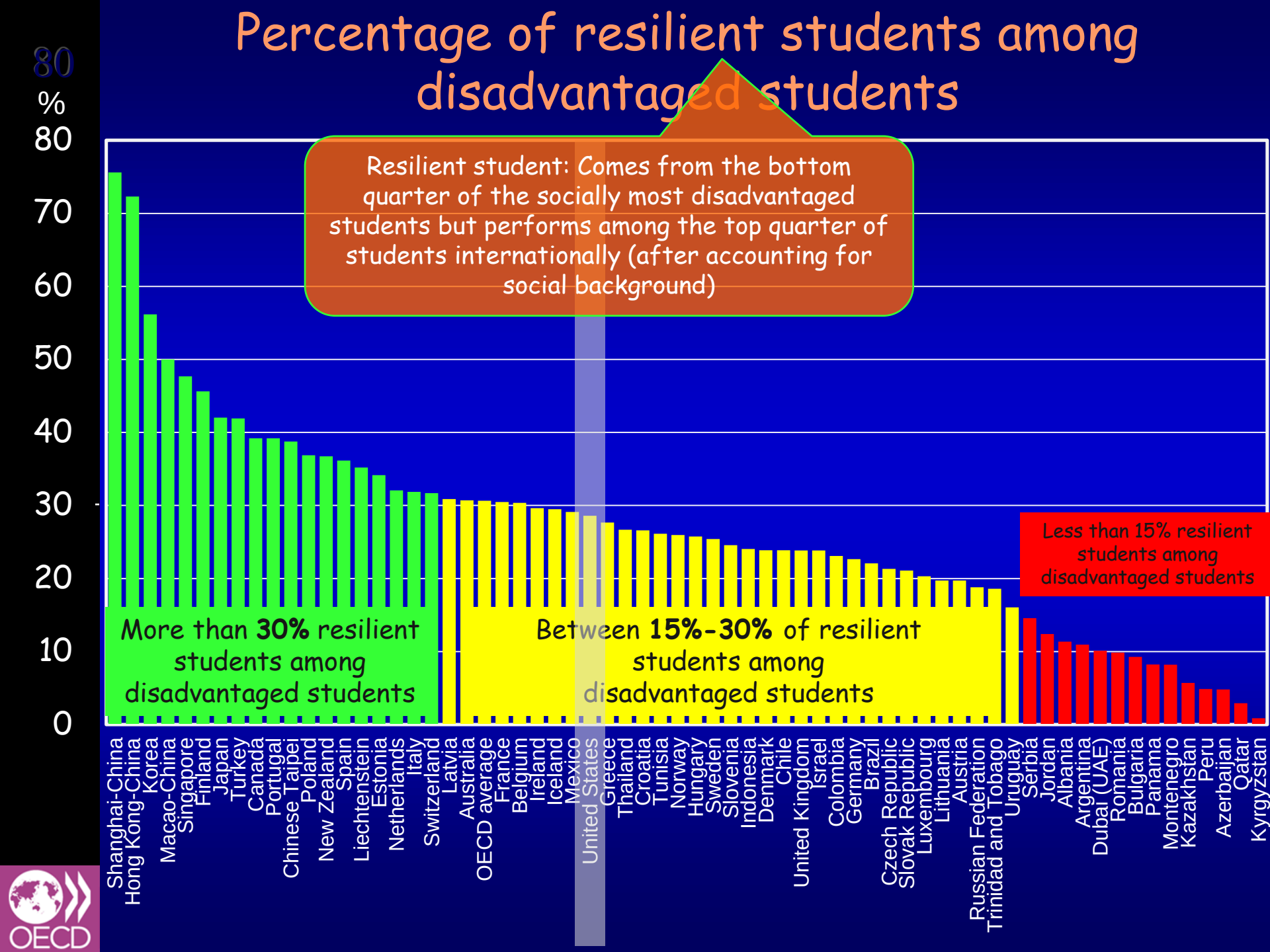
How do social background and learning outcomes interact?

School performance and socio-economic background

United States



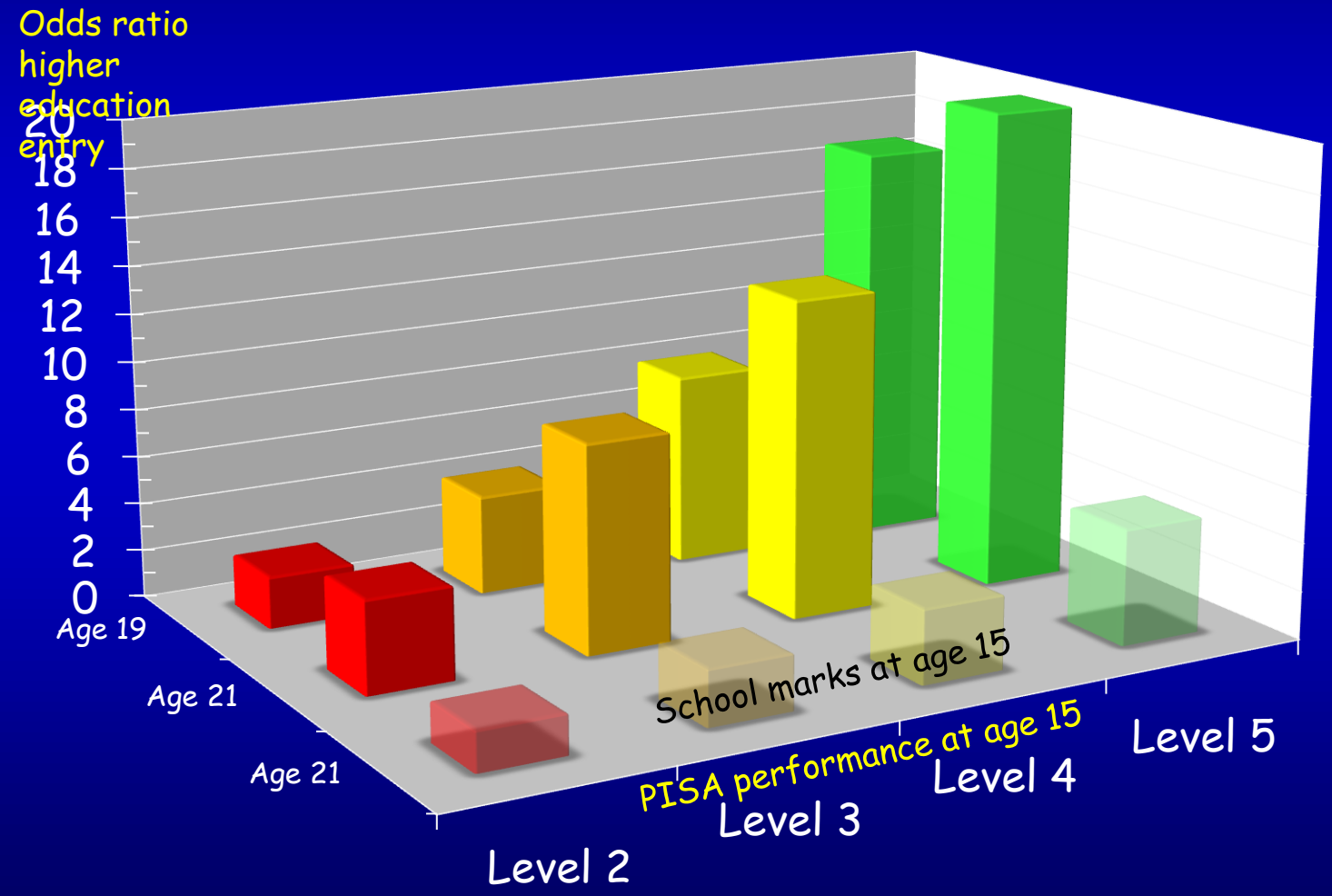
Percentage of resilient students among disadvantaged students



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)



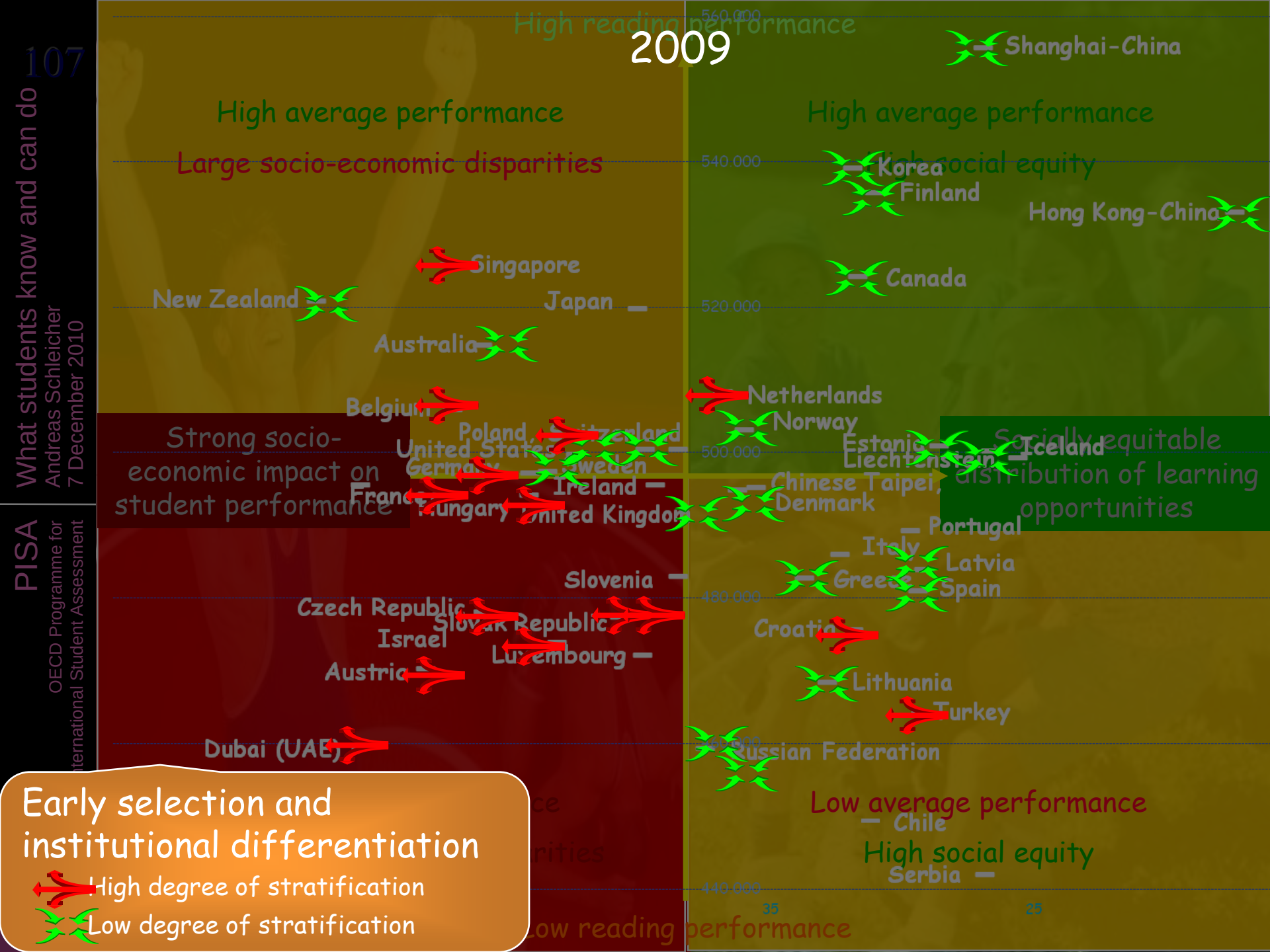
What does it all mean?

Some lessons from successful systems
Commitment to universal achievement
Goals, gateways, instructional systems
Capacity at point of delivery
Incentives and accountability
Resources
A learning system
Coherence

- 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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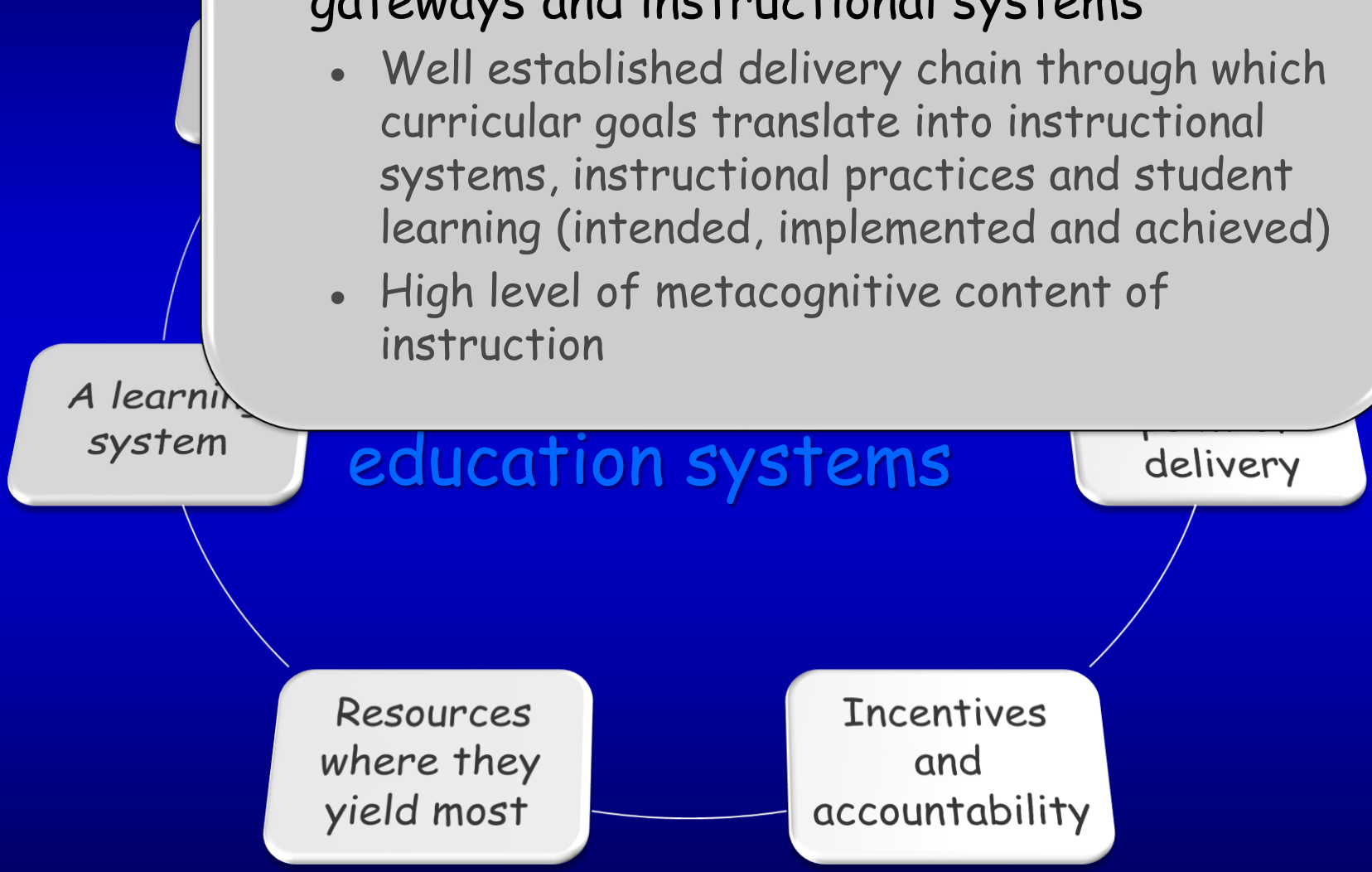
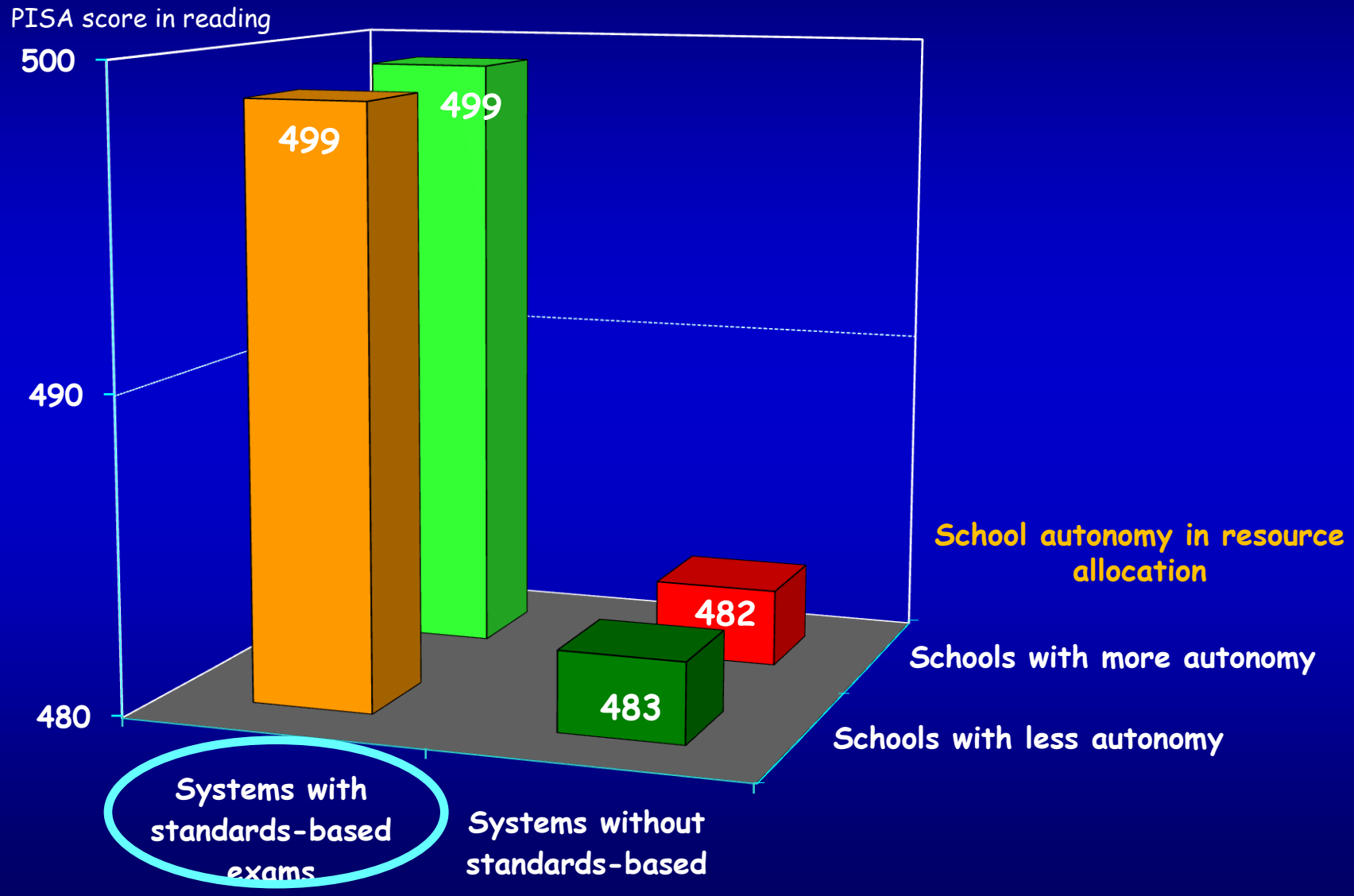
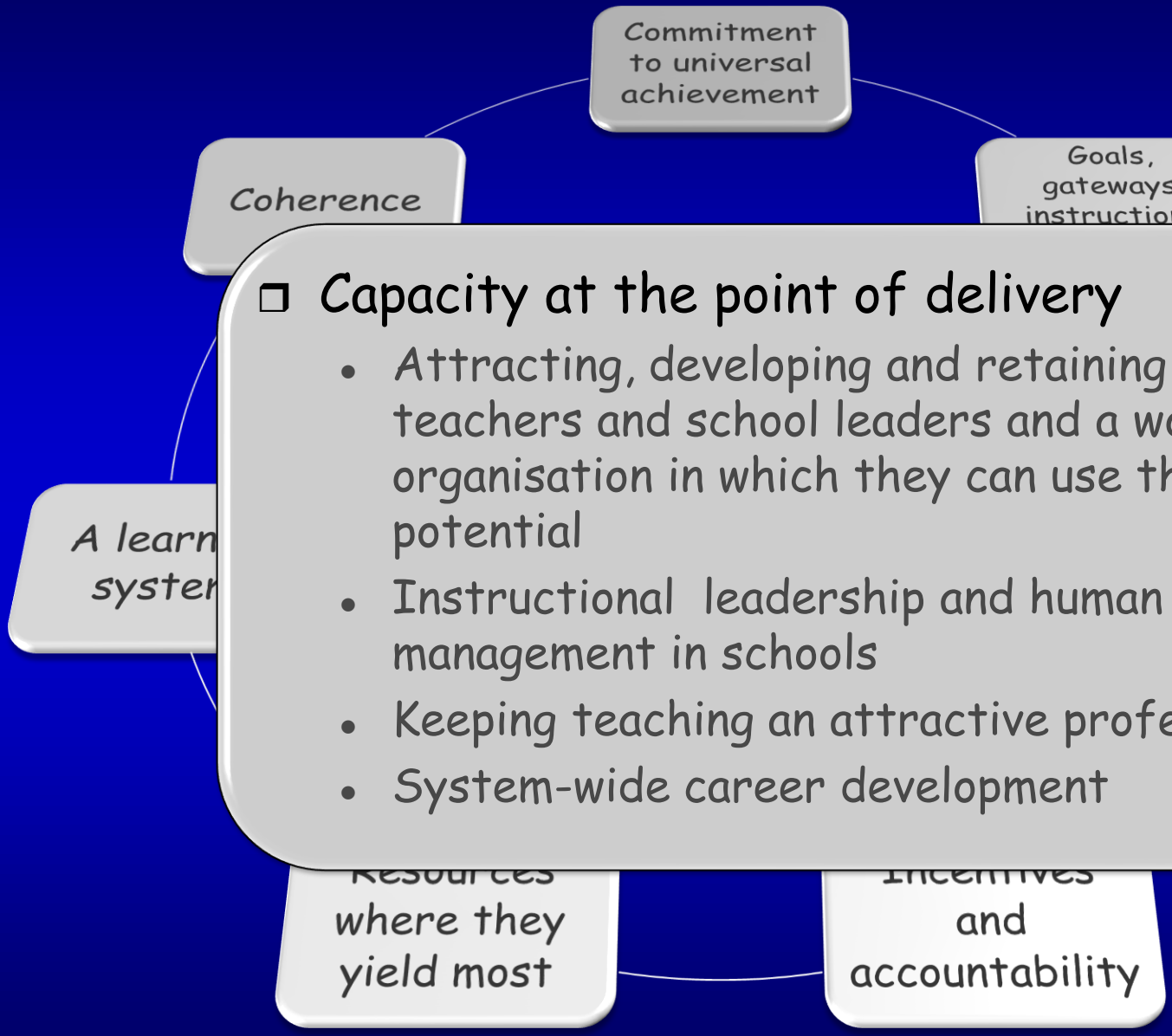
Serbia
Early selection and institutional differentiation
High degree of stratification
Low degree of stratification

- Clear ambitious goals that are shared across the system and aligned with high stakes gateways and instructional systems
  - Well established delivery chain through which curricular goals translate into instructional systems, instructional practices and student learning (intended, implemented and achieved)
  - High level of metacognitive content of instruction



School autonomy, standardised exams and student performance





- Capacity at the point of delivery
  - Attracting, developing and retaining high quality teachers and school leaders and a work organisation in which they can use their potential
  - Instructional leadership and human resource management in schools
  - Keeping teaching an attractive profession
  - System-wide career development

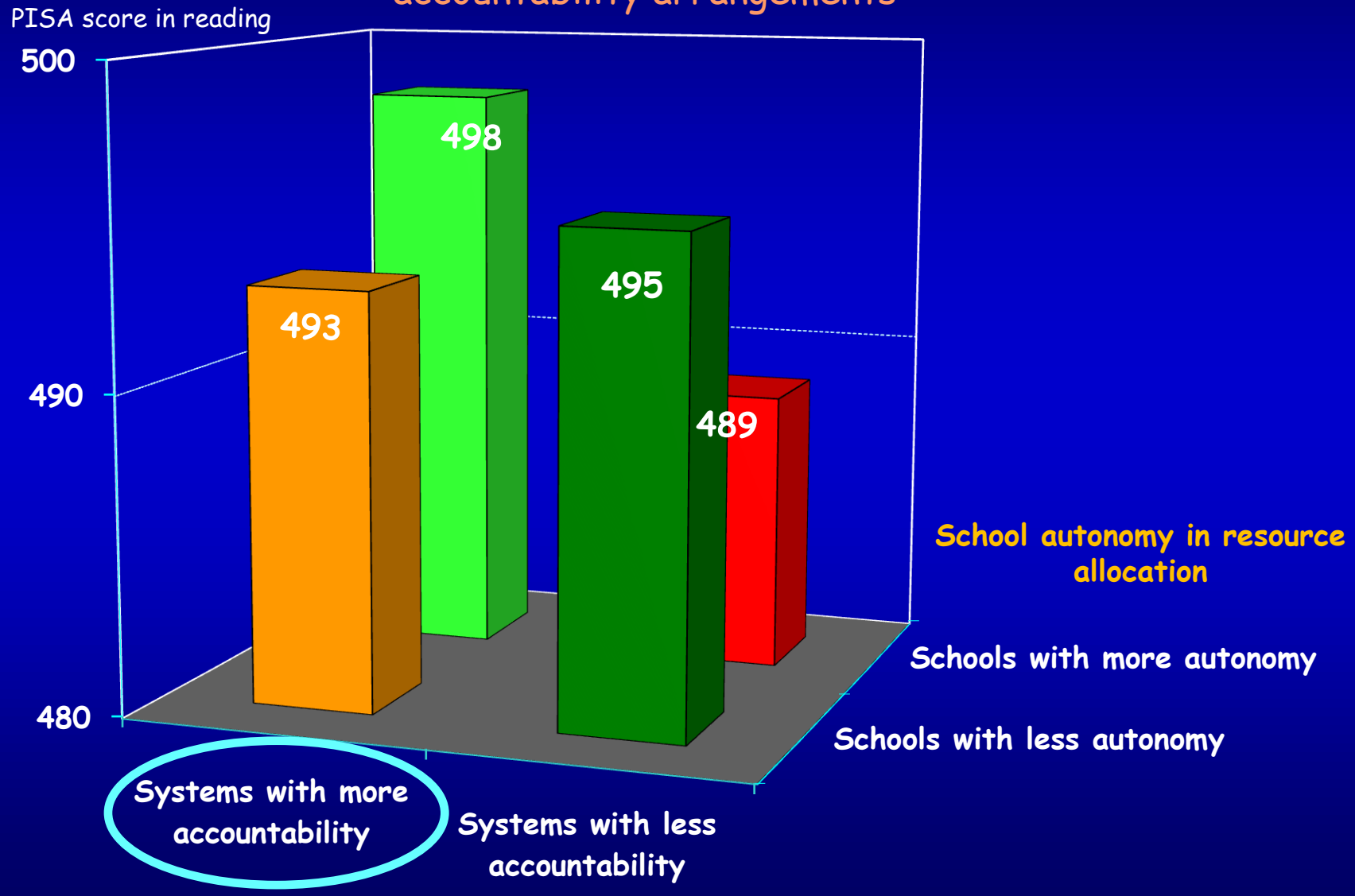
- Incentives, accountability, knowledge management
  - Aligned incentive structures

    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

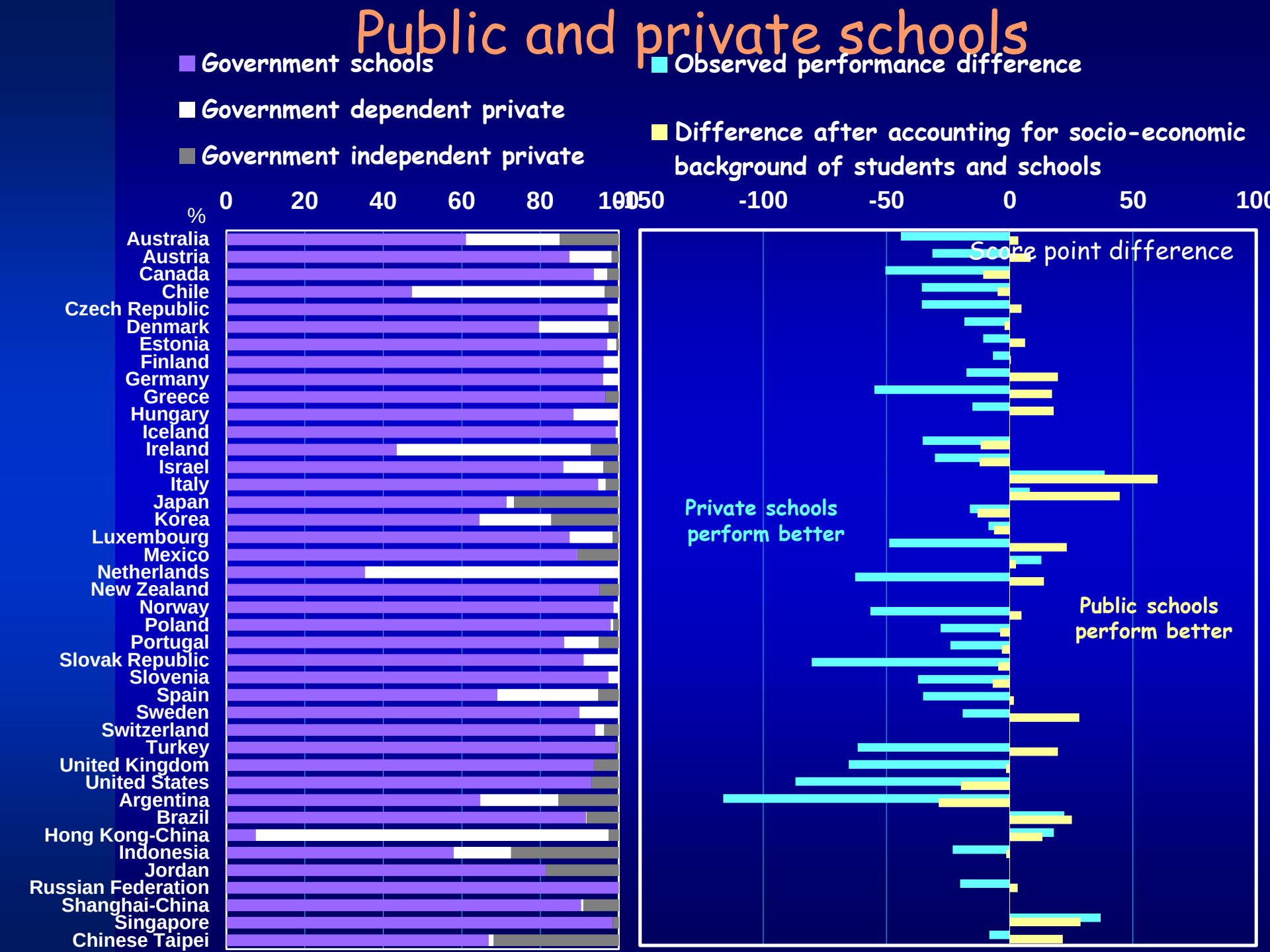
    For teachers
    - Make innovations in pedagogy and/or organisation
    - Improve their own performance and the performance of their colleagues
    - Pursue professional development opportunities that lead to stronger pedagogical practices
  - A balance between vertical and lateral accountability
  - 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

School autonomy, accountability and student performance

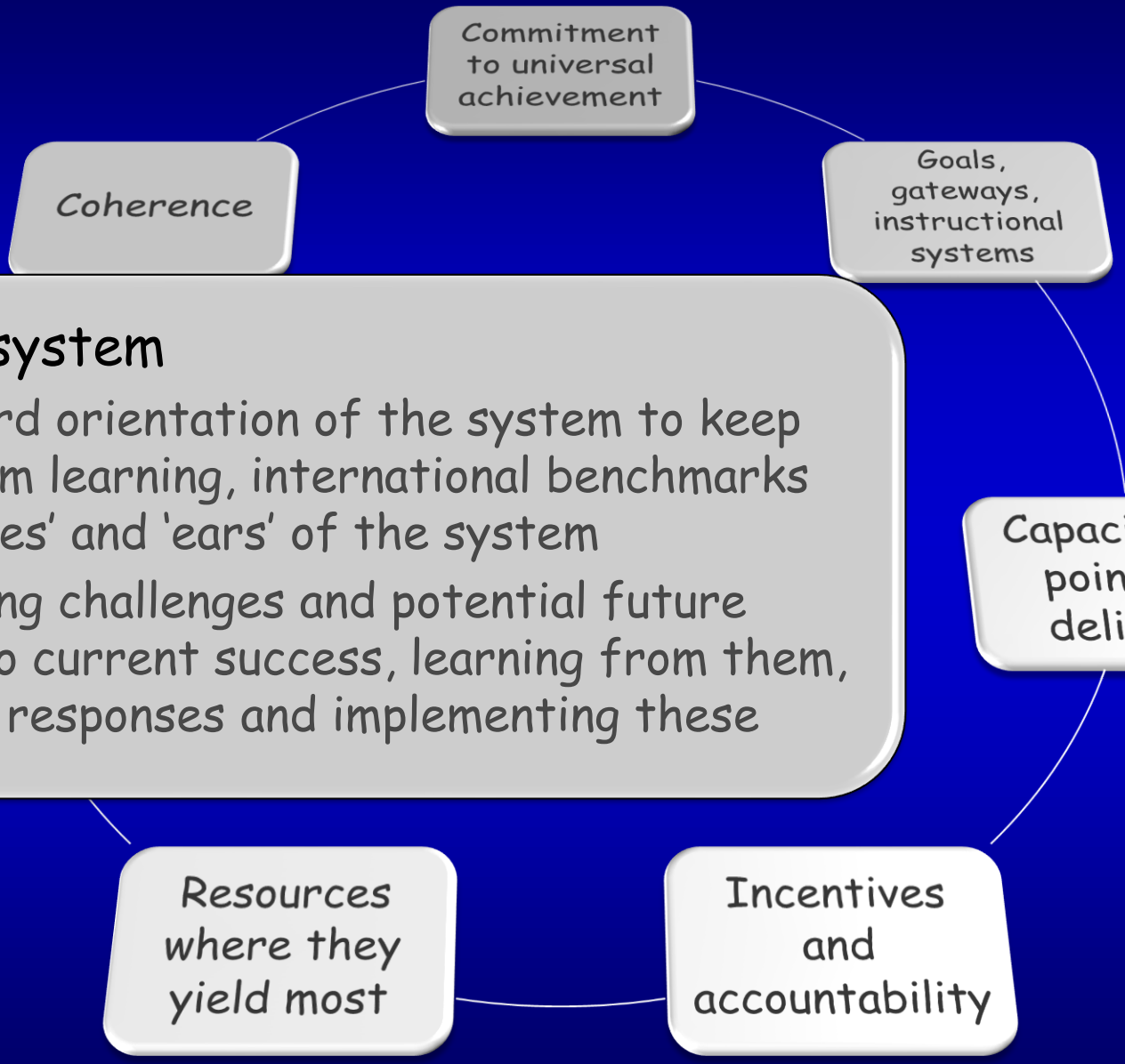
Impact of school autonomy on performance in systems with and without accountability arrangements



Public and private schools

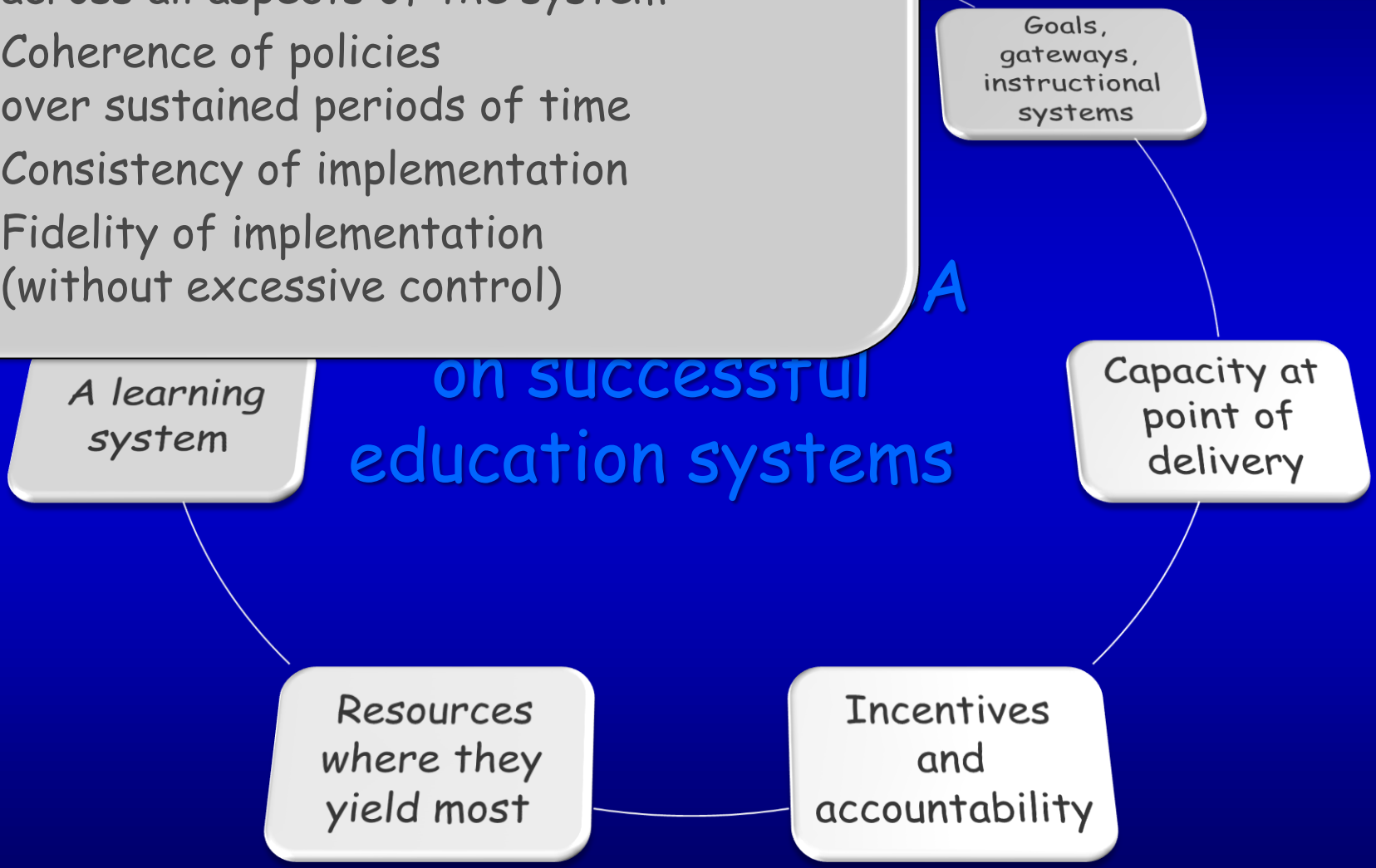


- Investing resources where they can make most of a difference
  - Alignment of resources with key challenges (e.g. attracting the most talented teachers to the most challenging classrooms)
  - Effective spending choices that prioritise high quality teachers over smaller classes



- *A learning system*
  - An outward orientation of the system to keep the system learning, 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

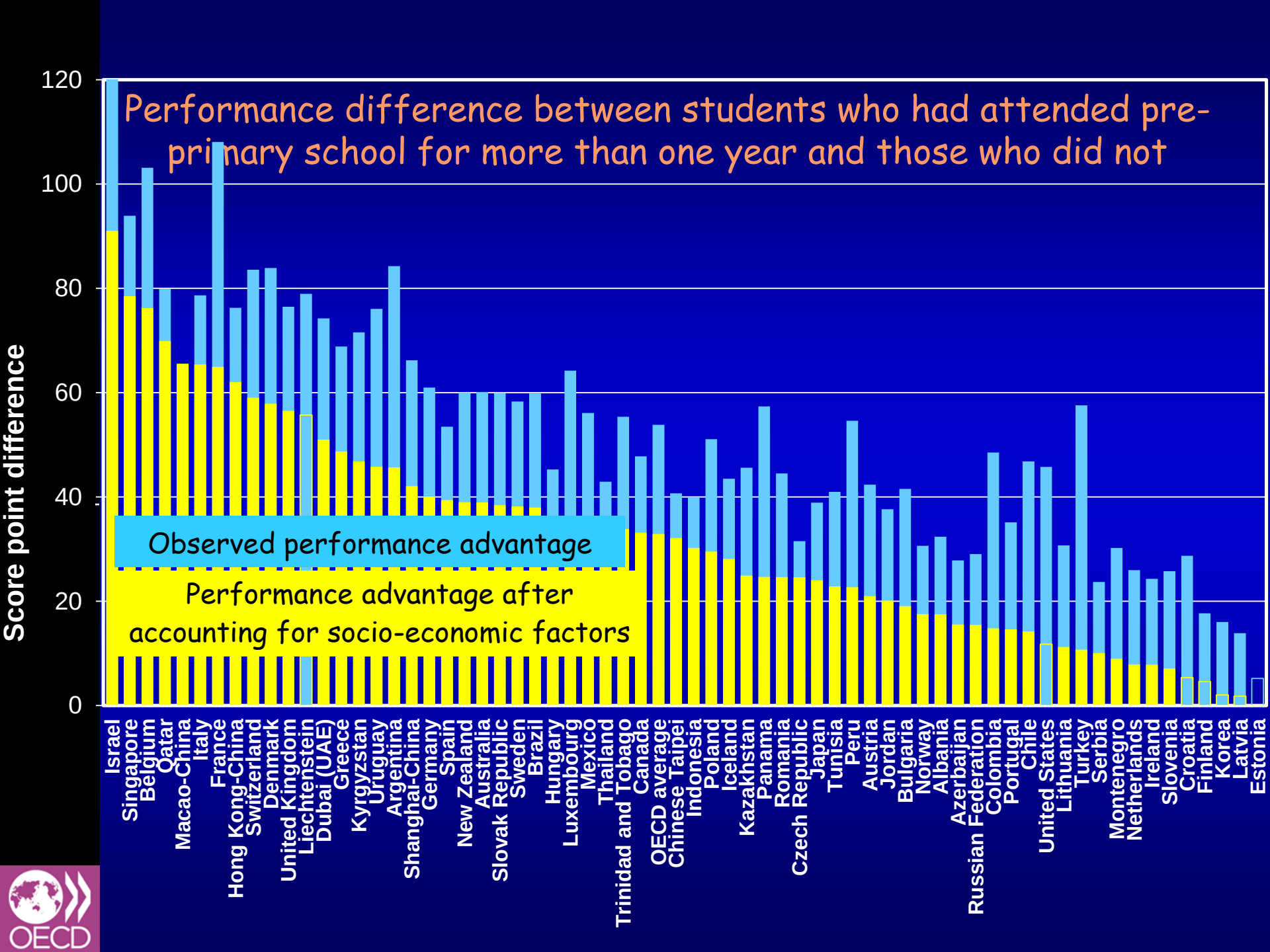
- Coherence of policies and practices
  - Alignment of policies across all aspects of the system
  - Coherence of policies over sustained periods of time
  - Consistency of implementation
  - Fidelity of implementation (without excessive control)



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
Routine cognitive skills, rote learning	Curriculum, instruction and assessment	Learning to learn, complex ways of thinking, ways of working
Few years more than secondary	Teacher quality	High-level professional knowledge workers
'Tayloristic', hierarchical	Work organisation	Flat, collegial
Primarily to authorities	Accountability	Primarily to peers and stakeholders

Beyond schooling


Performance difference between students who had attended pre-primary school for more than one year and those who did not
Score point difference
120
100
80
60
40
20
0
Observed performance advantage
Performance advantage after accounting for socio-economic factors
Israel
Singapore
Belgium
Qatar
Macao-China
Italy
France
Hong Kong-China
Switzerland
Denmark
United Kingdom
Liechtenstein
Dubai (UAE)
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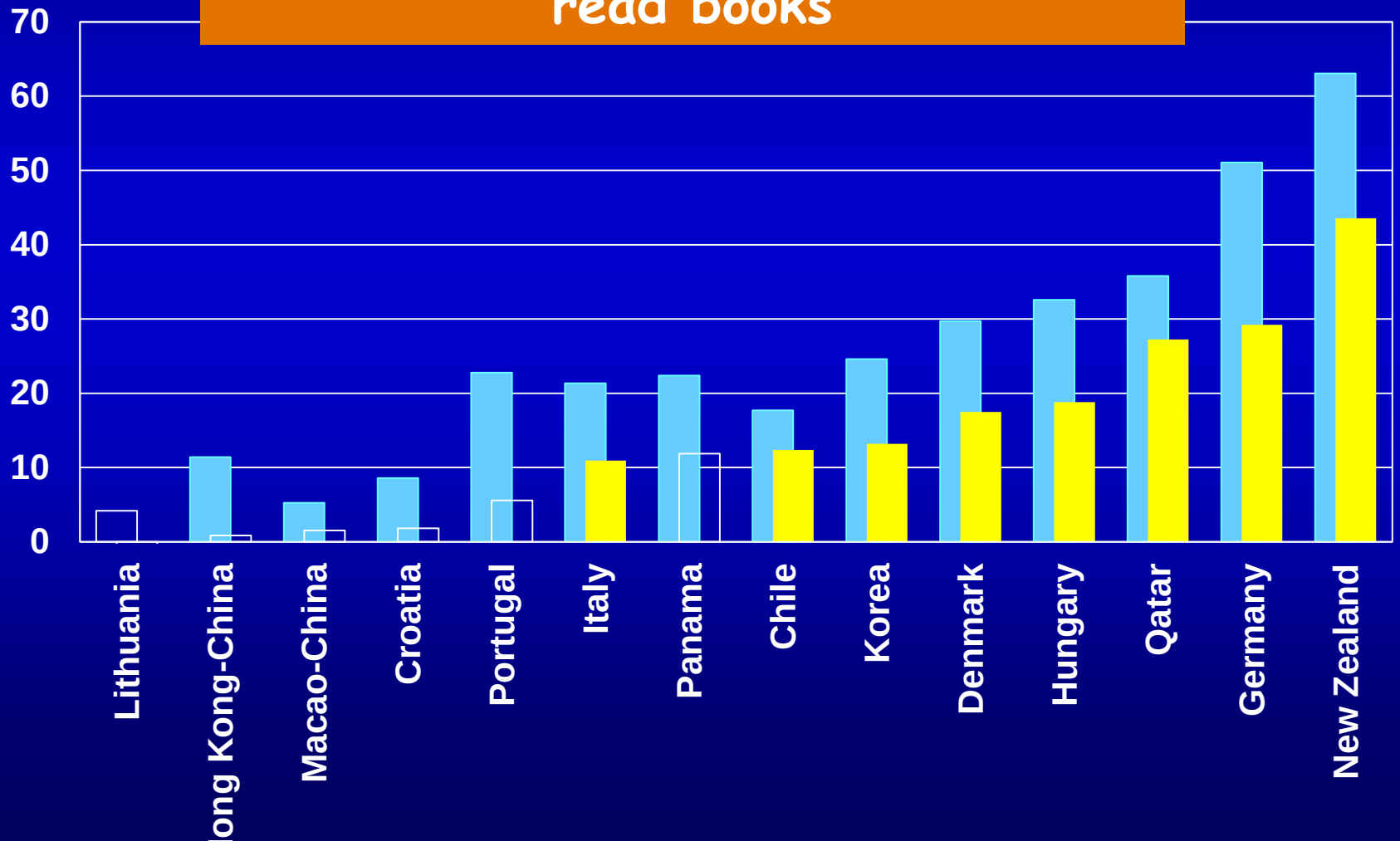
Parental support at the beginning of primary school

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

"read books"



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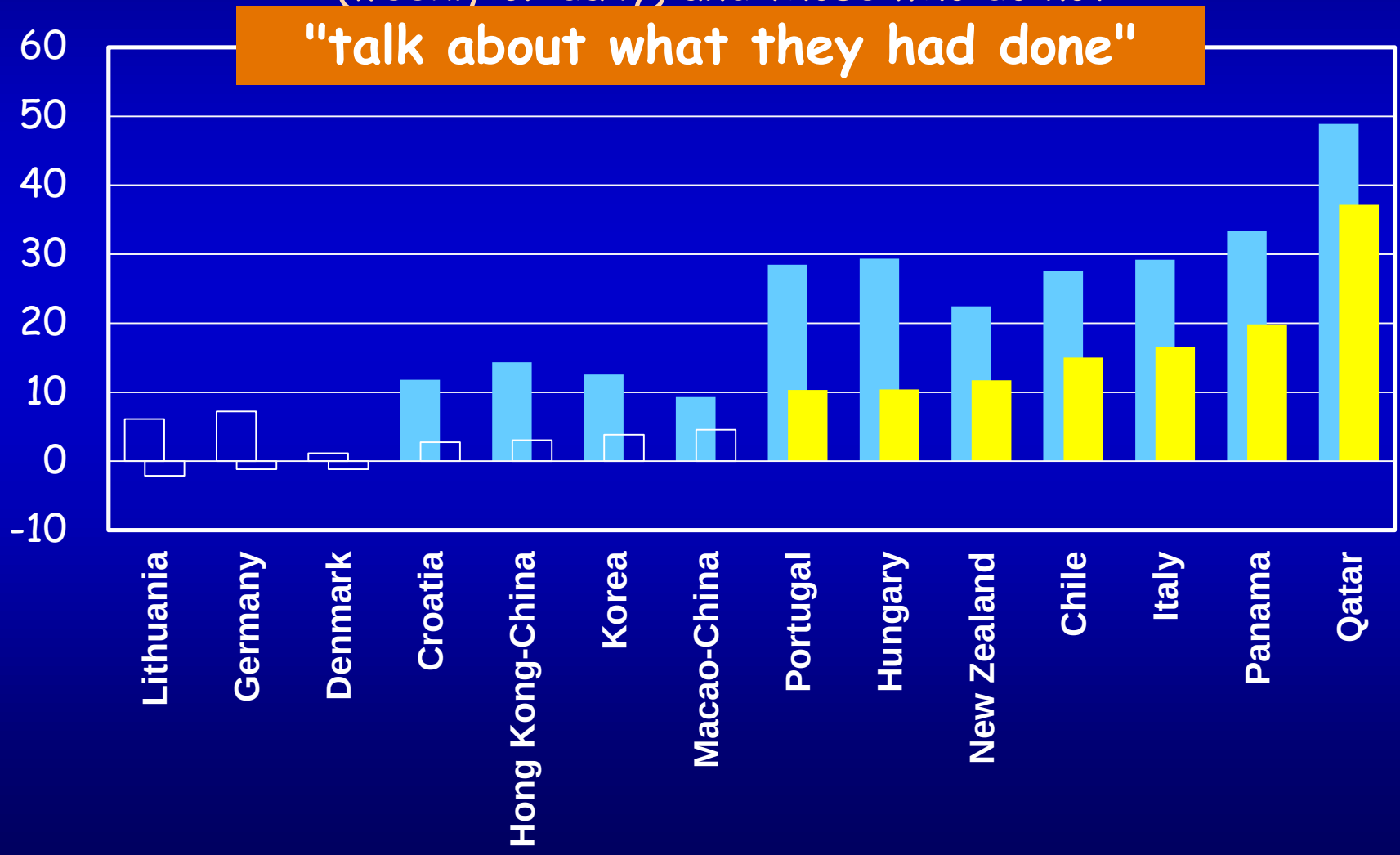
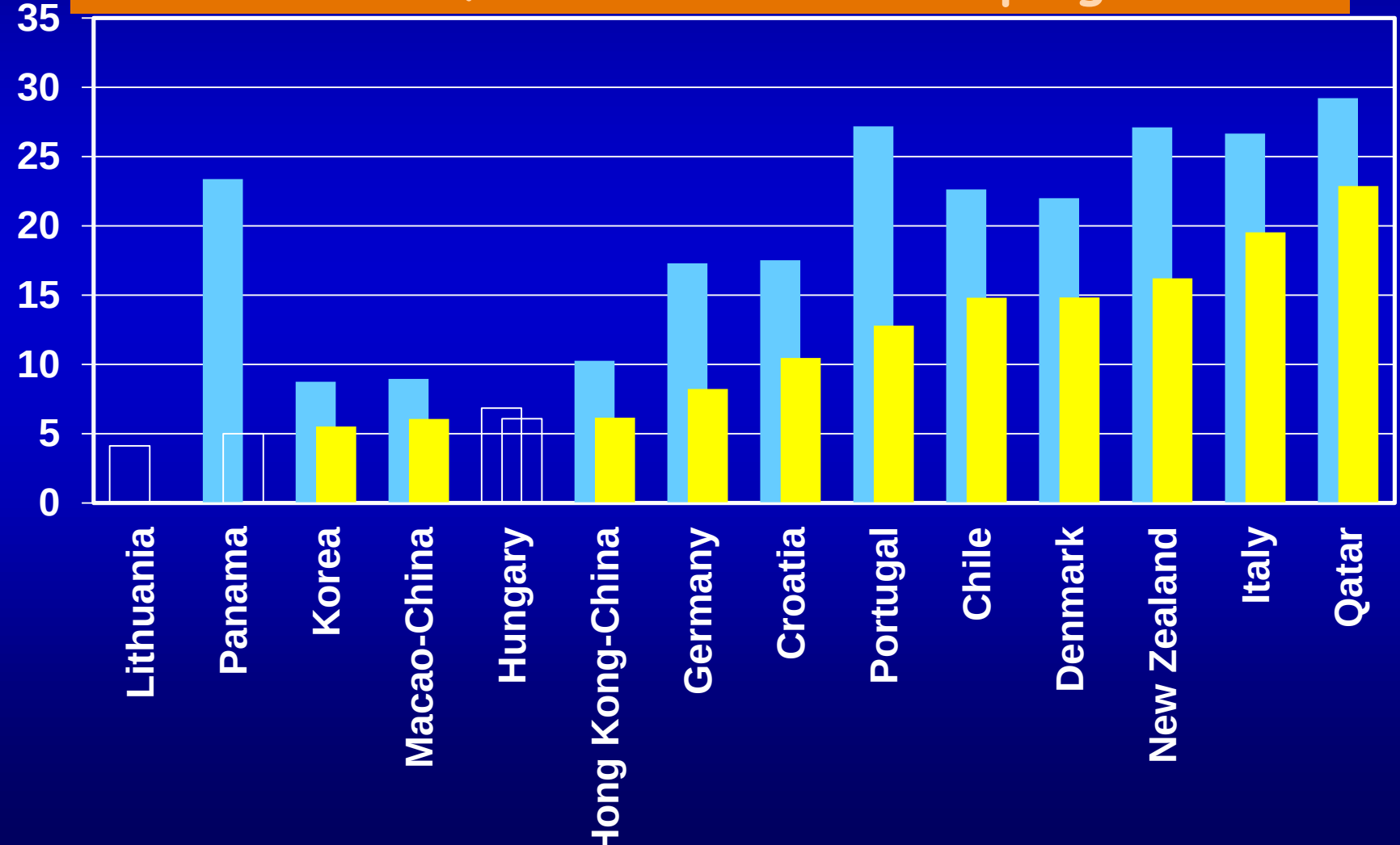


Parental support at age 15

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

"discuss books, films or televisions programmes"



Find out more about PISA at…

- OECD www.pisa.oecd.org
  - All national and international publications
  - The complete micro-level database
- U.S. White House www.data.gov

Thank you !

- Email: Andreas.Schleicher@OECD.org

… and remember:

Without data, you are just another person with an opinion