PISA

Seeing education through the prism of international comparisons

Maryland Commission on Excellence and Innovation in Education

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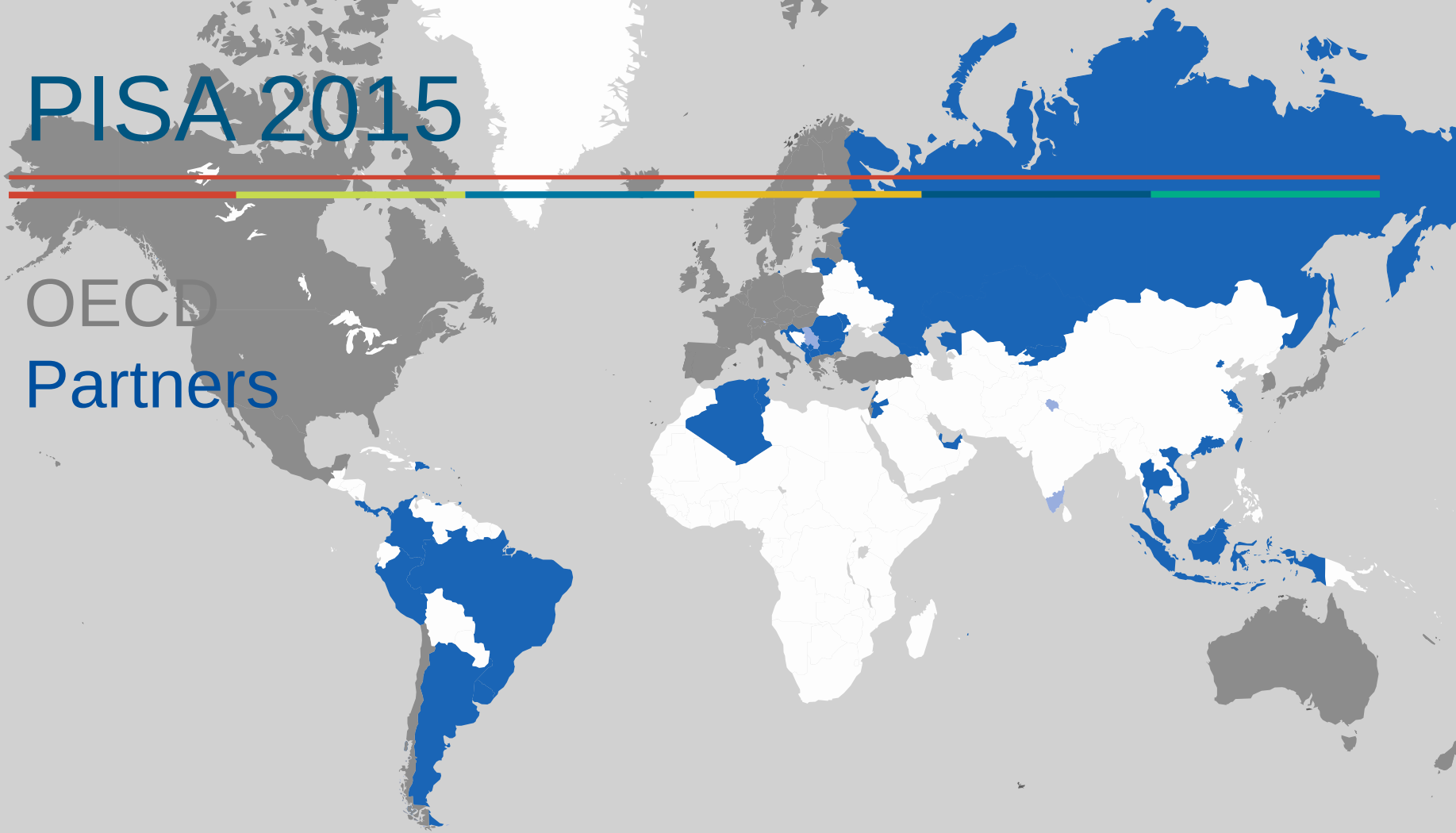
Director for Education and Skills

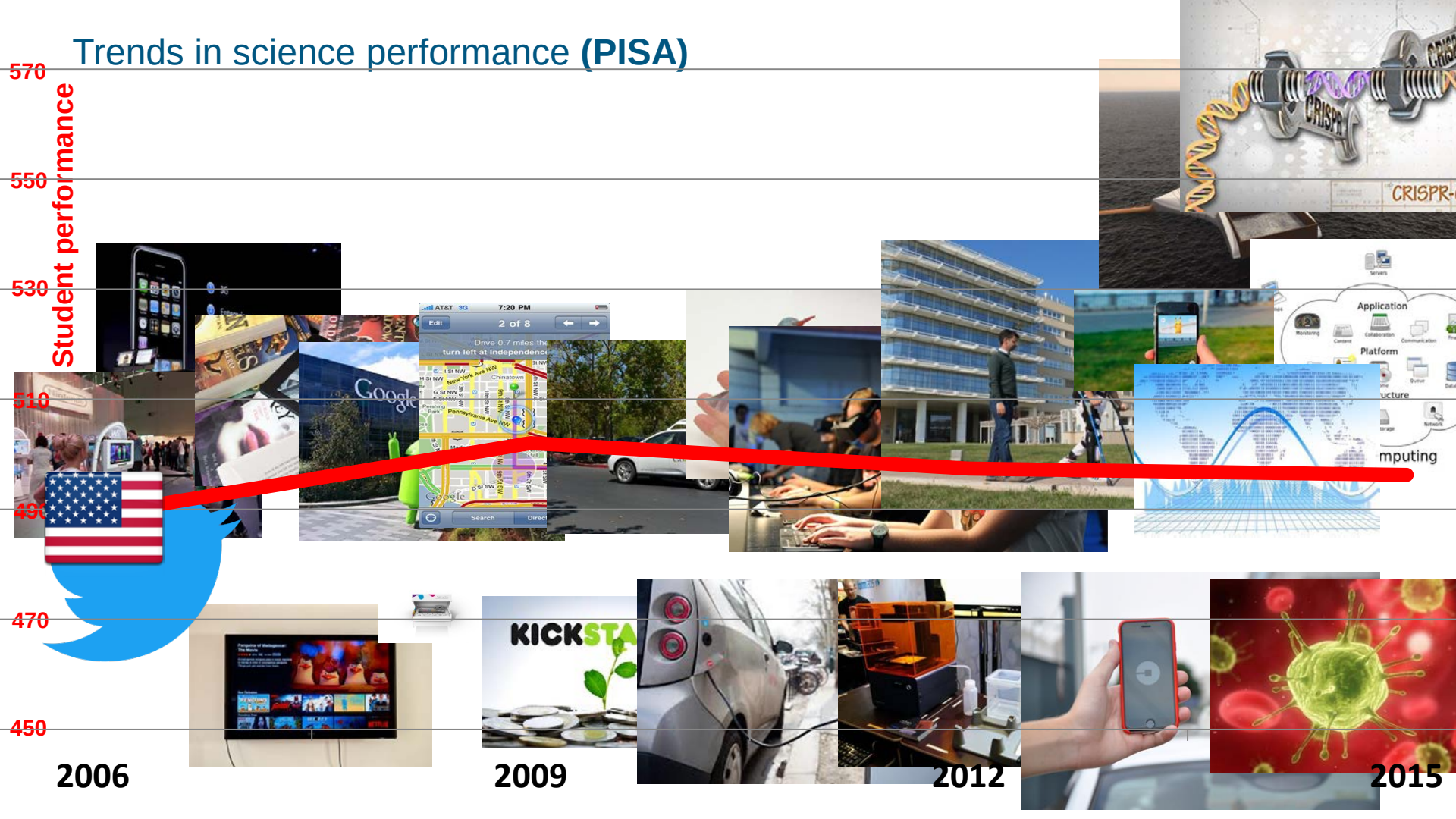
OECD

BETTER POLICIES FOR BETTER LIVES

PISA 2015



Trends in science performance **(PISA)**



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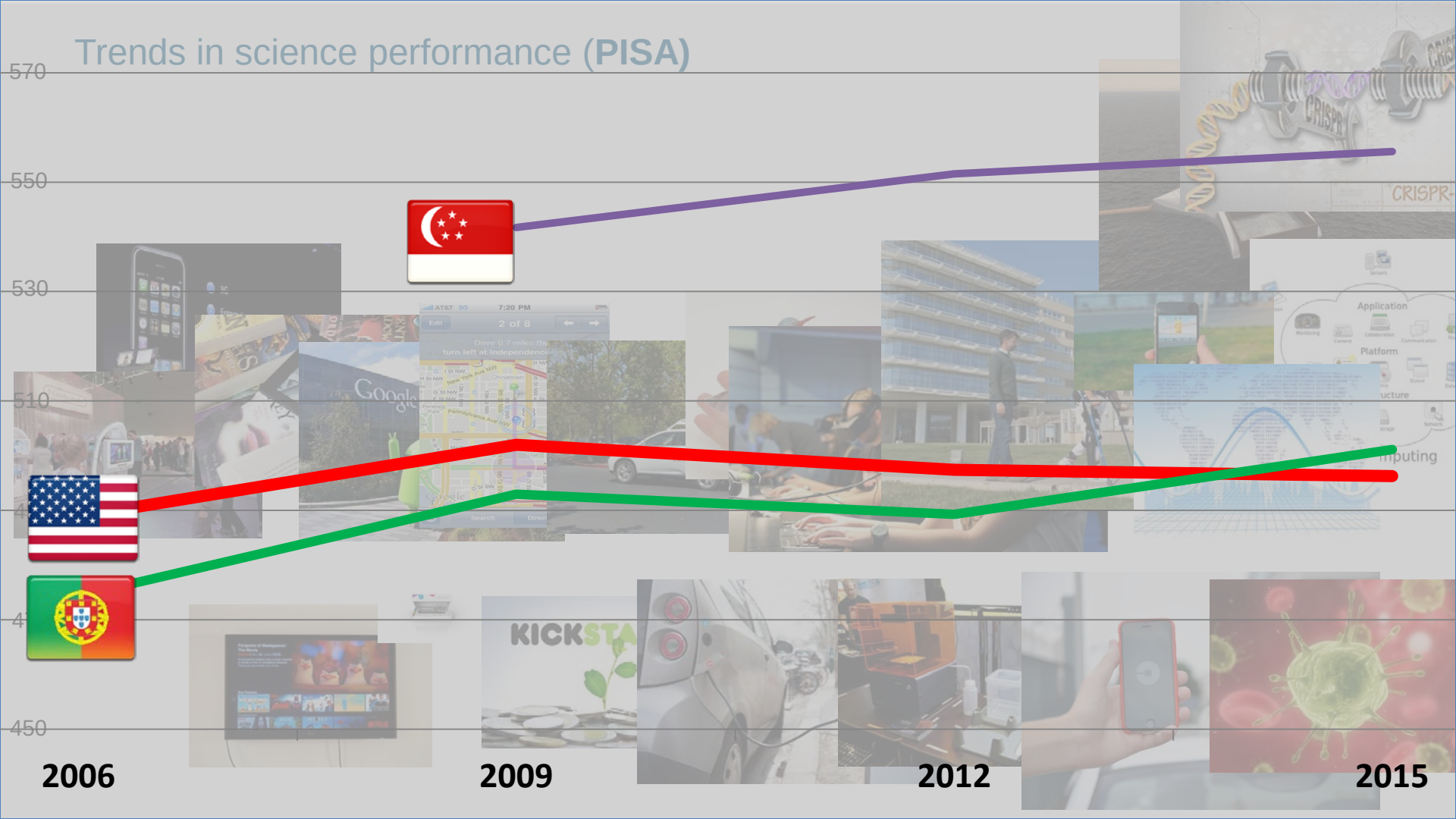
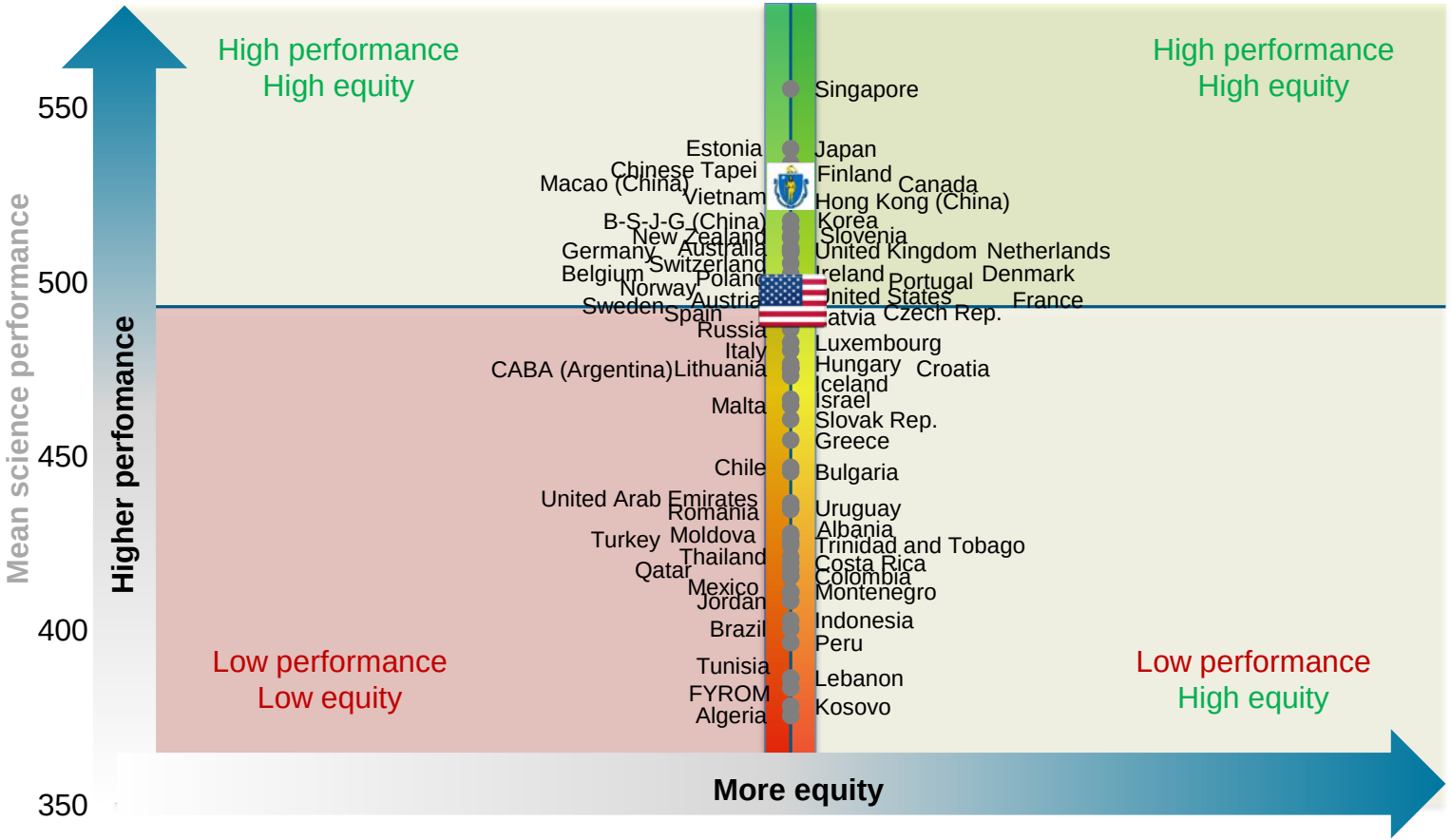
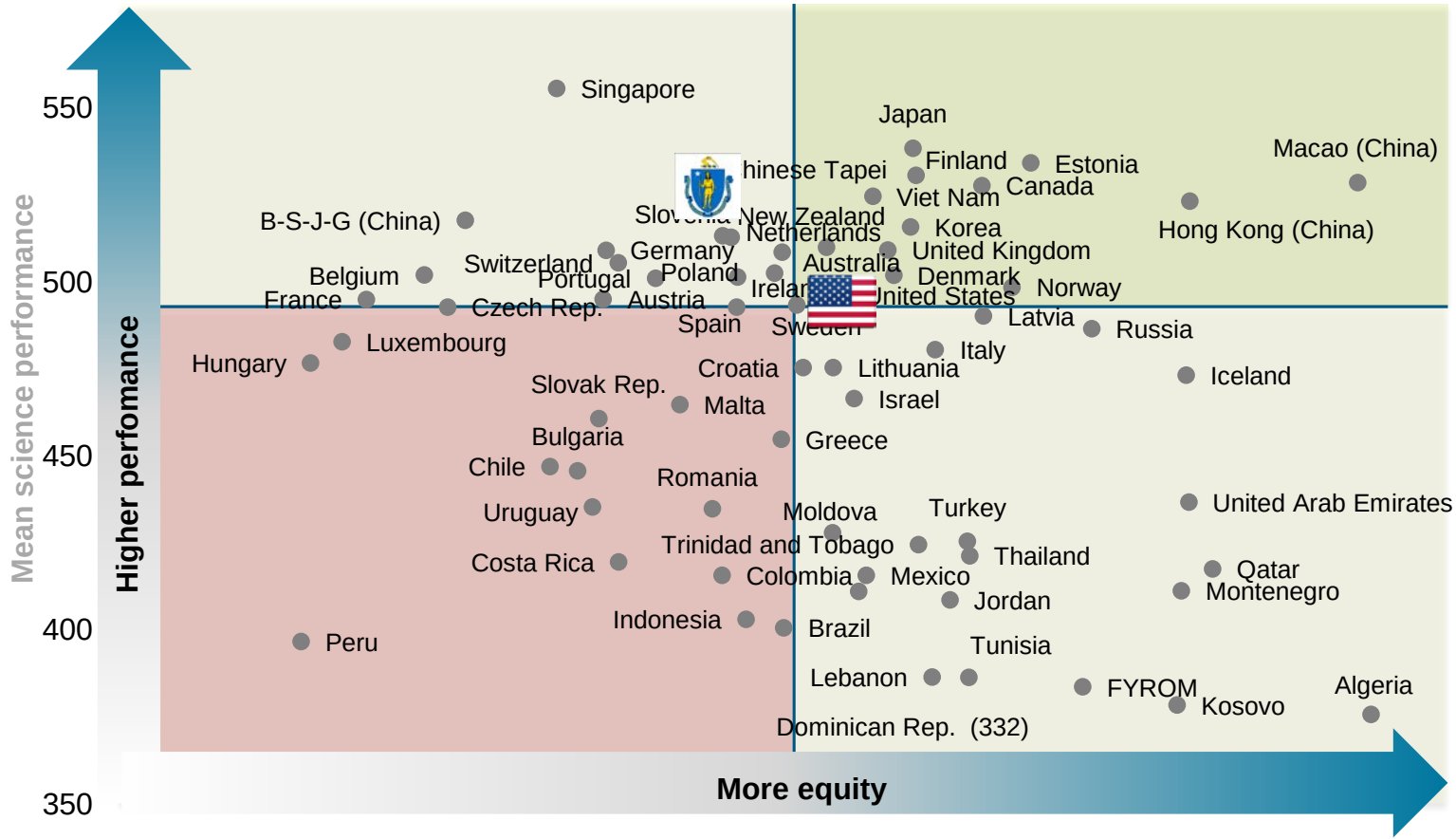


Science performance in PISA (2015)



Science performance and equity in PISA (2015)

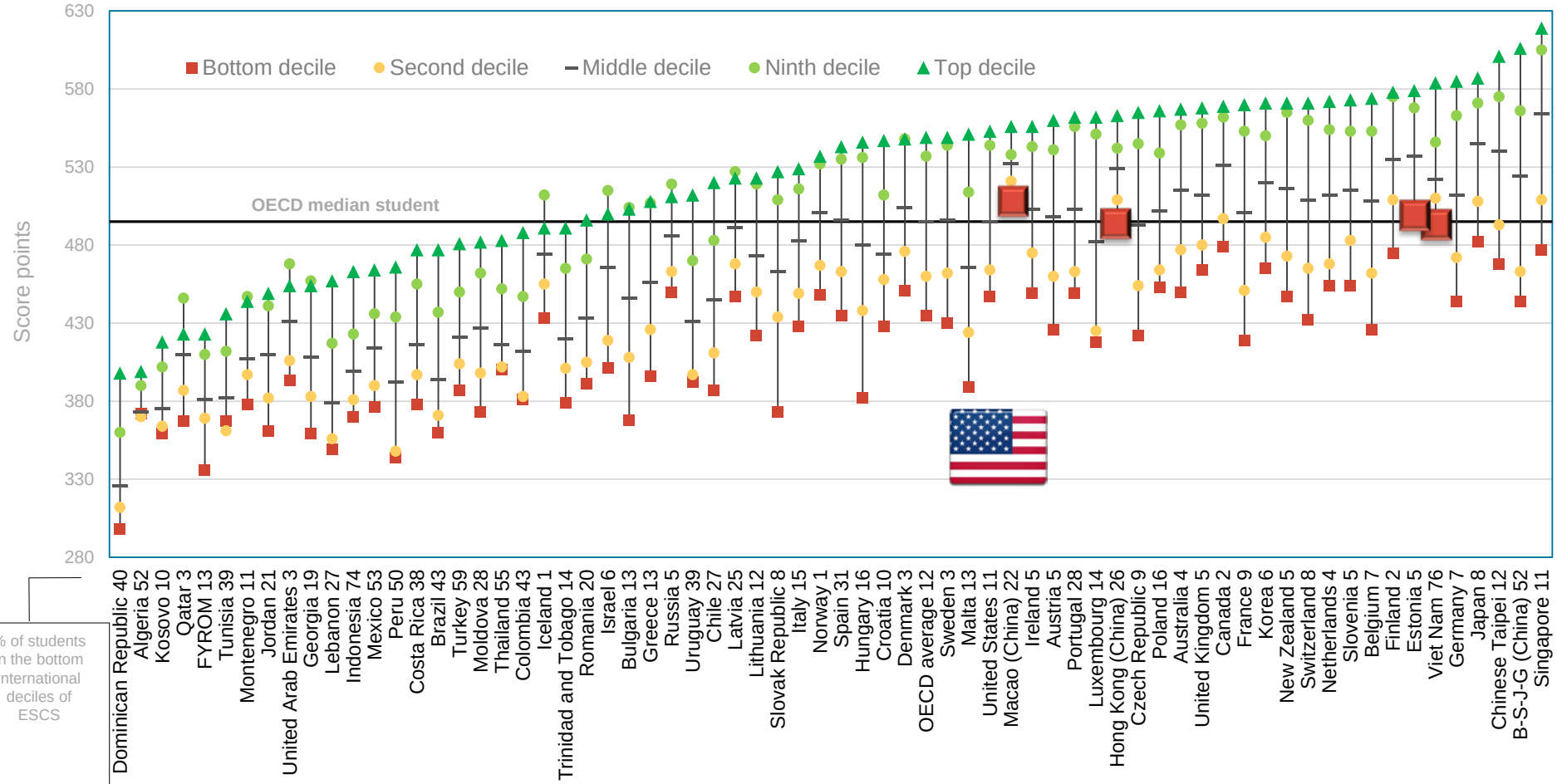


Some countries combine excellence with equity

Poverty is not destiny – Learning outcomes

by international deciles of the PISA index of economic, social and cultural status (ESCS)

Figure I.6.7

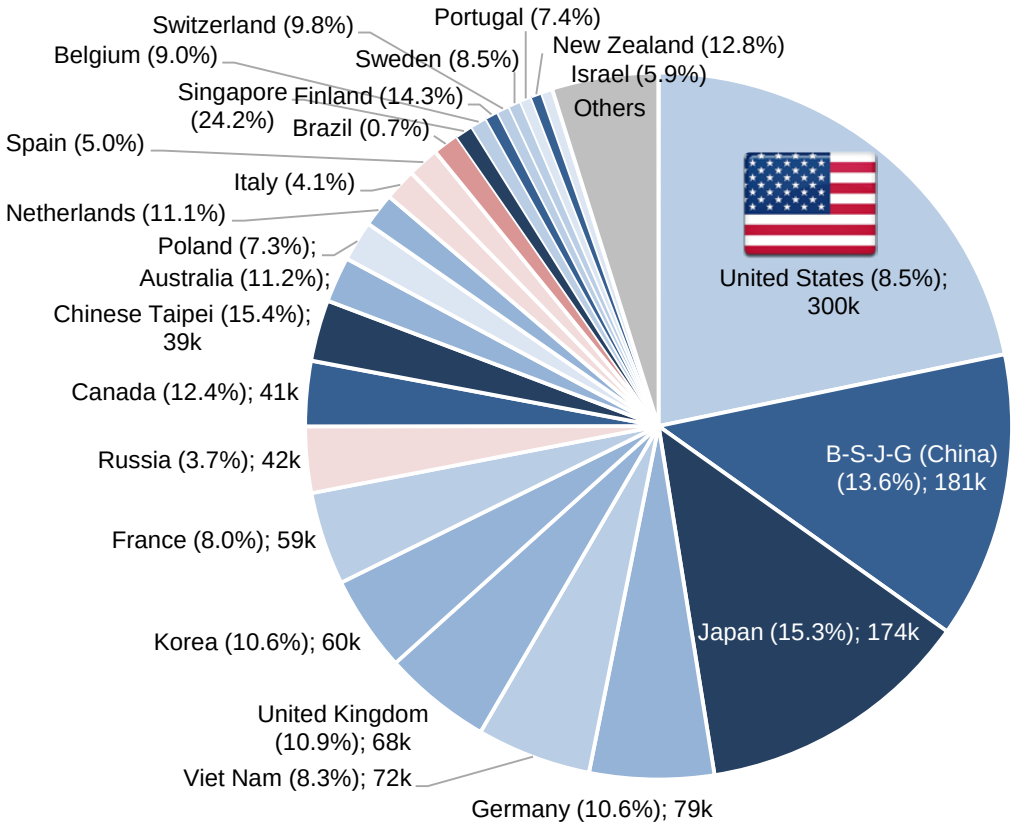


Top performers

Students who can develop and work with models for complex science situations, identifying constraints and specifying assumptions. They can select, compare and evaluate appropriate problem-solving strategies for dealing with complex problems related to these models.

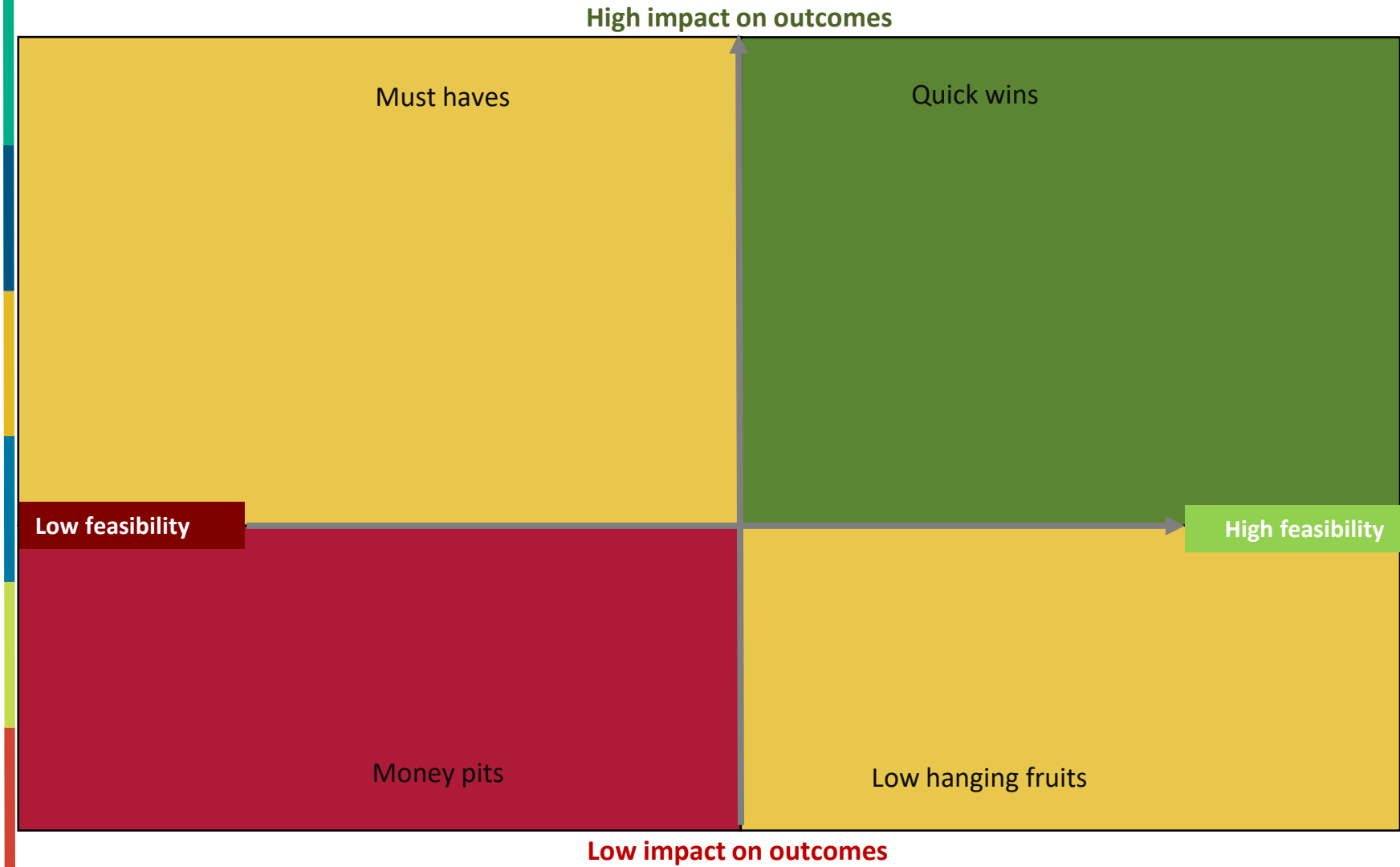
Figure I.2.18

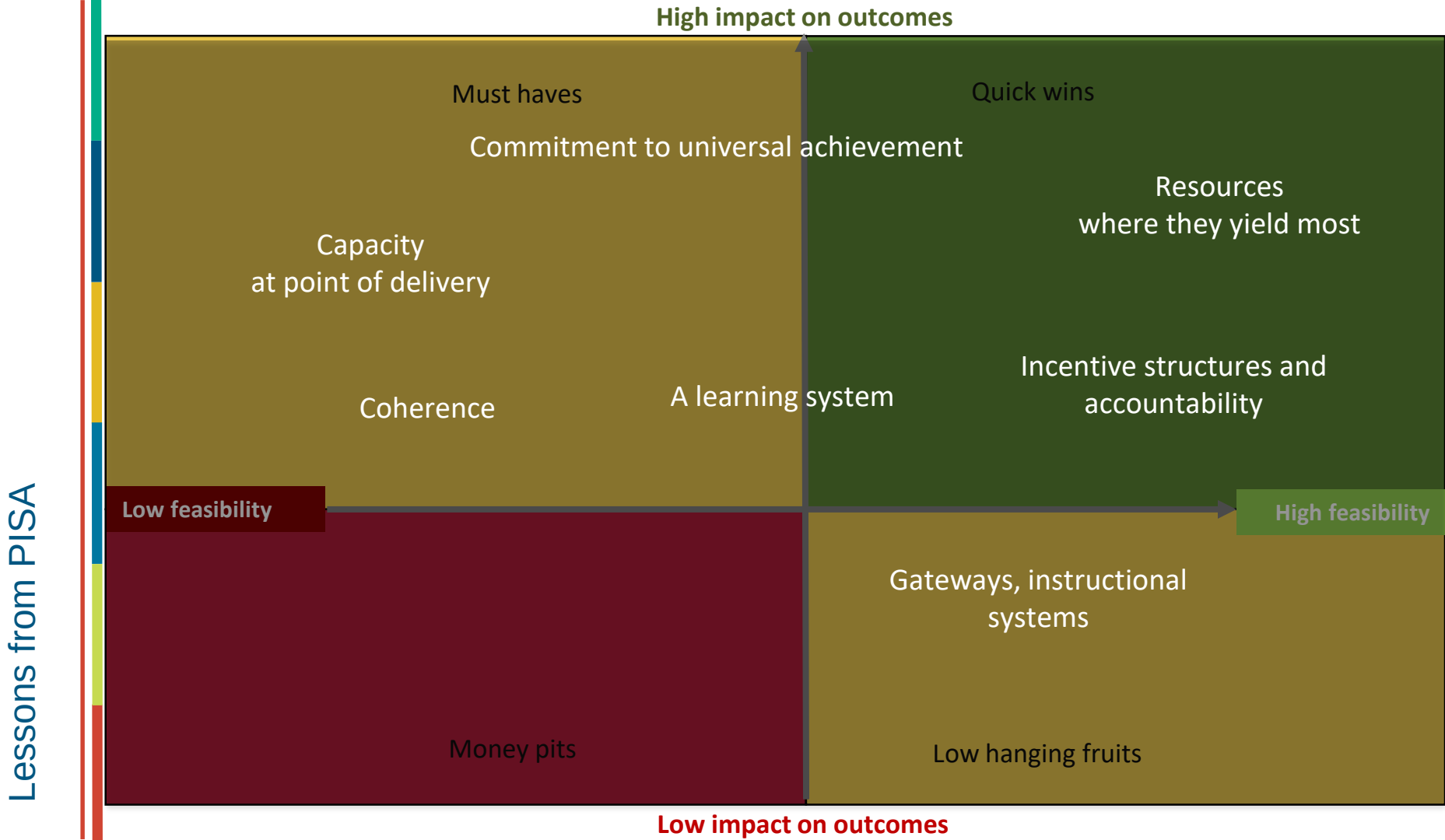
The global pool of top performers: A PISA perspective



Share of top performers among 15-year-old students:

- Less than 1%
- 1 to 2.5%
- 2.5 to 5%
- 5% to 7.5%
- 7.5% to 10%
- 10% to 12.5%
- 12.5% to 15%
- More than 15%


High impact on outcomes
Must haves
Quick wins
Low feasibility
High feasibility
Money pits
Low hanging fruits
Low impact on outcomes


High impact on outcomes
Must haves
Quick wins
Commitment to universal achievement
Resources
where they yield most
Capacity
at point of delivery
Incentive structures and
accountability
Coherence
A learning system
Low feasibility
High feasibility
Gateways, instructional
systems
Money pits
Low hanging fruits
Low impact on outcomes
Lessons from PISA

Spending per student from the age of 6 to 15 and science performance

Figure II.6.2

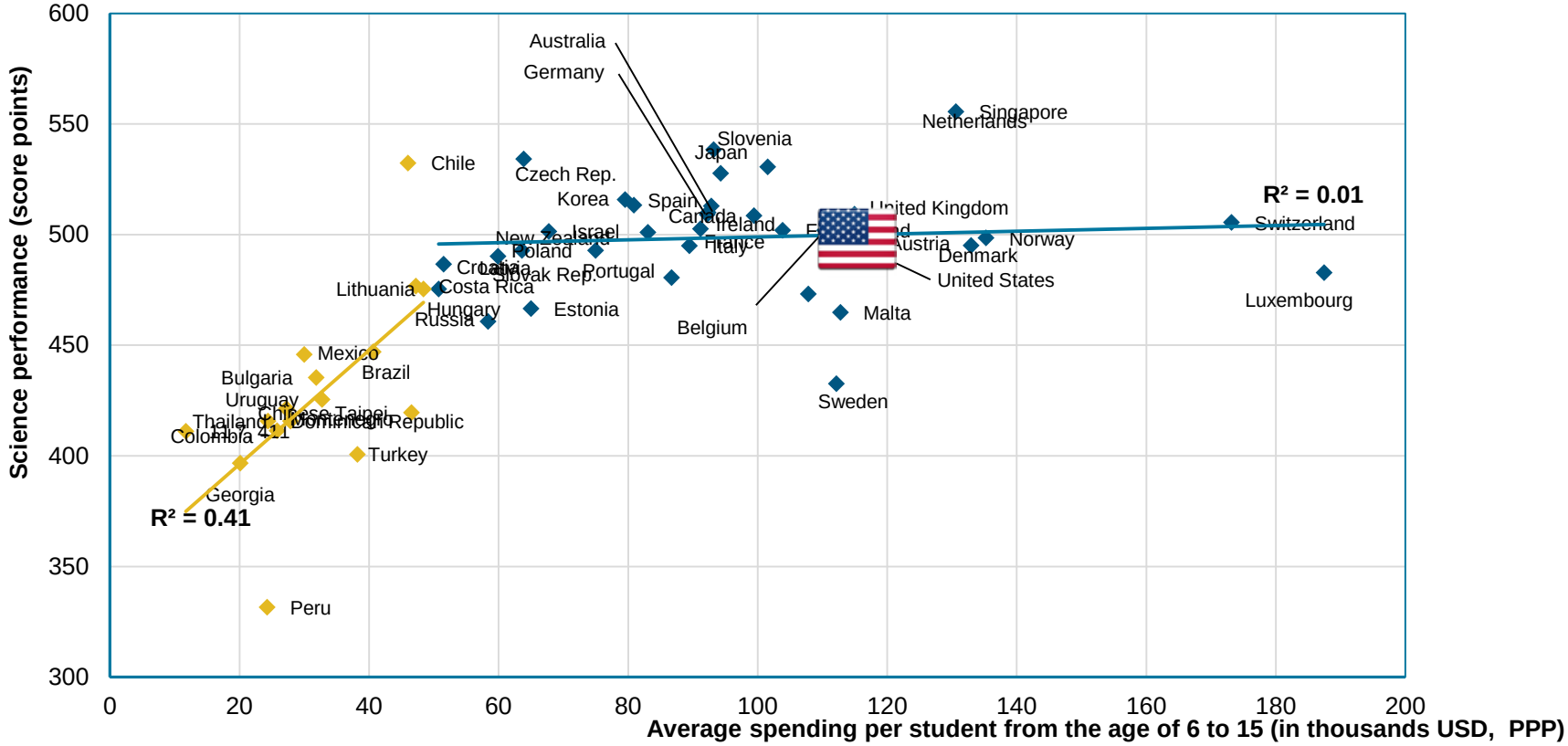
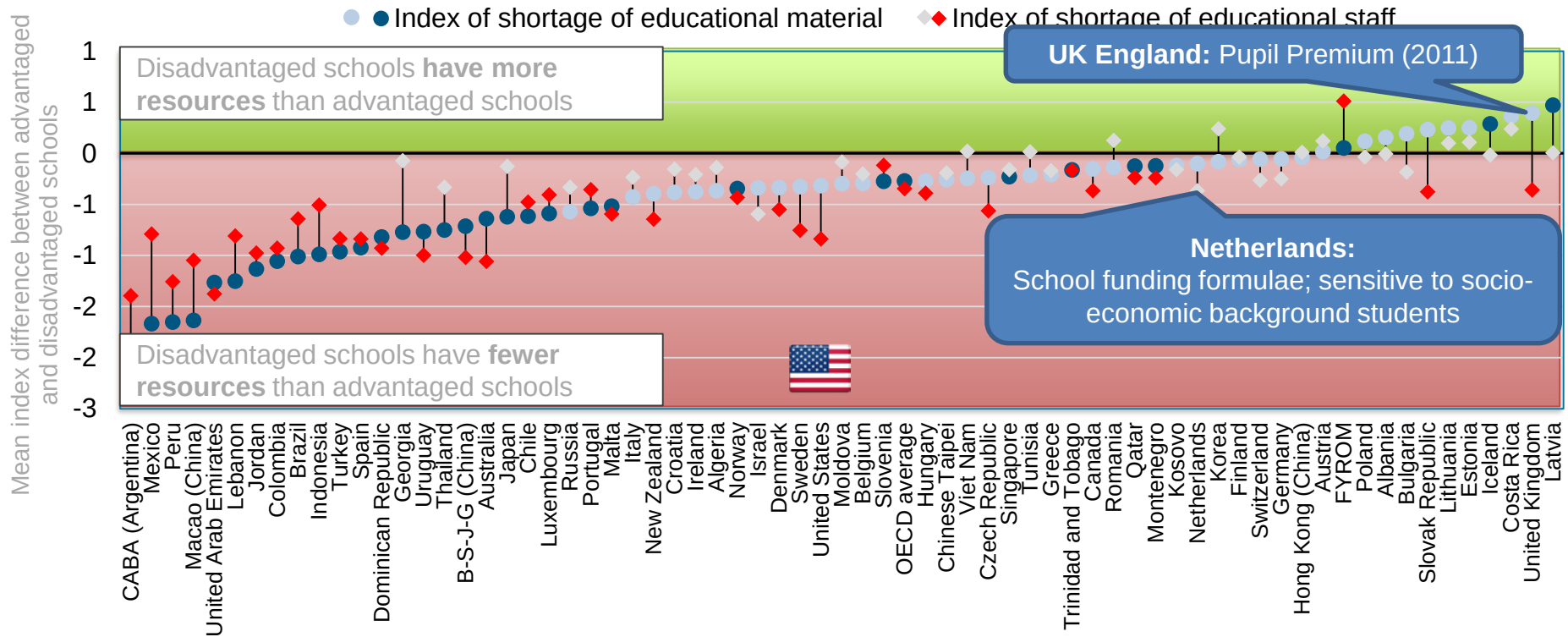


Figure I.6.14

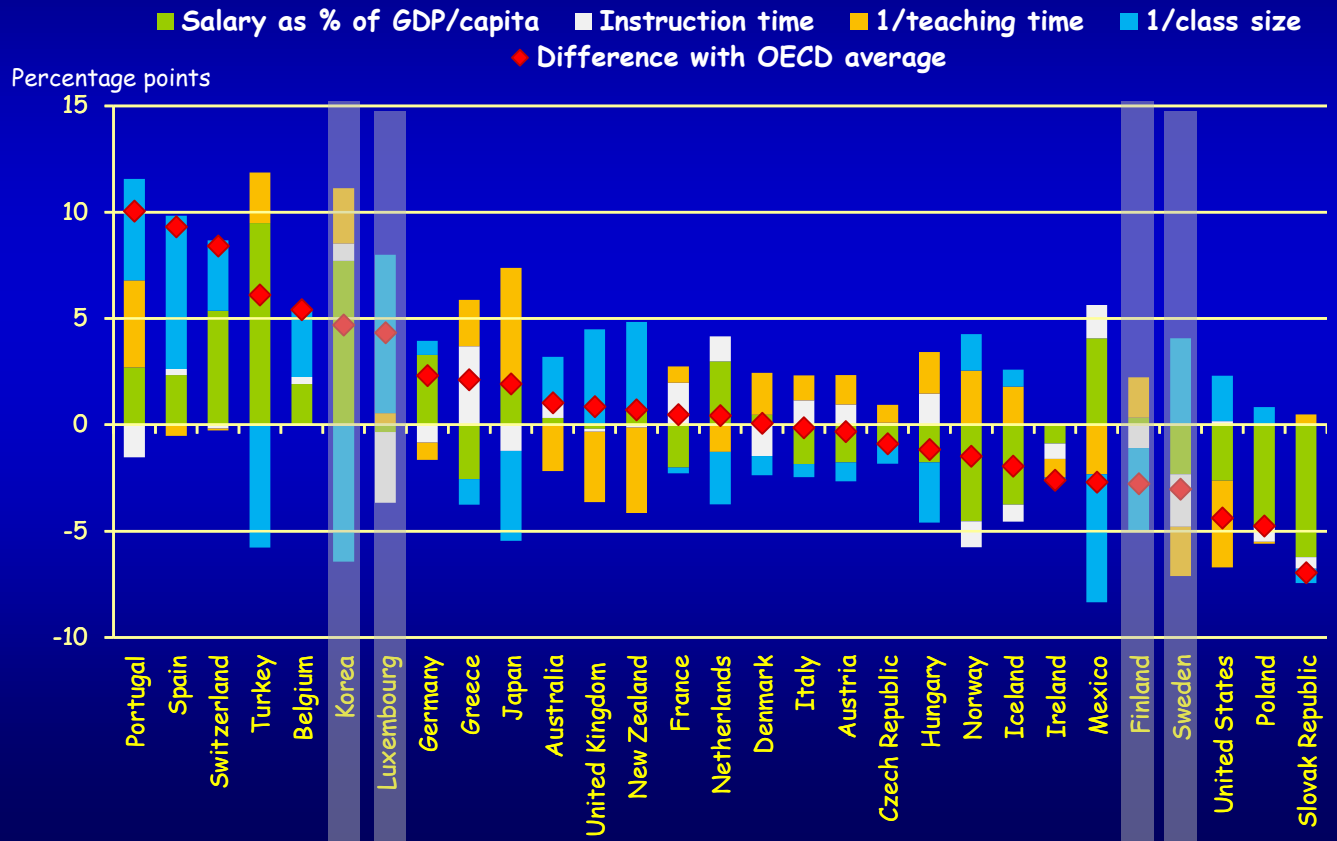
Differences in educational resources

between advantaged and disadvantaged schools



Spending choices on secondary schools

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



Countries that invest more public funds in privately managed schools tend to have less of a difference between the socio-economic profiles of publicly and privately managed schools

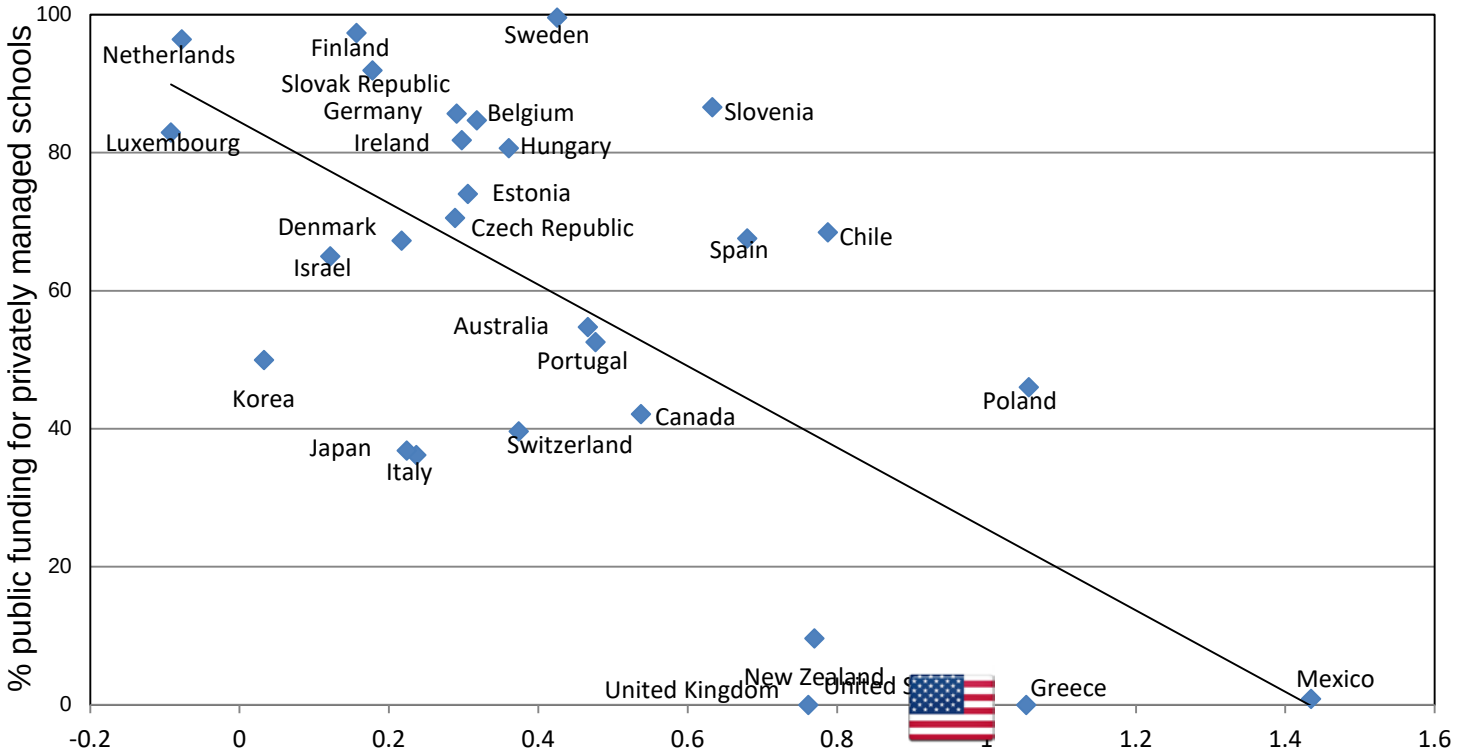
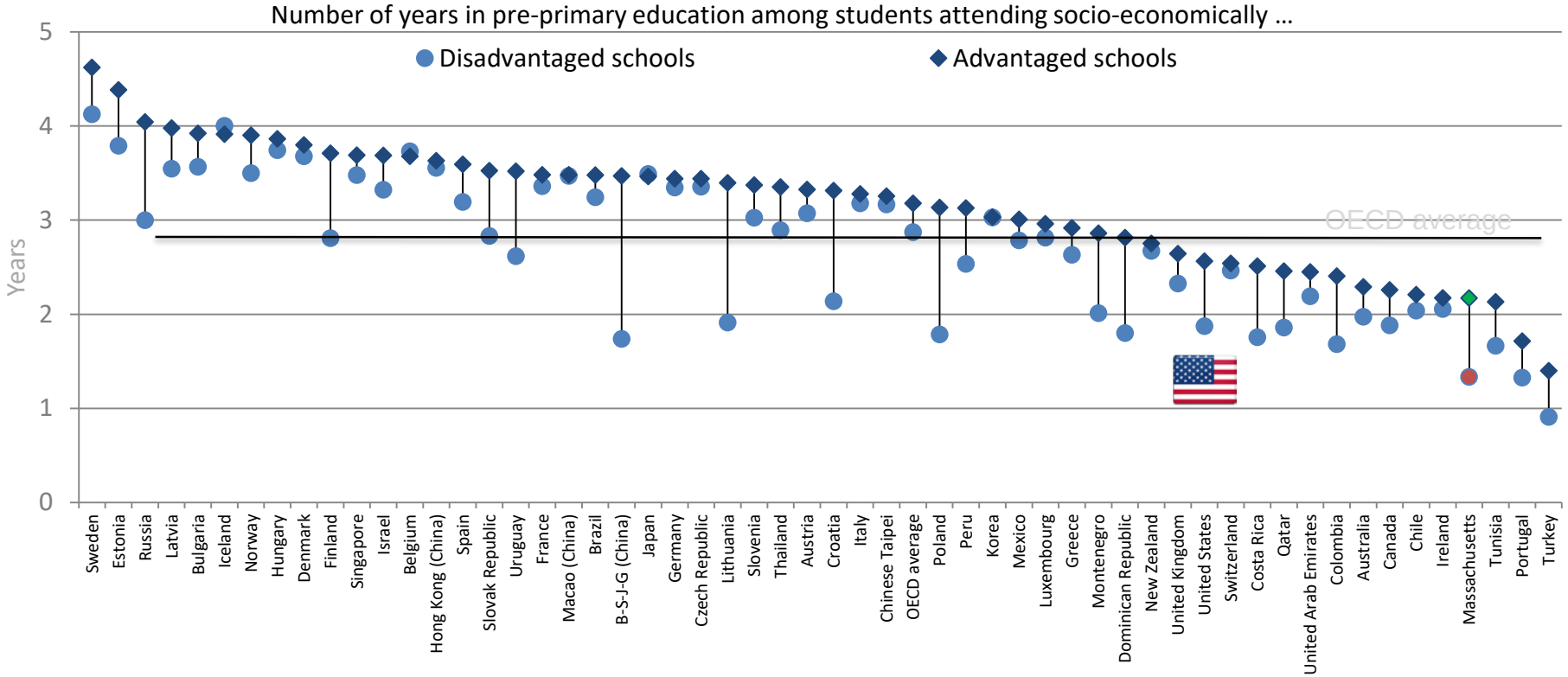


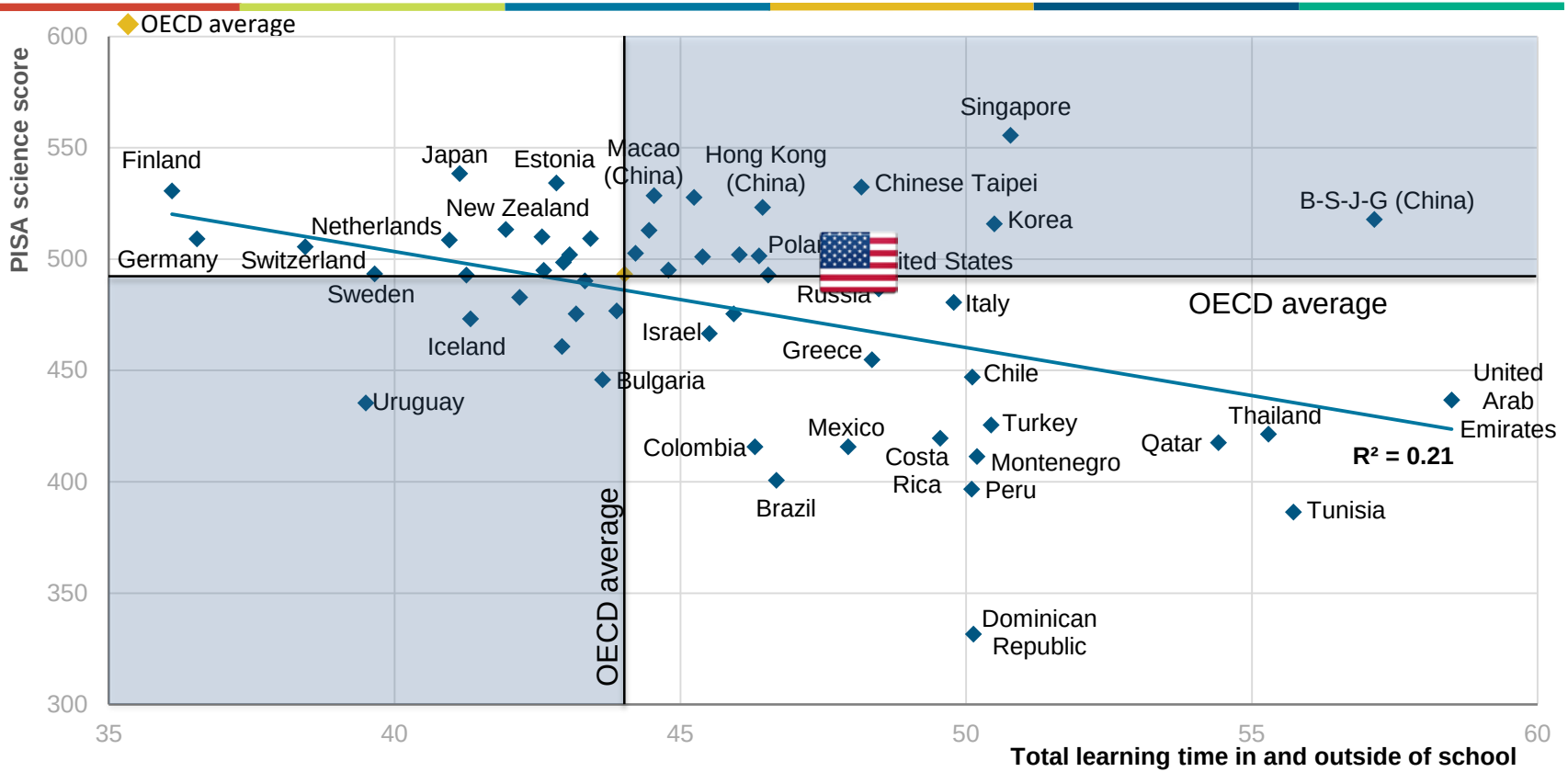
Table II.6.51

Attendance at pre-primary school

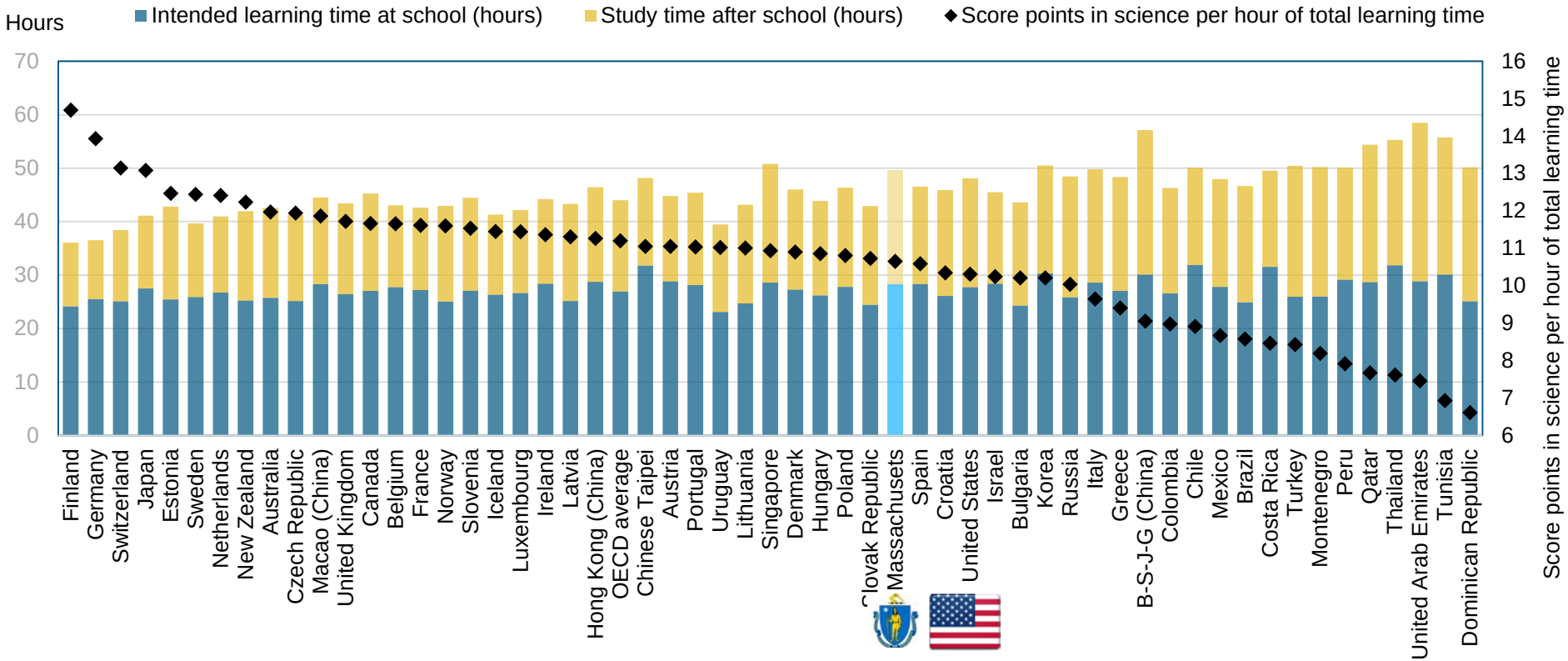
by schools' socio-economic profile



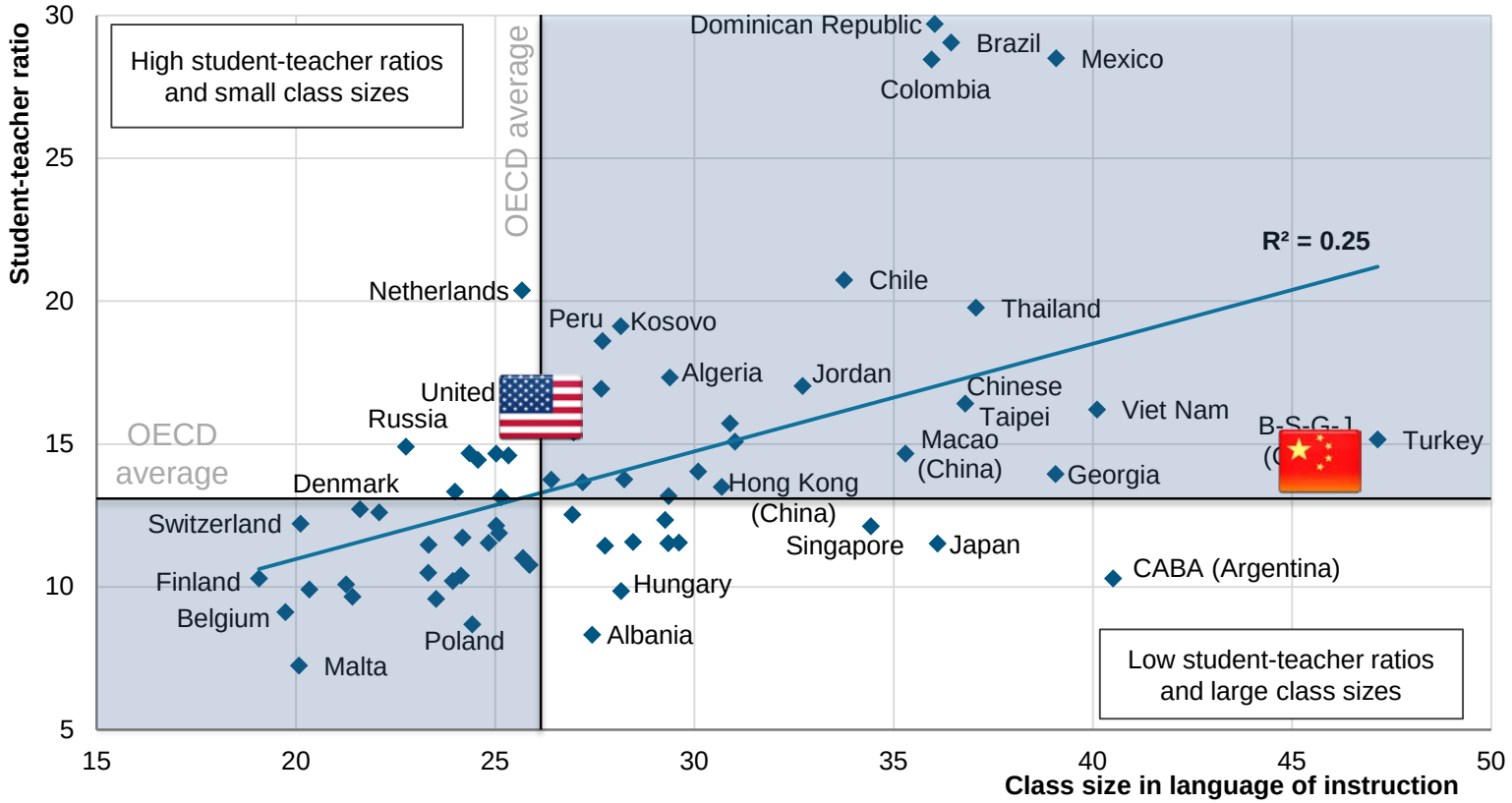
Learning time and science performance



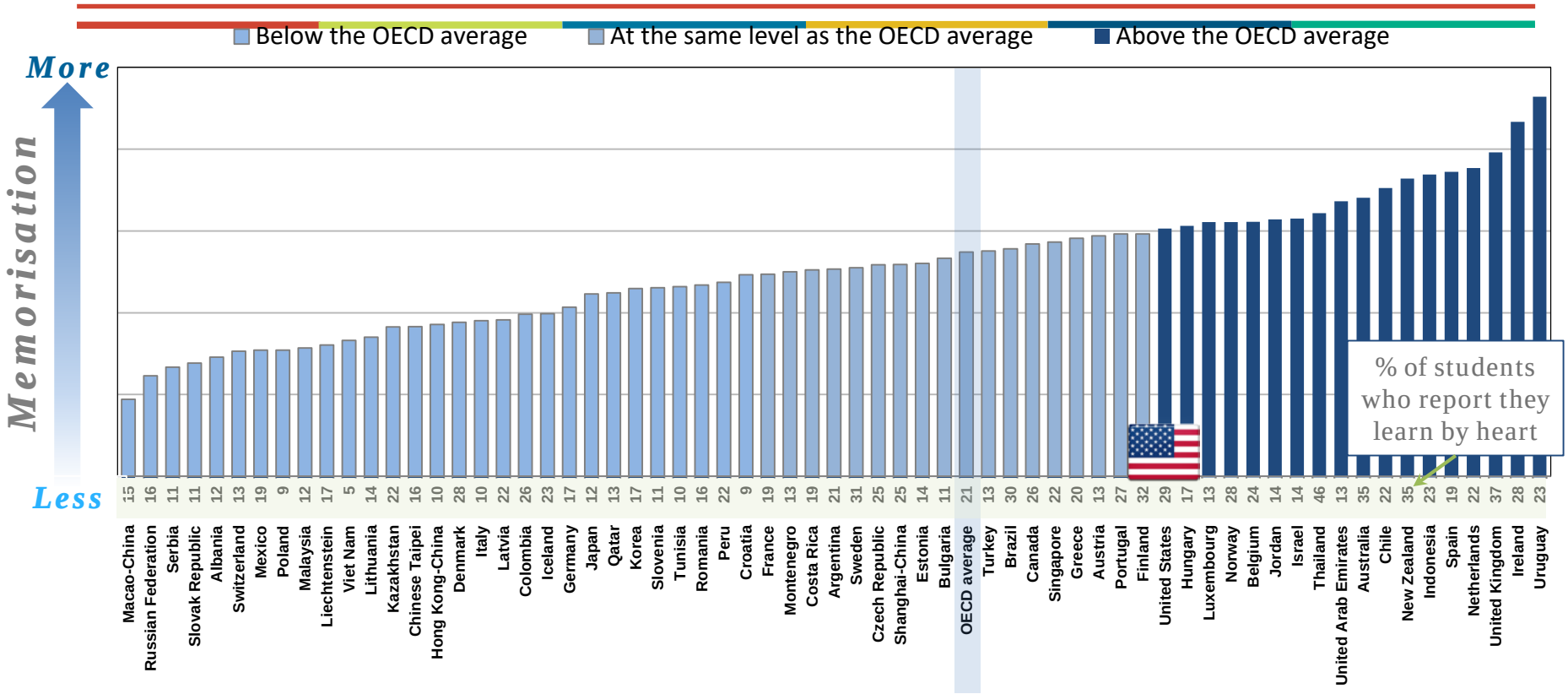
Learning time and science performance



Student-teacher ratios and class size

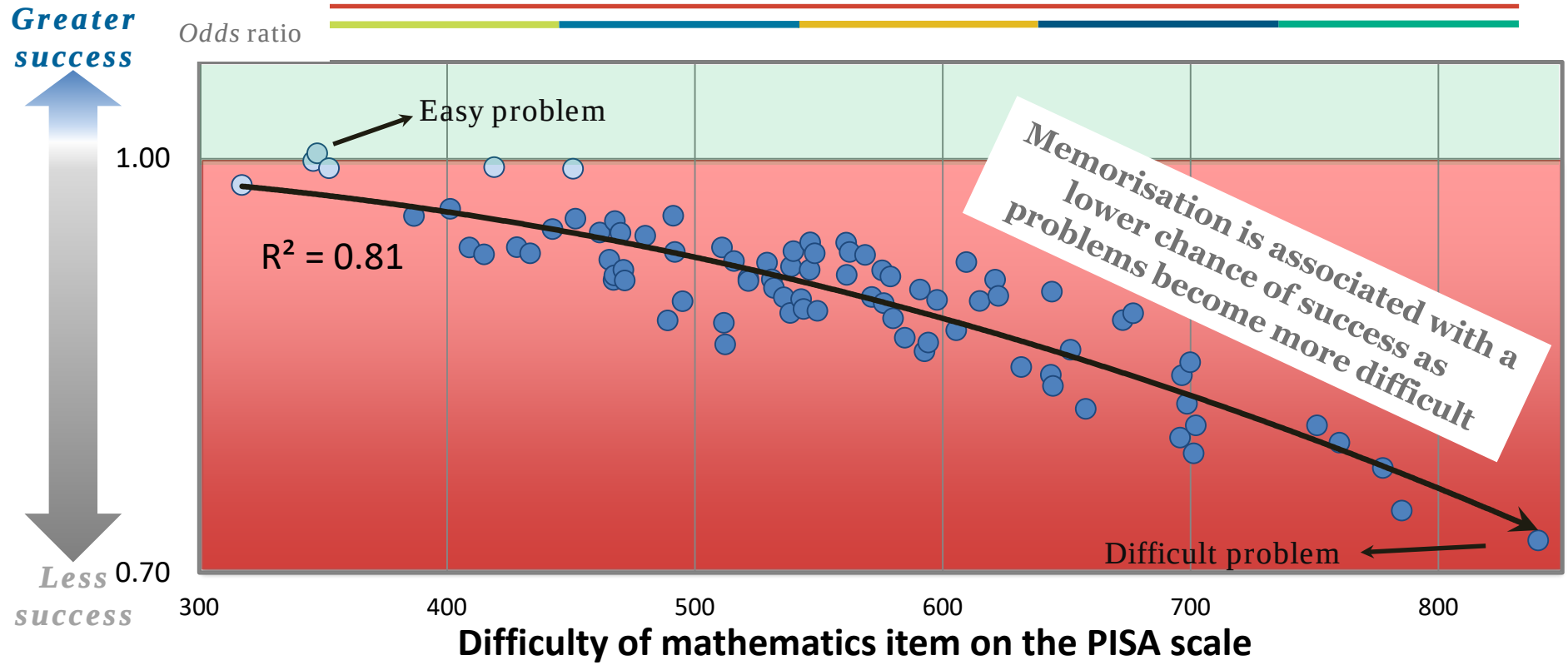


Students' use of **memorisation strategies**



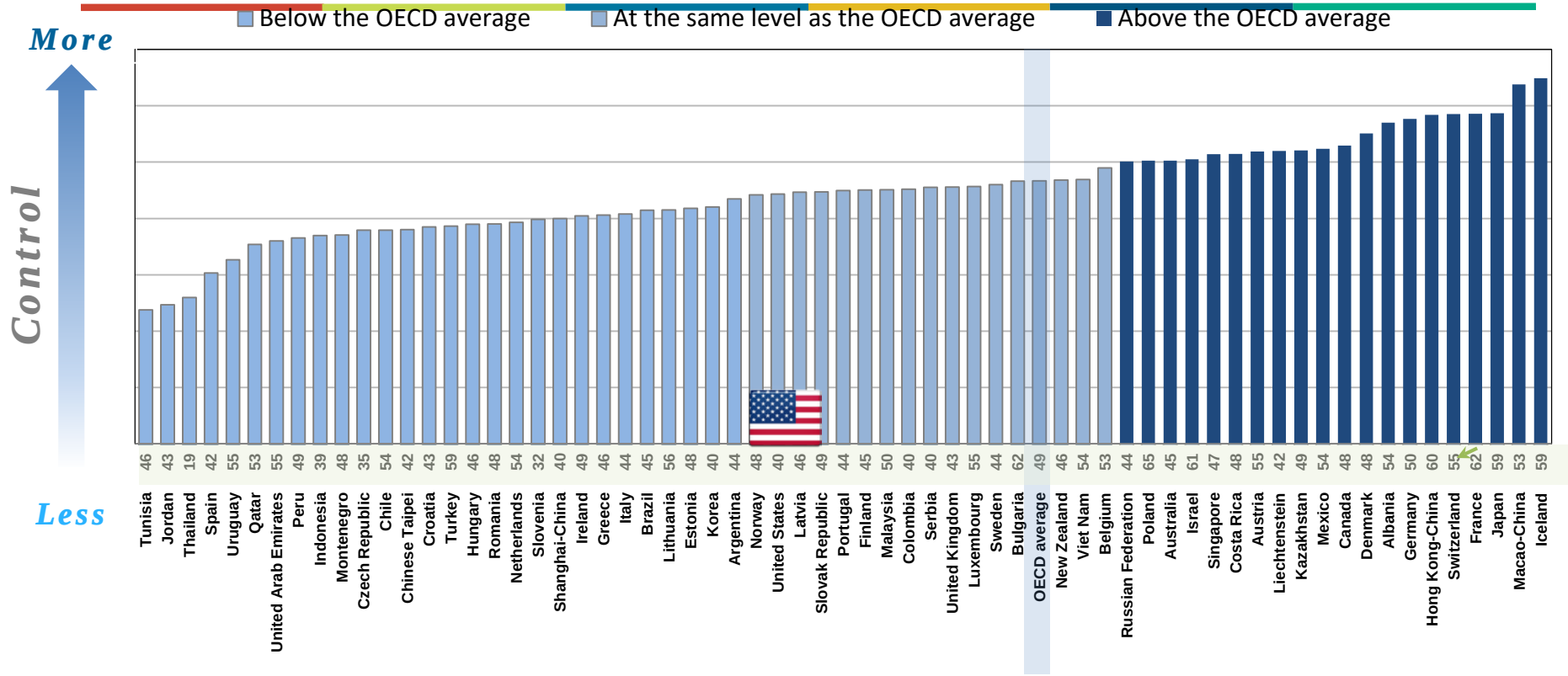
Source: Figure 4.1

Memorisation is **less useful** as problems become **more difficult** *(OECD average)*



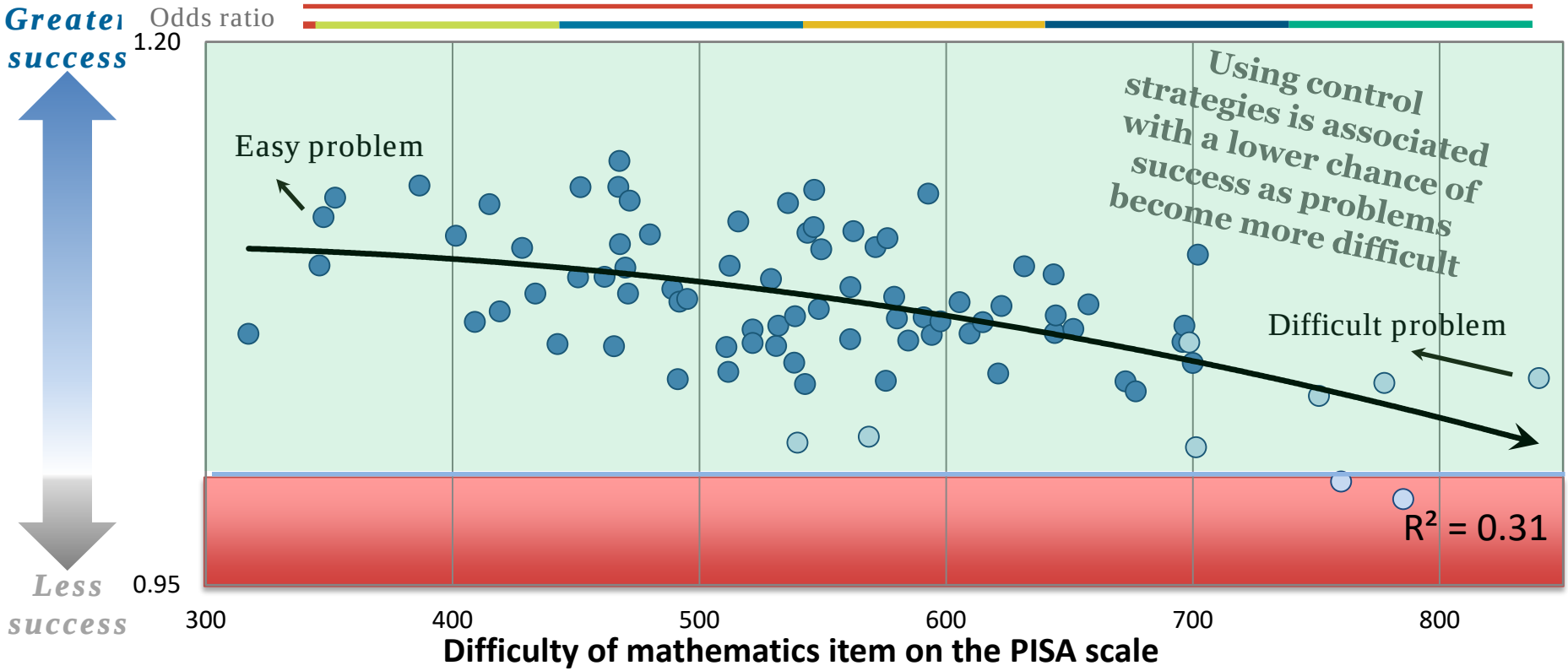
Source: Figure 4.3

There are large international differences in the use of **control strategies**



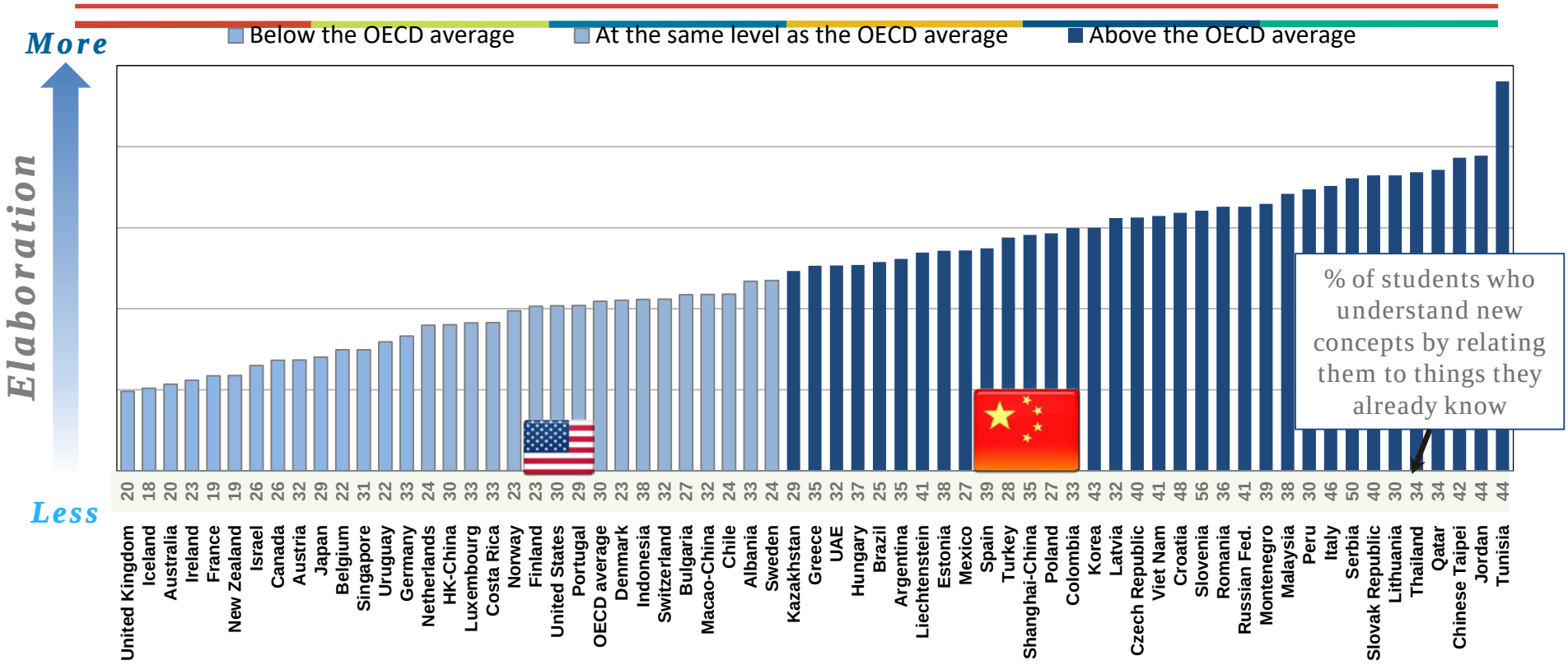
Source: Figure 5.1

Control strategies are **always helpful** but **less so** as problems become **more difficult** *(OECD average)*



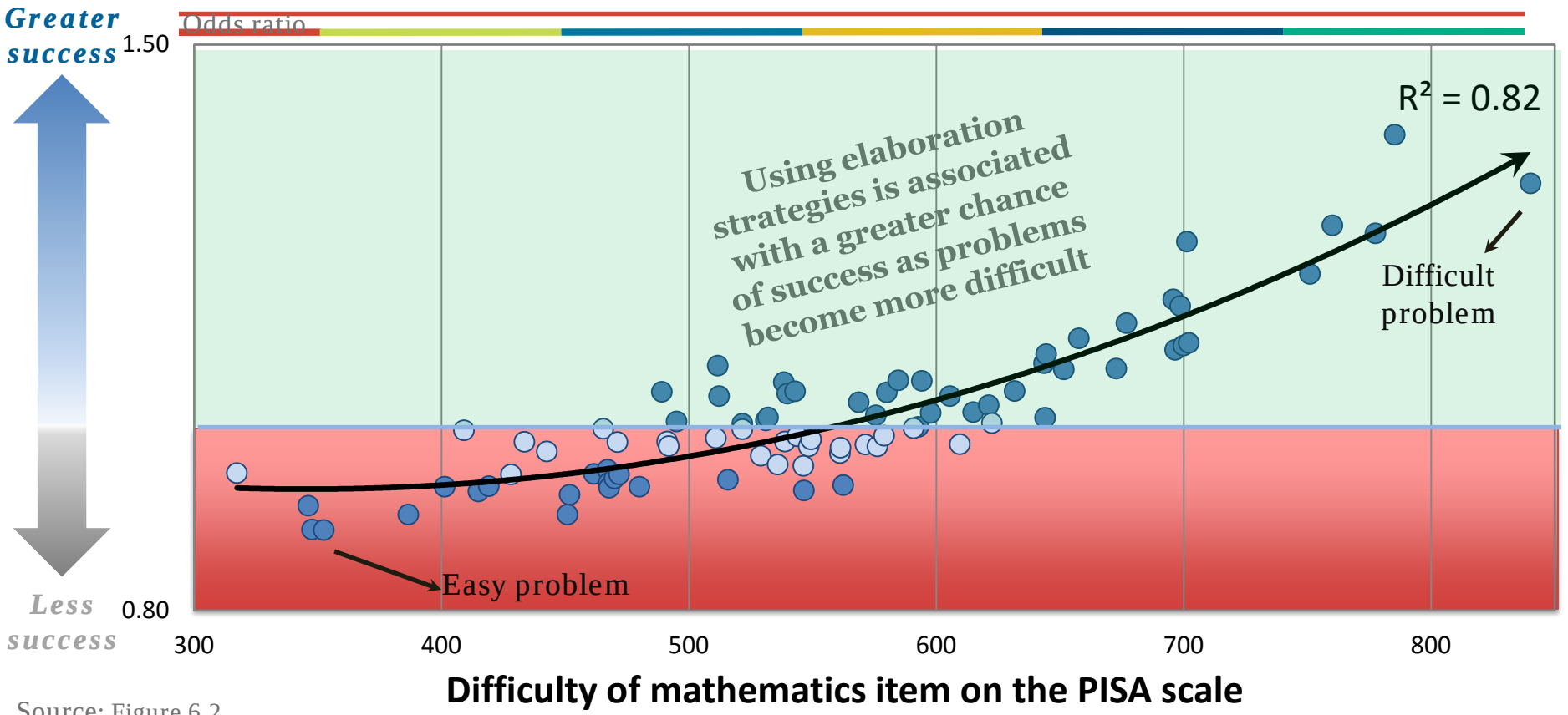
Source: Figure 5.2

Students' use of **elaboration strategies**



Source: Figure 6.1

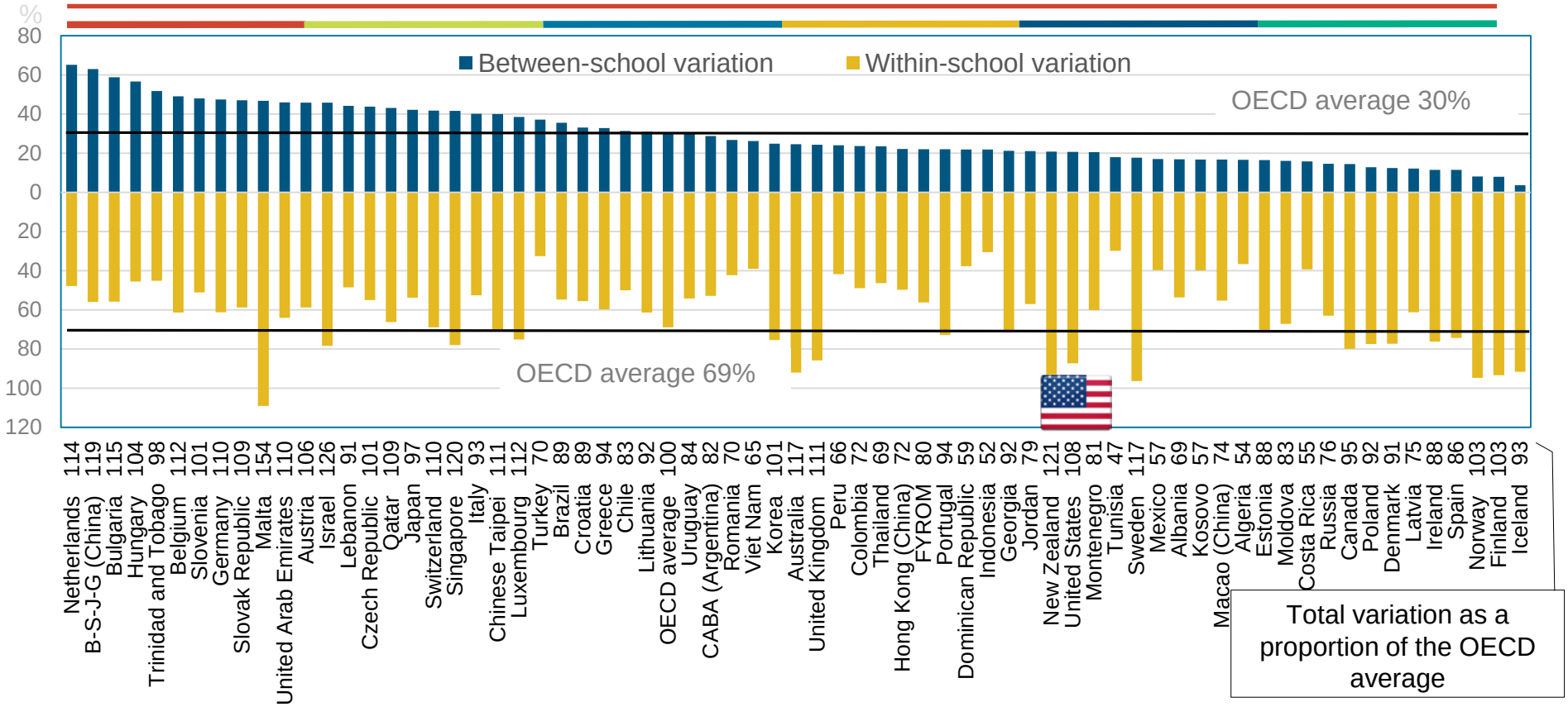
Elaboration strategies are **more useful** as problems become **more difficult** *(OECD average)*



Source: Figure 6.2

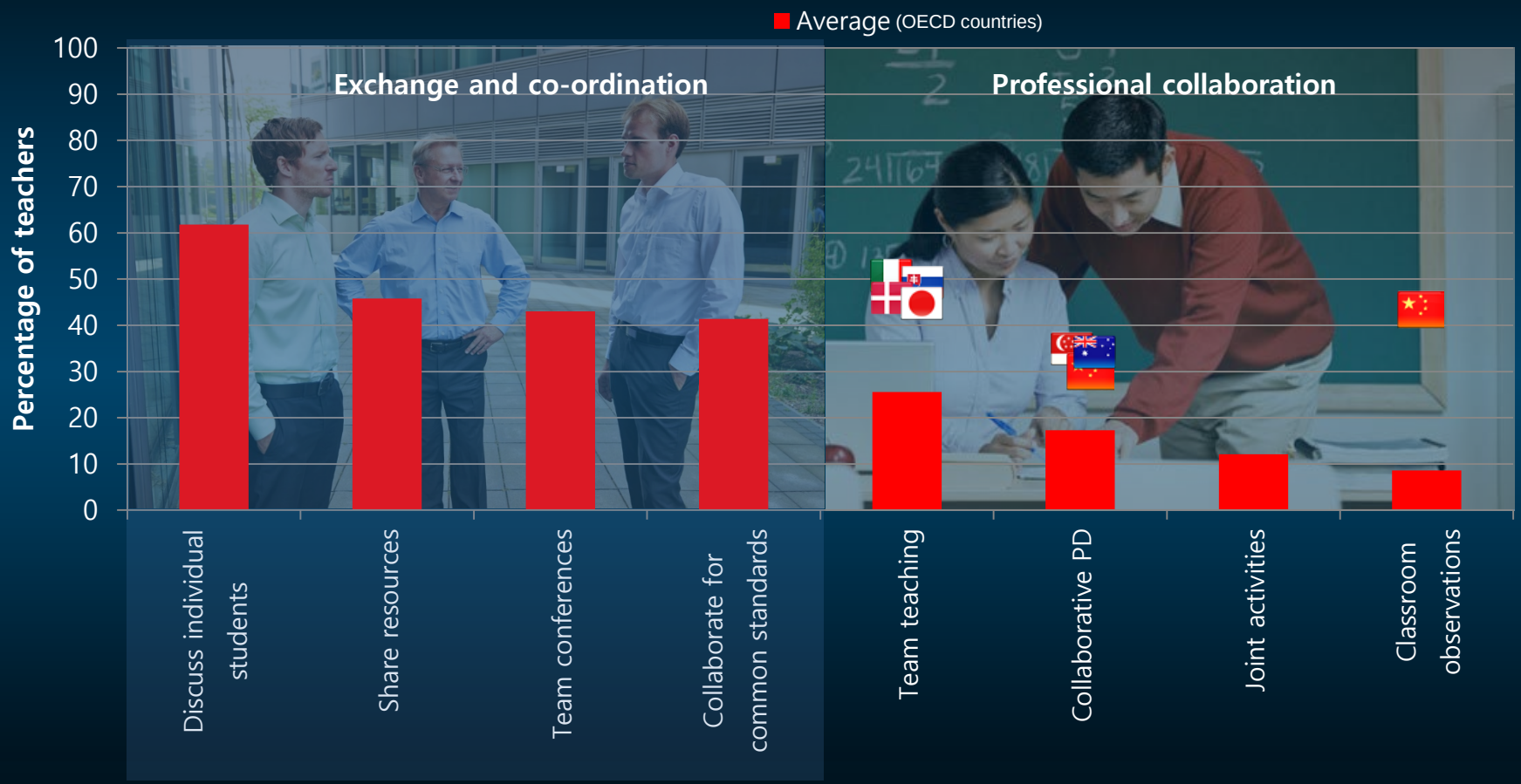
Figure I.6.11

Variation in science performance between and within schools

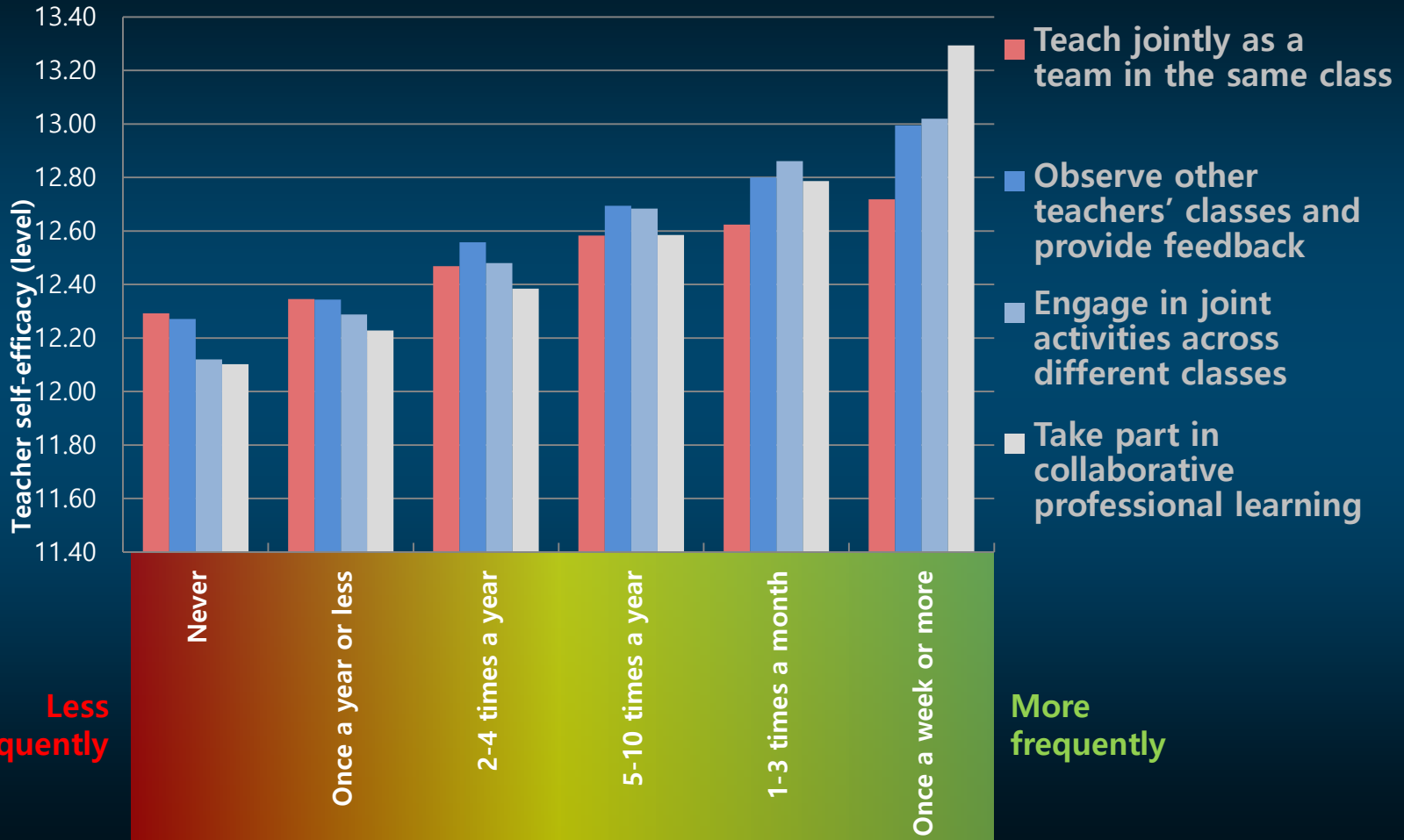


Professional collaboration among teachers

Percentage of lower secondary teachers who report doing the following activities at least once per month

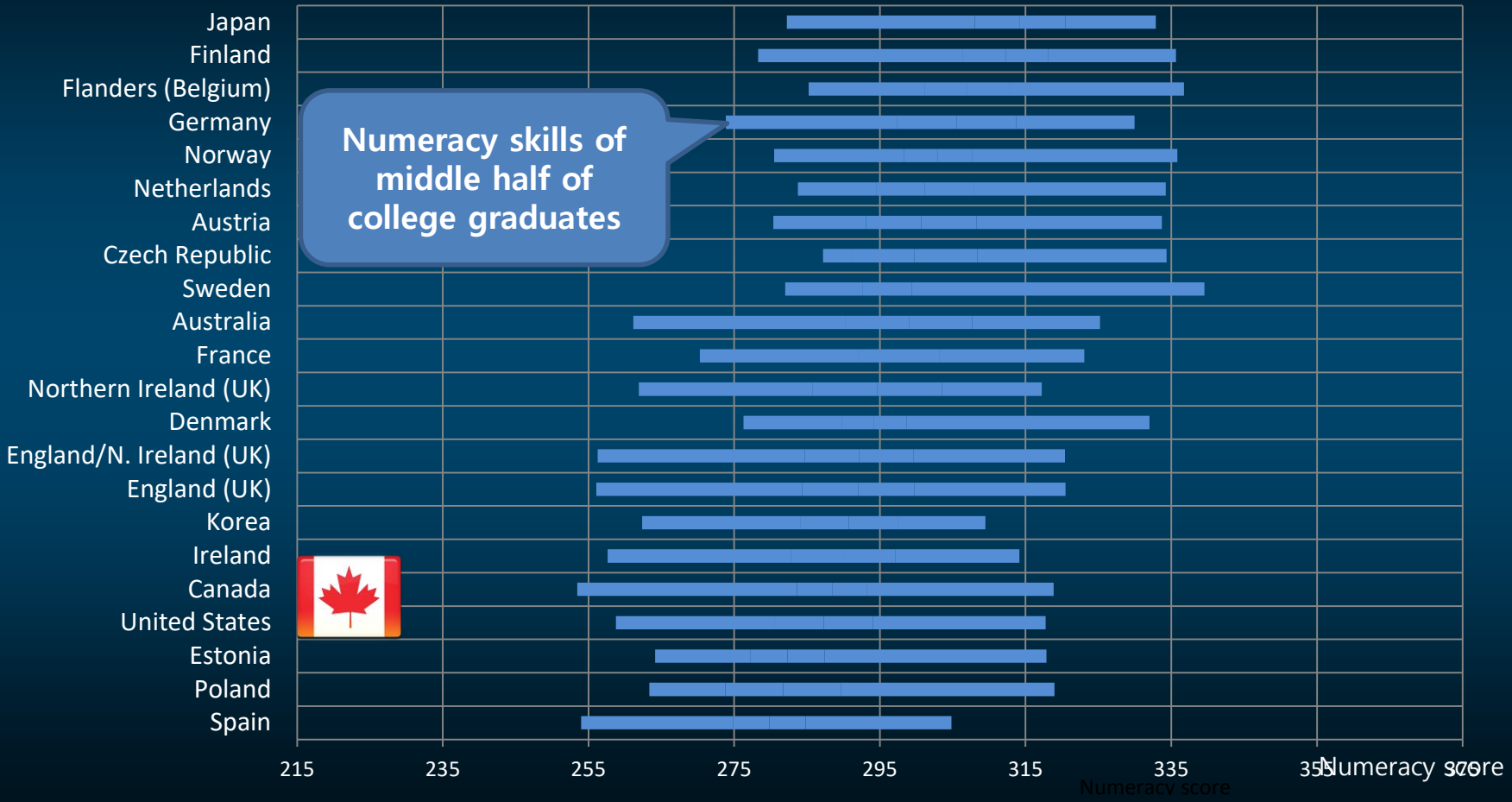


Teachers Self-Efficacy and Professional Collaboration



Teachers' skills

Numeracy test scores of tertiary graduates and teachers



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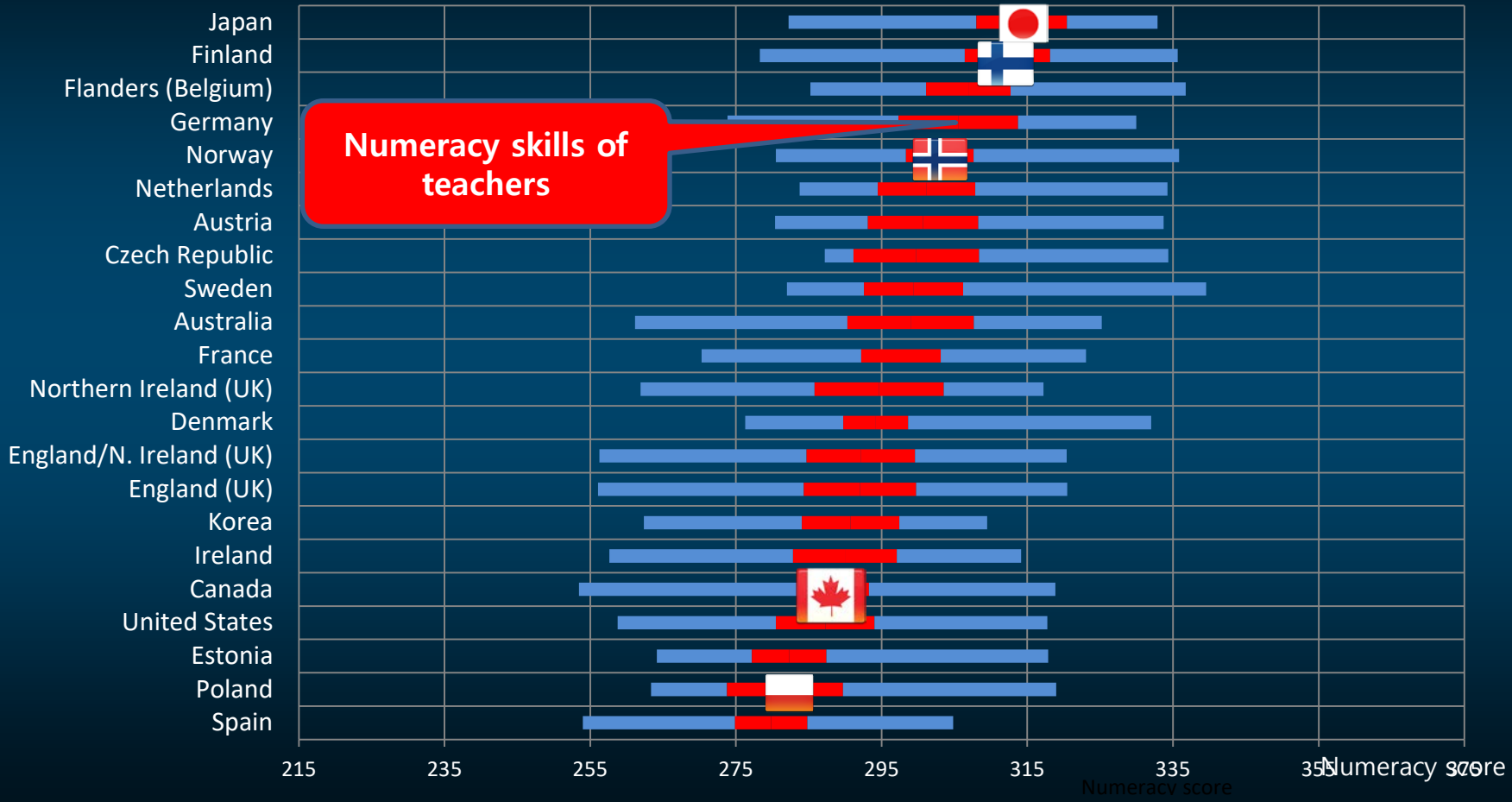
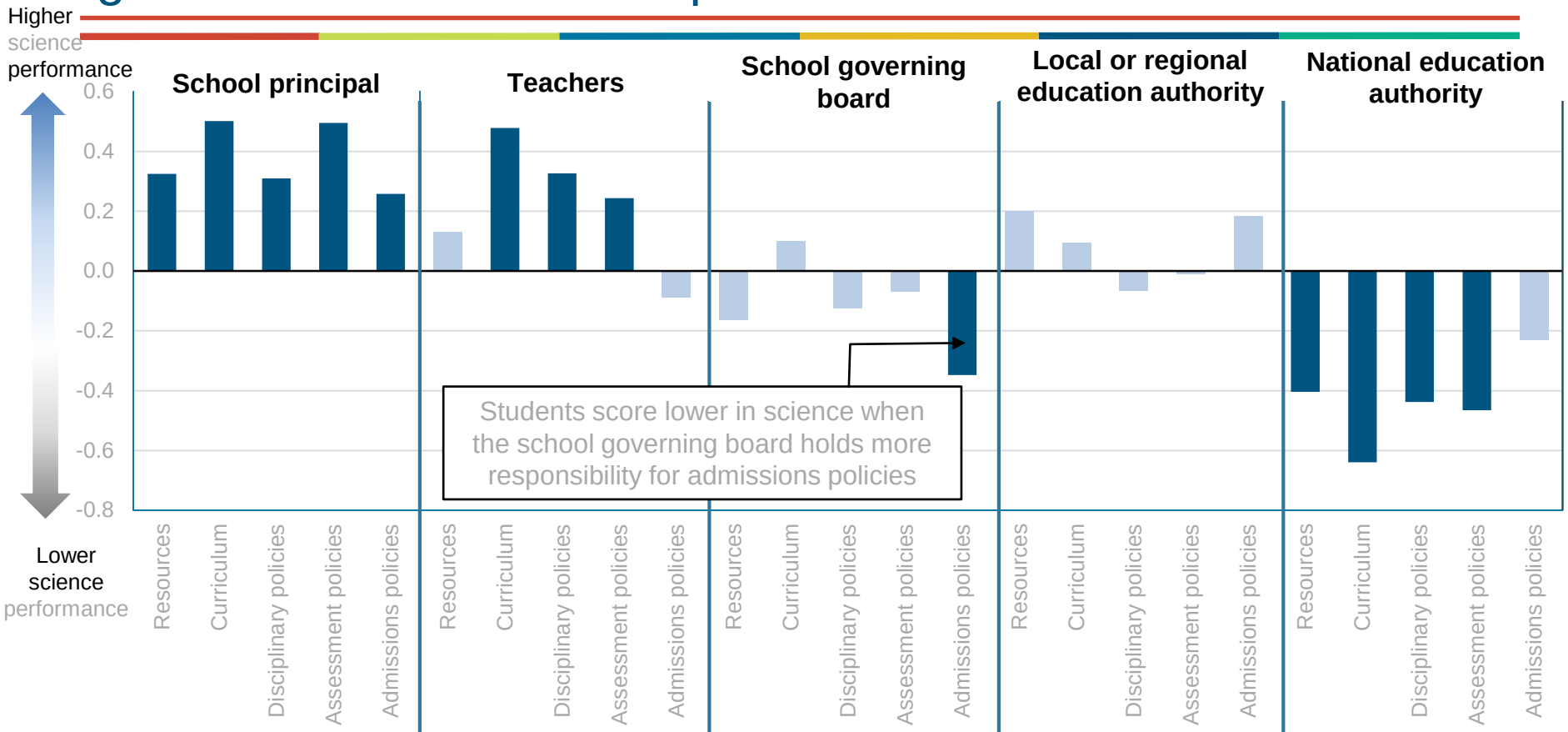


Governance

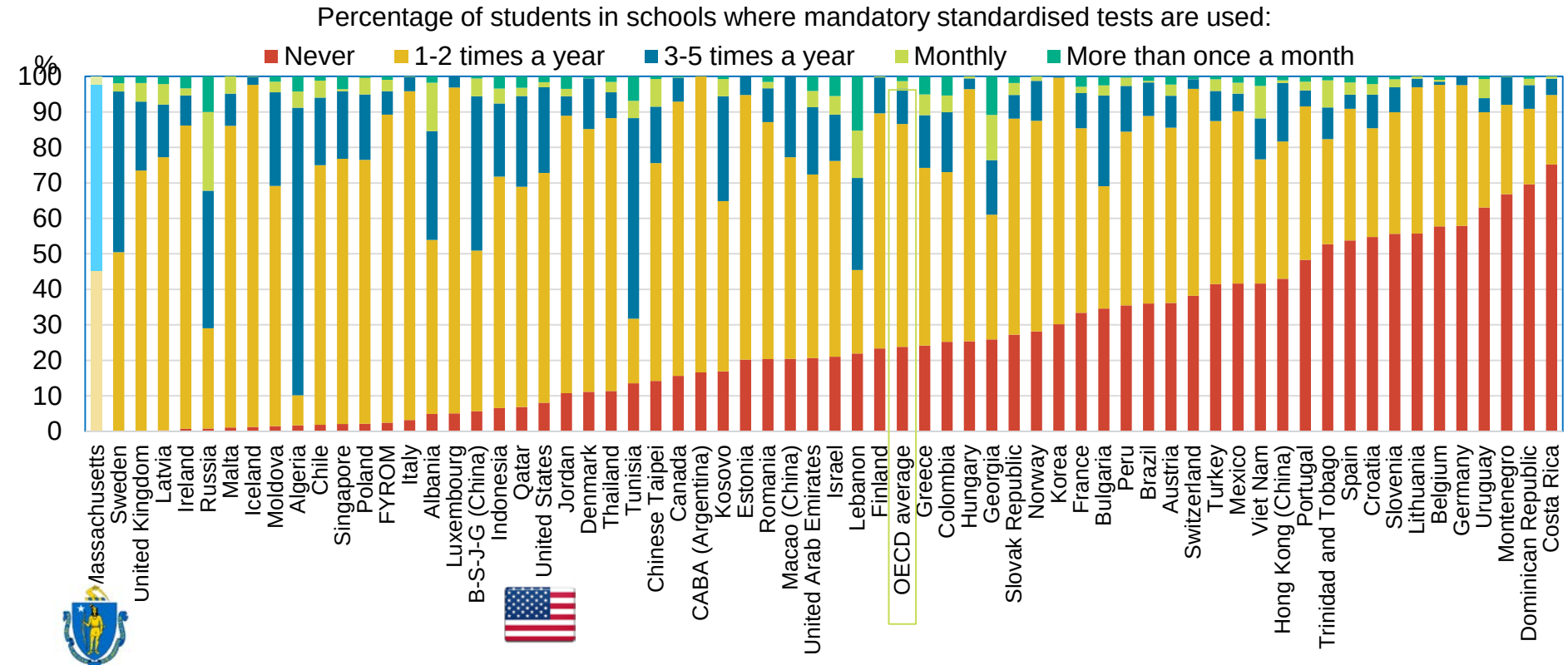
Across the OECD, 70% of students attend schools whose principals have considerable responsibility for hiring teachers, and in half the cases also over budget allocations within the school

Correlations between the responsibilities for school governance and science performance

Figure II.4.8



Frequency of mandatory standardised tests at school



System transformations

The old bureaucratic system		The modern enabling system
Some students learn at high levels (sorting)	Student inclusion	**All** students need to learn at high levels
Routine cognitive skills	Curriculum, instruction and assessment	Complex ways of thinking, complex ways of doing, collective capacity
Standardisation and compliance	Teacher quality	High-level professional knowledge workers
'Tayloristic', hierarchical	Work organisation	Flat, collegial
Primarily to authorities	Accountability	Primarily to peers and stakeholders

Thank you

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