Seeing US education through the prism of international comparisons

The OECD Programme for International Student Assessment (PISA)

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OECD
BETTER POLICIES FOR BETTER LIVES

PISA in brief

Every three years since 2000, over half a million students…

- representing 15-year-olds in now over 80 countries

… take an internationally agreed 2-hour test…

- that goes beyond whether students can reproduce what they were taught to assess students' capacity to extrapolate from what they know and creatively use and apply their knowledge
- Focus on mathematics, science and reading
- Problem-solving, collaborative problem-solving, creative thinking, financial literacy

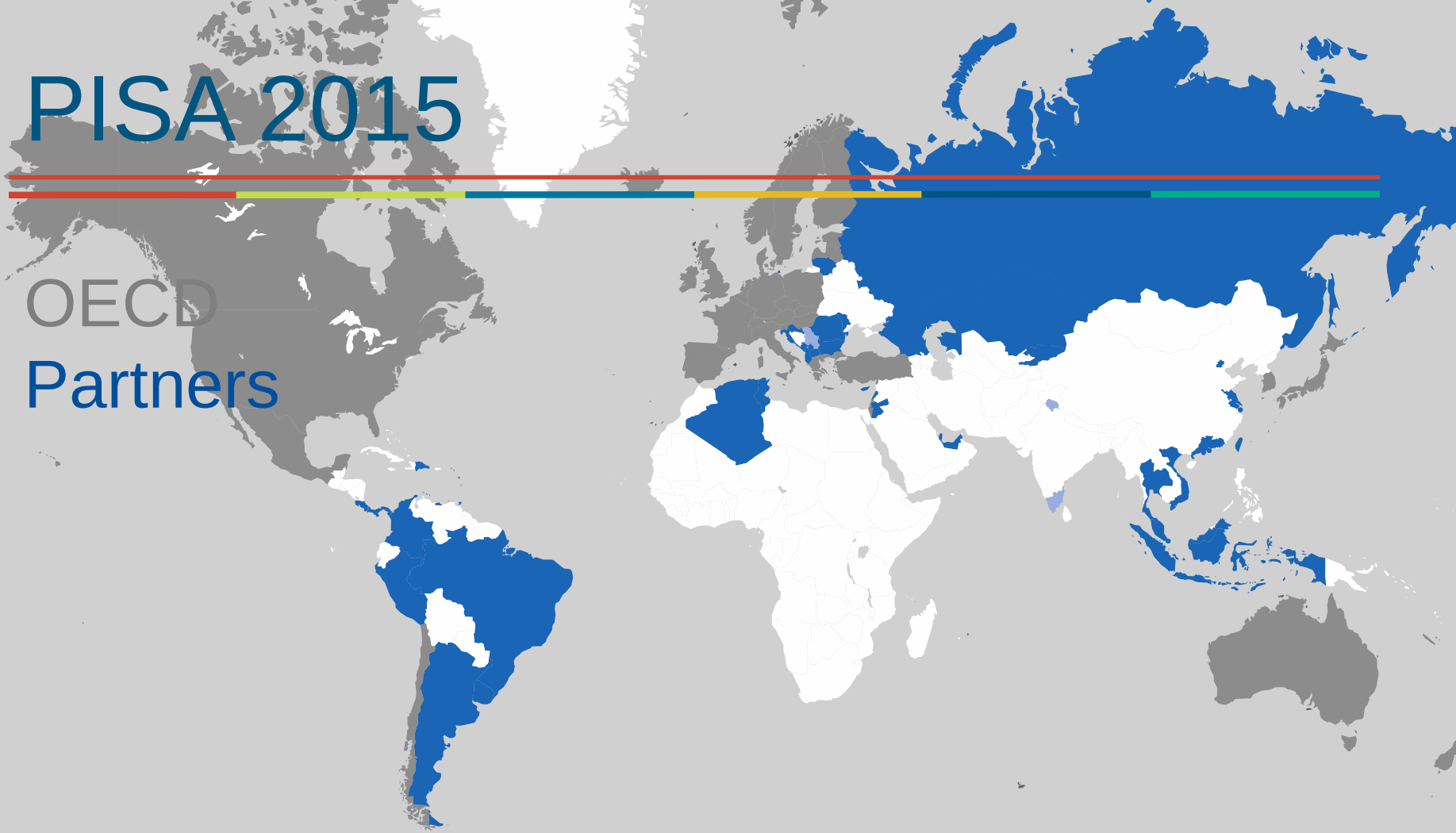
… and respond to questions on…

- their personal background, their schools, their well-being and their motivation

Teachers, principals, parents and system leaders provide data on:

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

PISA 2015



Trends in science performance **(PISA)**

Student performance

570

550

530

510

490

470

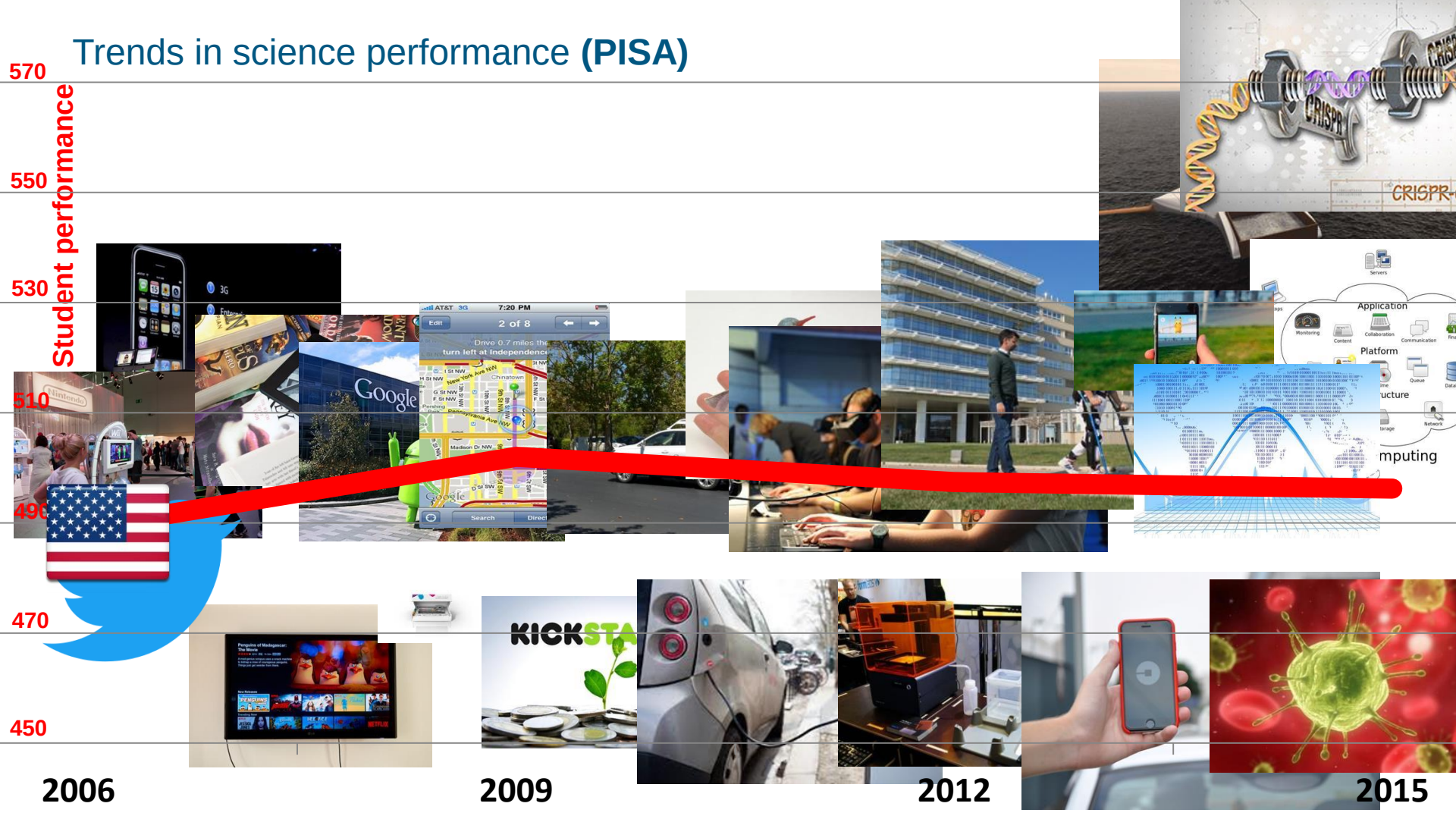
450

2006

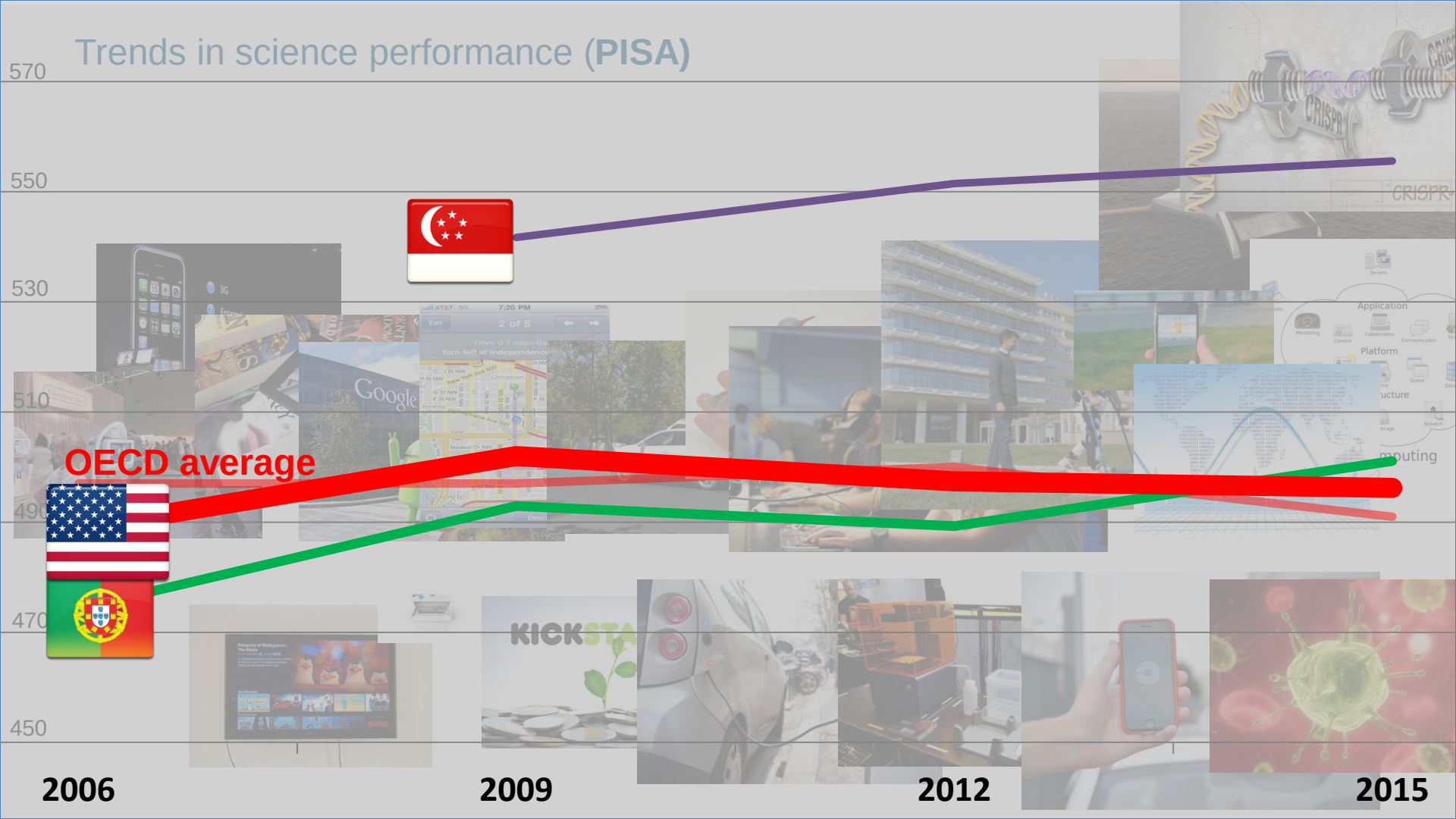
2009

2012

2015



Trends in science performance (**PISA**)



Poverty is not destiny – Learning outcomes

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

Figure I.6.7

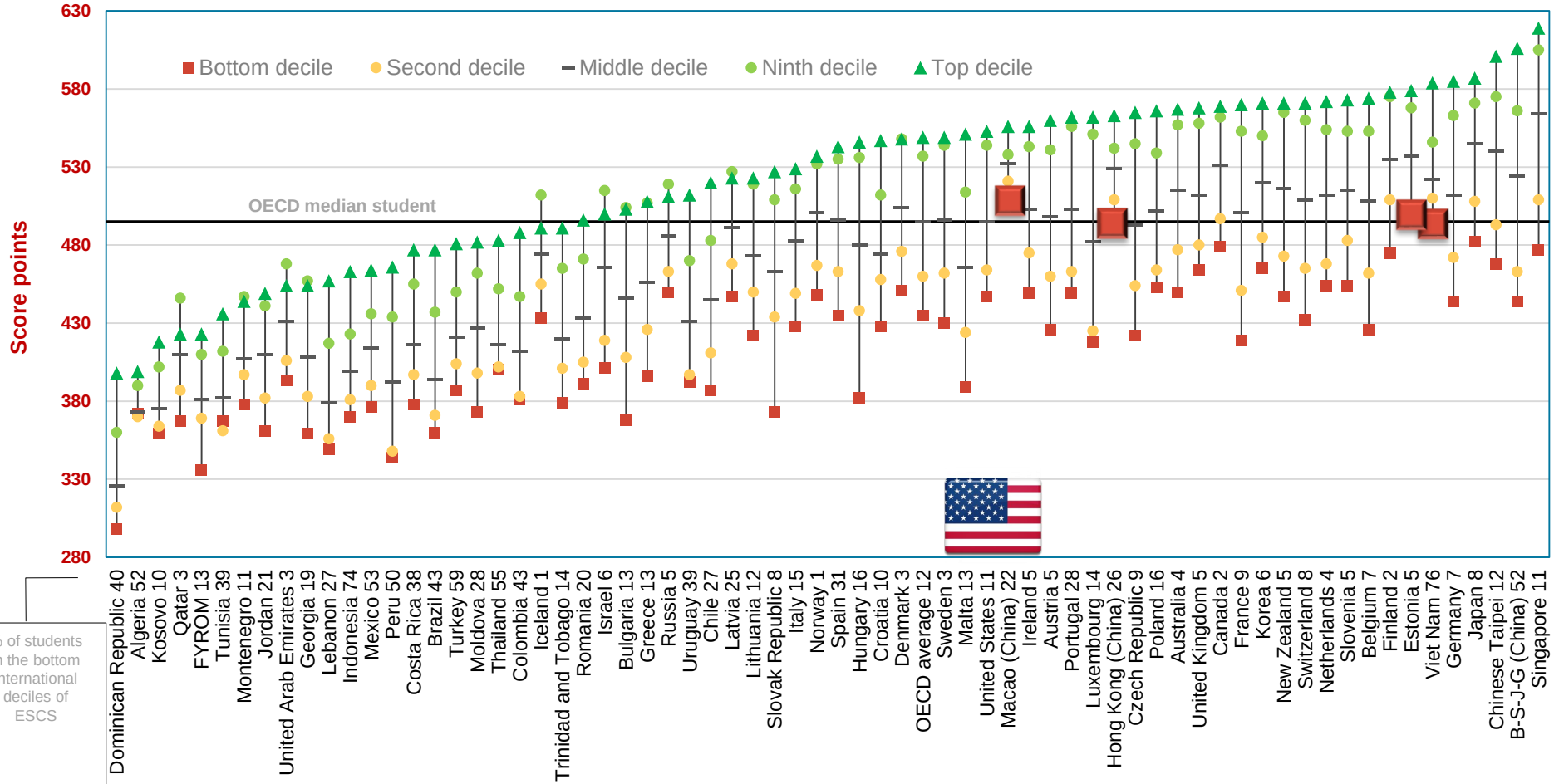
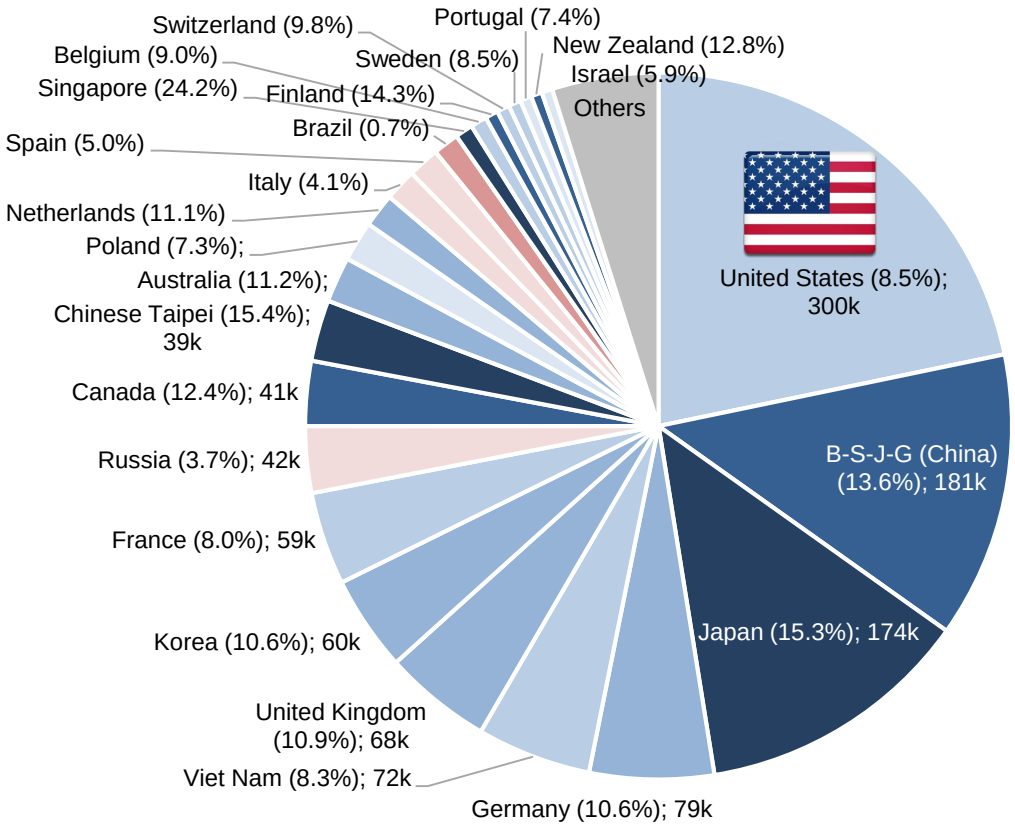


Figure I.2.18

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%

Understanding performance differences

Triangulating data from students, parents, teachers, schools and systems

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

Figure II.6.2

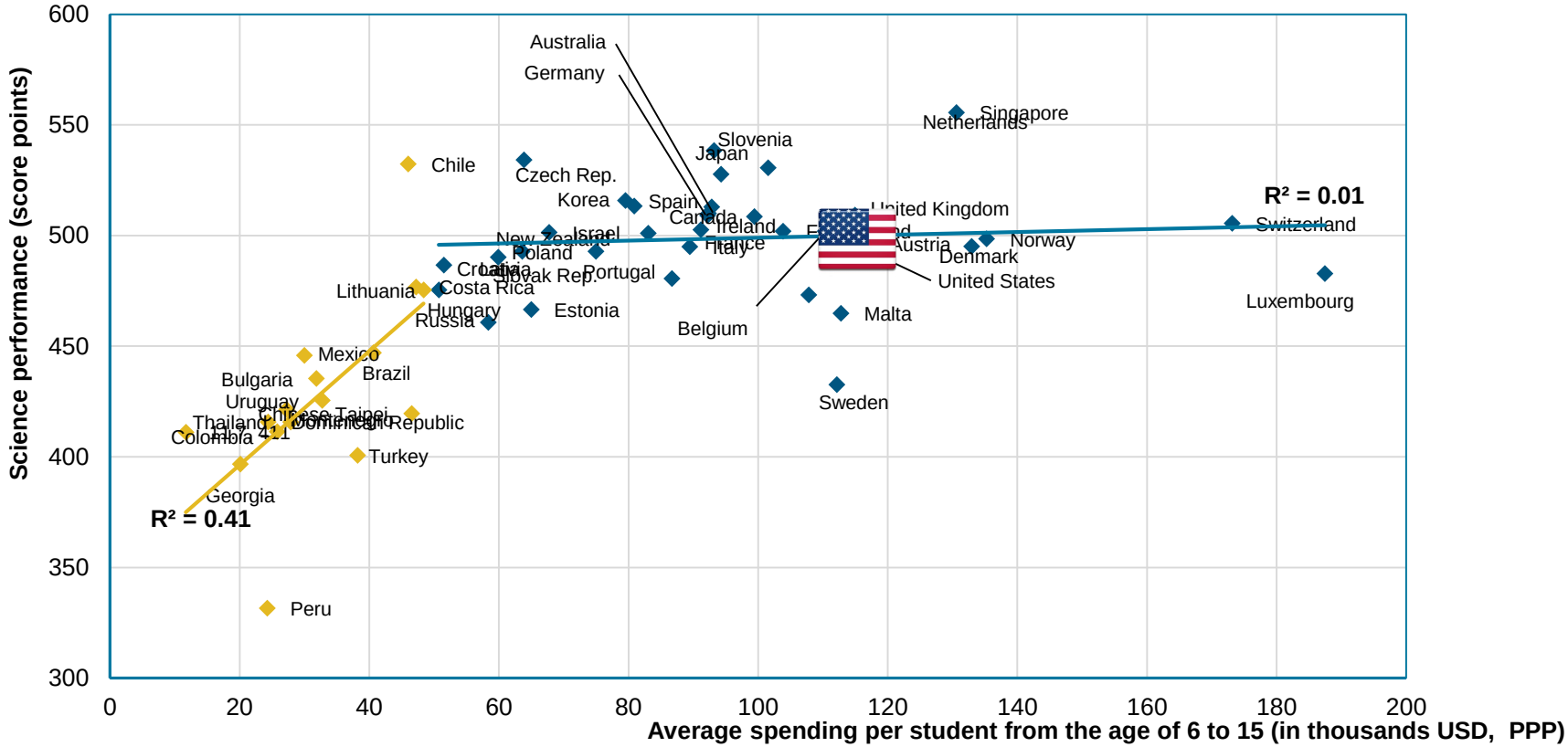


Figure I.6.14

Differences in educational resources

between advantaged and disadvantaged schools

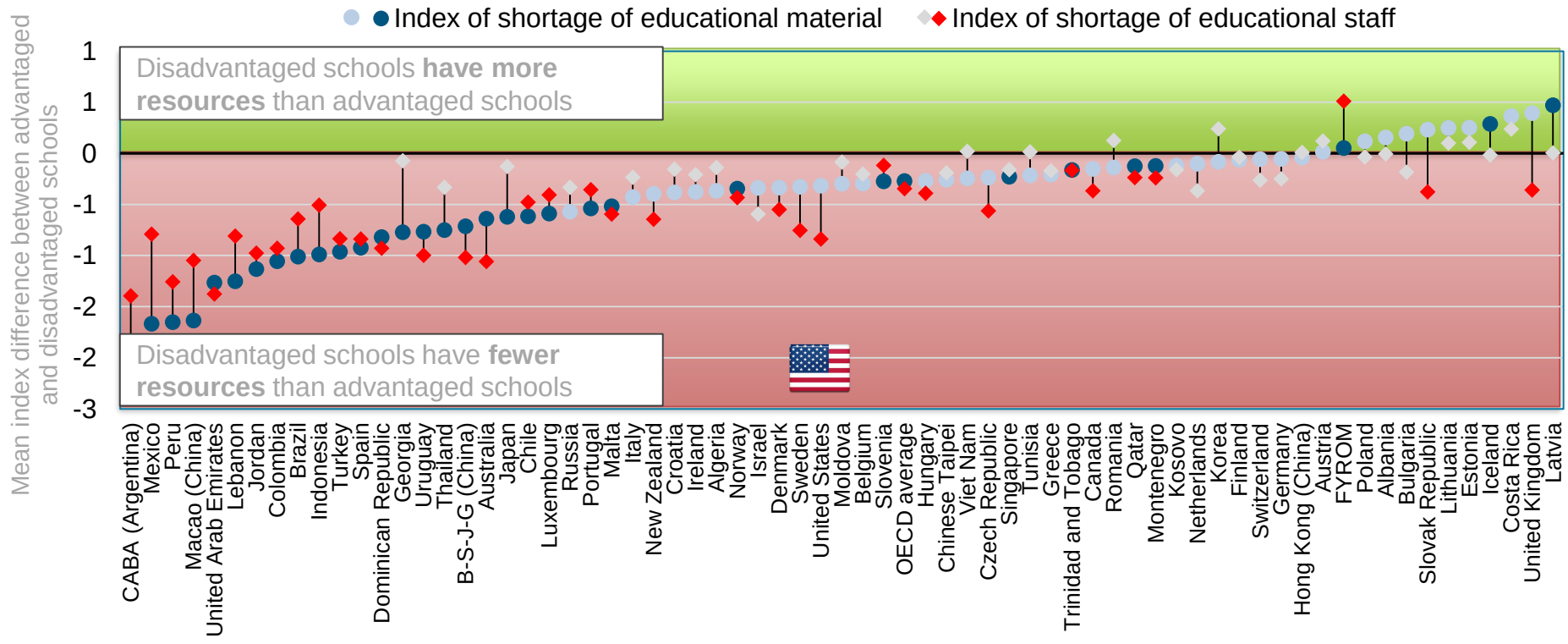
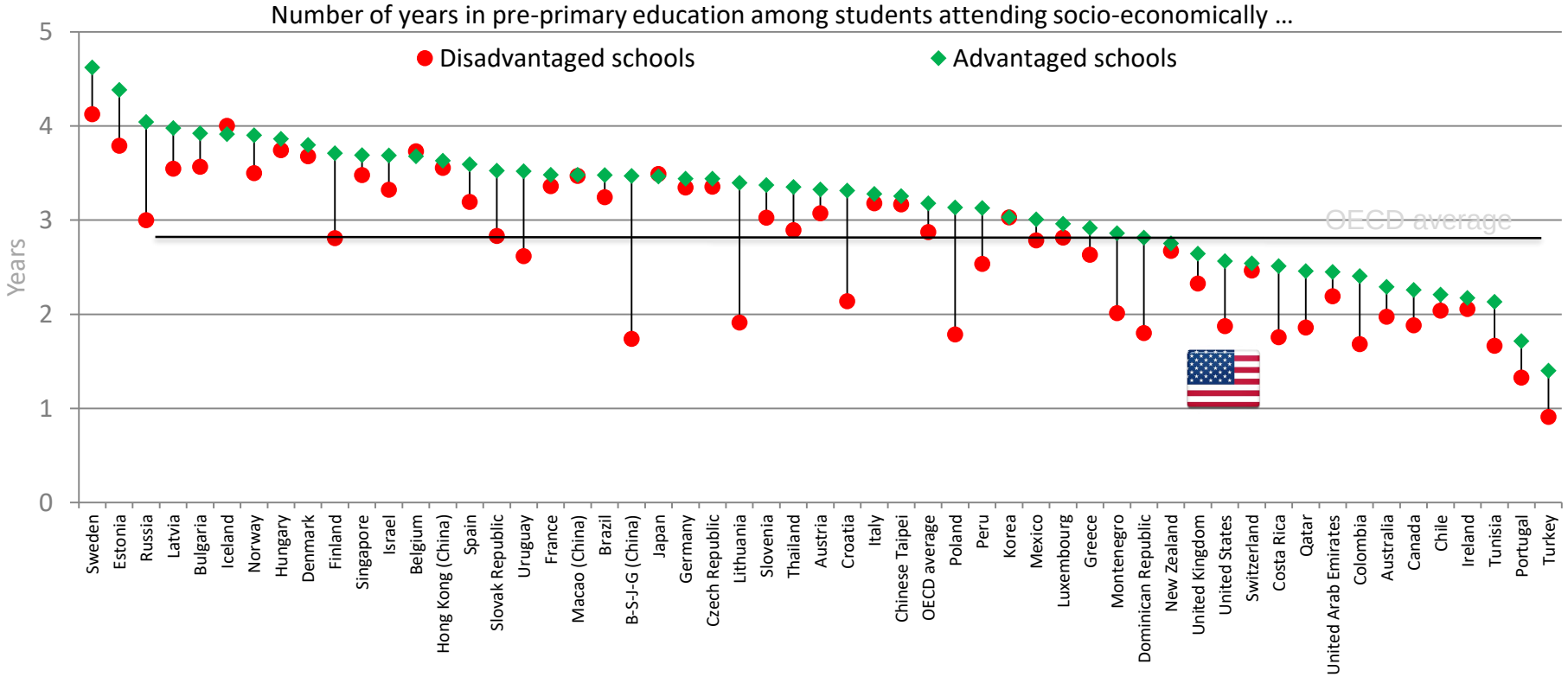


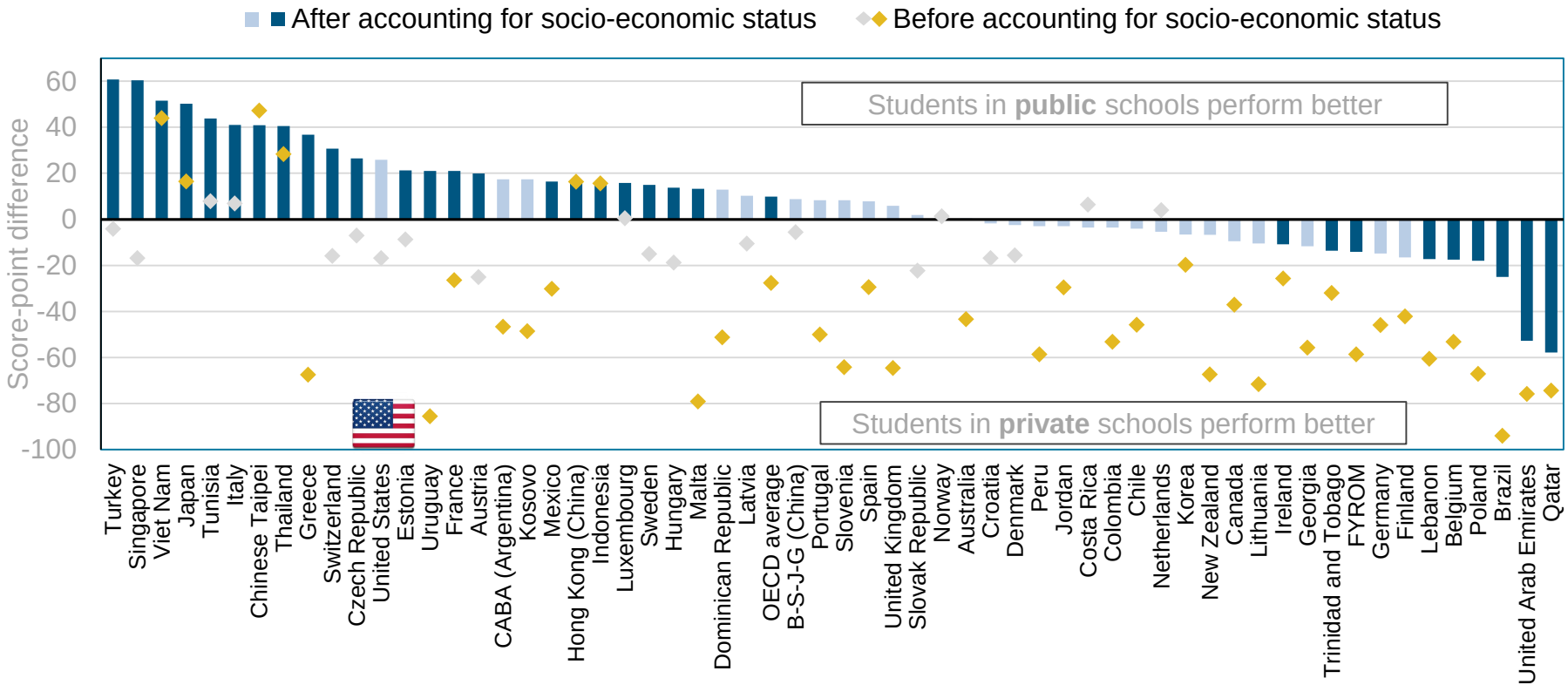
Table II.6.51

Attendance at pre-primary school

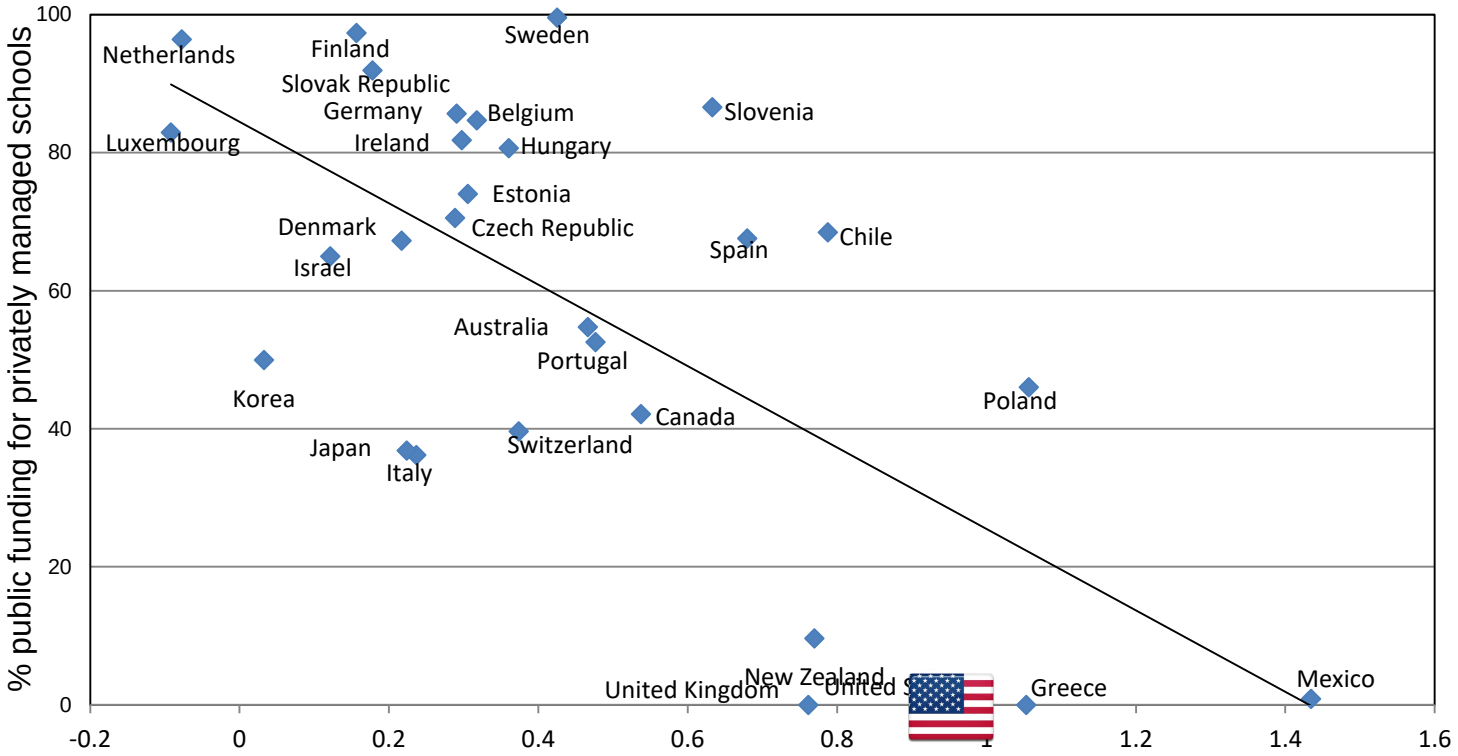
by schools' socio-economic profile



Science performance in public and private schools

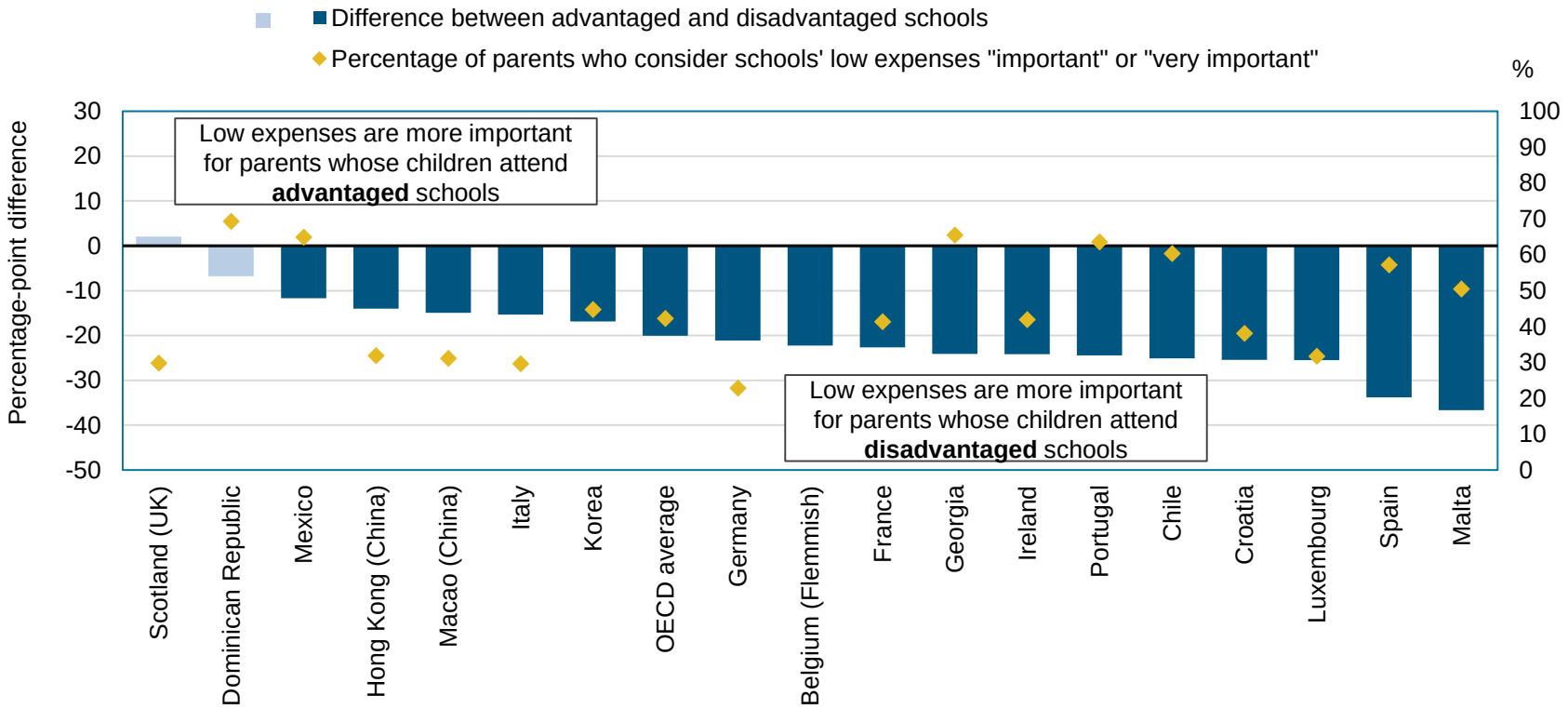


Countries that invest more public funds in privately managed schools tend to have less of a difference between the socio-economic profiles of publicly and privately managed schools



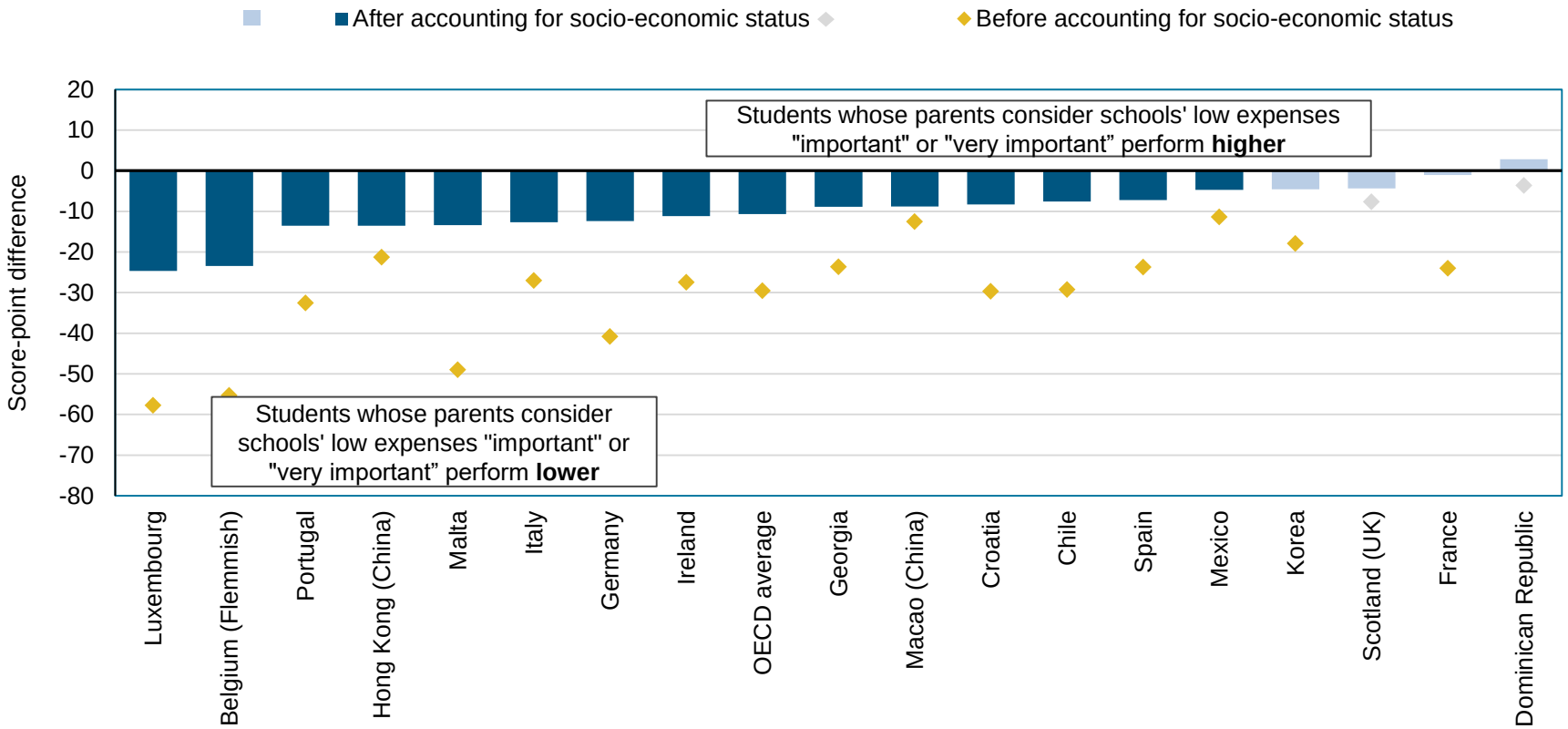
Low expenses as a reason for choosing school, by schools' socio-economic status

Figure II.4.17



Schools' low expenses as a reason for choosing school and students' science performance

Figure II.4.17



Learning time and science performance

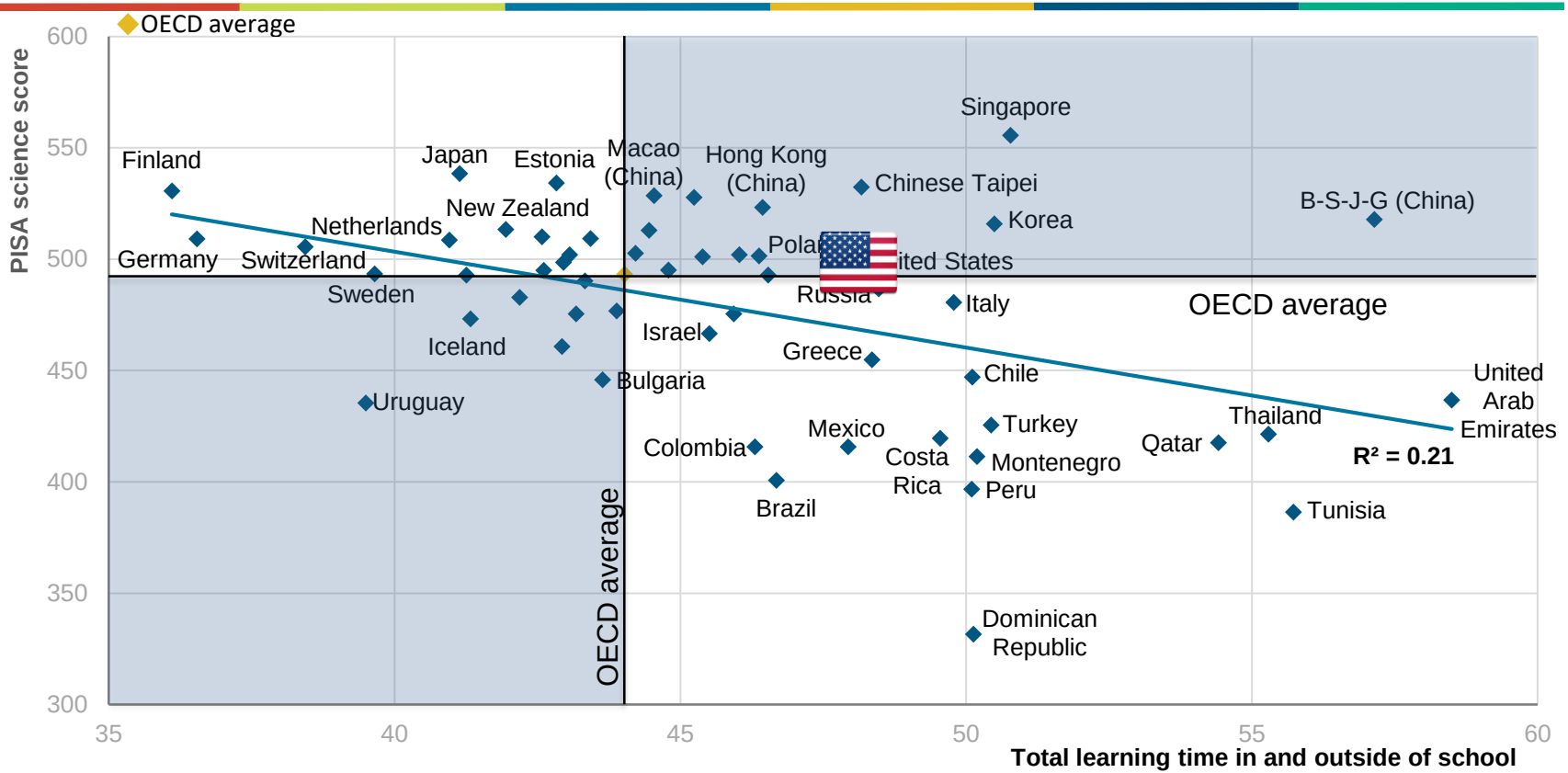
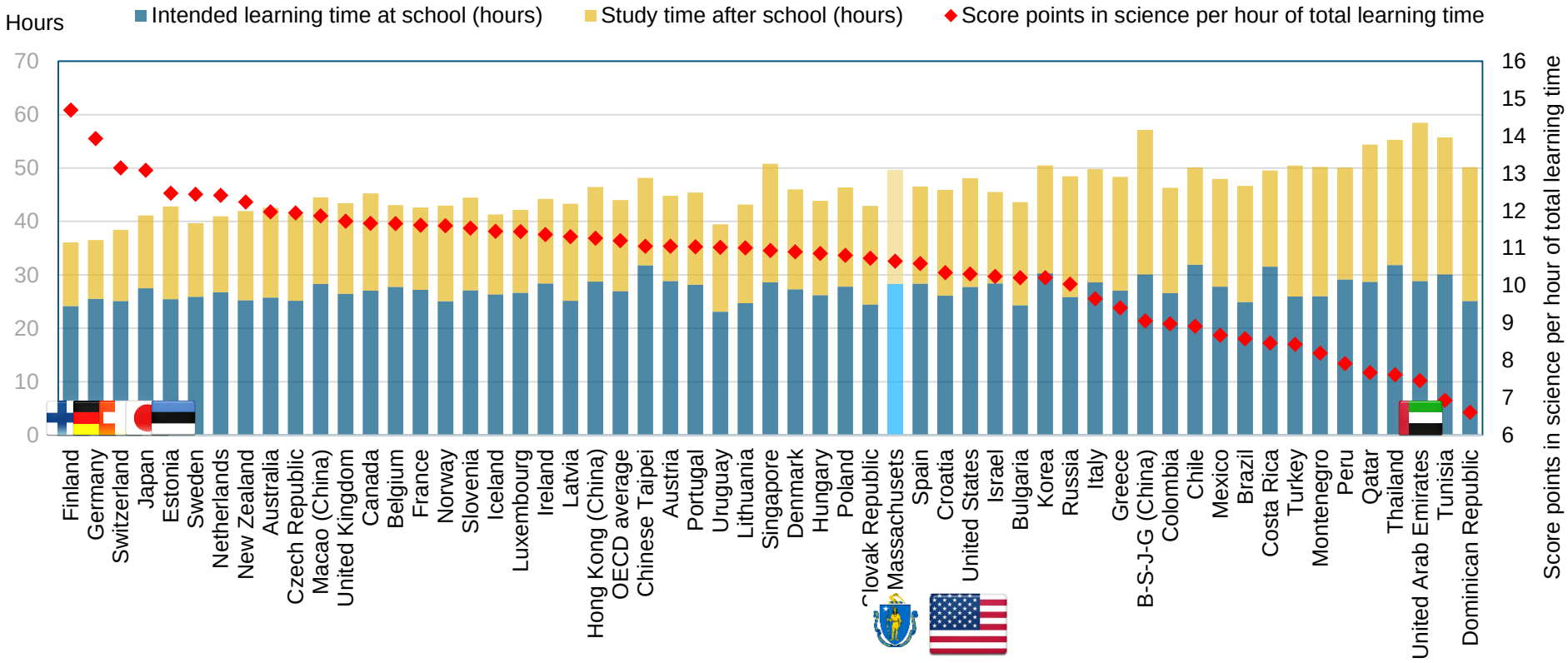


Figure II.6.23

Learning time and science performance

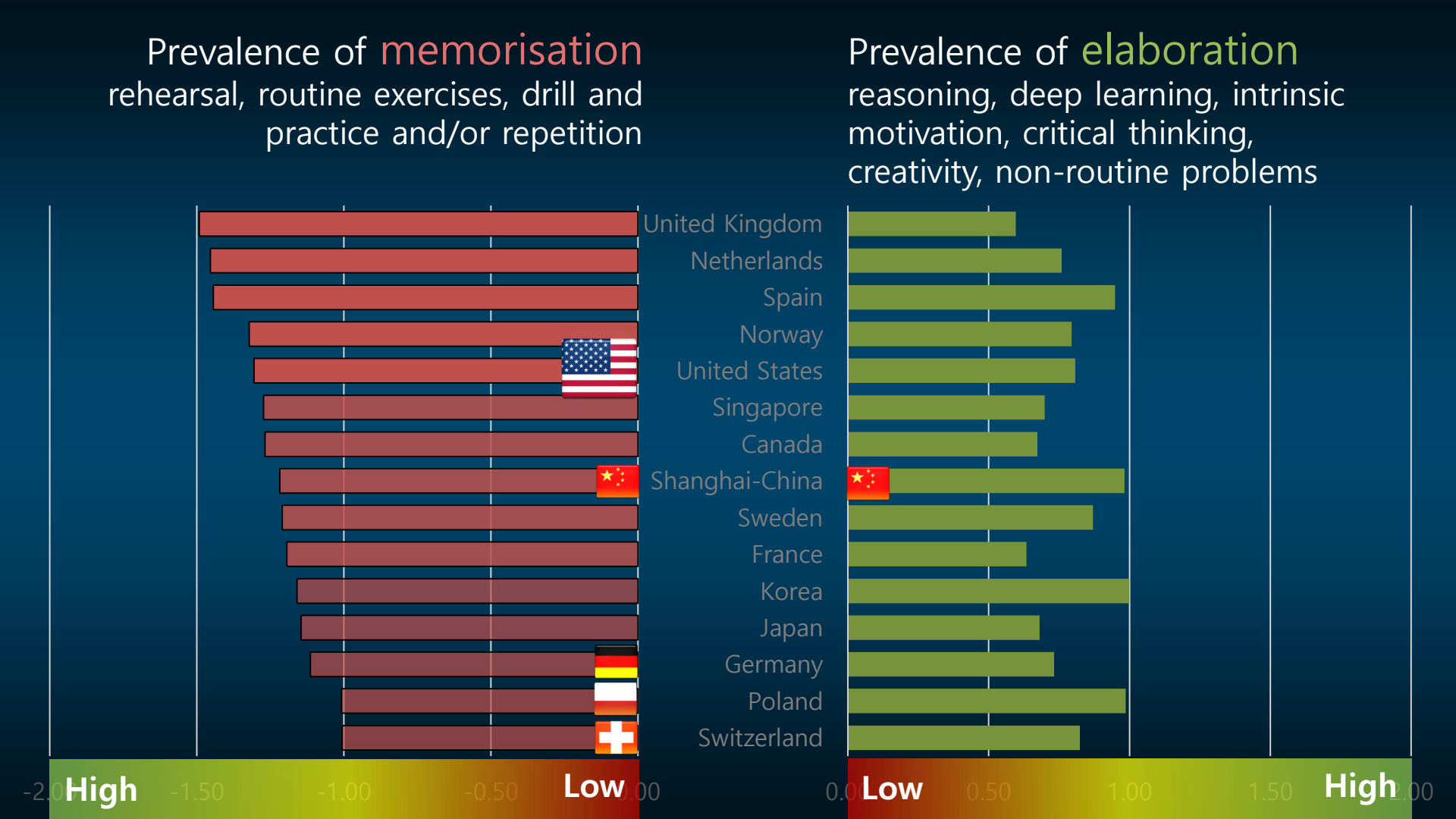


What teachers say and what teachers do

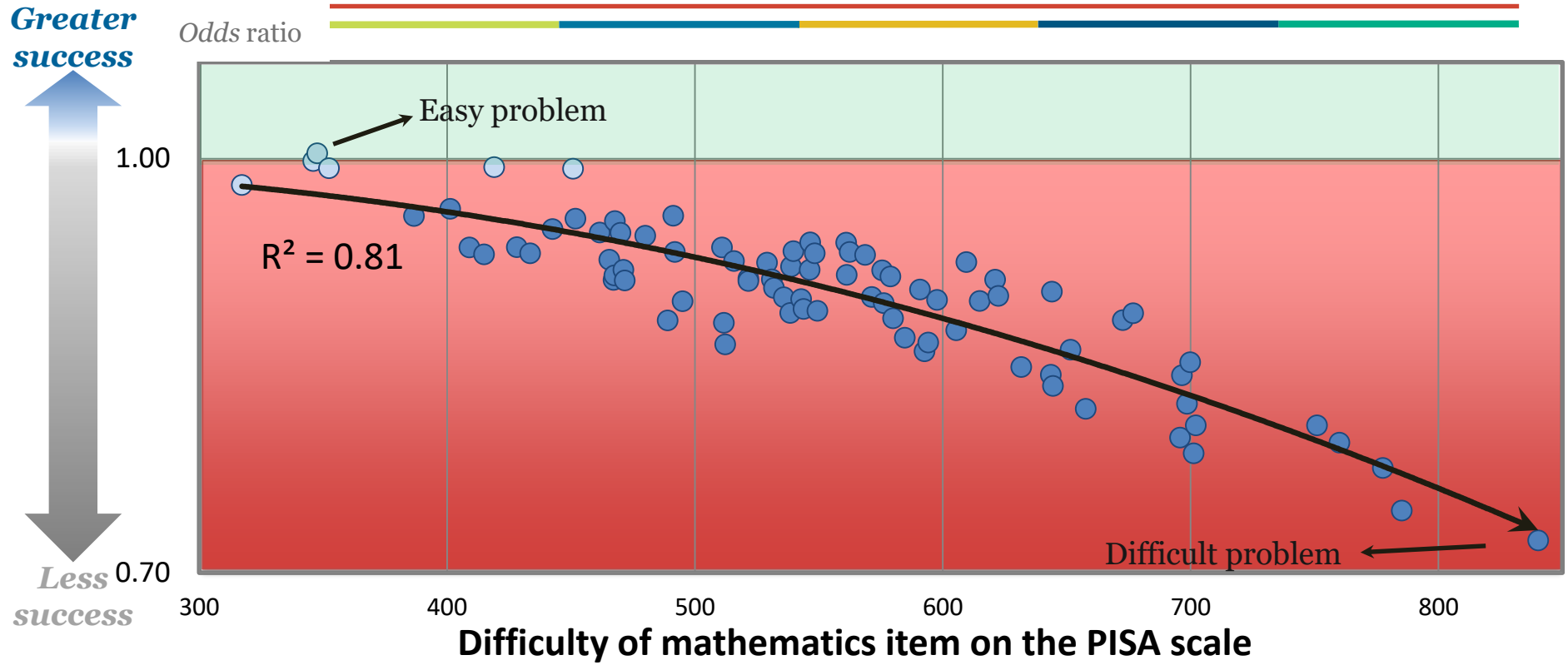

95% of teachers: My role as a teacher
is to facilitate students own inquiry


82%: Students learn best
by findings solutions on their own

85%: Thinking and reasoning is more important than curriculum content

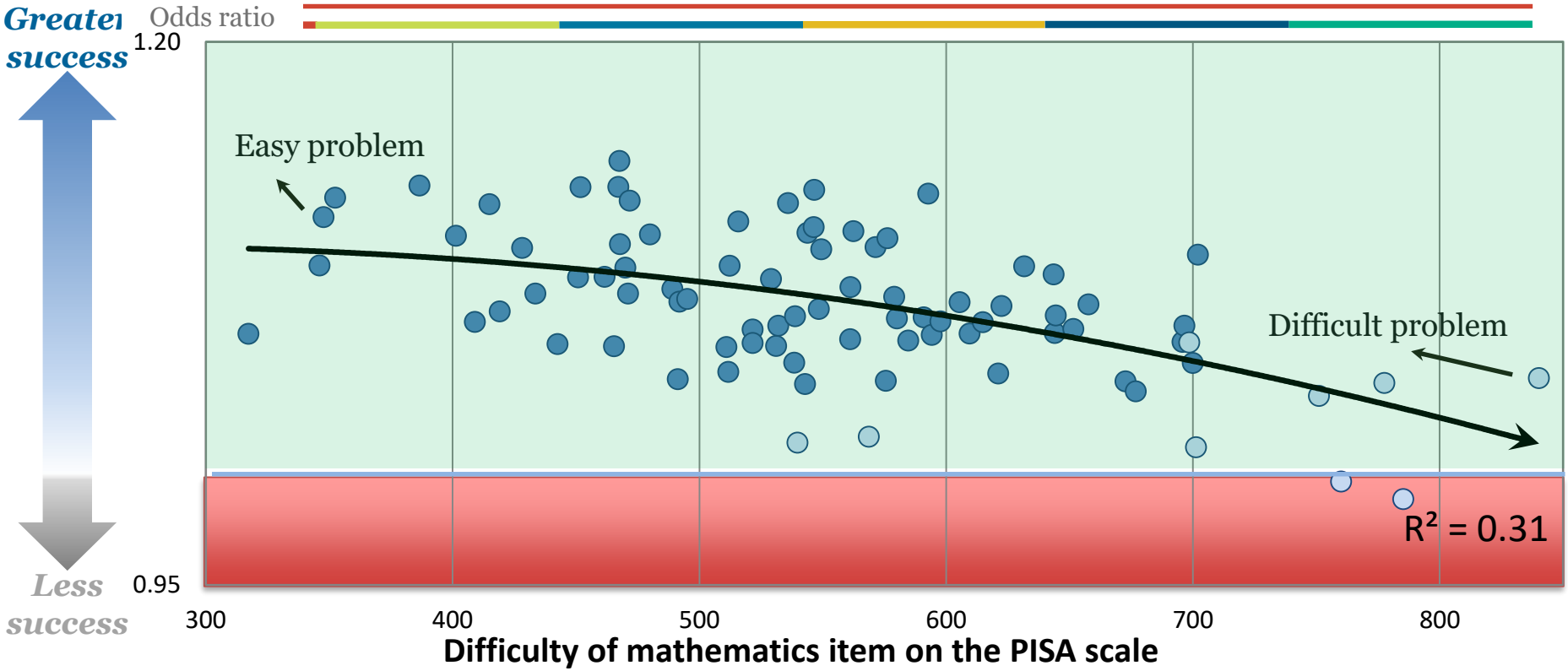

Prevalence of memorisation
rehearsal, routine exercises, drill and practice and/or repetition
Prevalence of elaboration
reasoning, deep learning, intrinsic motivation, critical thinking, creativity, non-routine problems
United Kingdom
Netherlands
Spain
Norway
United States
Singapore
Canada
Shanghai-China
Sweden
France
Korea
Japan
Germany
Poland
Switzerland
High
Low
-2.00
-1.50
-1.00
-0.50
0.00
Low
High
0.00
0.50
1.00
1.50
2.00

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



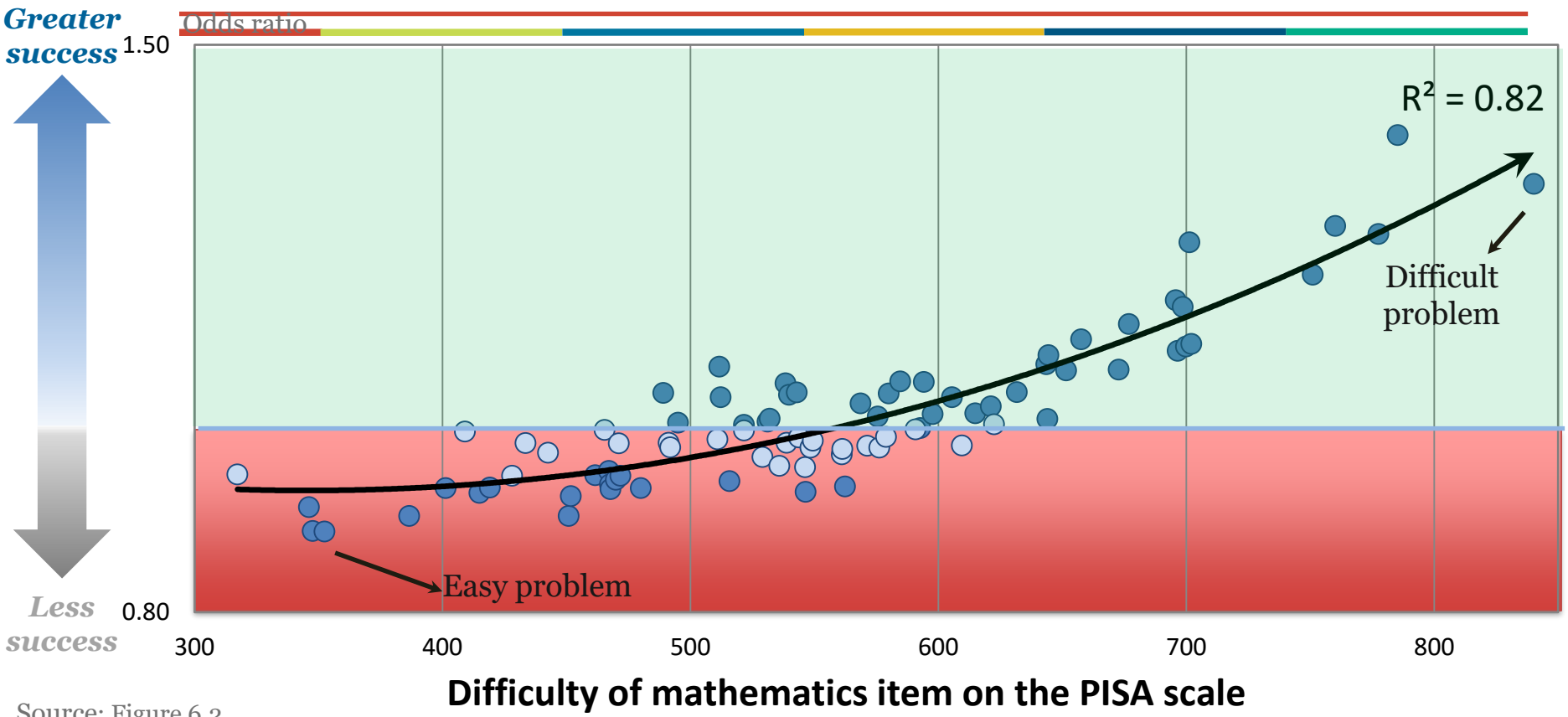
Source: Figure 4.3

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



Source: Figure 5.2

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



Source: Figure 6.2

Building a high quality teaching force

Improve the societal view of teaching as a profession

Recruit top candidates into the profession

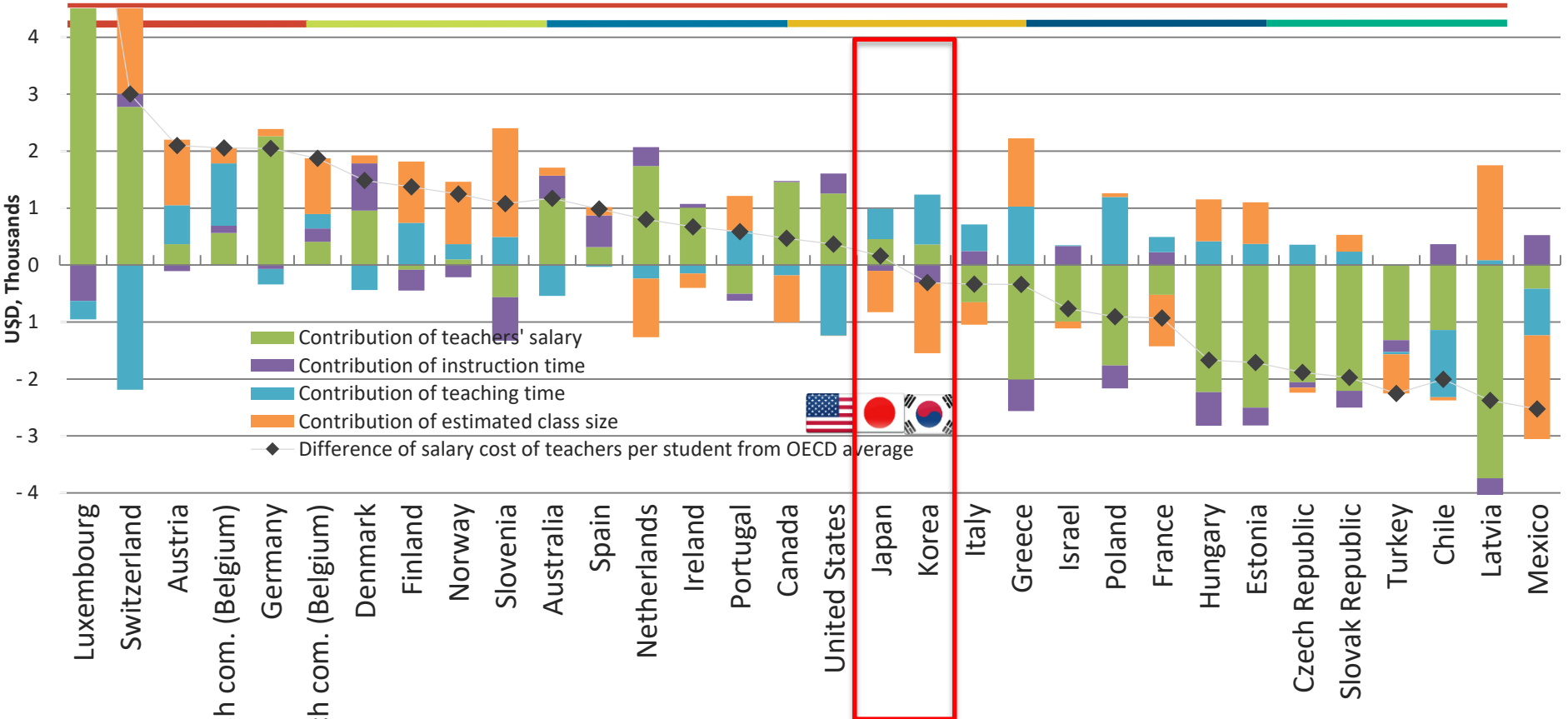
Developing Teaching as a profession

Retain and recognise effective teachers – path for growth

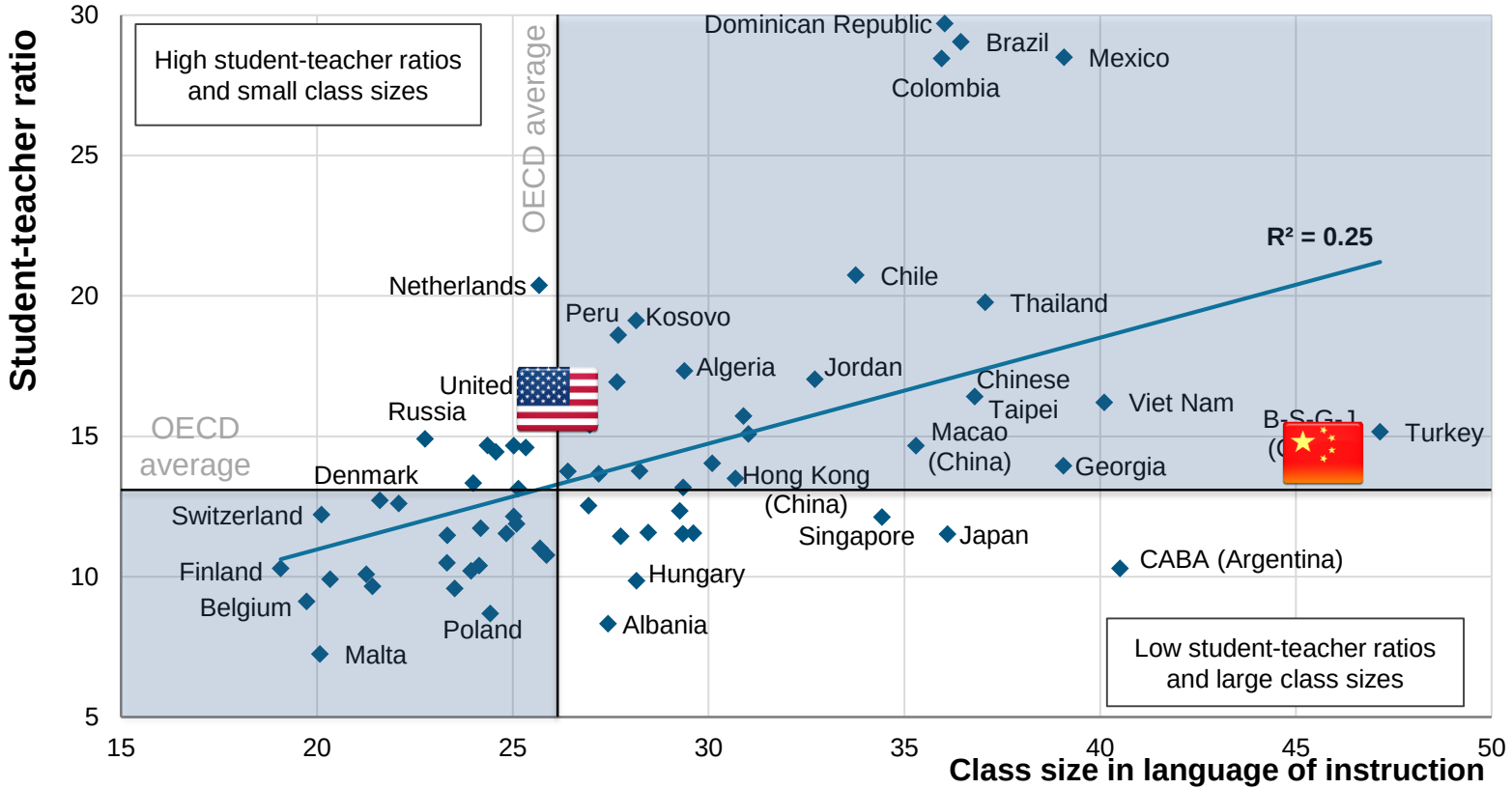
Support teachers in continued development of practice

Countries spend their money differently

Contribution of various factors to salary cost of teachers per student in public institutions, lower secondary education (2015)



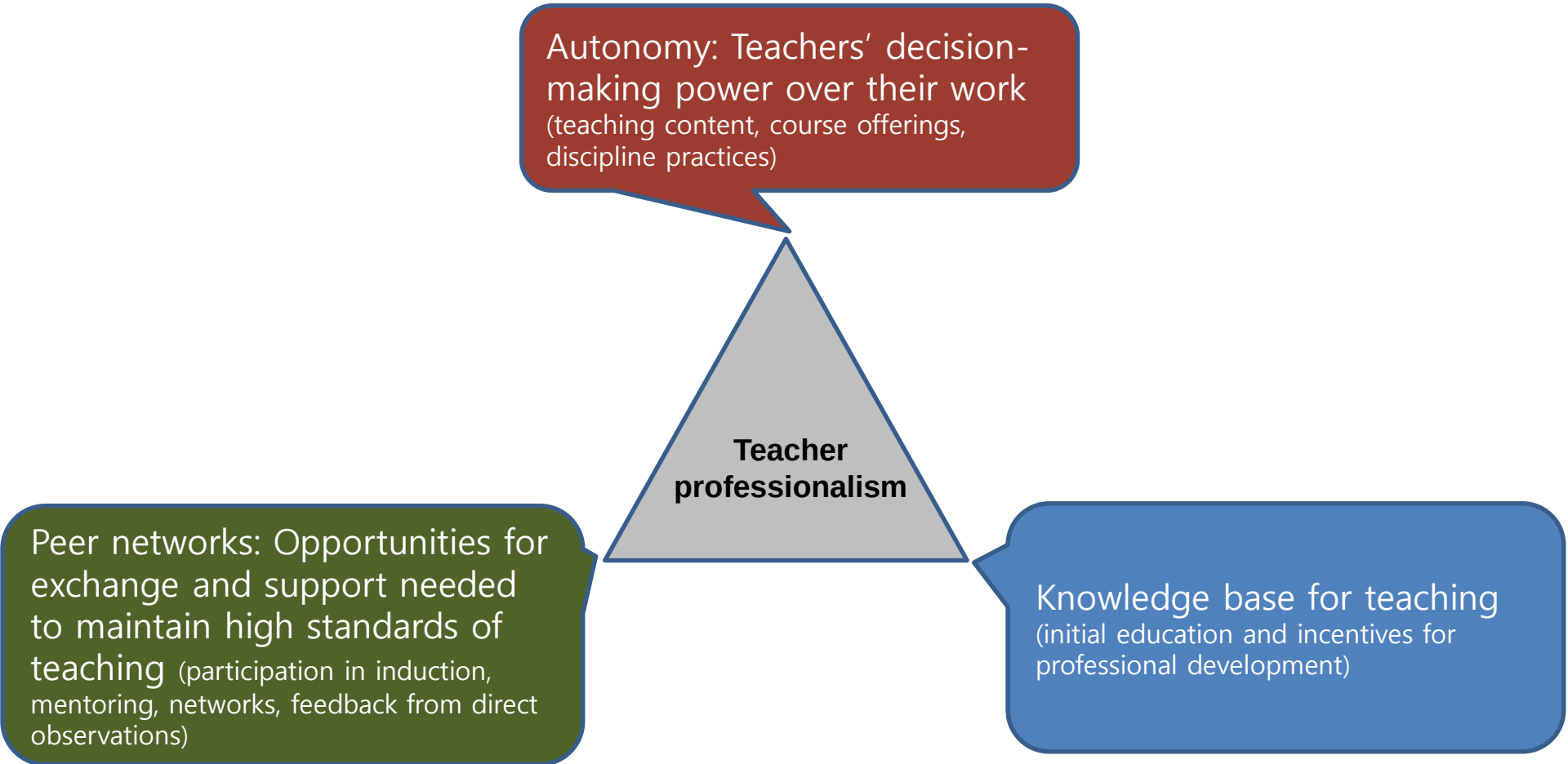
Student-teacher ratios and class size



Professionalism

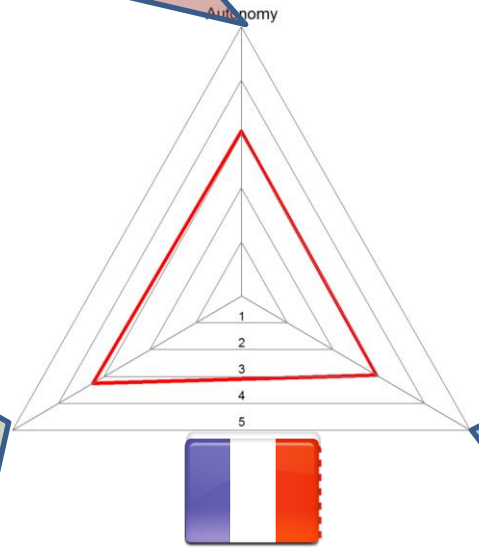
- Public confidence in profession and professionals
- Professional preparation and learning
- Collective ownership of professional practice
- Decisions made in accordance with the body of knowledge o the profession
- Acceptance of professional responsibility in the name of the profession and accountability towards the profession

Policy levers to teacher professionalism



Teacher professionalism

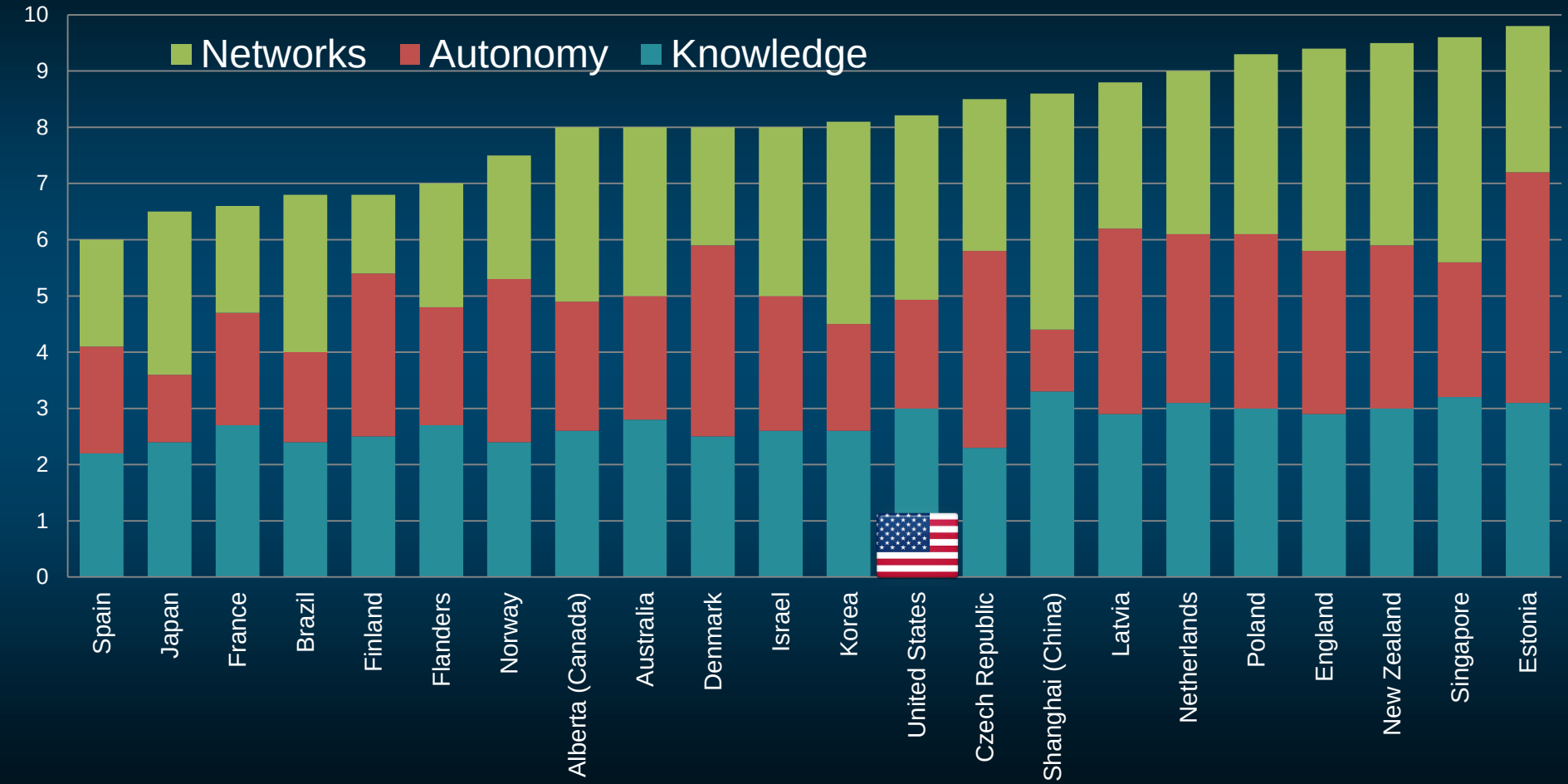
Autonomy: Teachers' decision-making power over their work (teaching content, course offerings, discipline practices)



Peer networks: Opportunities for exchange and support needed to maintain high standards of teaching (participation in induction, mentoring, networks, feedback from direct observations)

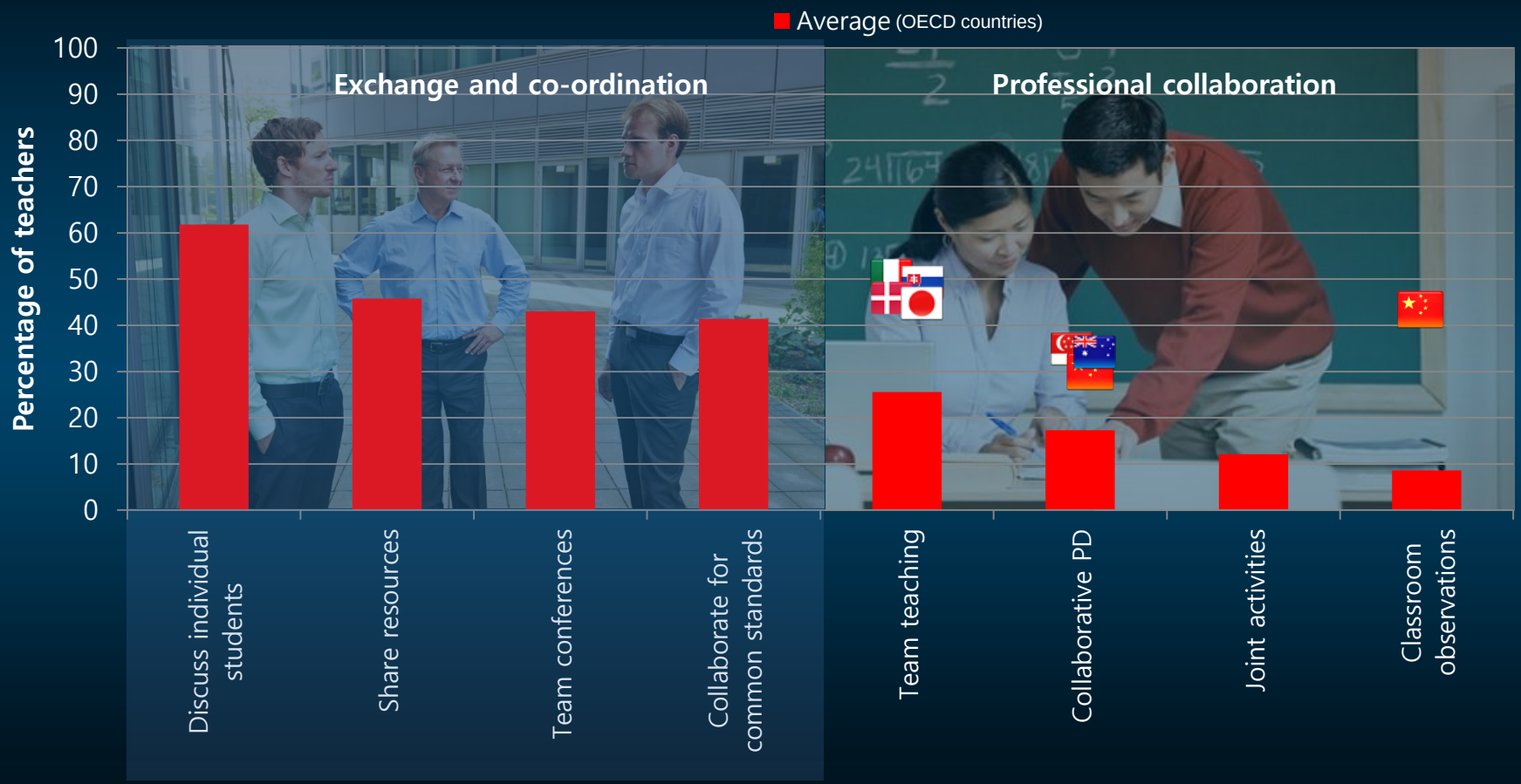
Knowledge base for teaching (initial education and incentives for professional development)

TALIS Teacher professionalism index

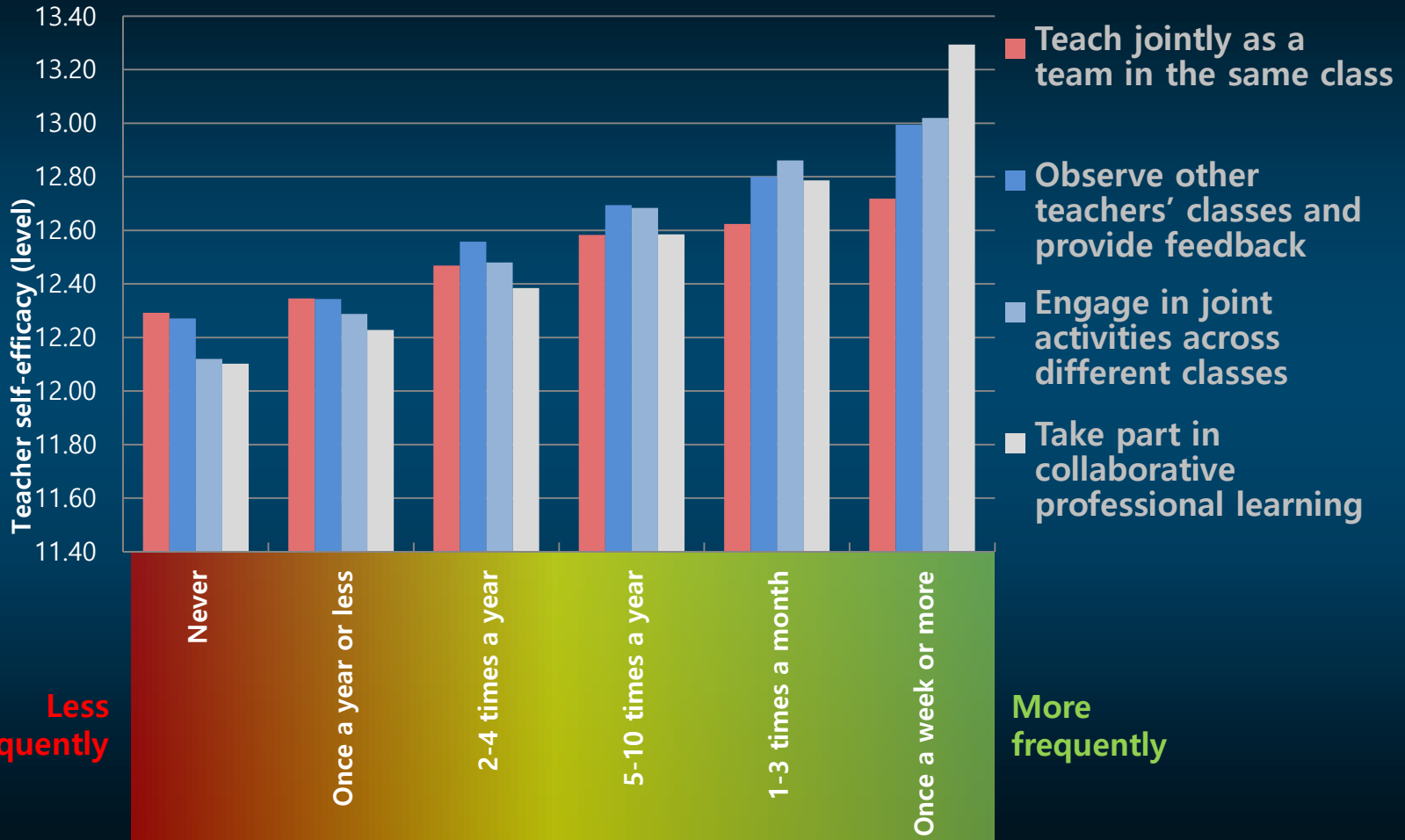


Professional collaboration among teachers

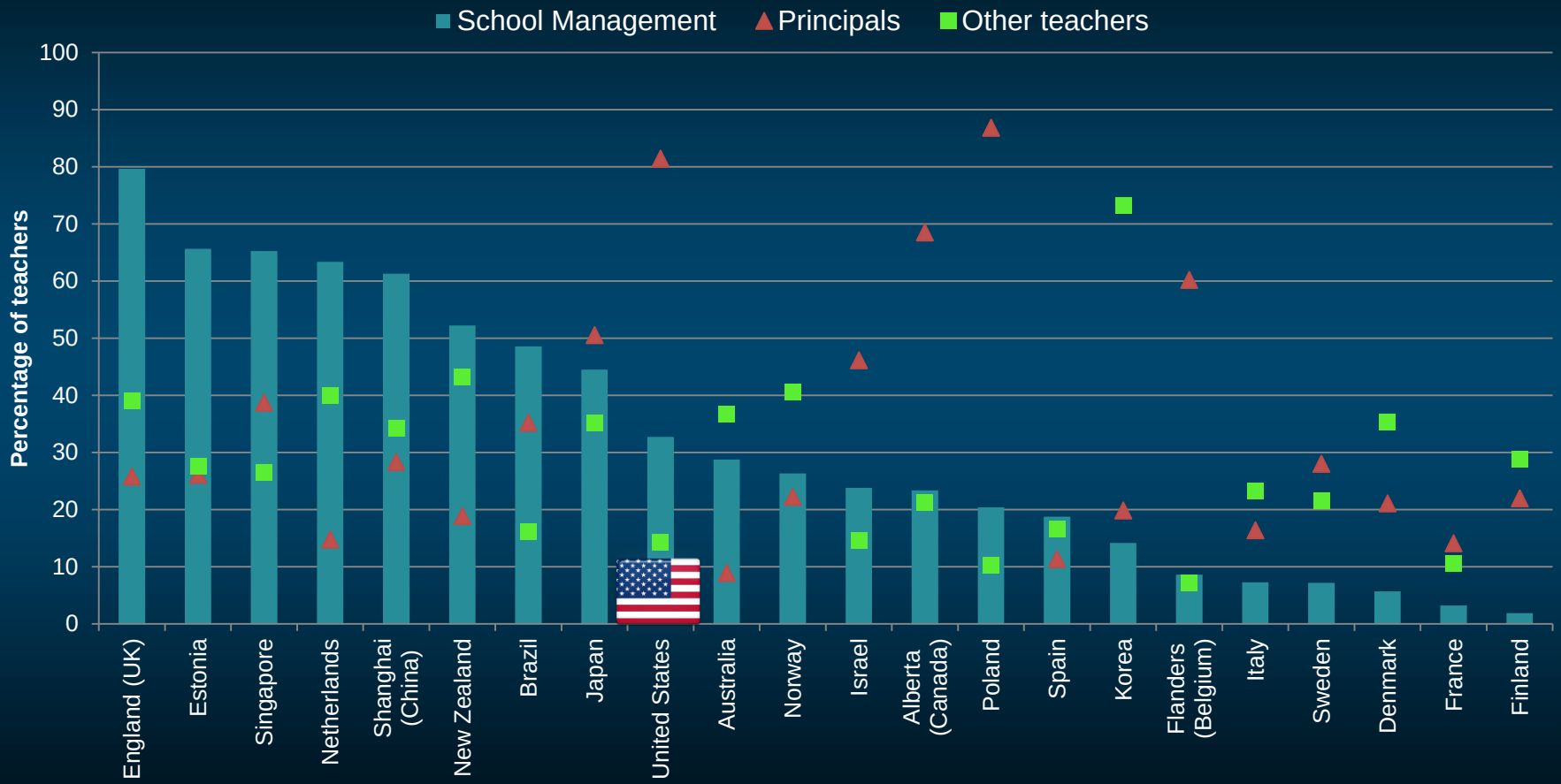
Percentage of lower secondary teachers who report doing the following activities at least once per month



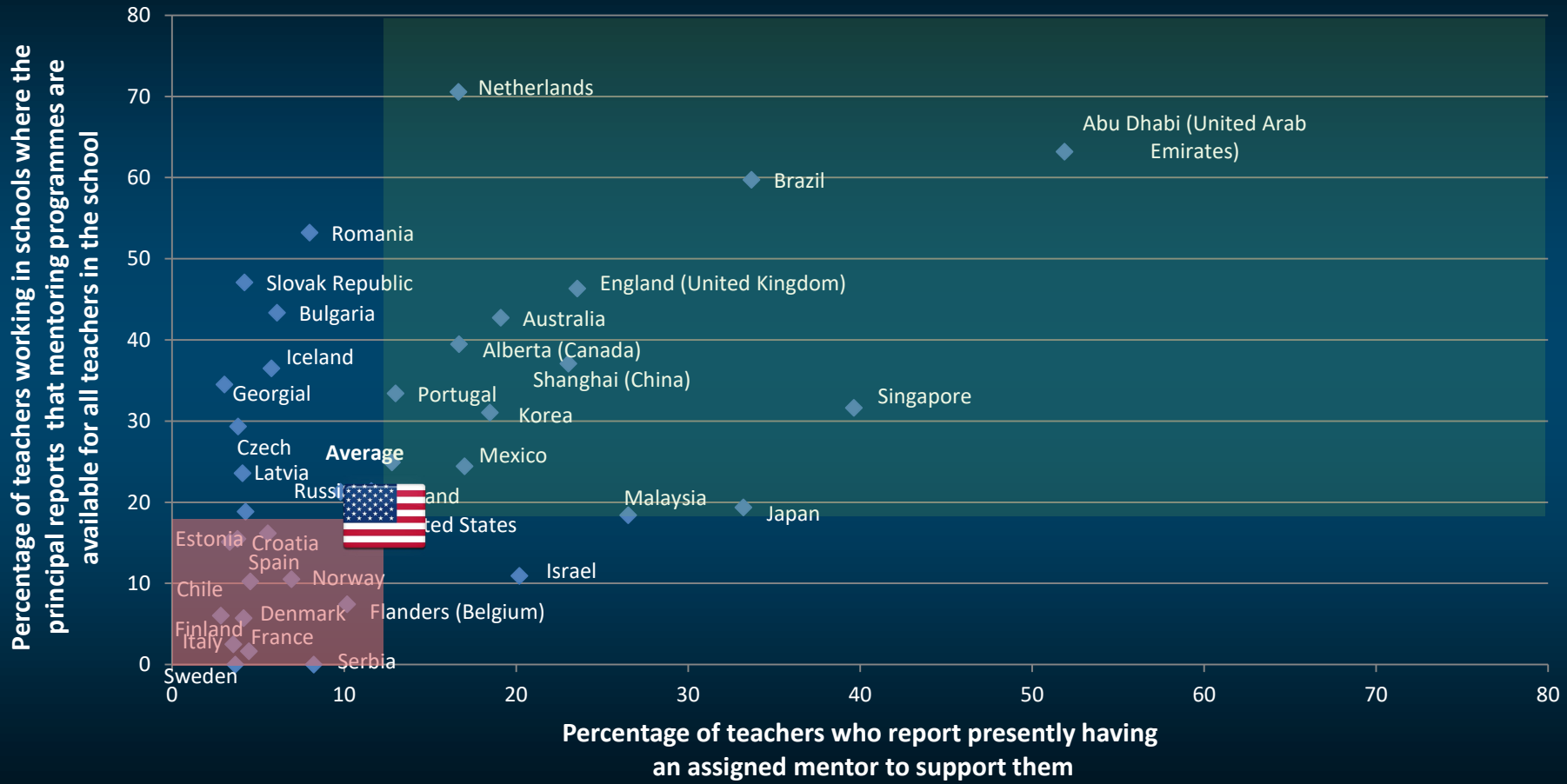
Teachers Self-Efficacy and Professional Collaboration



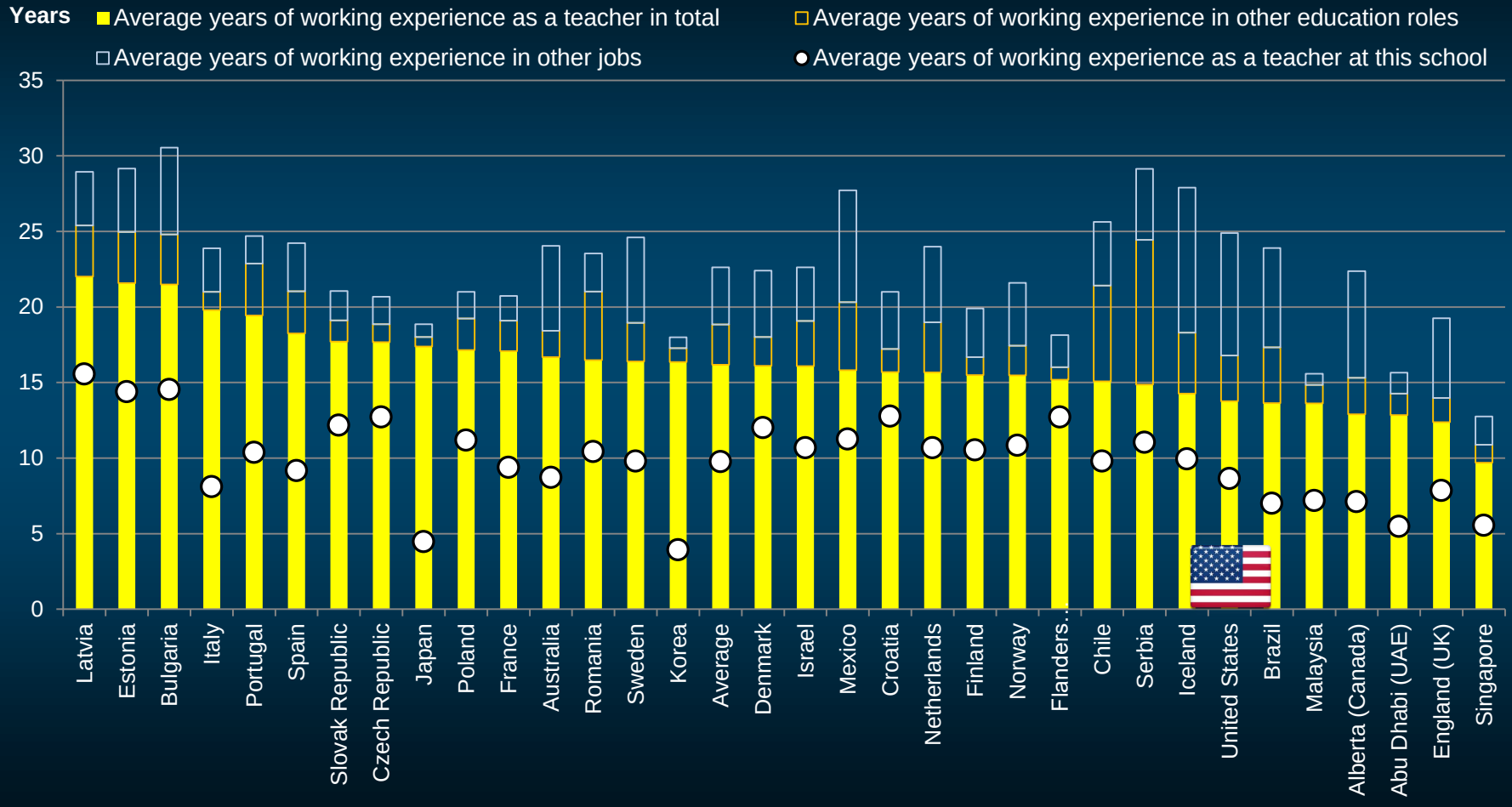
Teachers feedback : *Classroom observations*



Not everywhere where principals say mentoring is available do teachers have mentors



Work experience of teachers



Teacher outcomes

Status of the profession

Teachers' perception of the extent to which teaching is valued as a profession

Satisfaction with the profession

Teachers' report on the extent to which teachers are happy with their decision to become a teacher.

Satisfaction with work environment

Teachers' report on the extent to which teachers are happy with their current schools.

Self-efficacy

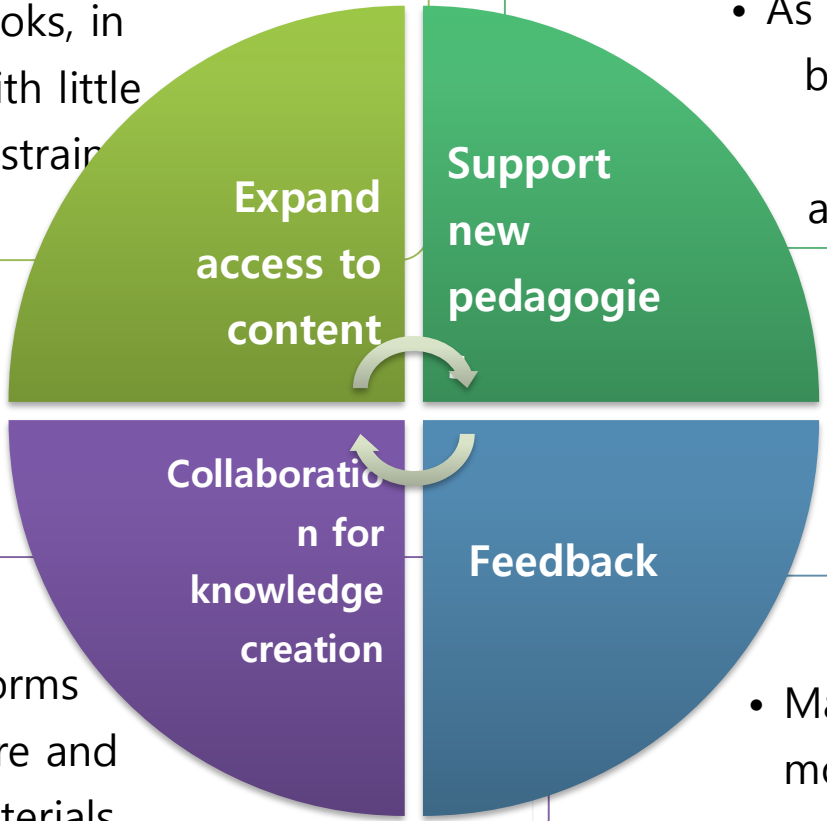
Teachers' perception of their capabilities (e.g. controlling disruptive behaviour, use a variety of assessment strategies, etc.).

Teacher professionalism index and teacher outcomes

Technology can amplify innovative teaching

- Well beyond textbooks, in multiple formats, with little time and space constrain

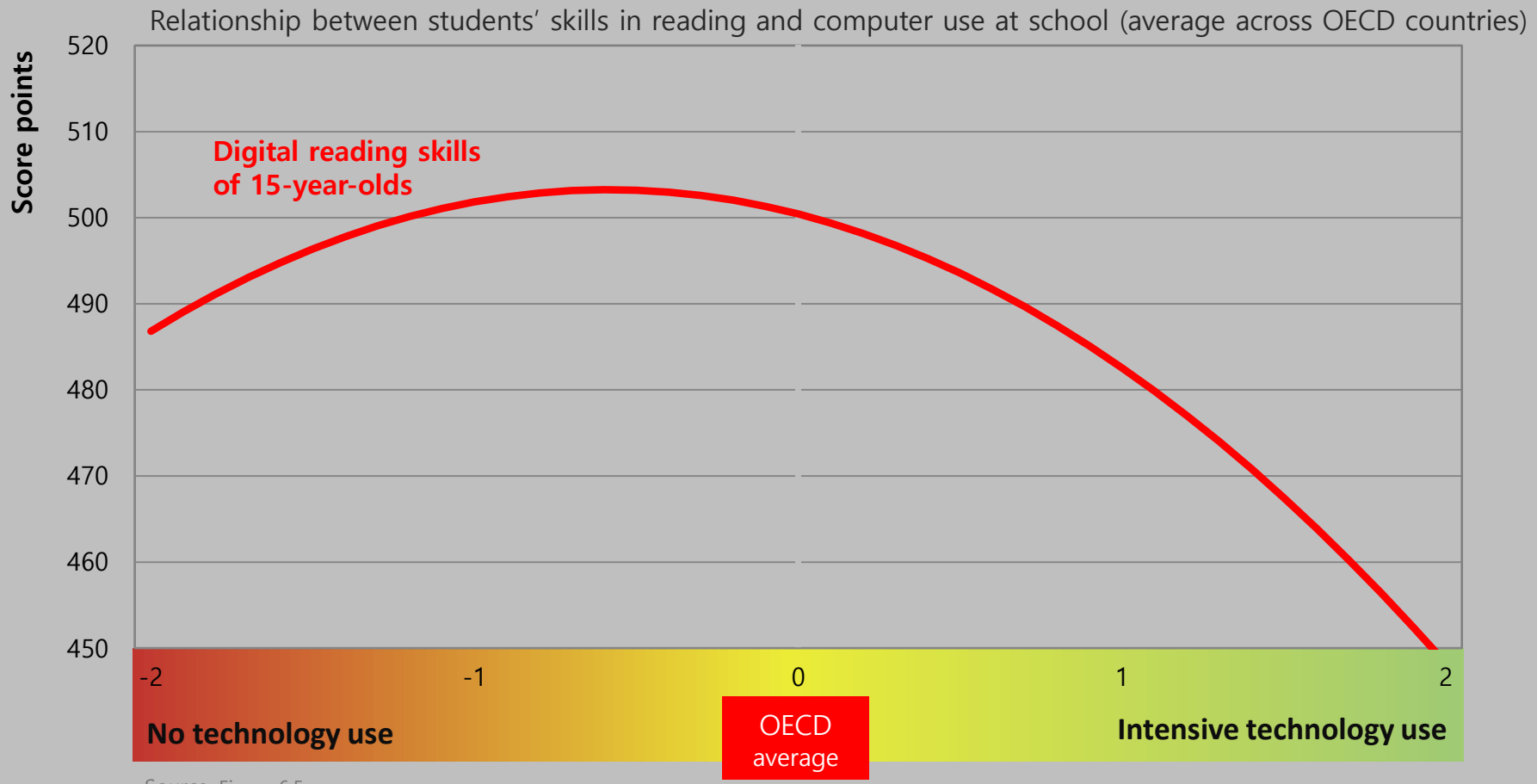
- As tools for inquiry-based pedagogies with learners as active participants



- Collaborative platforms for teachers to share and enrich teaching materials

- Make it faster and more granular

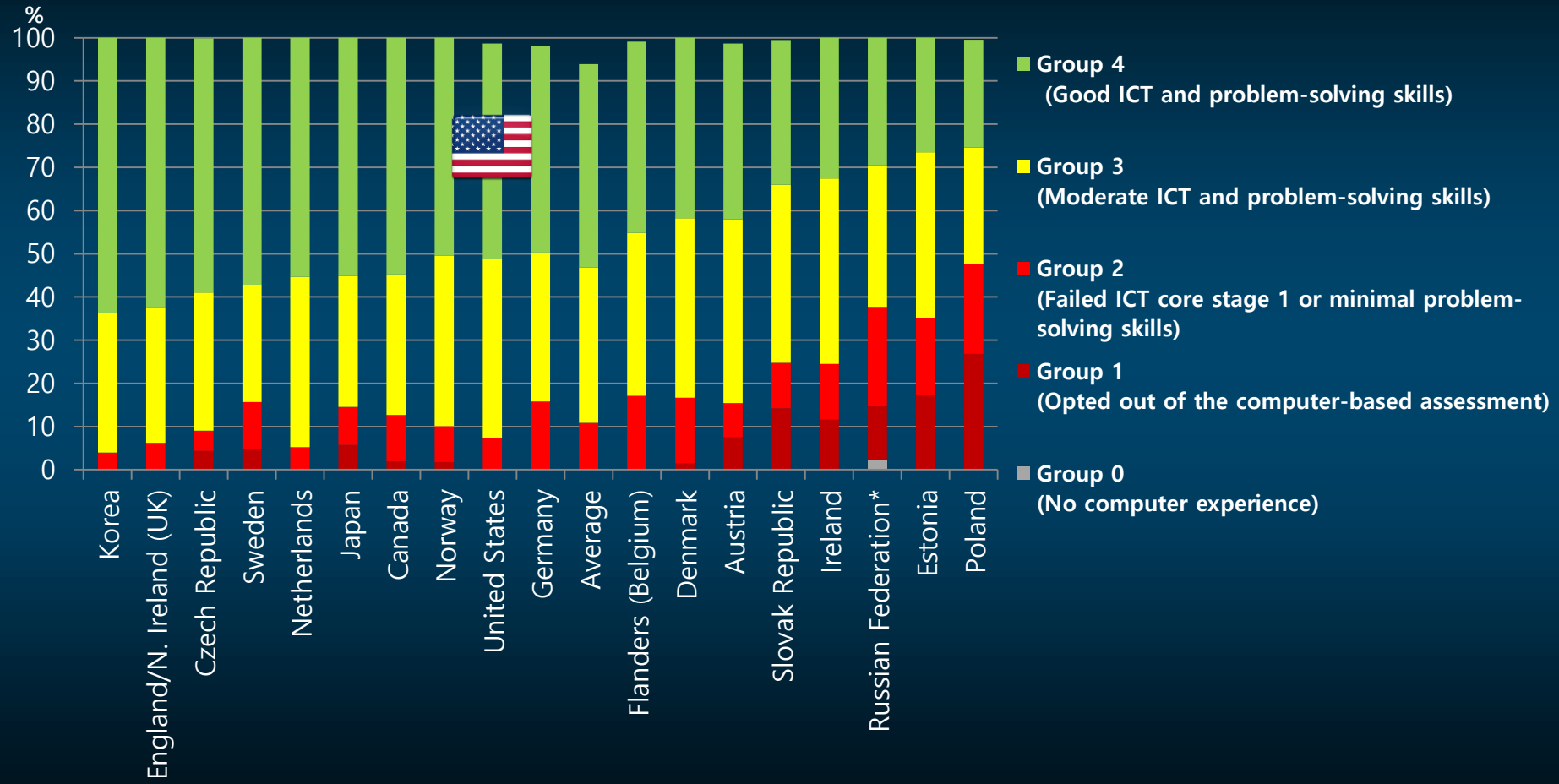
Technology in schools and digital skills still don't square

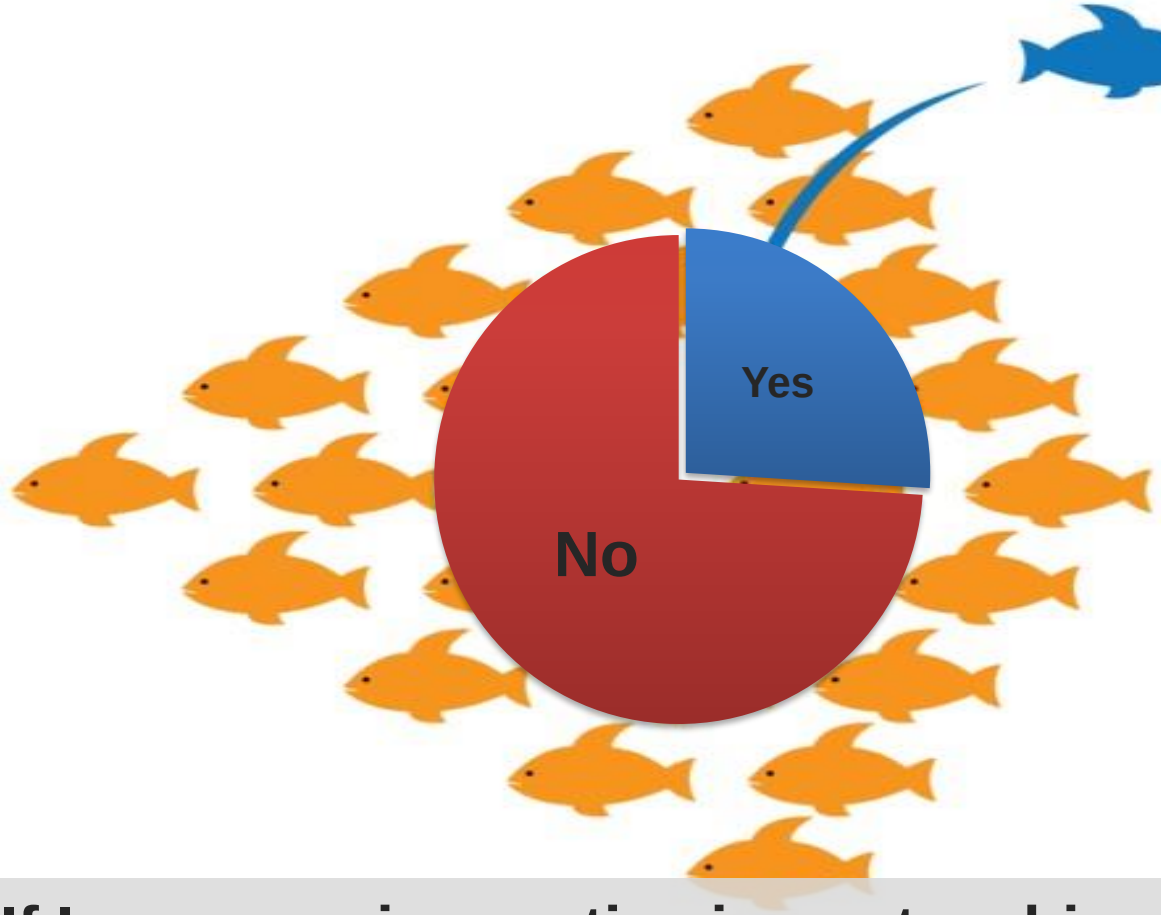


Source: Figure 6.5

Teachers' skills and readiness to use information and communication technologies (ICT) for problem solving (2012)

Chart D5.4





If I am more innovative in my teaching I will be rewarded (country average)

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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- **The complete micro-level database**

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