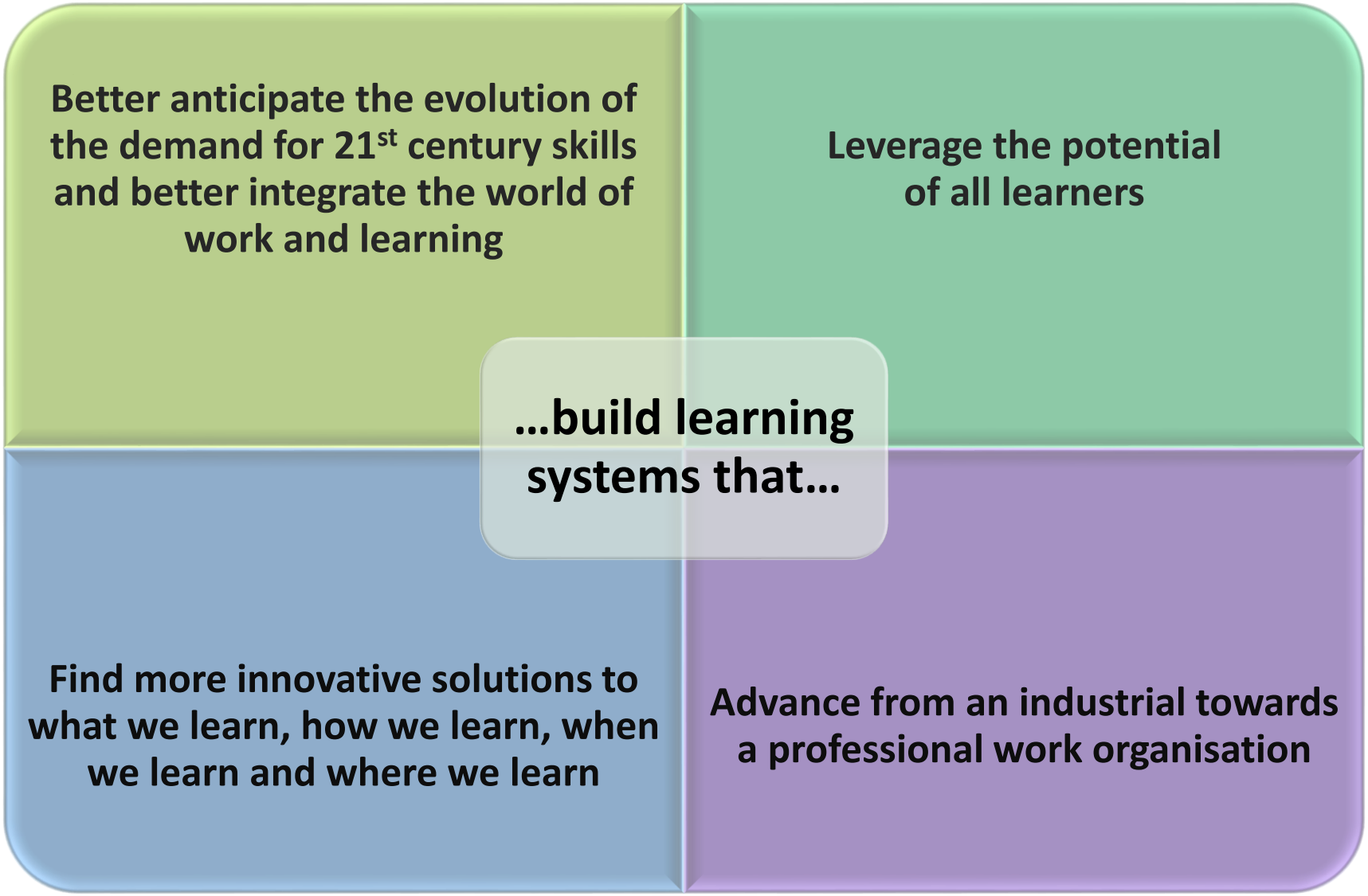
ESHA GA

Some developments that shaped PISA, and some developments that PISA shaped

Andreas Schleicher

8 April 2016

Citizens expect that we…



Citizens expect that we…

Better anticipate the evolution of the demand for 21st century skills and better integrate the world of work and learning

Leverage the potential of all learners

…build learning systems that…

Find more innovative solutions to what we learn, how we learn, when we learn and where we learn

Advance from an industrial towards a professional work organisation

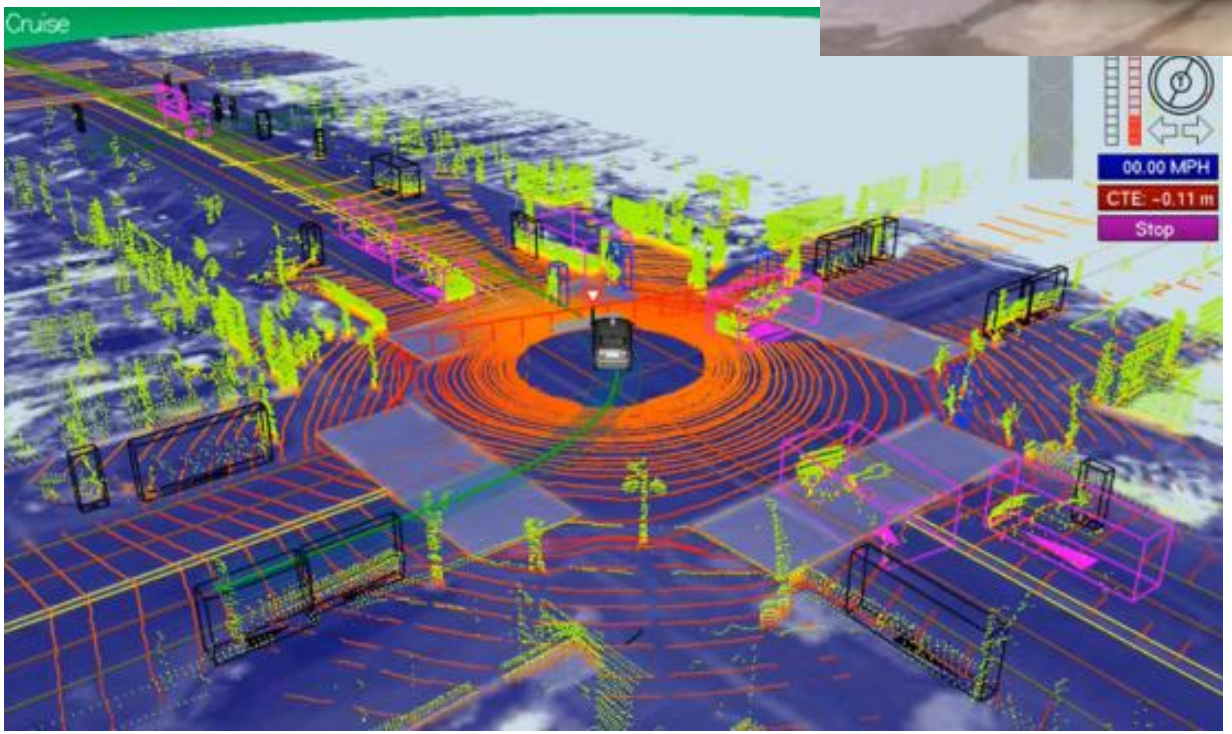
The kind of things that are easy to teach are now easy to automate, digitize or outsource

Robotics

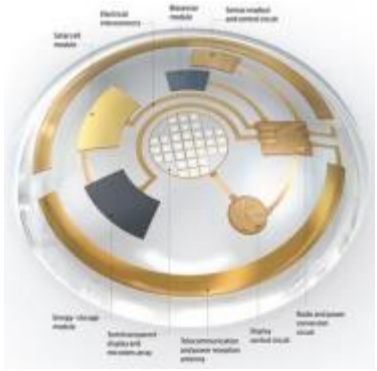
>1m km,

one minor accident,

occasional human intervention

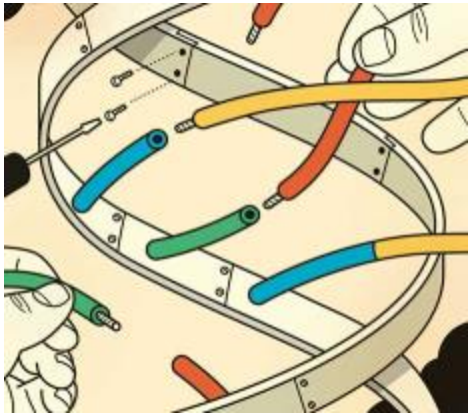


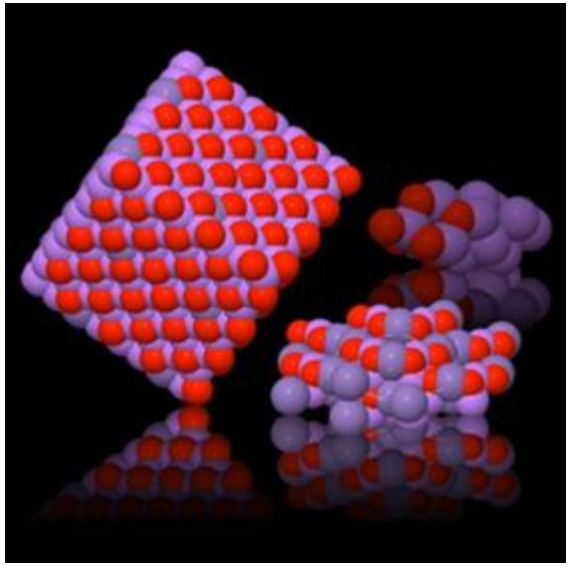
Augmented Reality

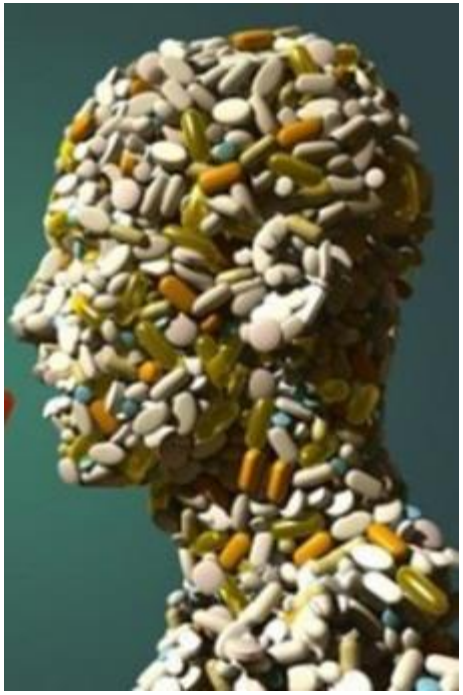


A lot more to come

- 3D printing
- Synthetic biology
- Brain enhancements
- Nanomaterials
- Etc.

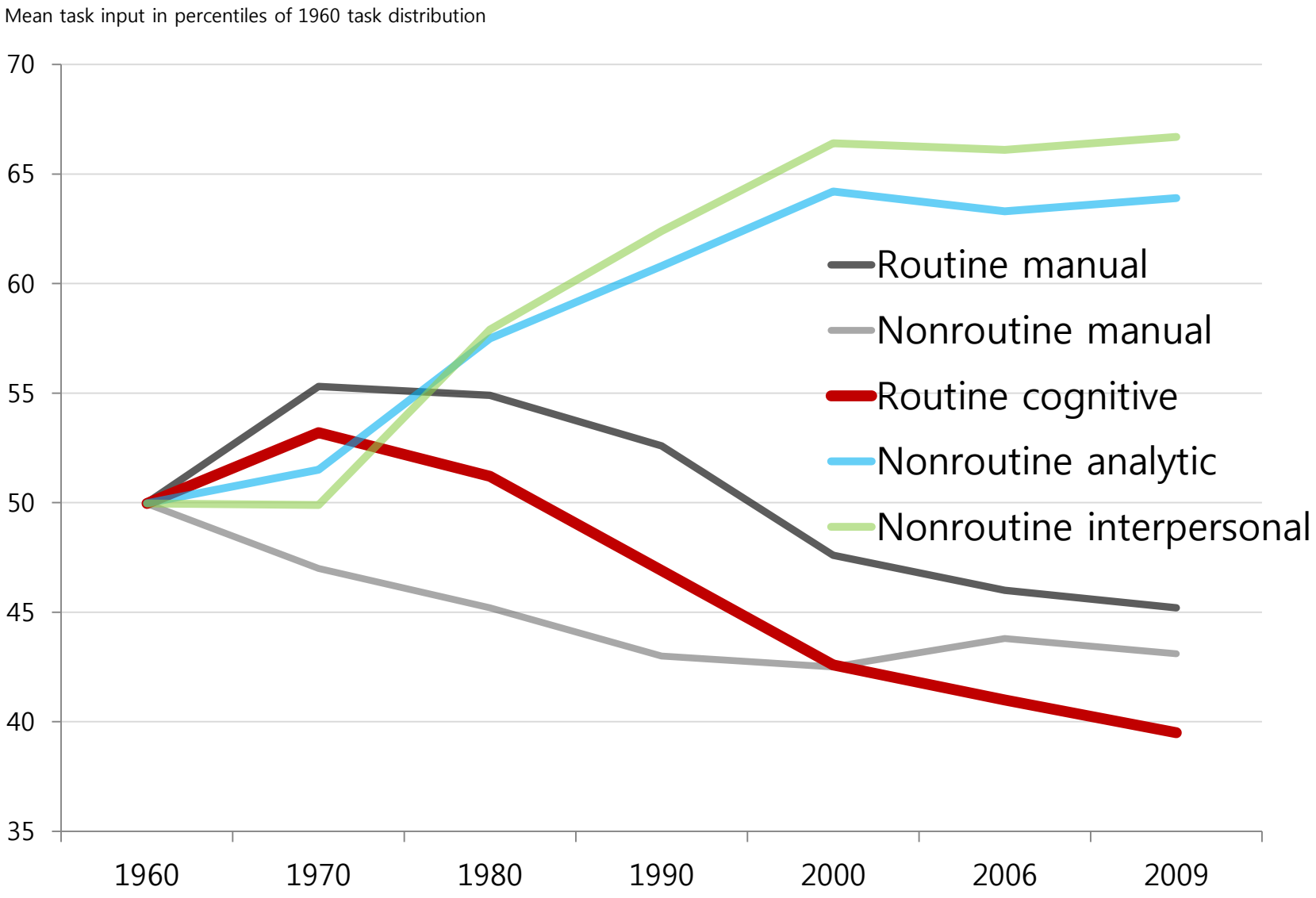






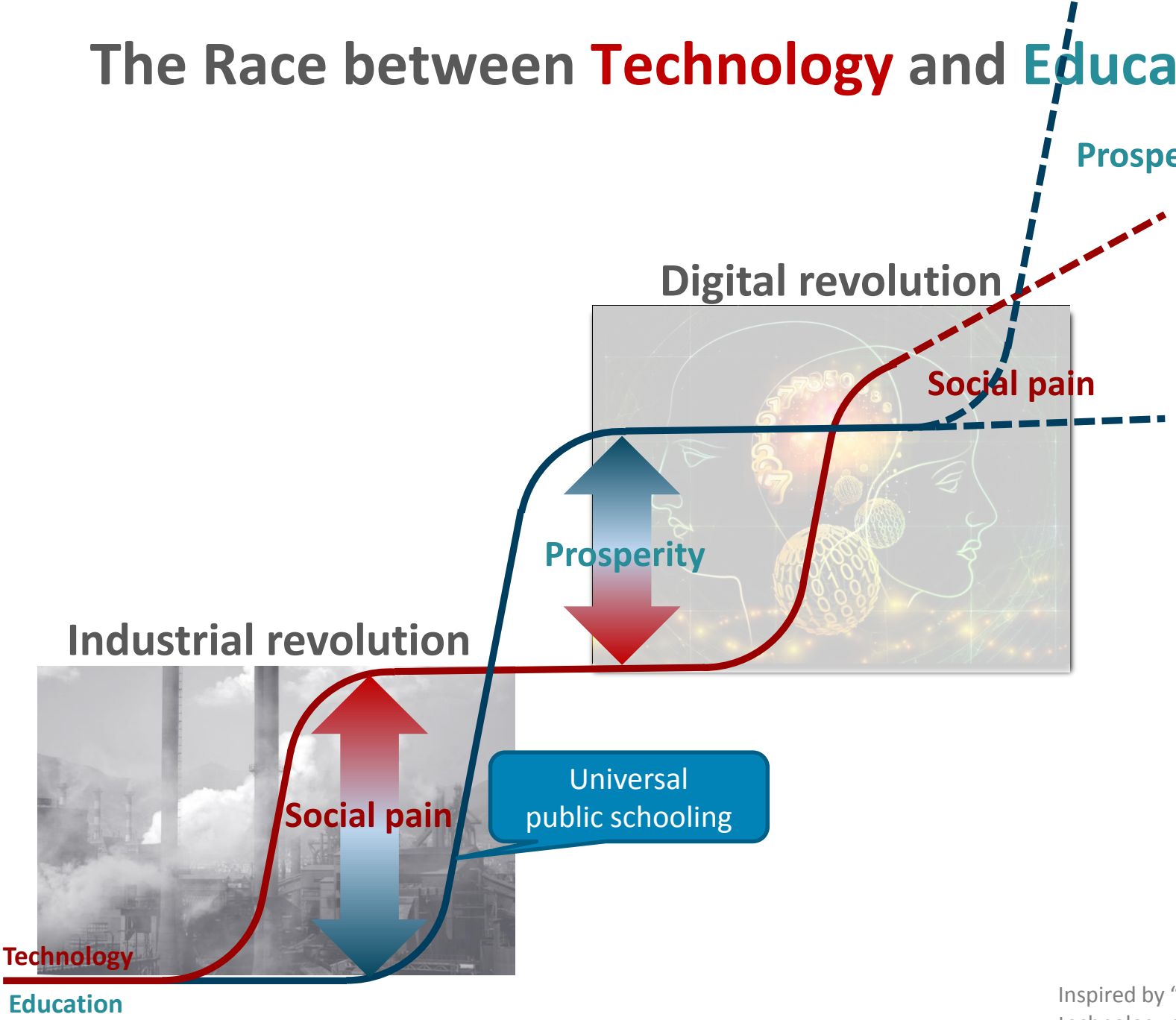
Changes in the demand for skills

Trends in different tasks in occupations (United States)



Source: Autor, David H. and Brendan M. Price. 2013. "The Changing Task Composition of the US Labor Market: An Update of Autor, Levy, and Murnane (2003)." MIT Mimeograph, June.

The Race between Technology and Education

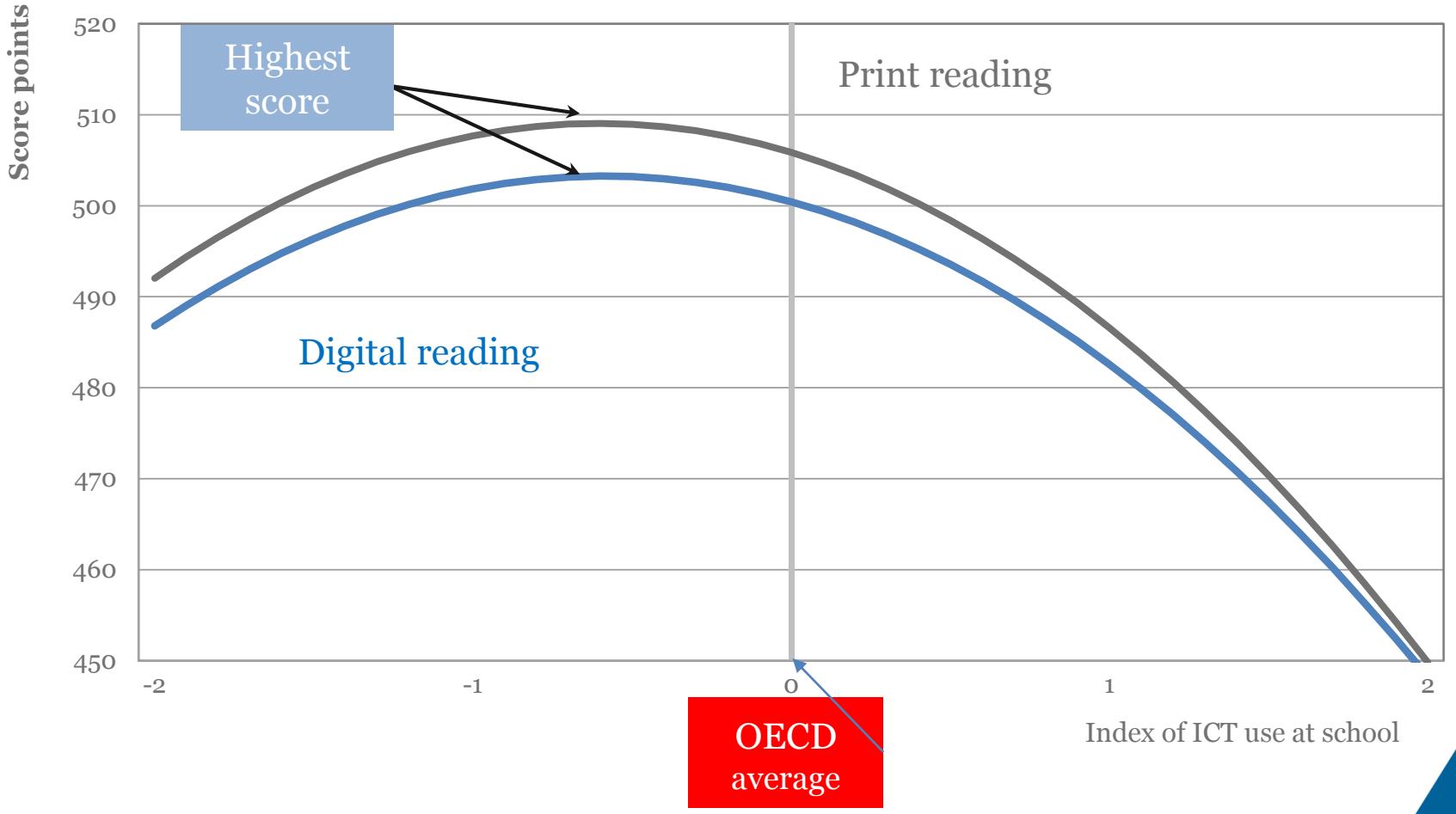


Inspired by "The race between technology and education"
Pr. Goldin & Katz (Harvard)

Technology can amplify innovative teaching

Students who use computers at school only moderately score the highest in reading

Relationship between students' skills in reading and computer use at school (average across OECD countries)



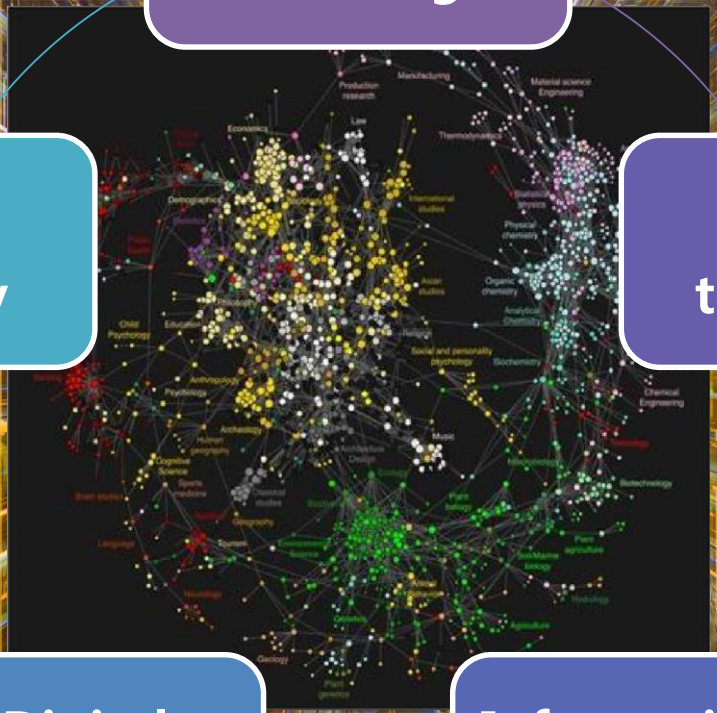
Source: Figure 6.5

Education in the past

Education now

Systems thinking

Global literacy



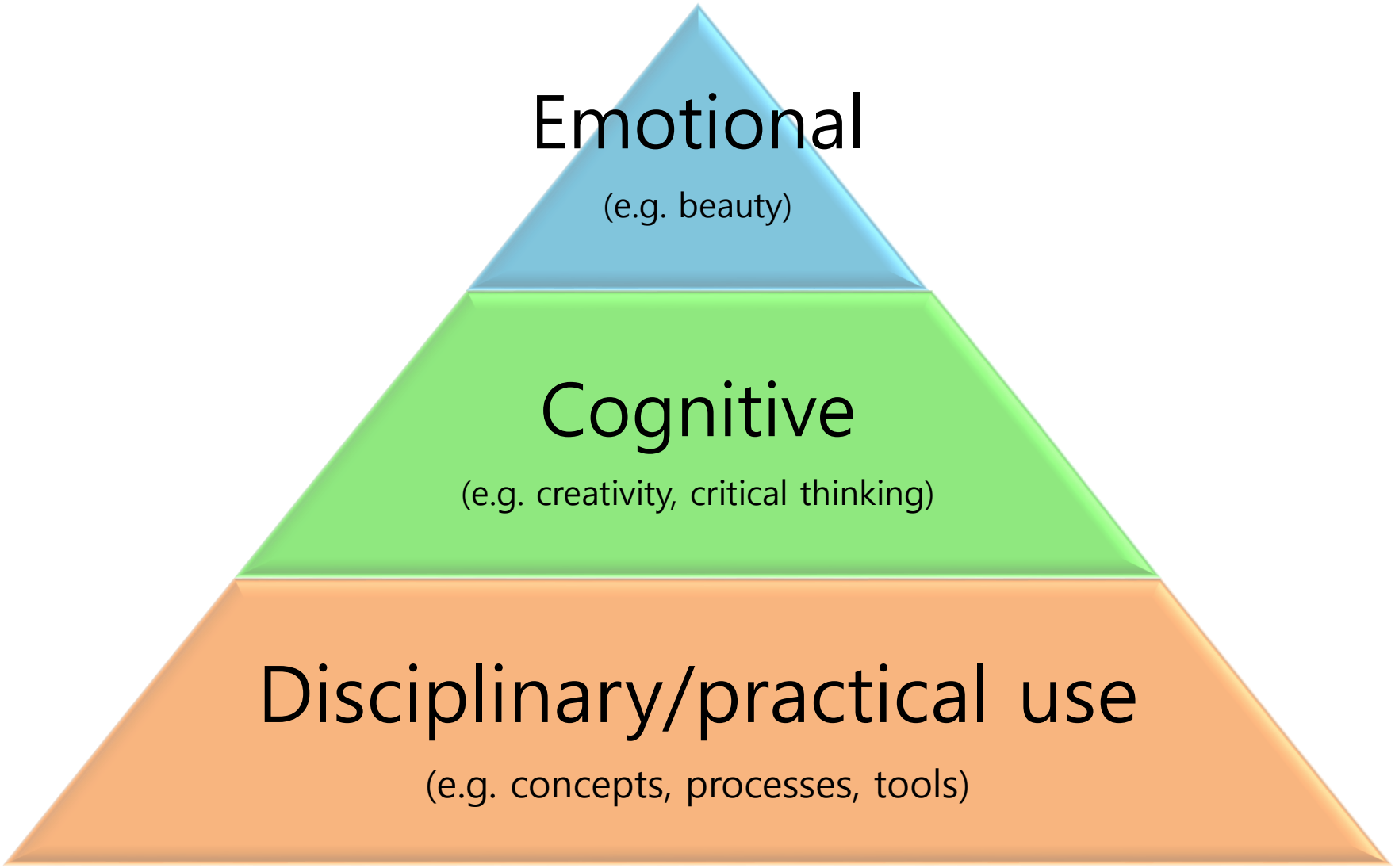
Design thinking

Digital literacy

Information literacy

Knowledge

Three aspects of value



Source: Center for curriculum redesign(

What knowledge, skills and character qualities do successful teachers require?

96% of teachers: My role as a teacher is to facilitate students own inquiry

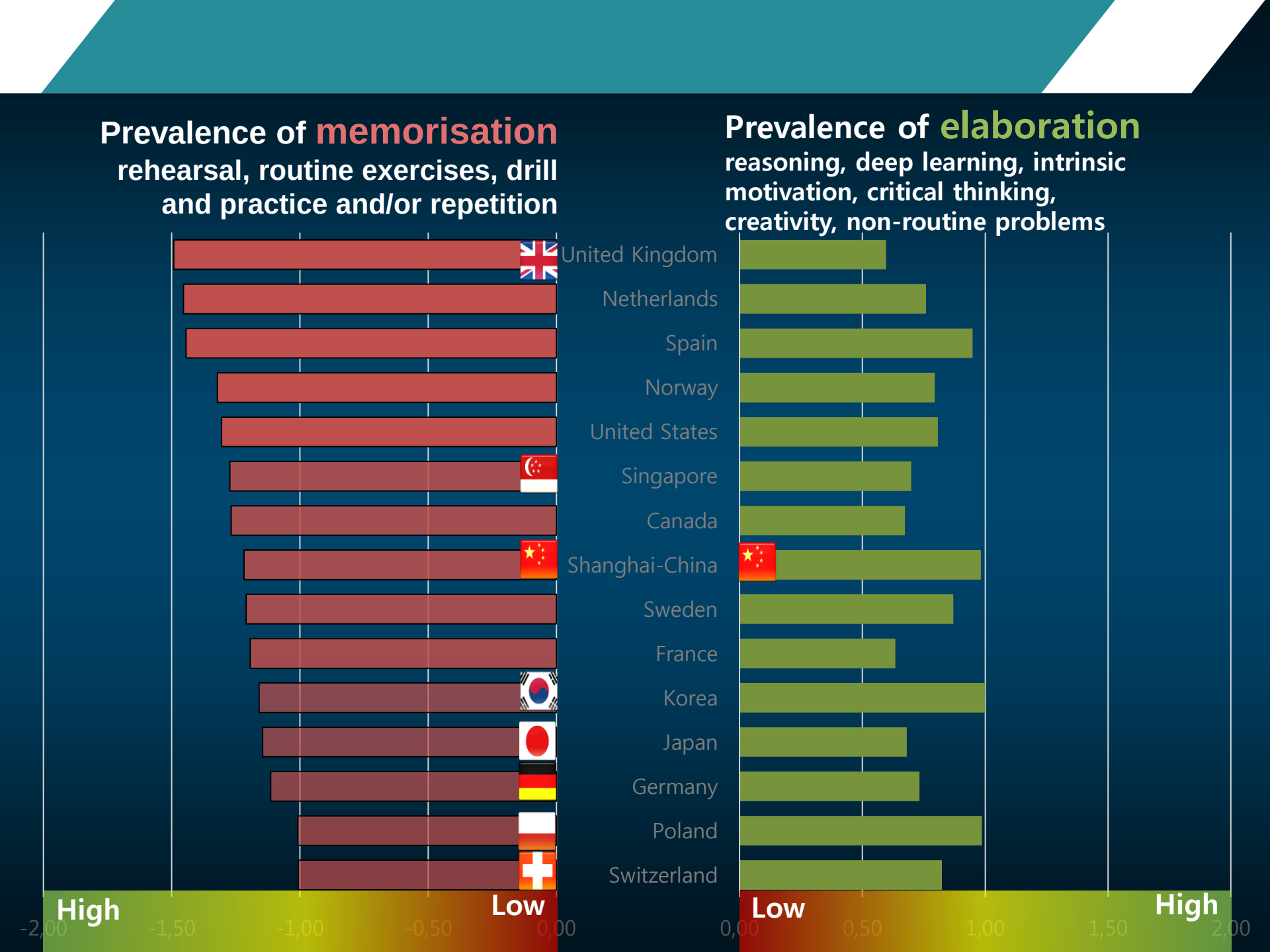
lge, skills
alities do
require?

86%: Students learn best
by findings solutions on their own

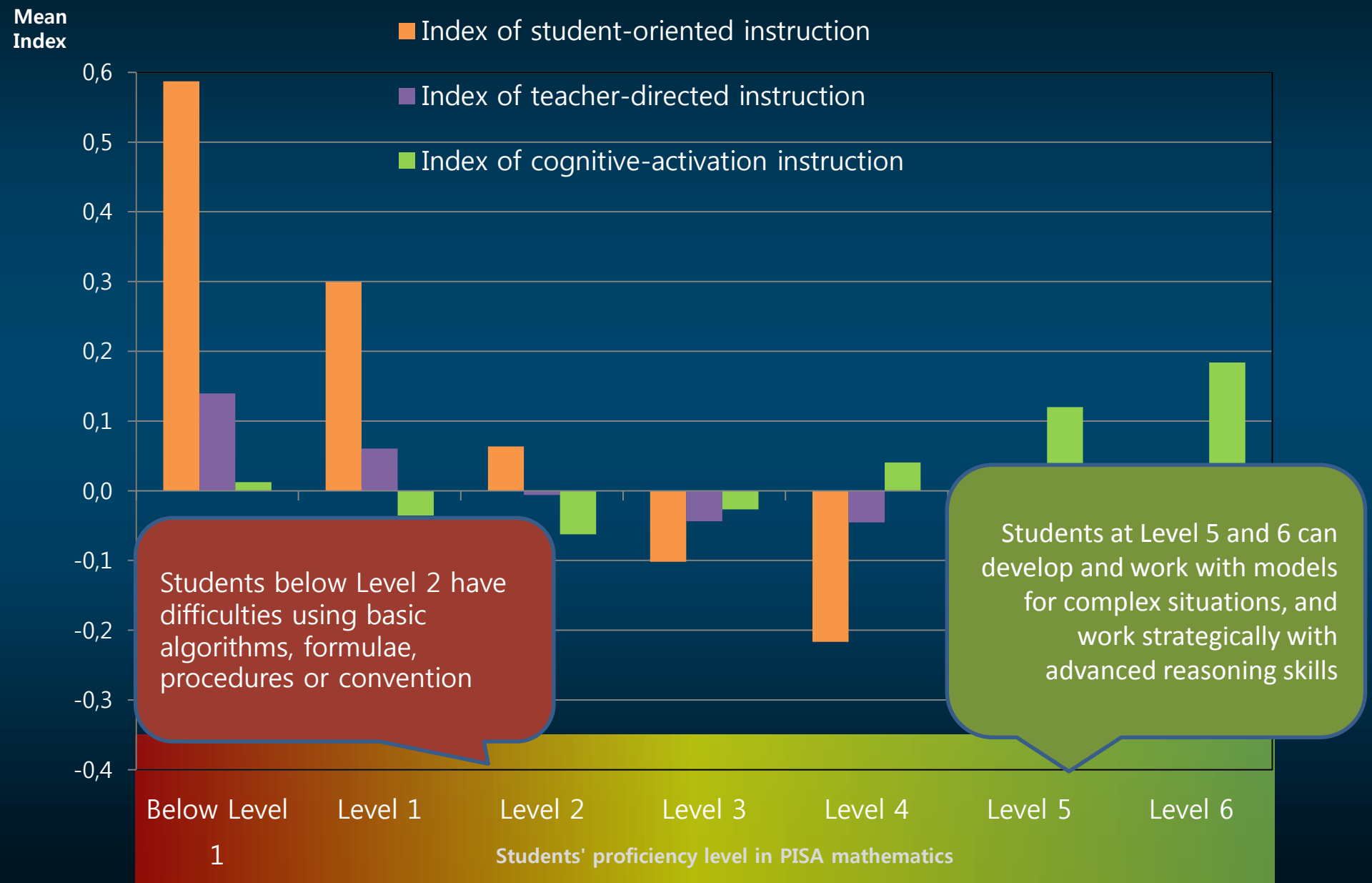
lge, skills
alities do
require?

74%: Thinking and reasoning is more important than curriculum content

lge, skills
alities do
require?

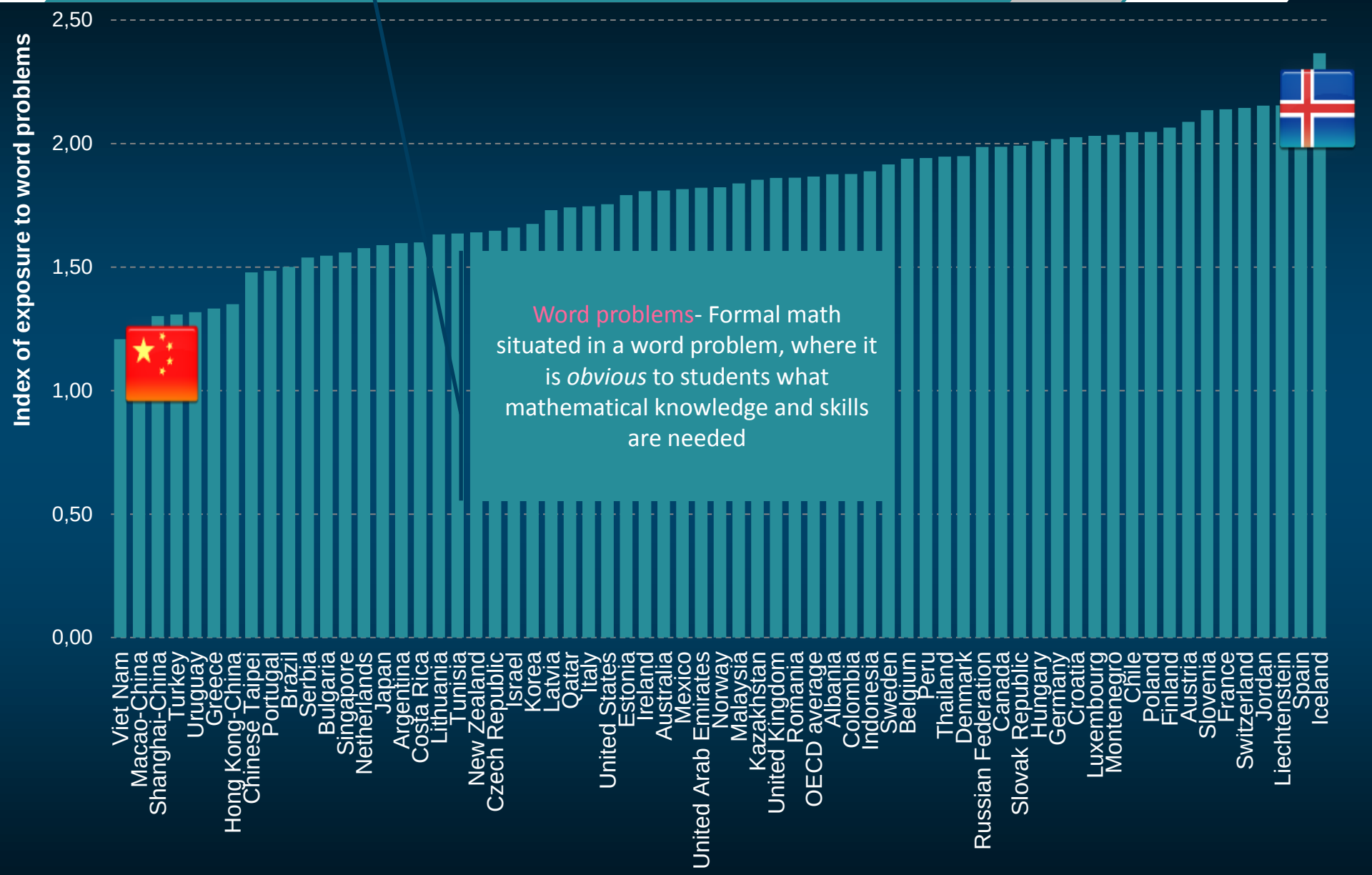

Prevalence of memorisation
rehearsal, routine exercises, drill and practice and/or repetition
Prevalence of elaboration
reasoning, deep learning, intrinsic motivation, critical thinking, creativity, non-routine problems
United Kingdom
Netherlands
Spain
Norway
United States
Singapore
Canada
Shanghai-China
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

Teaching strategies and learning outcomes



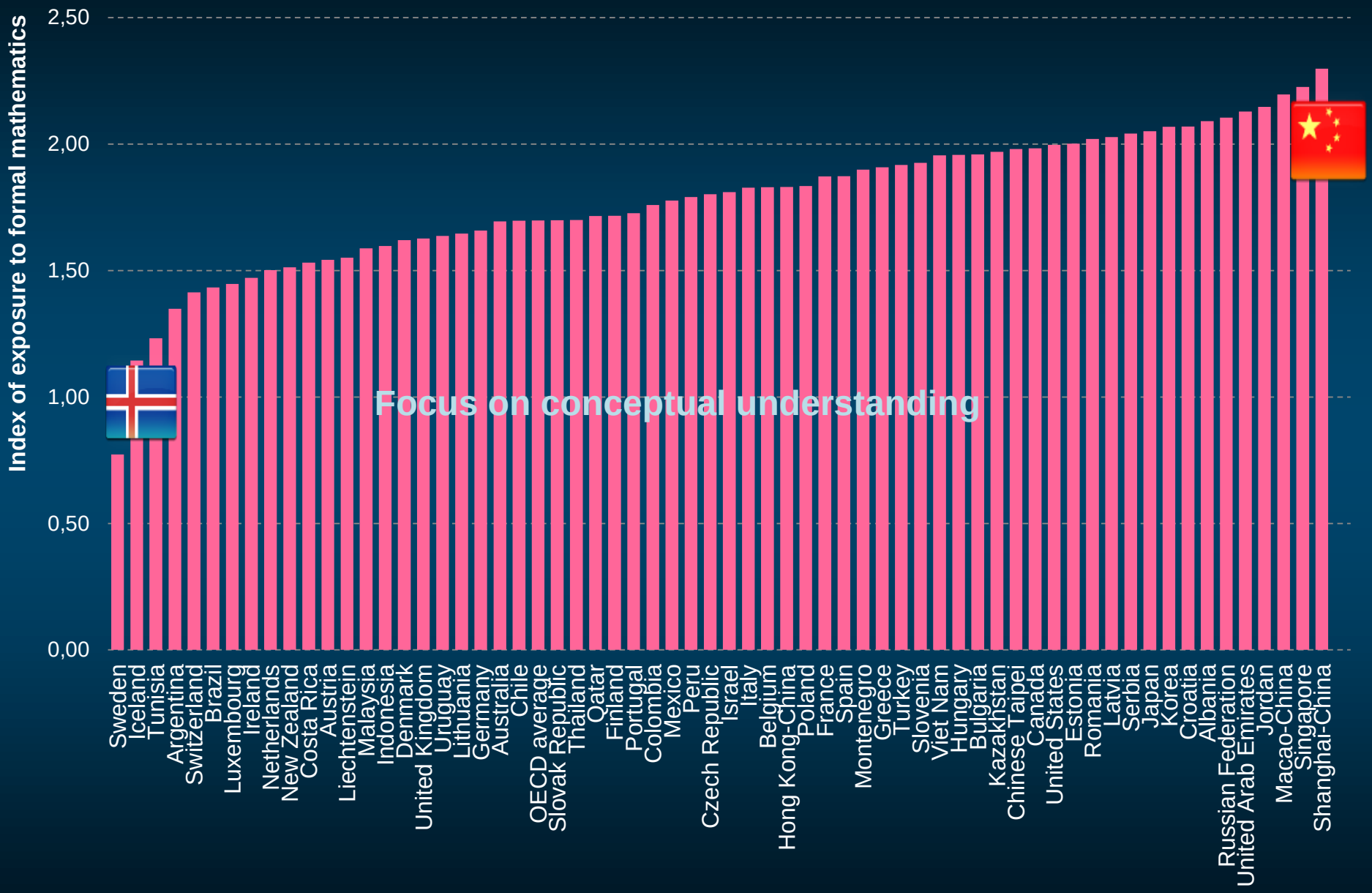
Focus on word problems

Fig I.3.1a



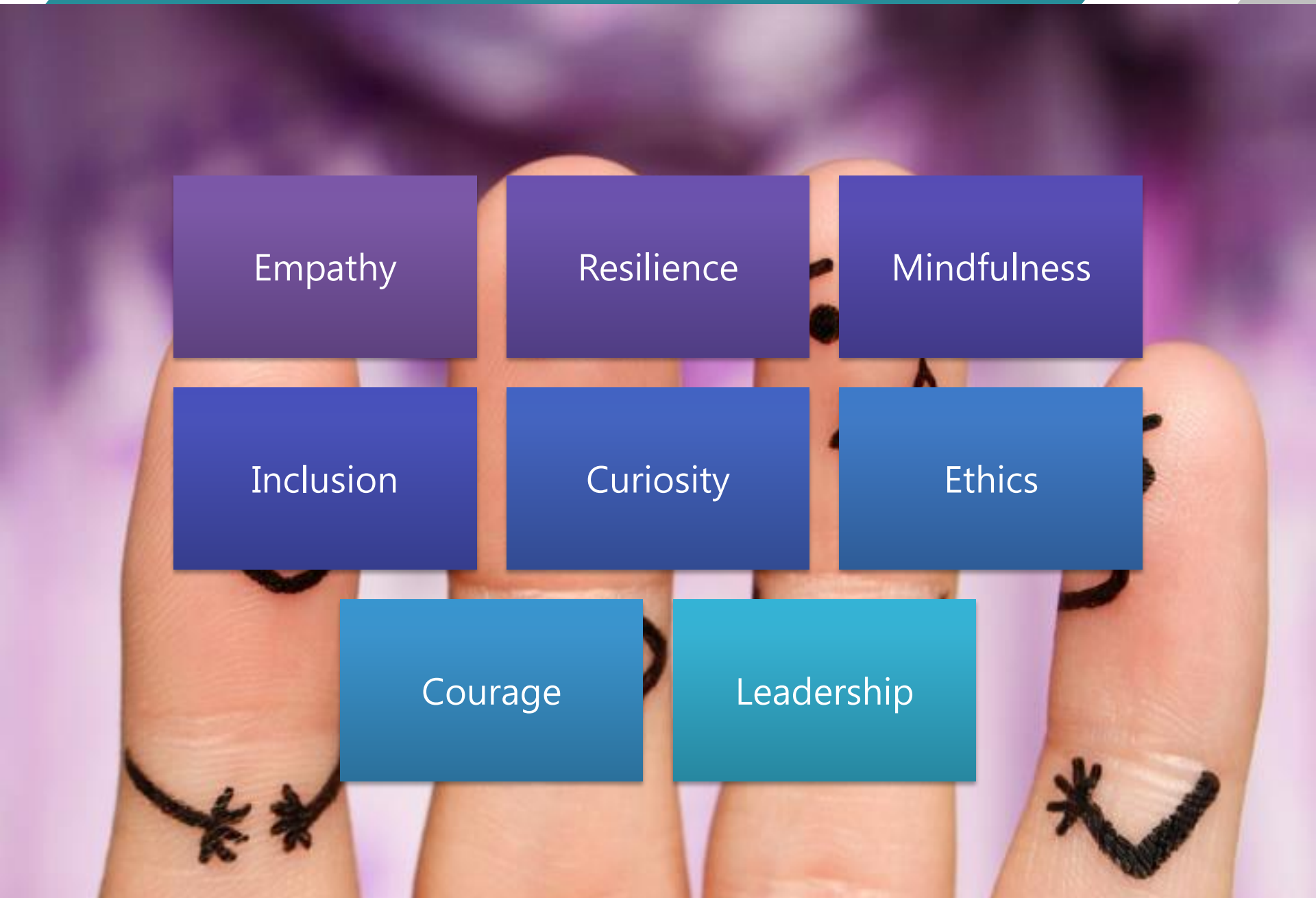
Focus on conceptual understanding

Fig I.3.1b



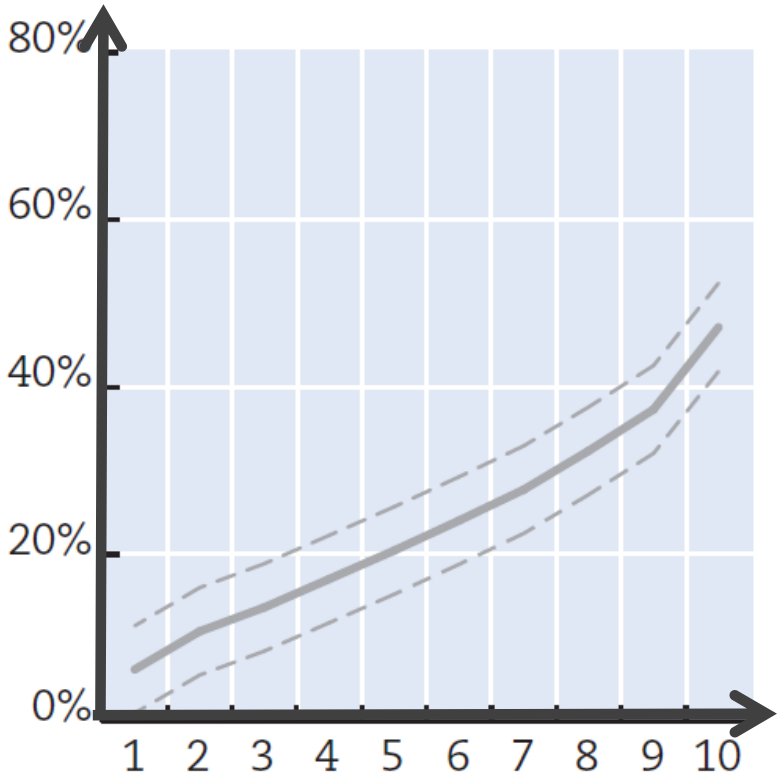

Creativity
Critical Thinking
Problem Solving
Innovation
Collaboration
Data Gathering
Communication

Can we make the differentiator of yesterday's elite schools the key for success in every school?

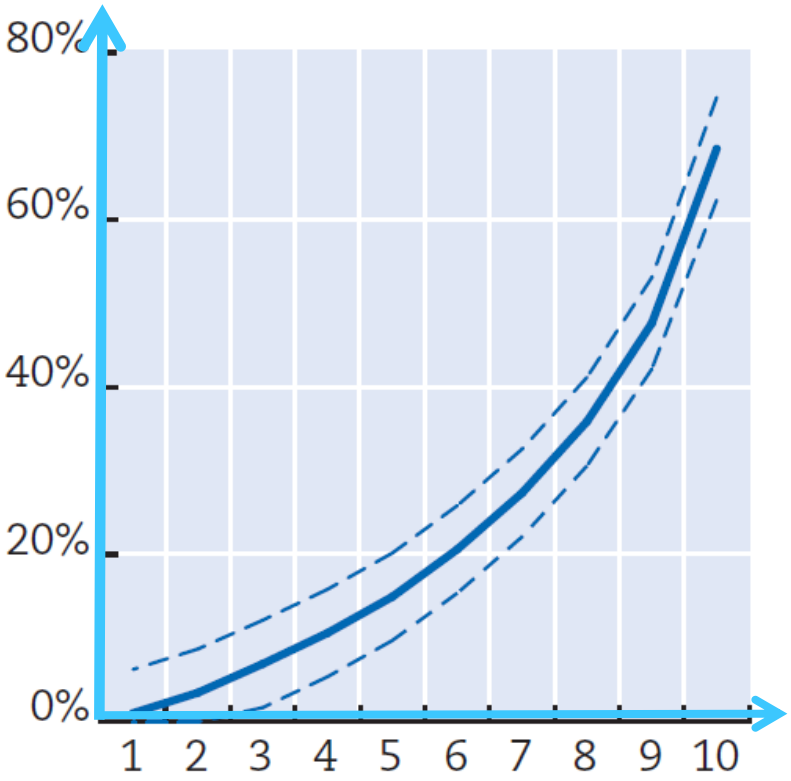


College Completion (USA)

Source: NLS Y



Cognitive skills deciles

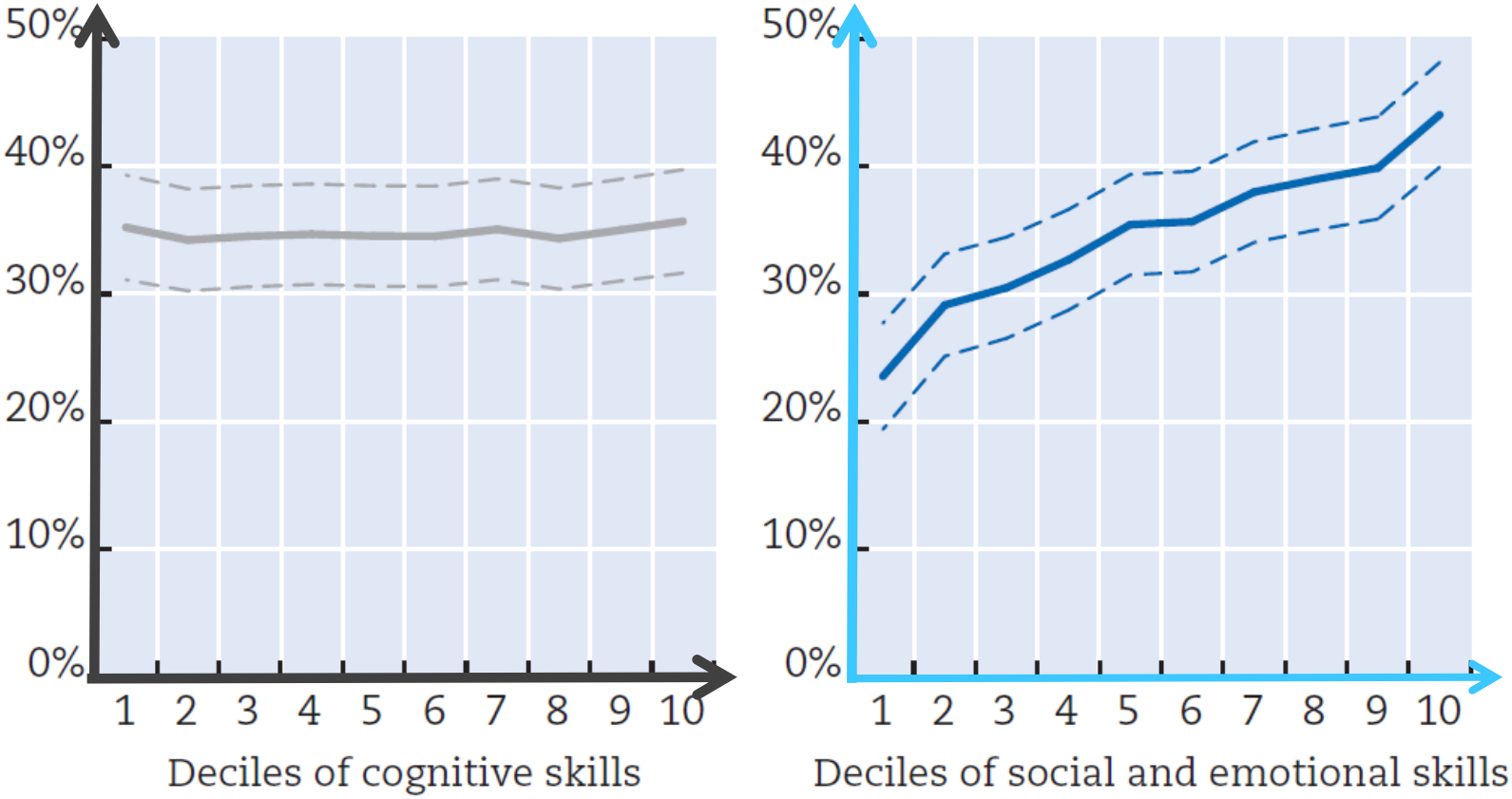


Social & emotional skills deciles

OECD (2015)

Happy at 20 (New Zealand)

Source: CC



OECD (2015)

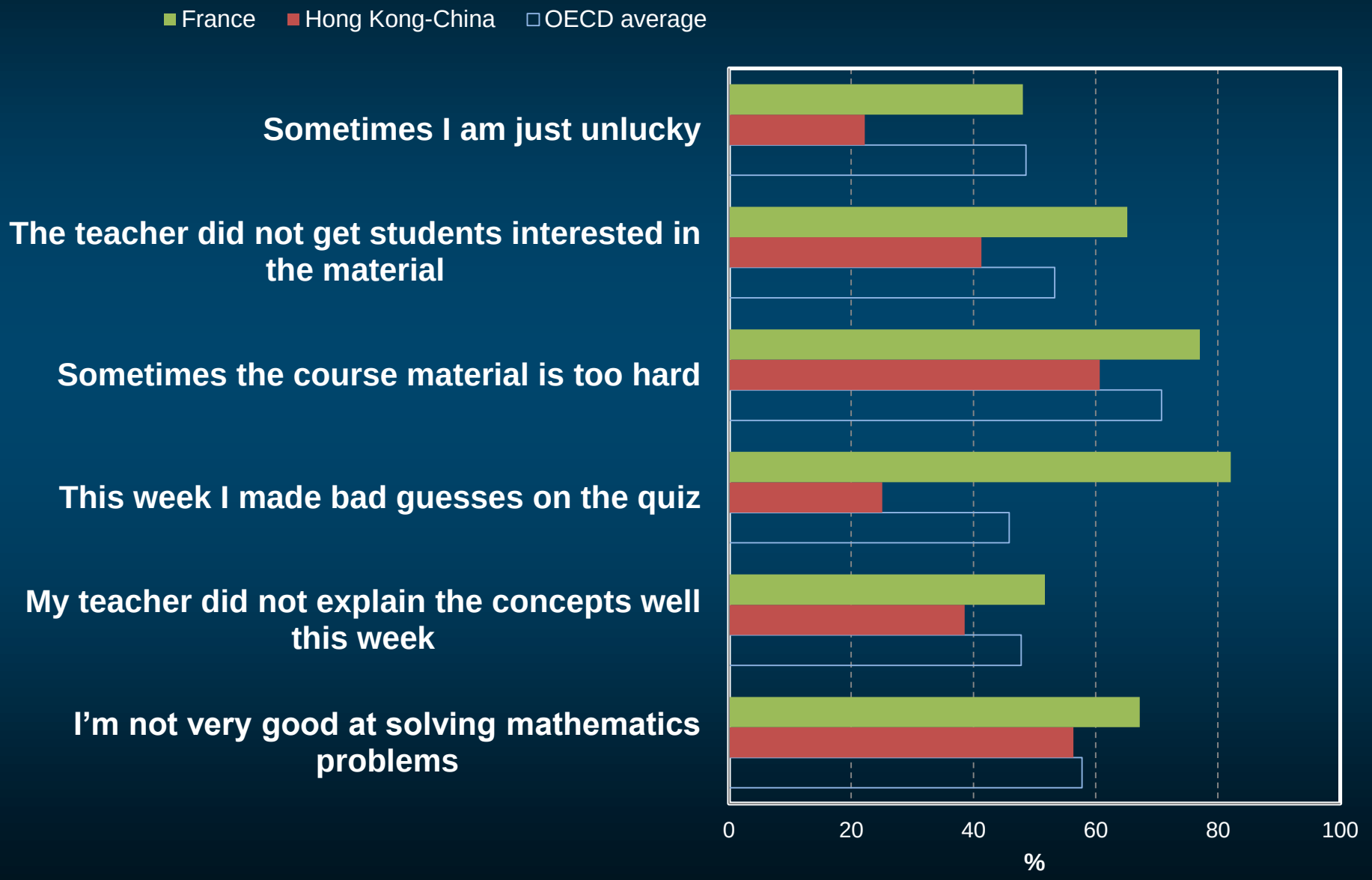
Metacognition

Countries where students have stronger beliefs in their abilities perform better in mathematics

Fig III.4.5

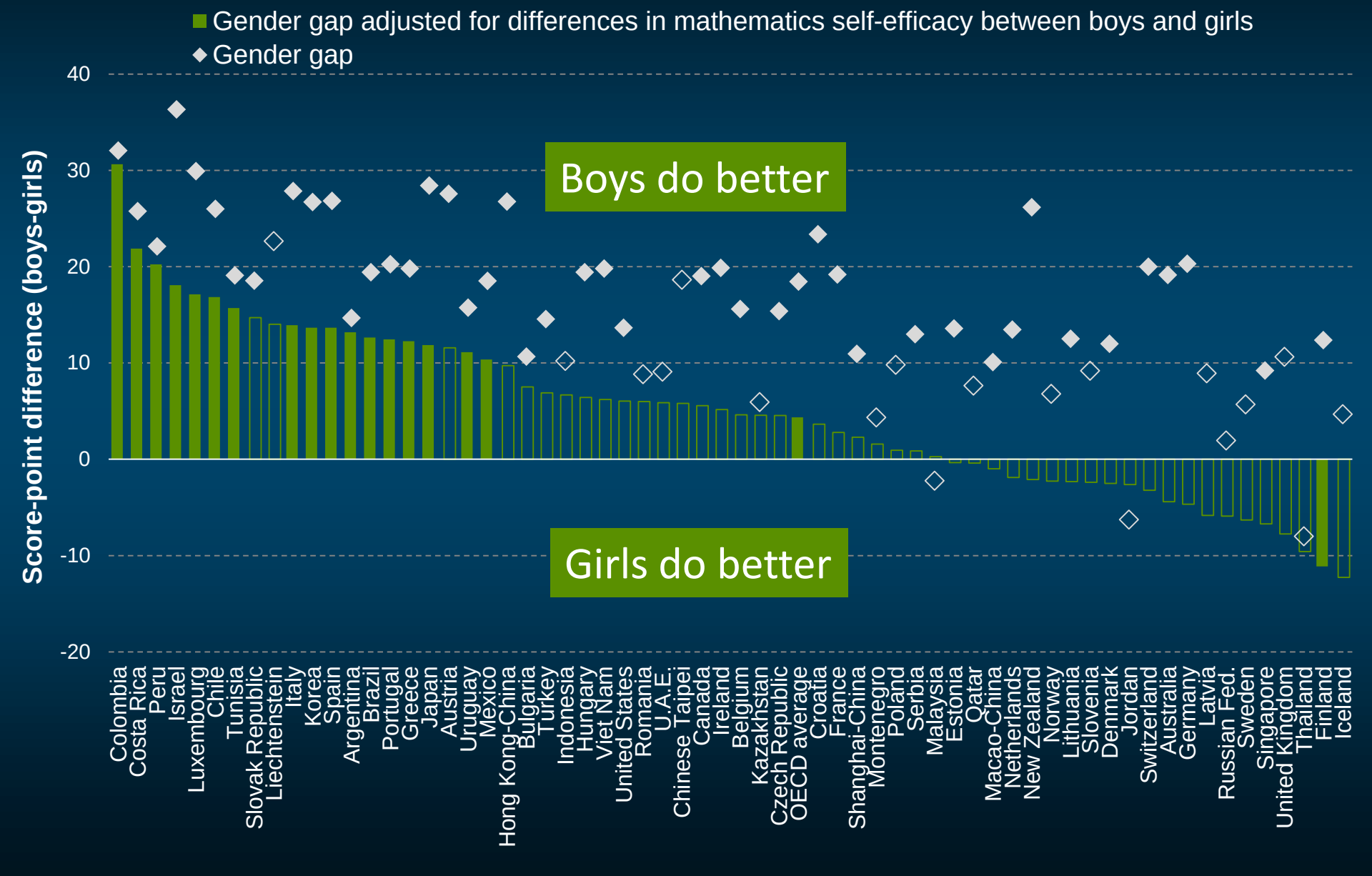
Perceived self-responsibility for failure in mathematics

Percentage of students who reported "agree" or "strongly agree" with the following statements:



Greater self-efficacy among girls could shrink the gender gap in mathematics performance, particularly among the highest-performing students

Gender gap among the highest-achieving students (90th percentile)



Citizens expect that we…

Better anticipate the evolution of the demand for 21st century skills and better integrate the world of work and learning

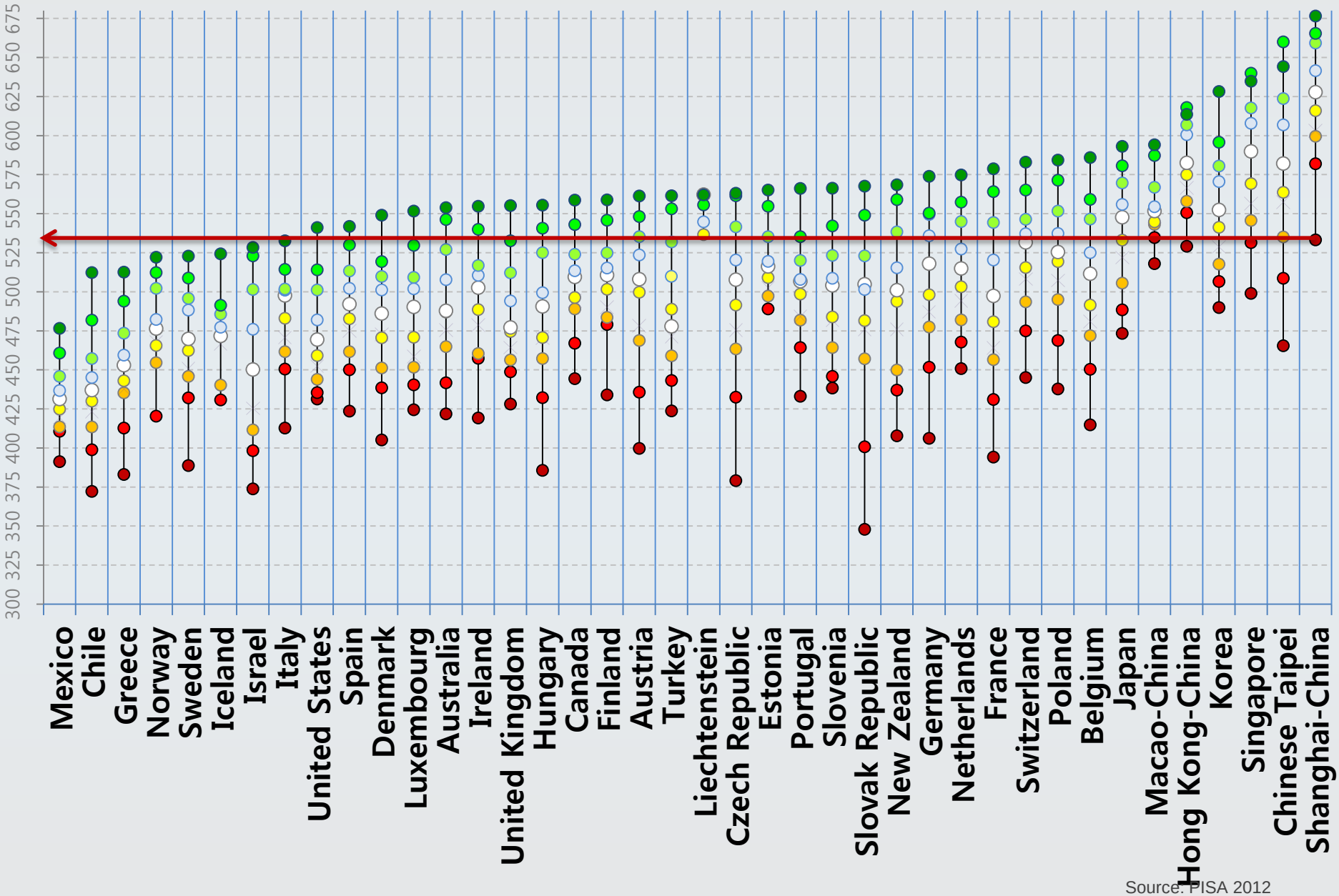
Leverage the potential of all learners

…build learning systems that…

Find more innovative solutions to what we learn, how we learn, when we learn and where we learn

Advance from an industrial towards a professional work organisation

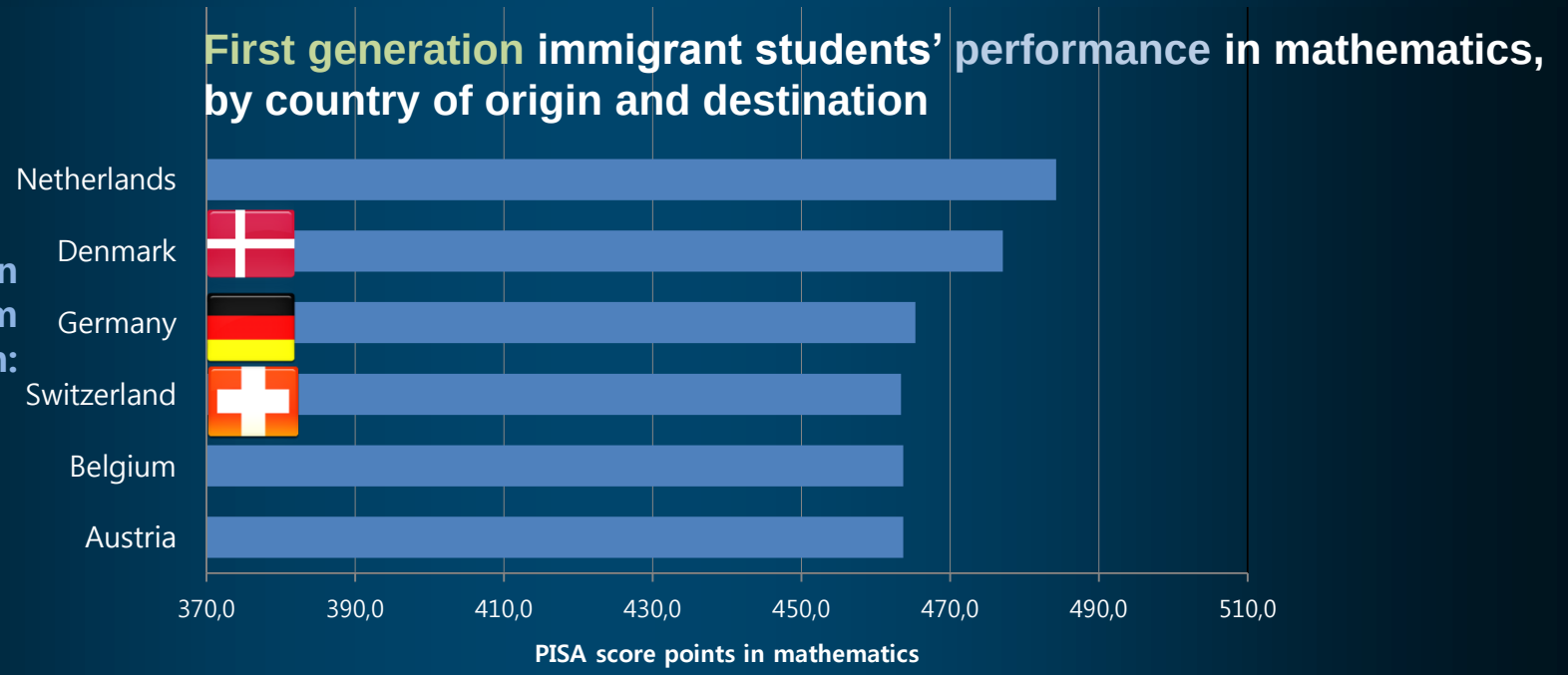
PISA mathematics performance by decile of social background



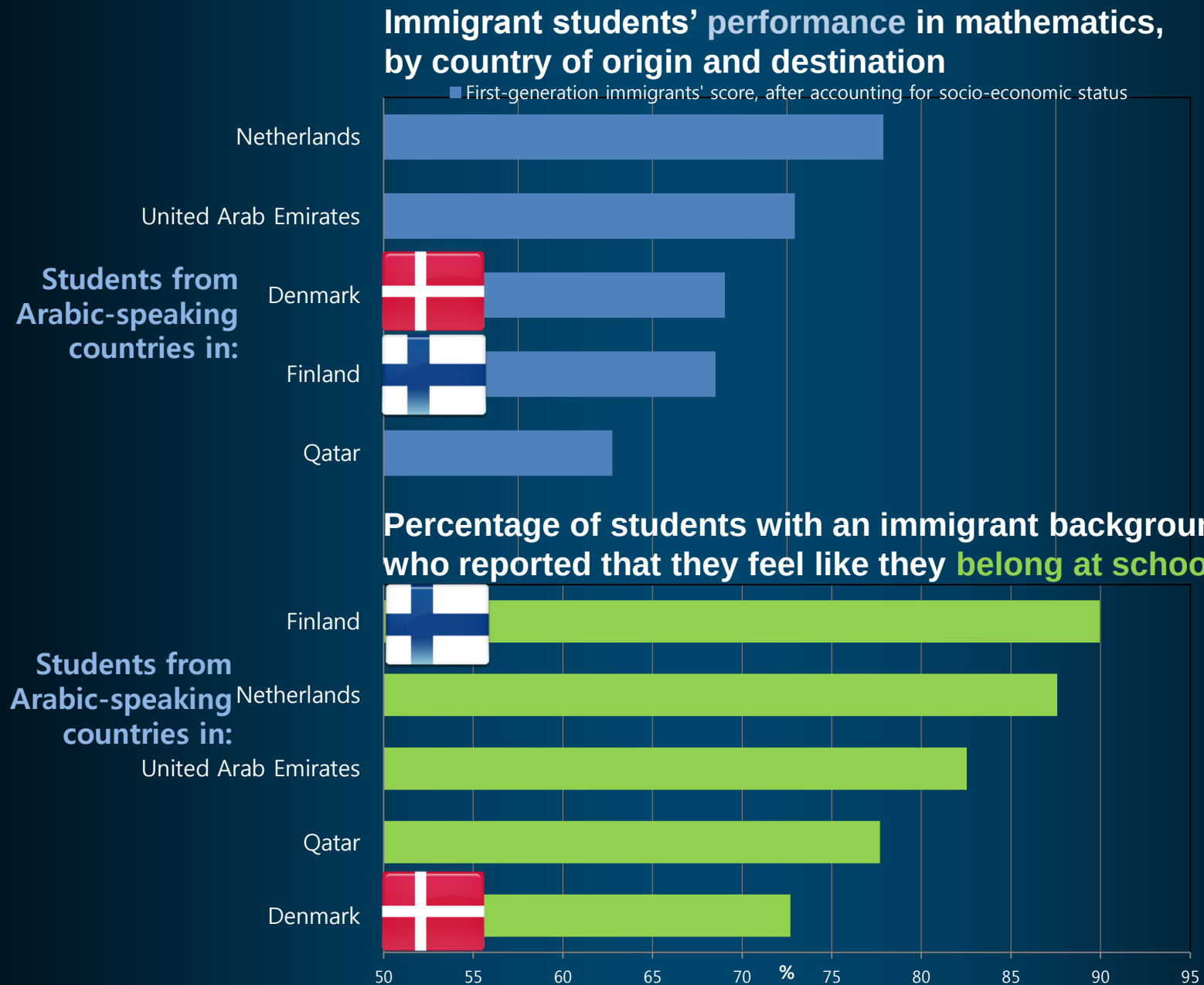
Source: PISA 2012

Country of origin and country of destination

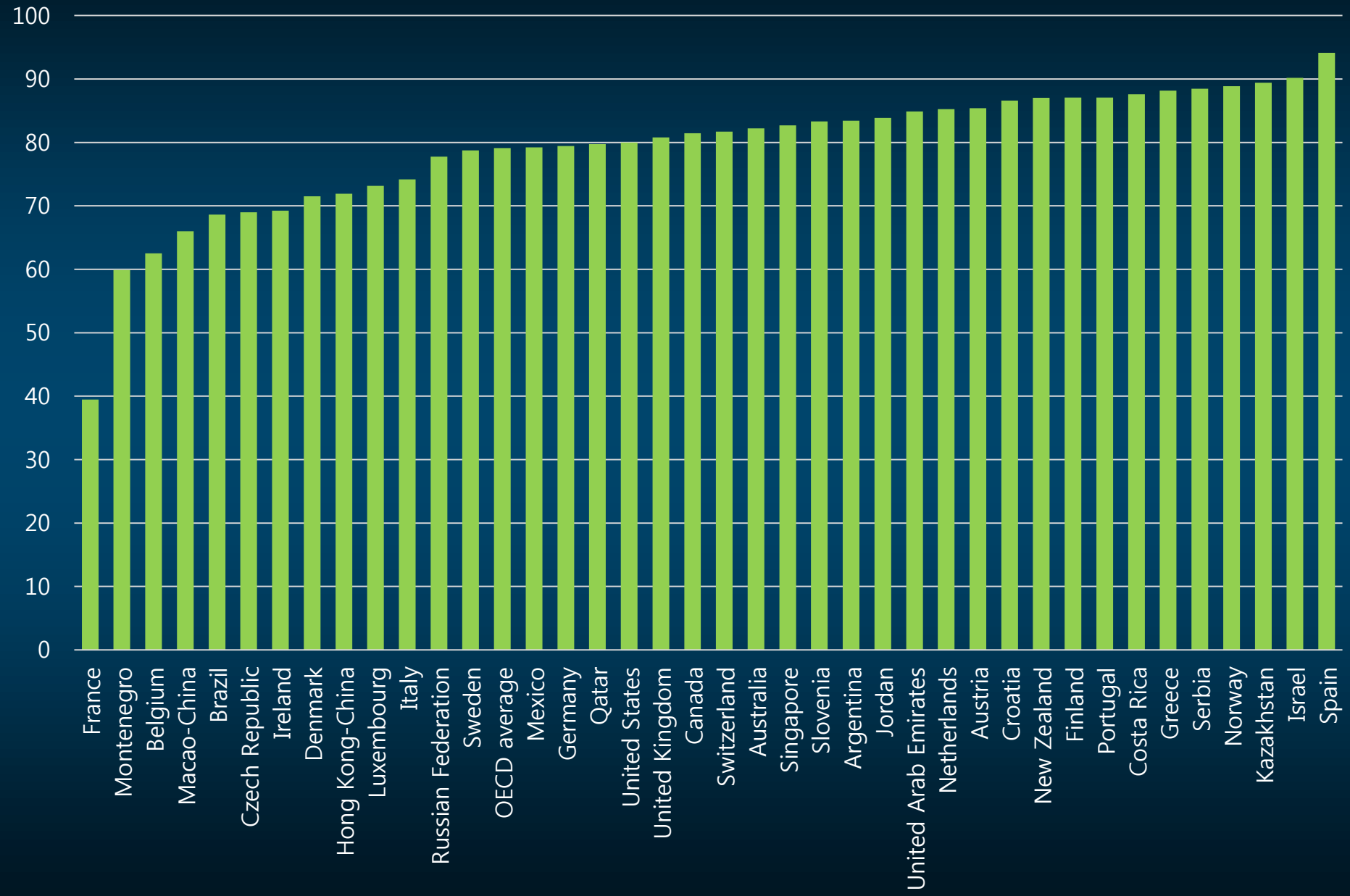
1st generation students from Turkey in:



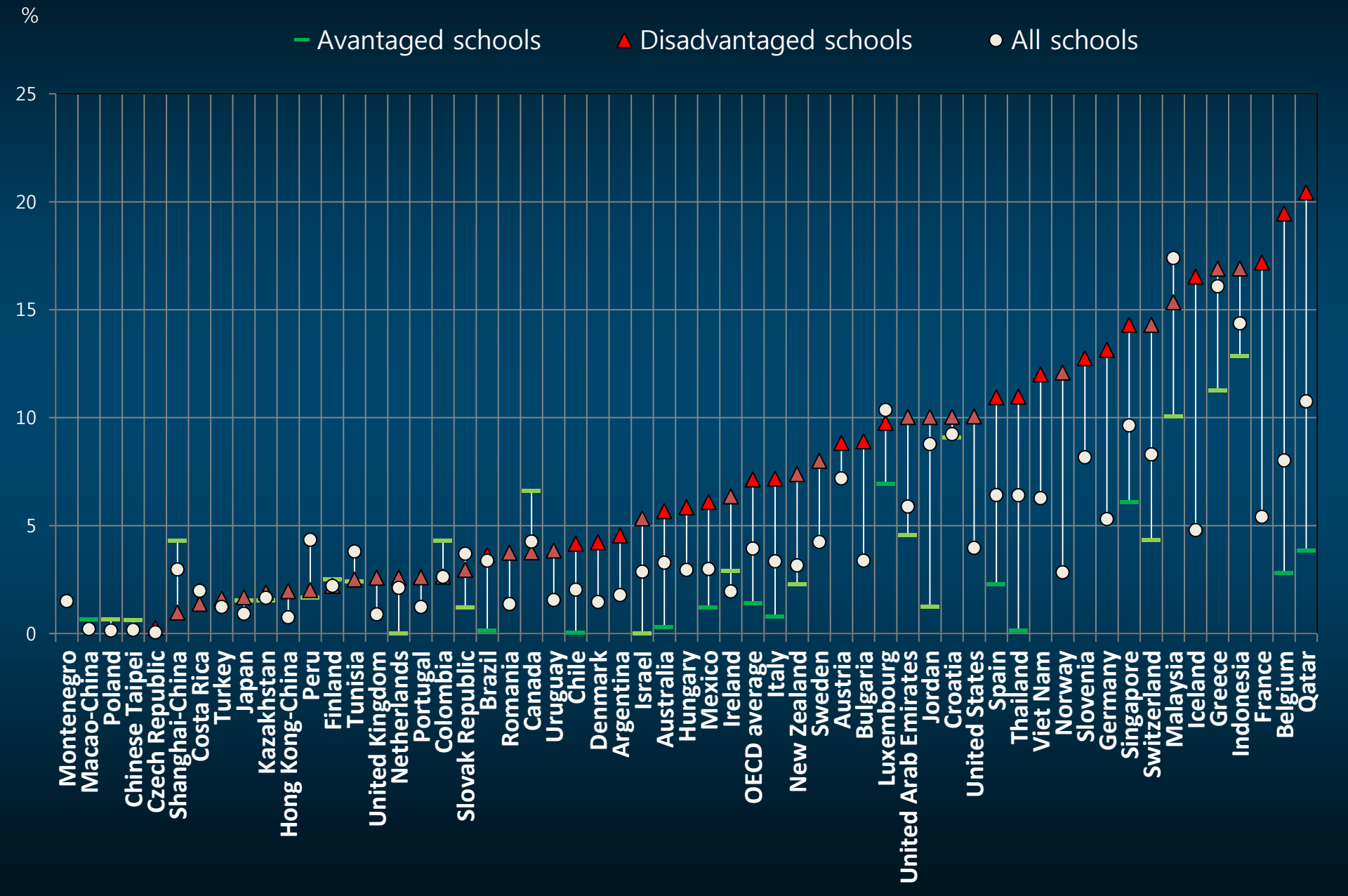
Country of origin and country of destination



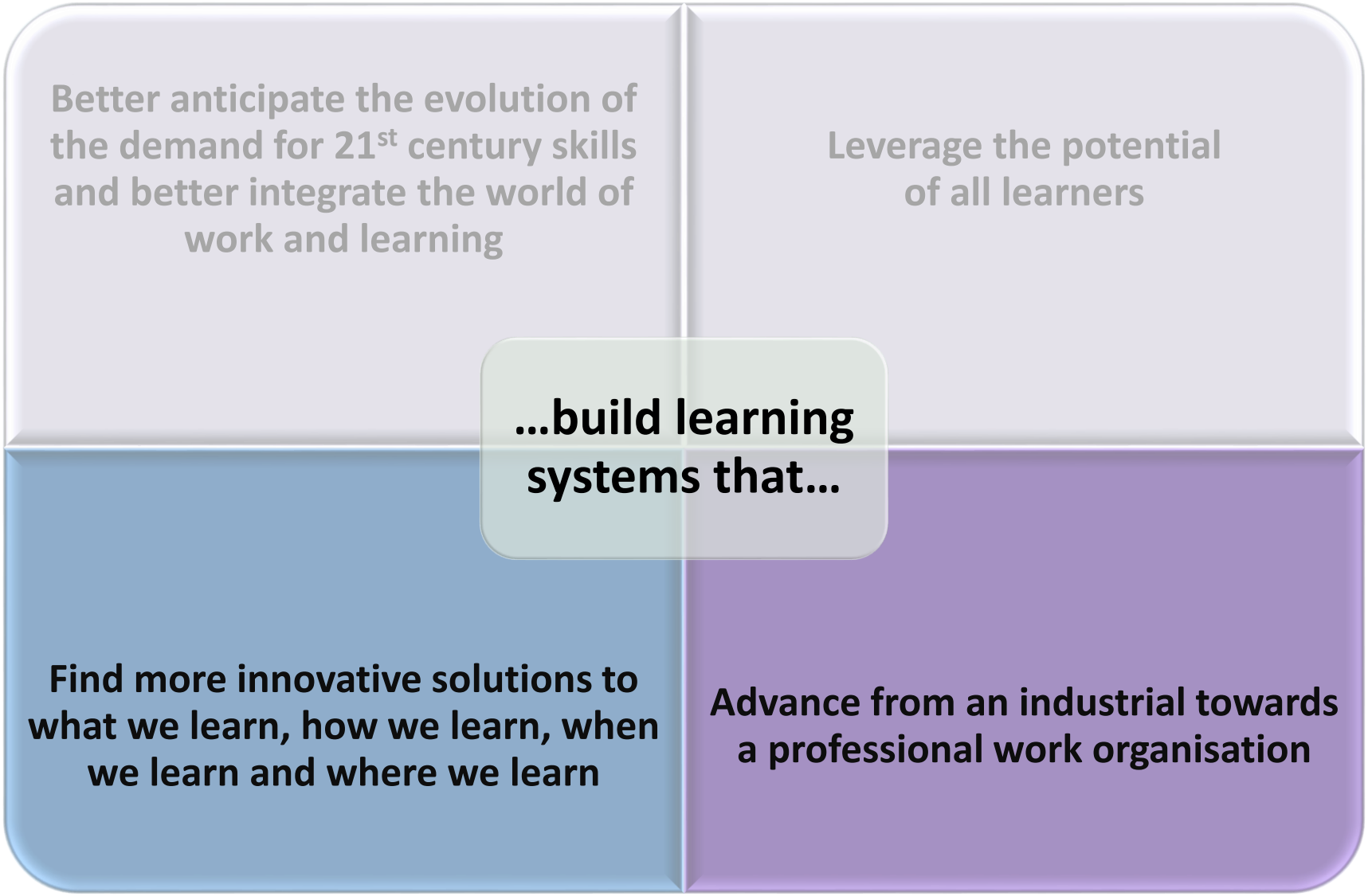
Percentage of second-generation immigrant students who reported that they feel like they belong at school



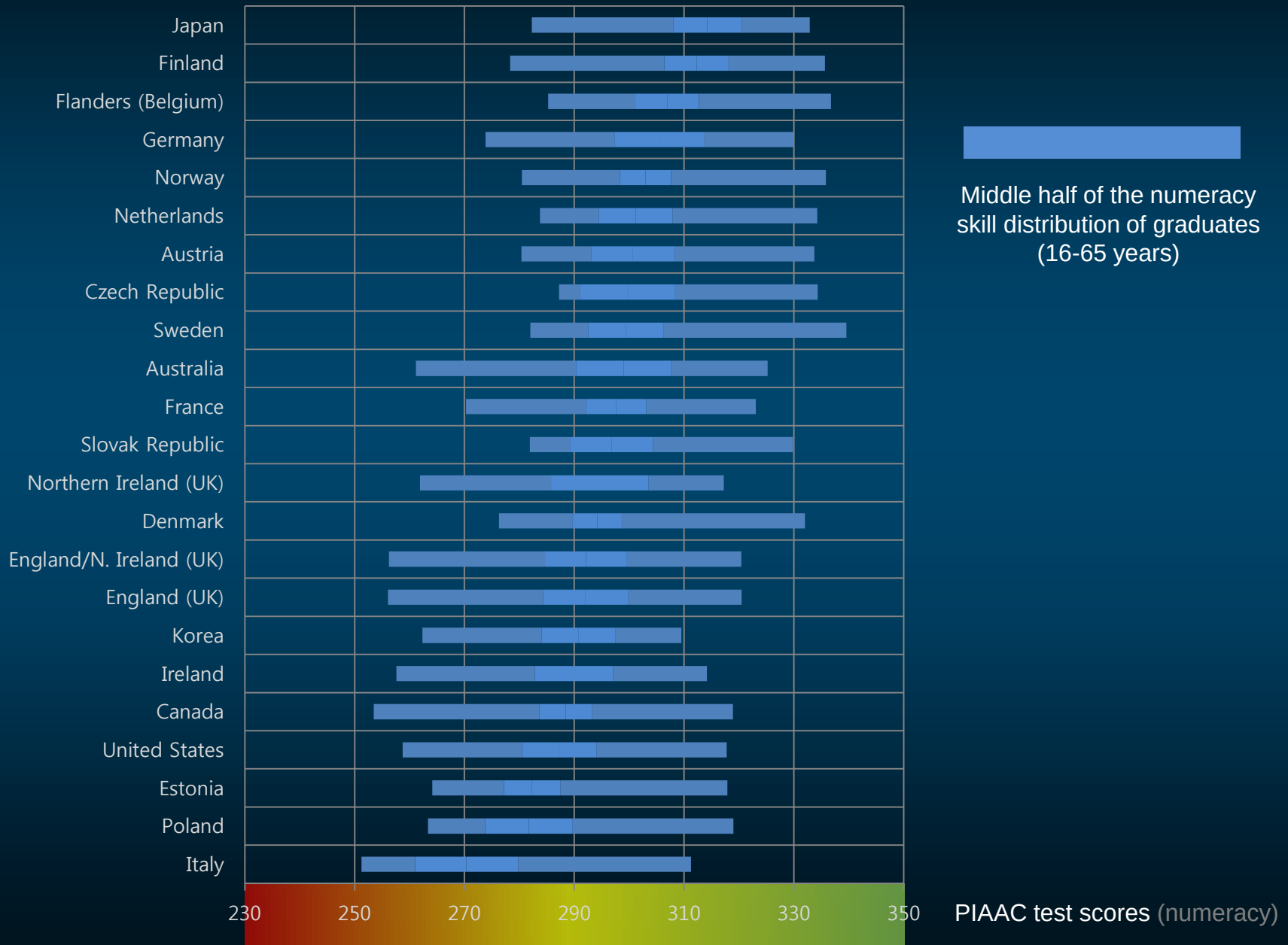
Percentage of students in schools where the principal reports that ethnic diversity hinders learning



Citizens expect that we…



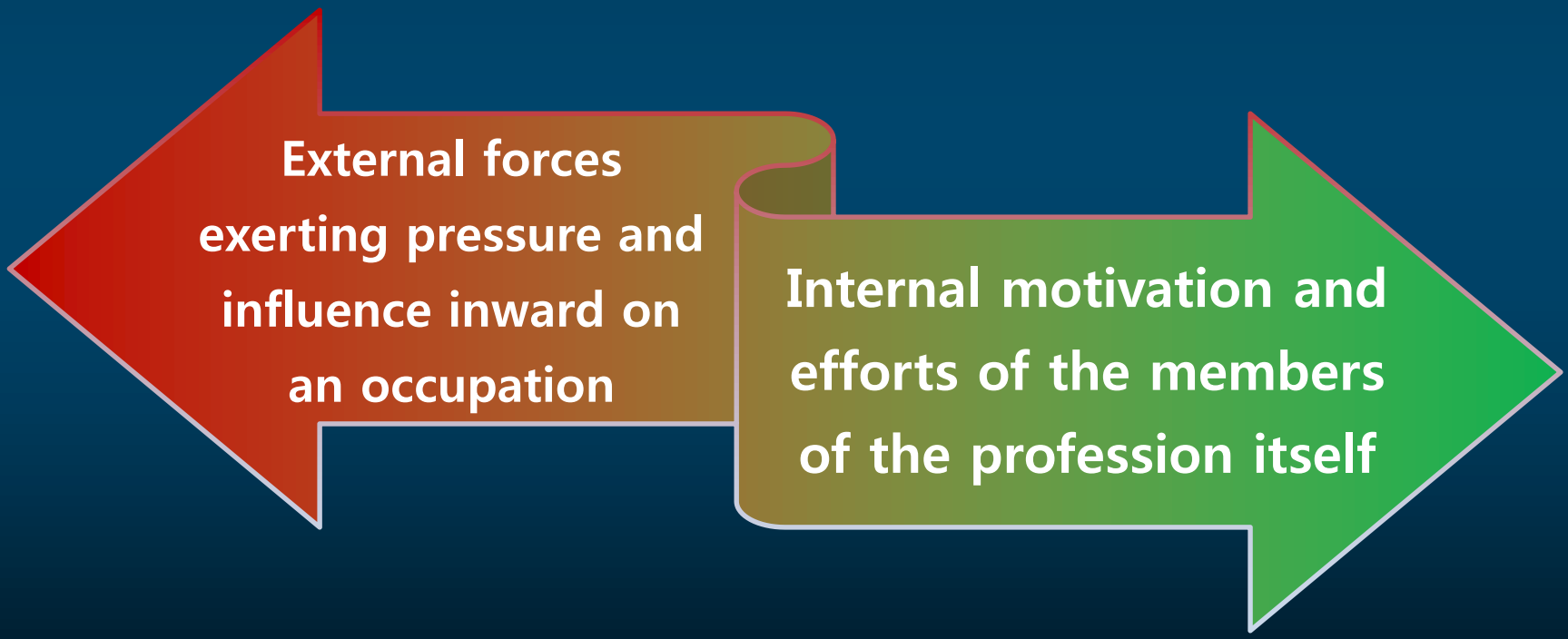
Teacher skills and graduate skills (numeracy)



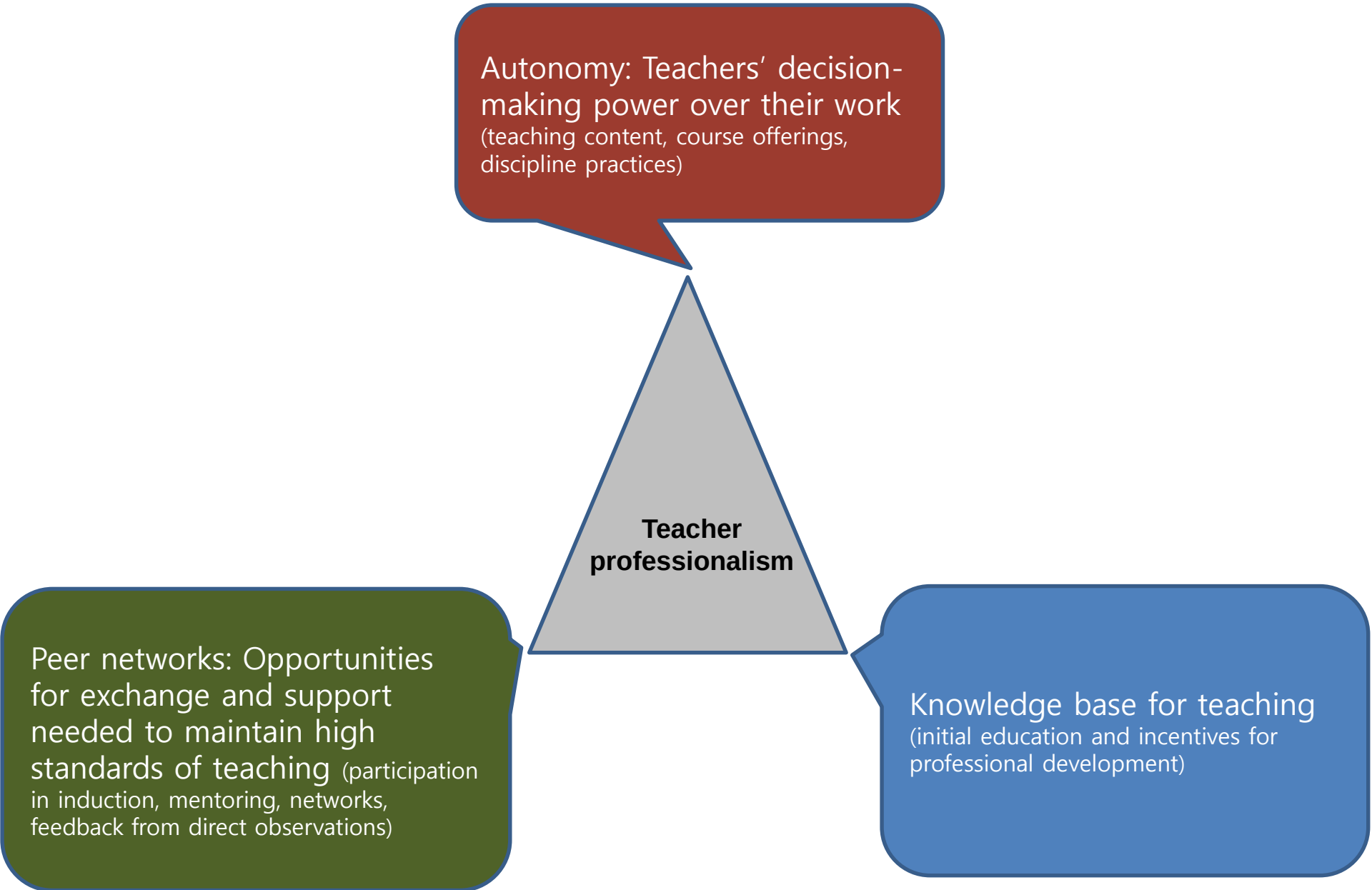
Teacher skills and graduate skills (numeracy)

Professionalism

Professionalism is the level of autonomy and internal regulation exercised by members of an occupation in providing services to society

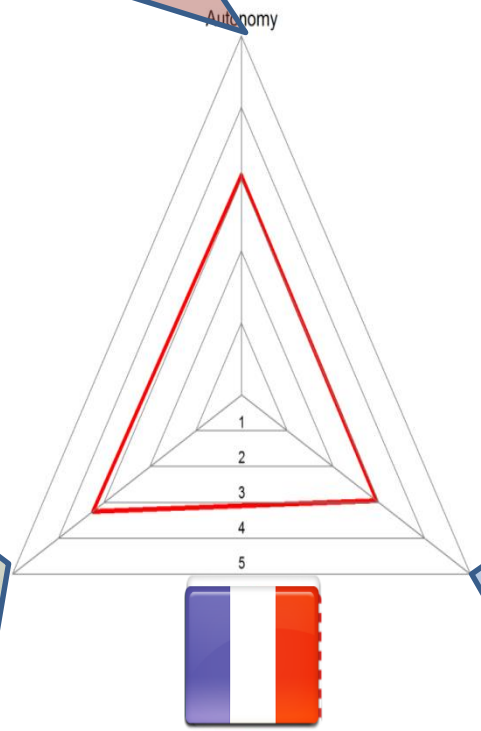


Policy levers to teacher professionalism



Teacher professionalism

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

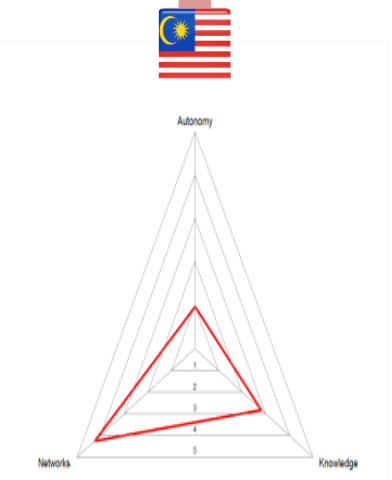


Peer networks: Opportunities for exchange and support needed to maintain high standards of teaching (participation in induction, mentoring, networks, feedback from direct observations)

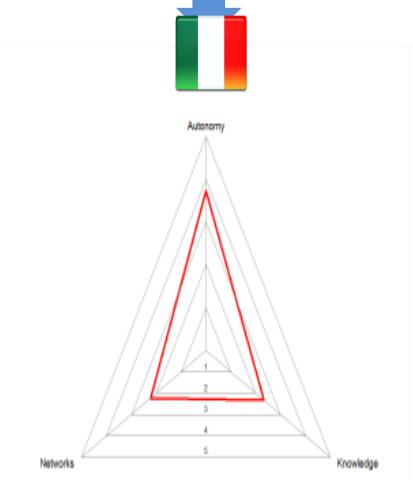
Knowledge base for teaching (initial education and incentives for professional development)

Teacher professionalism

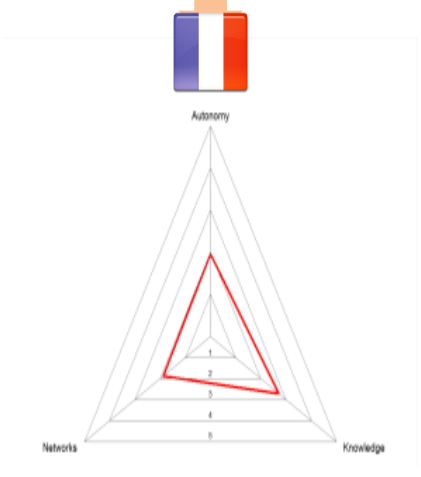
High Peer Networks/ Low Autonomy



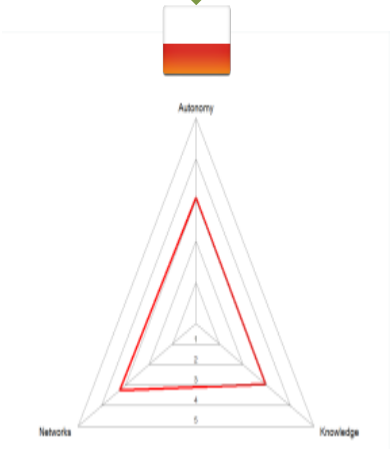
High Autonomy



Knowledge Emphasis

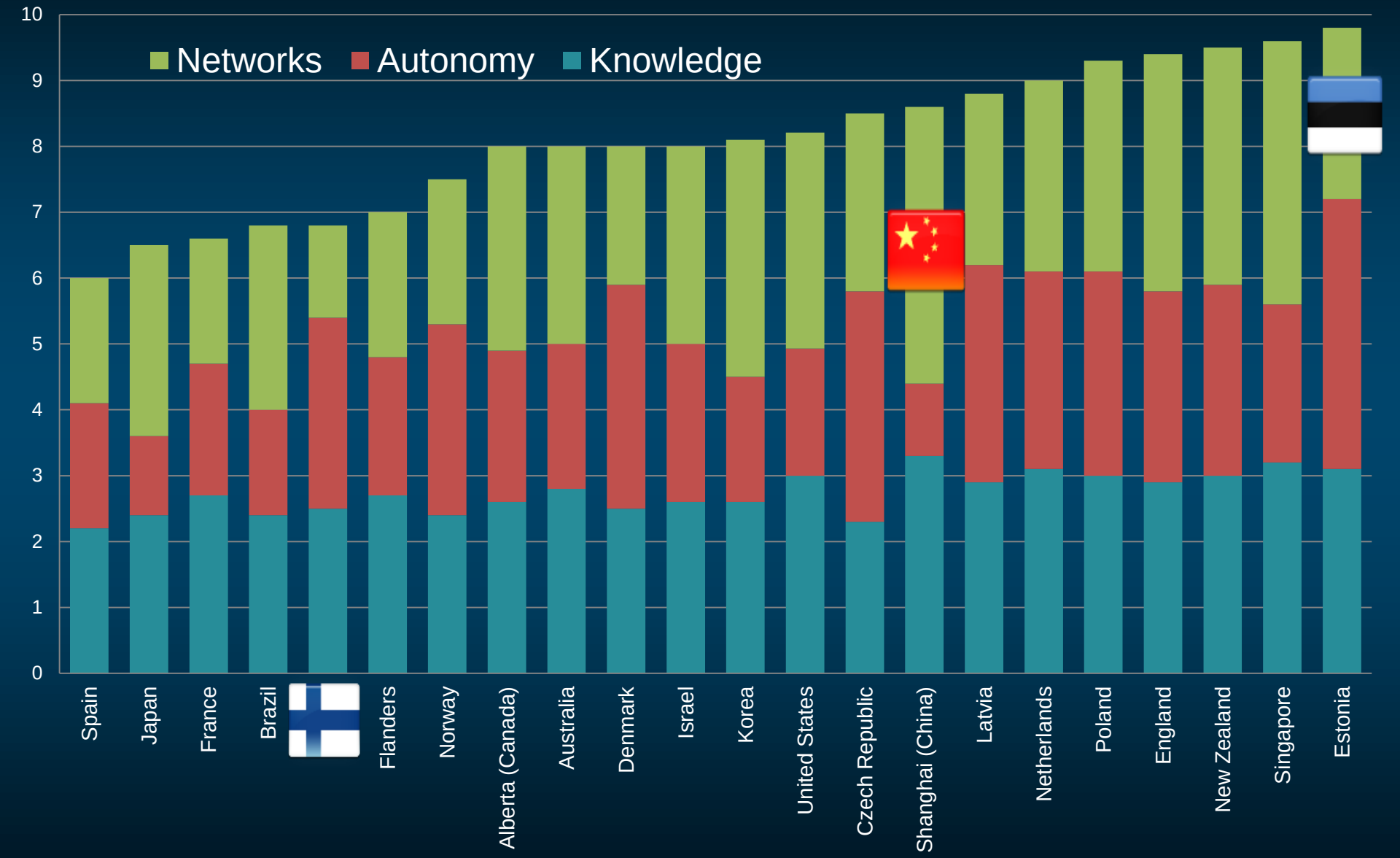


Balanced Domains/ High Professionalism



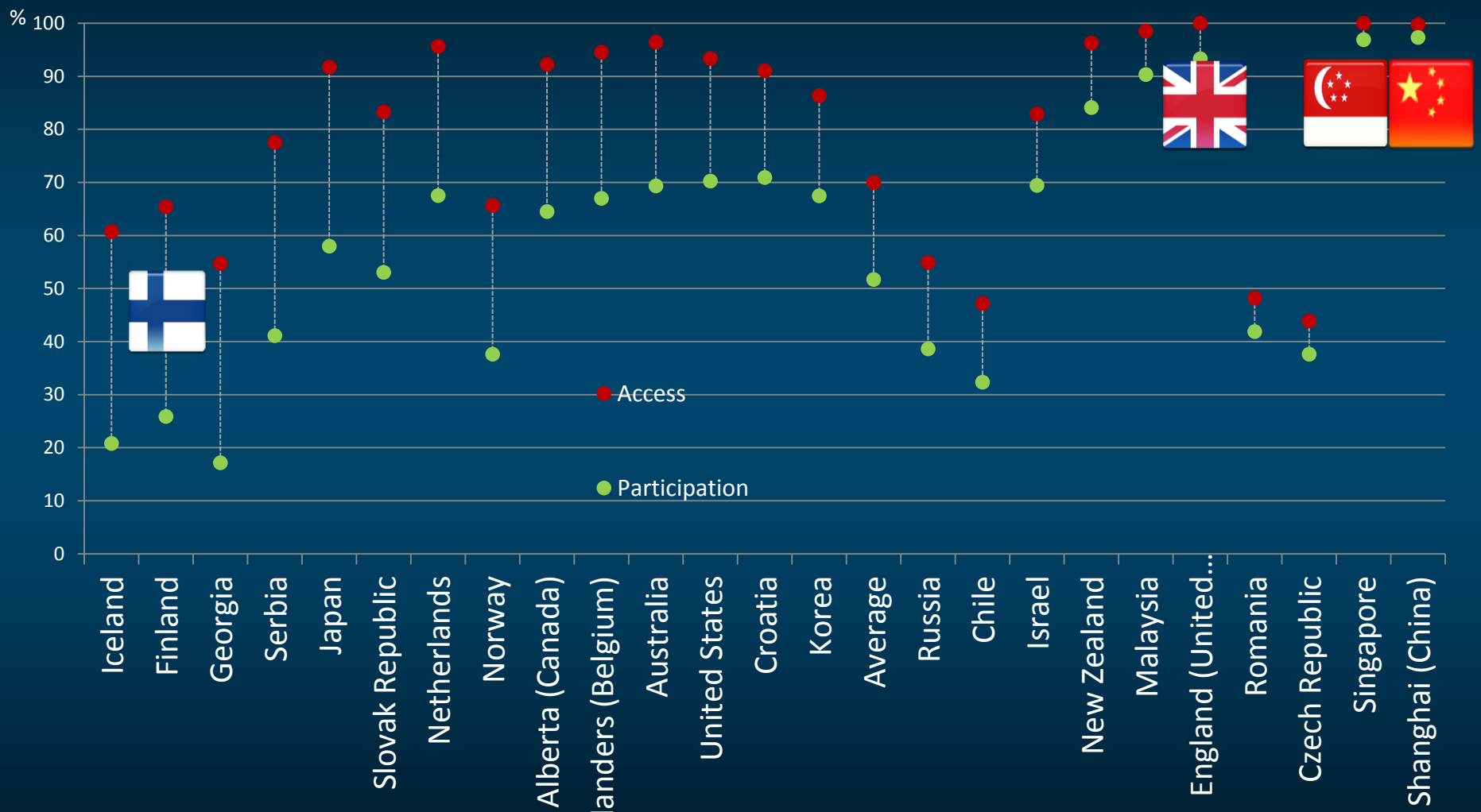
Balanced Domains/ Low Professionalism

TALIS Teacher professionalism index



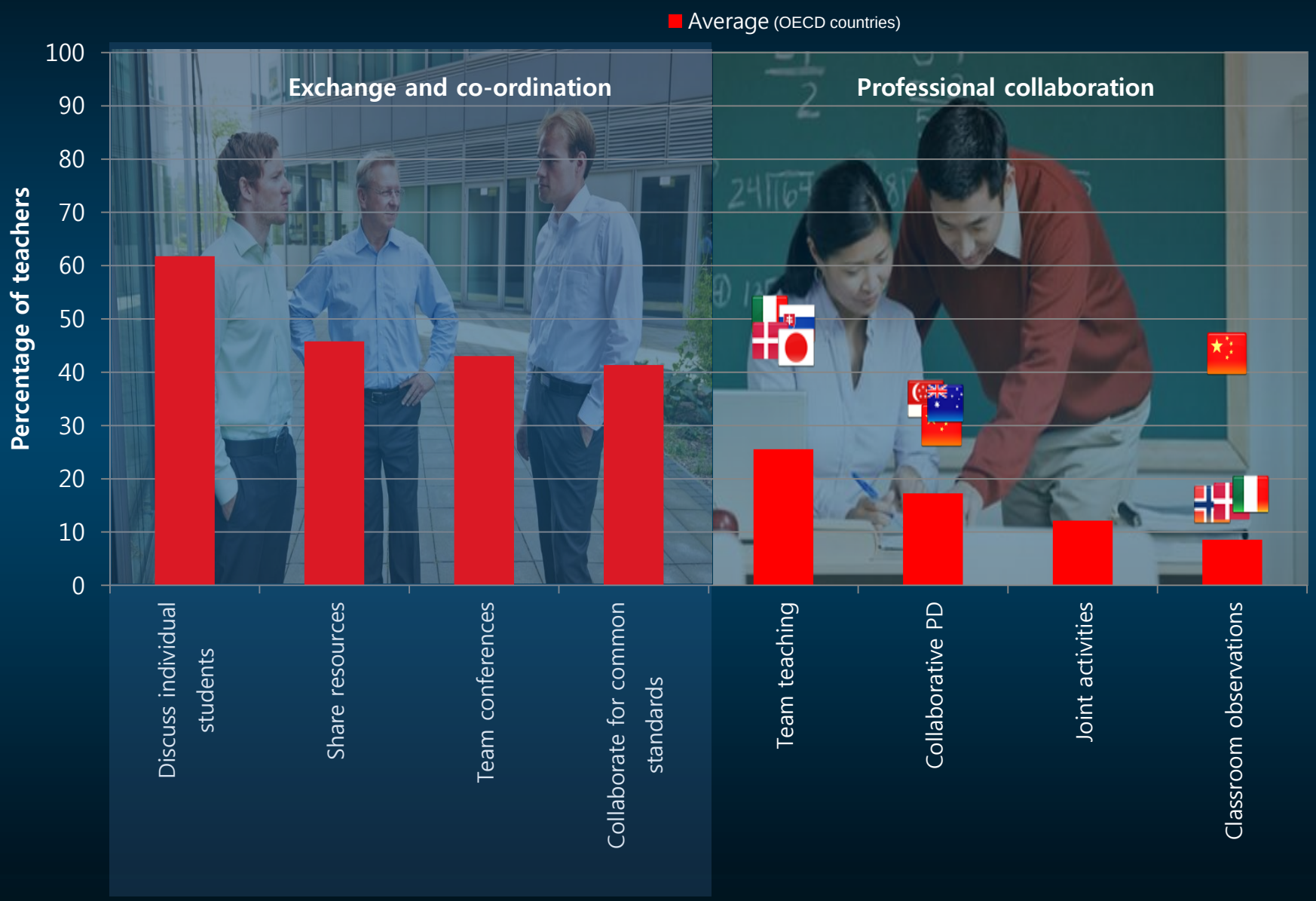
Not everywhere where induction programmes are accessible do teachers use them

Percentage of lower secondary teachers with less than 3 years experience at their school and as a teacher, who are working in schools with the following reported access to formal induction programmes, and their reported participation in such programmes

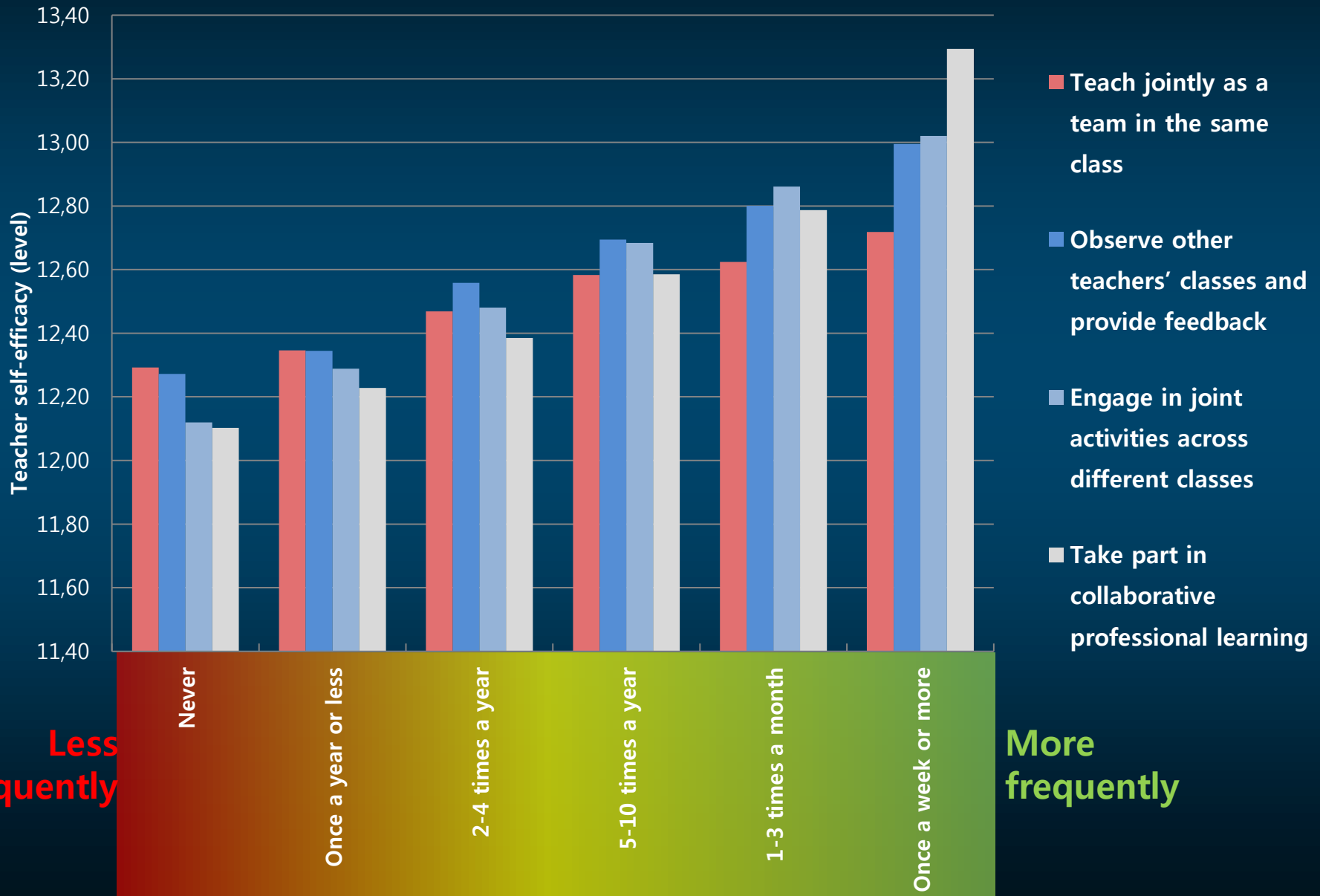


Professional collaboration among teachers

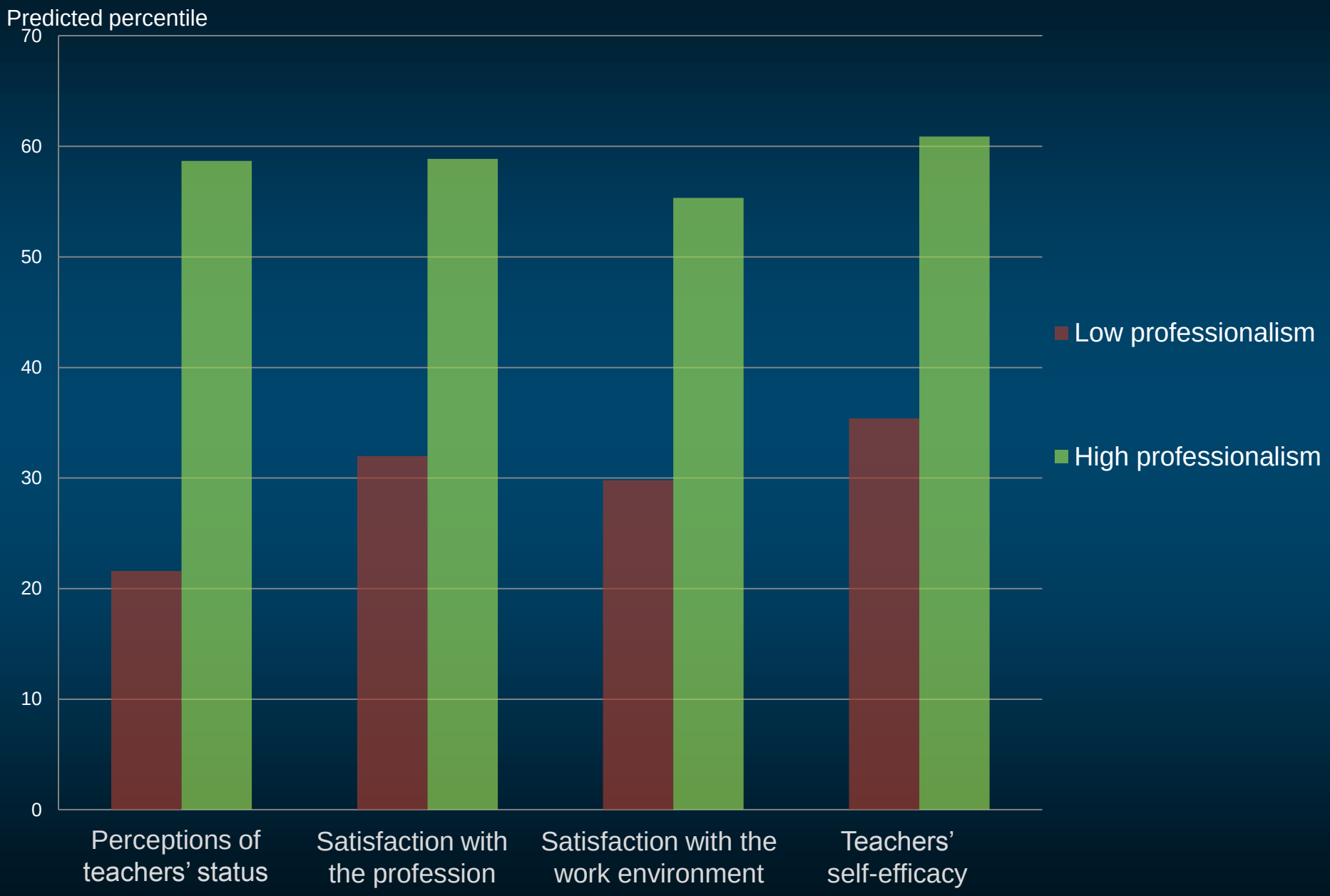
Percentage of lower secondary teachers who report doing the following activities at least once per month

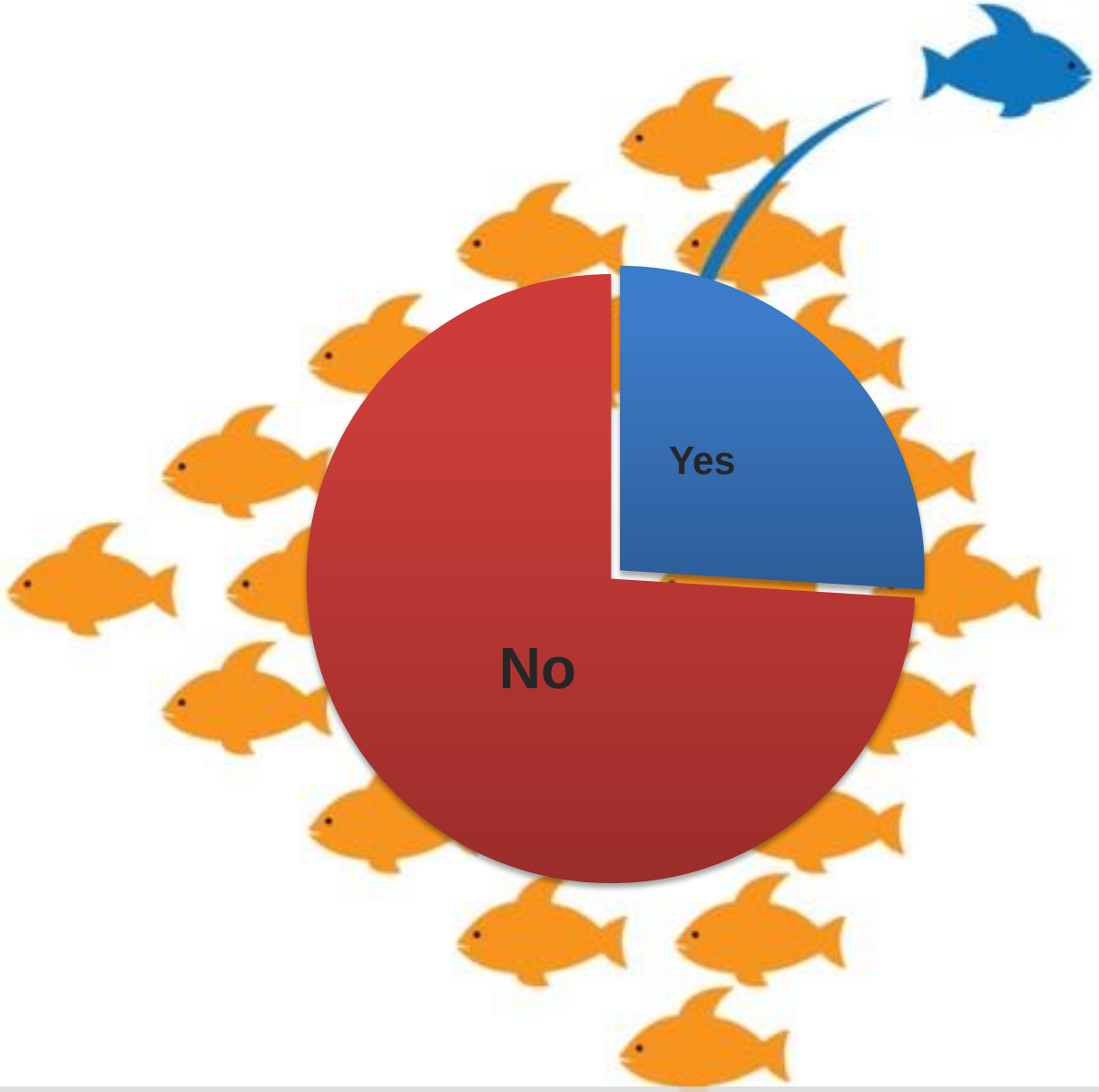


Teachers Self-Efficacy and Professional Collaboration



Teacher professionalism index and teacher outcomes

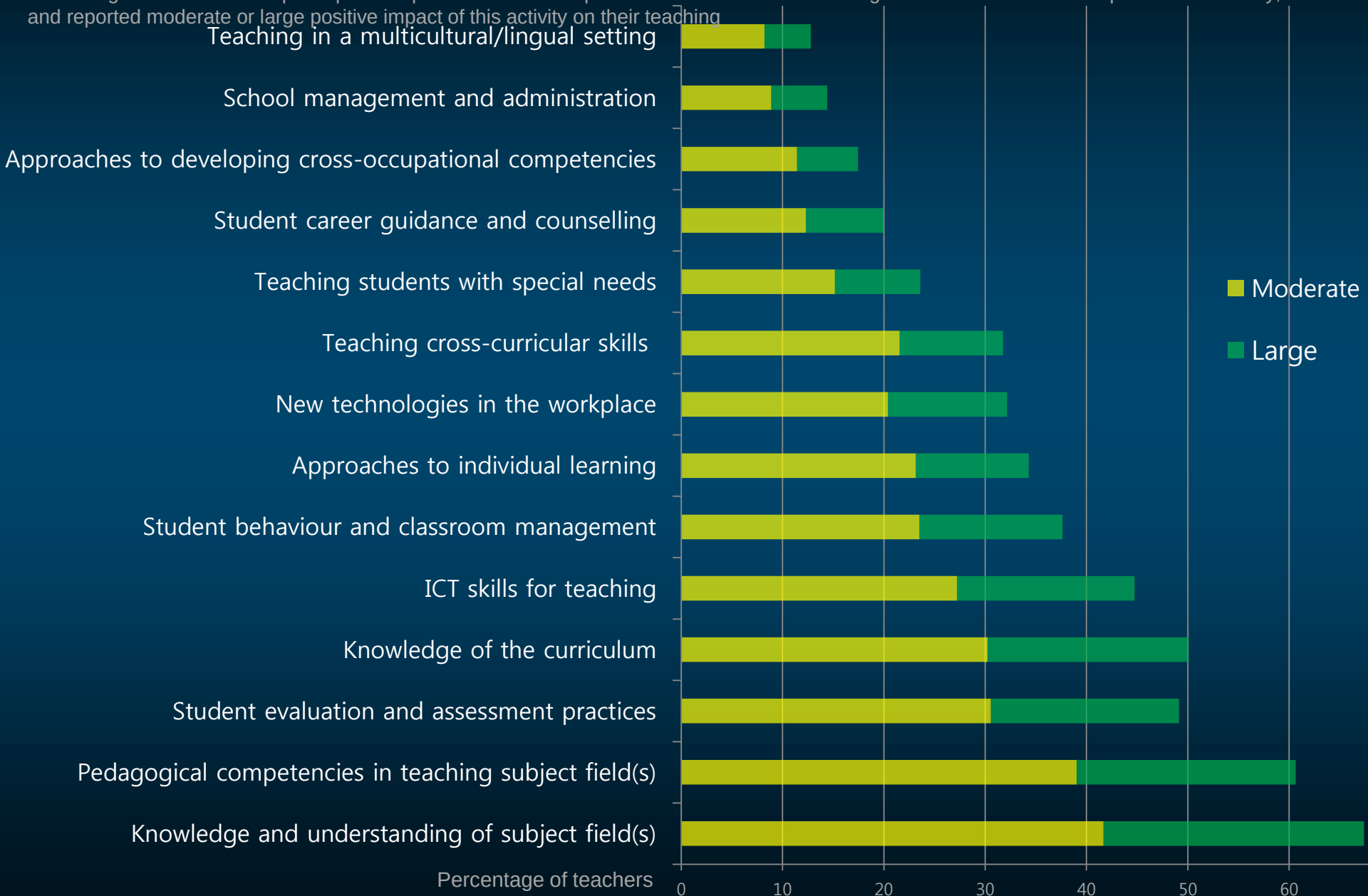




If I am more innovative in my teaching I will be rewarded (country average)

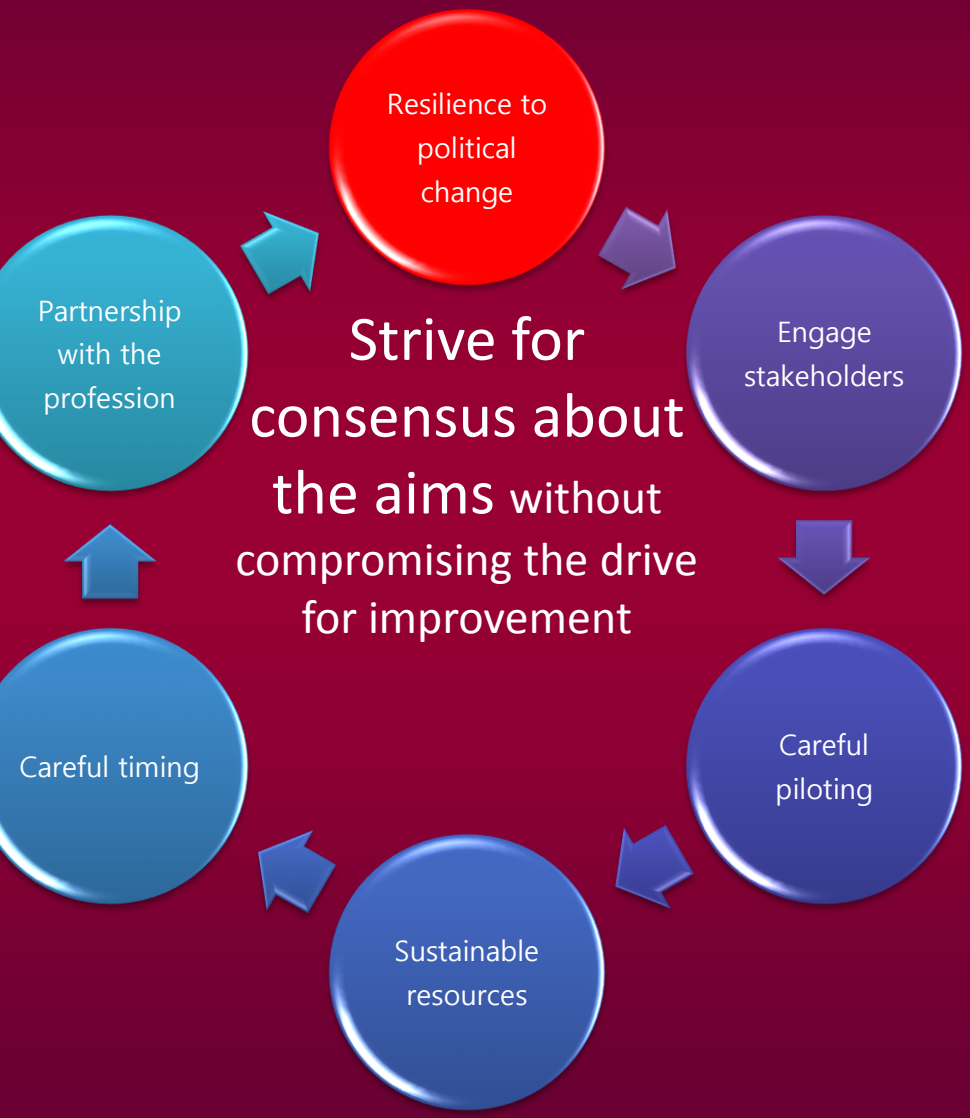
Impact of professional development on teaching

Percentage of teachers who participated in professional development activities with the following content in the 12 months prior to the survey, and reported moderate or large positive impact of this activity on their teaching



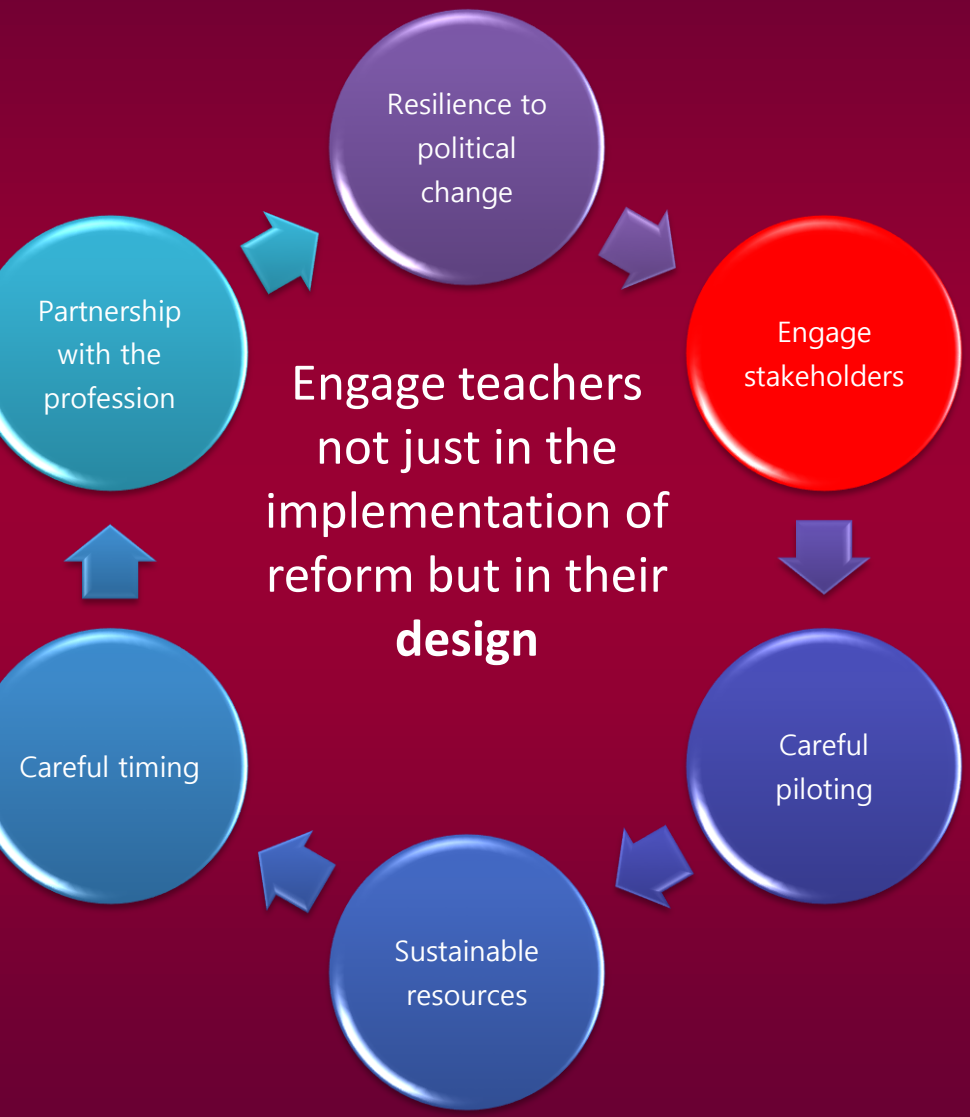
Shared vision	• Clear and consistent priorities (across governments and across time), ambition and urgency, and the capacity to learn rapidly.
Performance management	• Appropriate targets, real-time data, monitoring, incentives aligned to targets, accountability, and the capacity to intervene where necessary.
Frontline capacity	• Building professional capabilities, sharing best practice and innovation, flexible management, and frontline ethos aligned with system objectives.
Delivery architecture	• Strong leadership at every level, including teacher leadership, adequate process design and consistency of focus across agencies.

Successful reform implementation



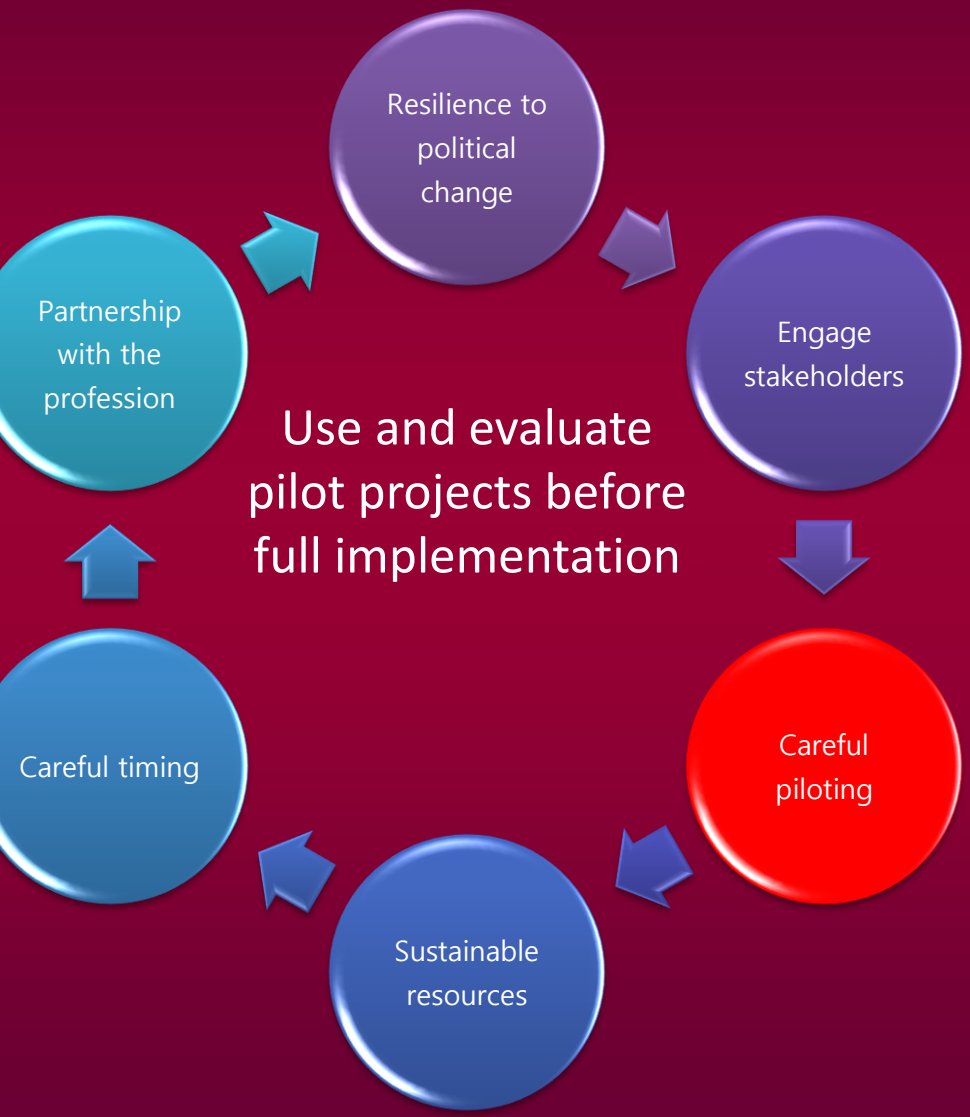
- Acknowledge divergent views and interests
- Communicate, communicate, communicate
  - Feedback reduces the likelihood of strong opposition
  - Involvement of stakeholders cultivates a sense of joint ownership over policies, and hence helps build consensus over both the need and the relevance of reforms
- Mechanisms of regular and institutionalised consultation contribute to the development of trust among parties, and help them reach consensus
  - Regular interactions raise awareness of the concerns of others, thus fostering a climate of compromise
- External pressures can build a compelling case for change .

Successful reform implementation



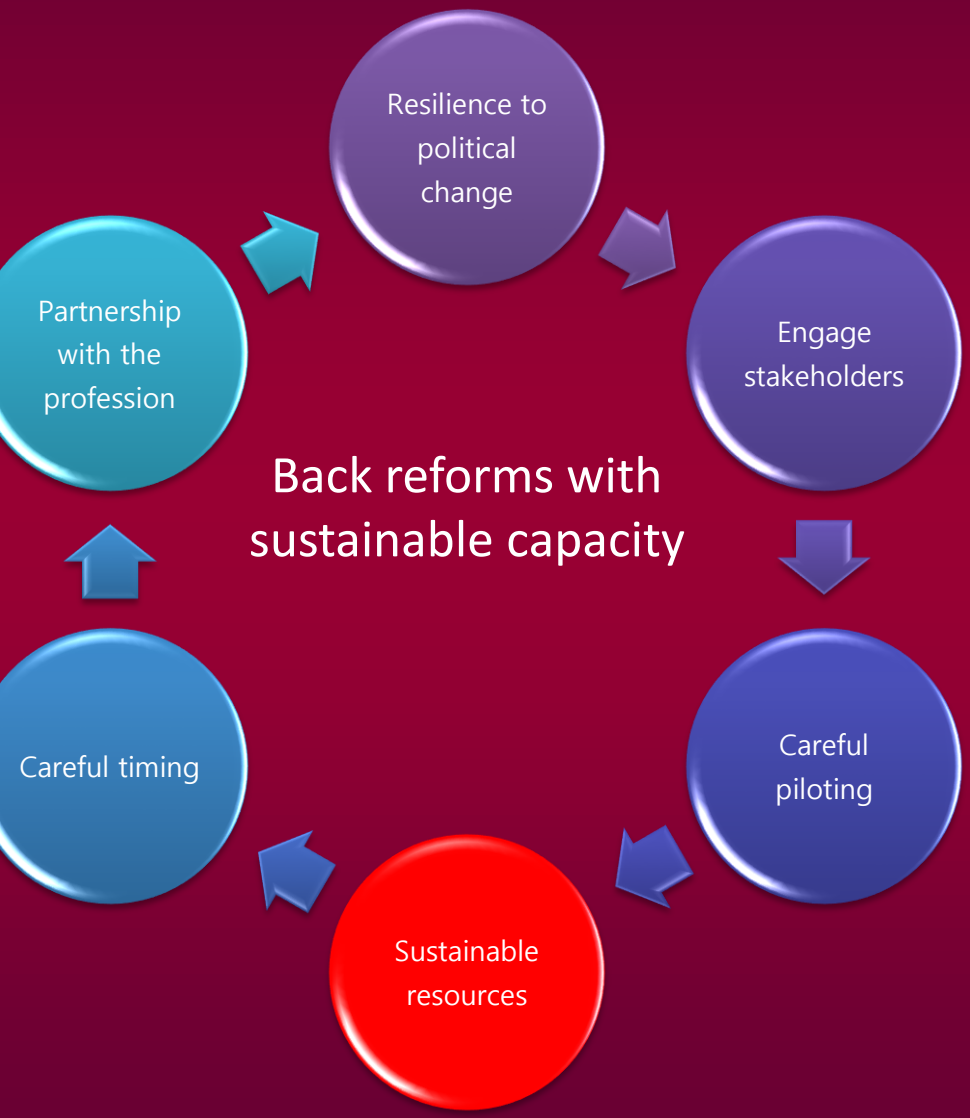
- Regular involvement by teachers in policy design helps to build capacity and shared ideas over time
- Several countries have established teaching councils that provide teachers with both a forum for policy development and, critically, a mechanism for profession-led standard setting and quality assurance in teacher education, teacher induction, teacher performance and career development
- Policy can encourage the formation of such communities .

Successful reform implementation



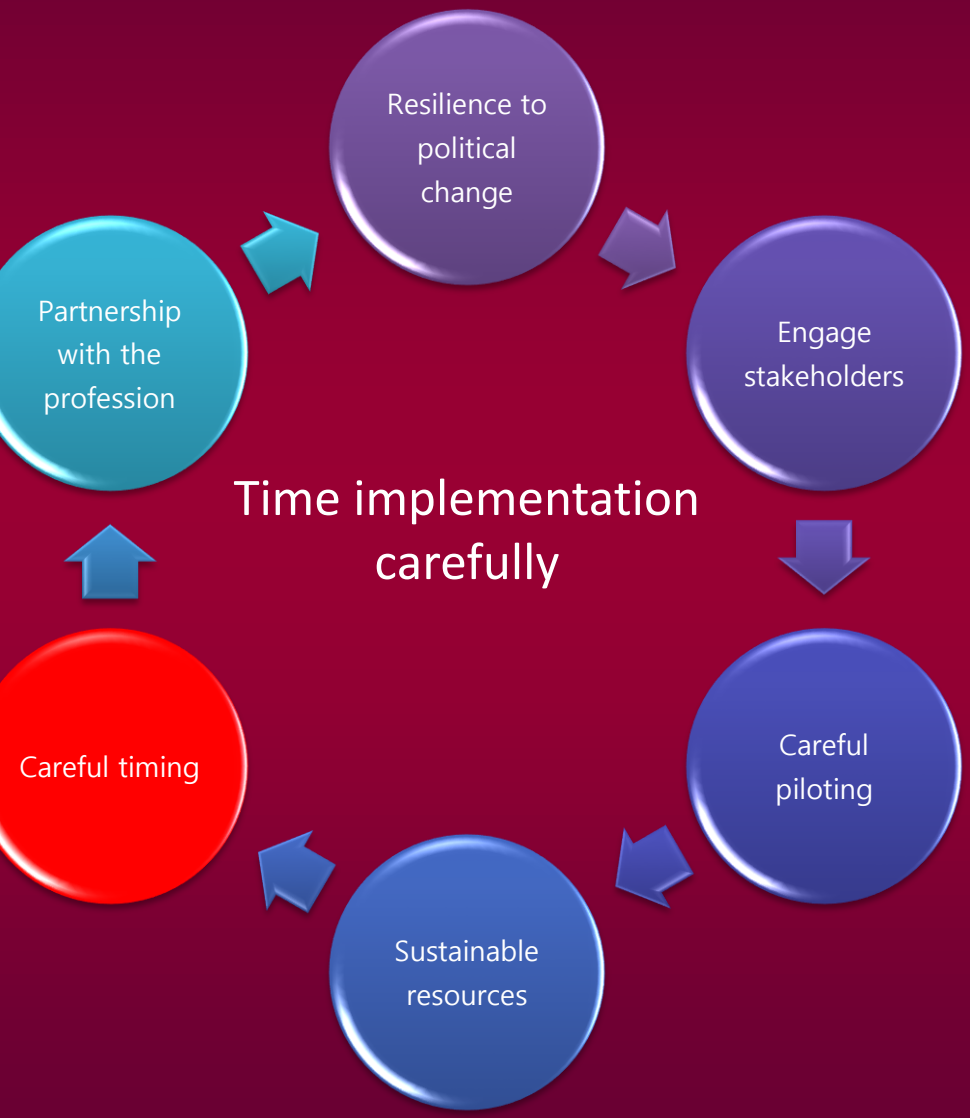
- Currently only one in ten educational reforms is evaluated
- Policy experimentation can help build consensus on implementation and can prove powerful in testing out policy initiatives and – by virtue of their temporary nature and limited scope – overcoming fears and resistance by specific groups of stakeholders.

Successful reform implementation



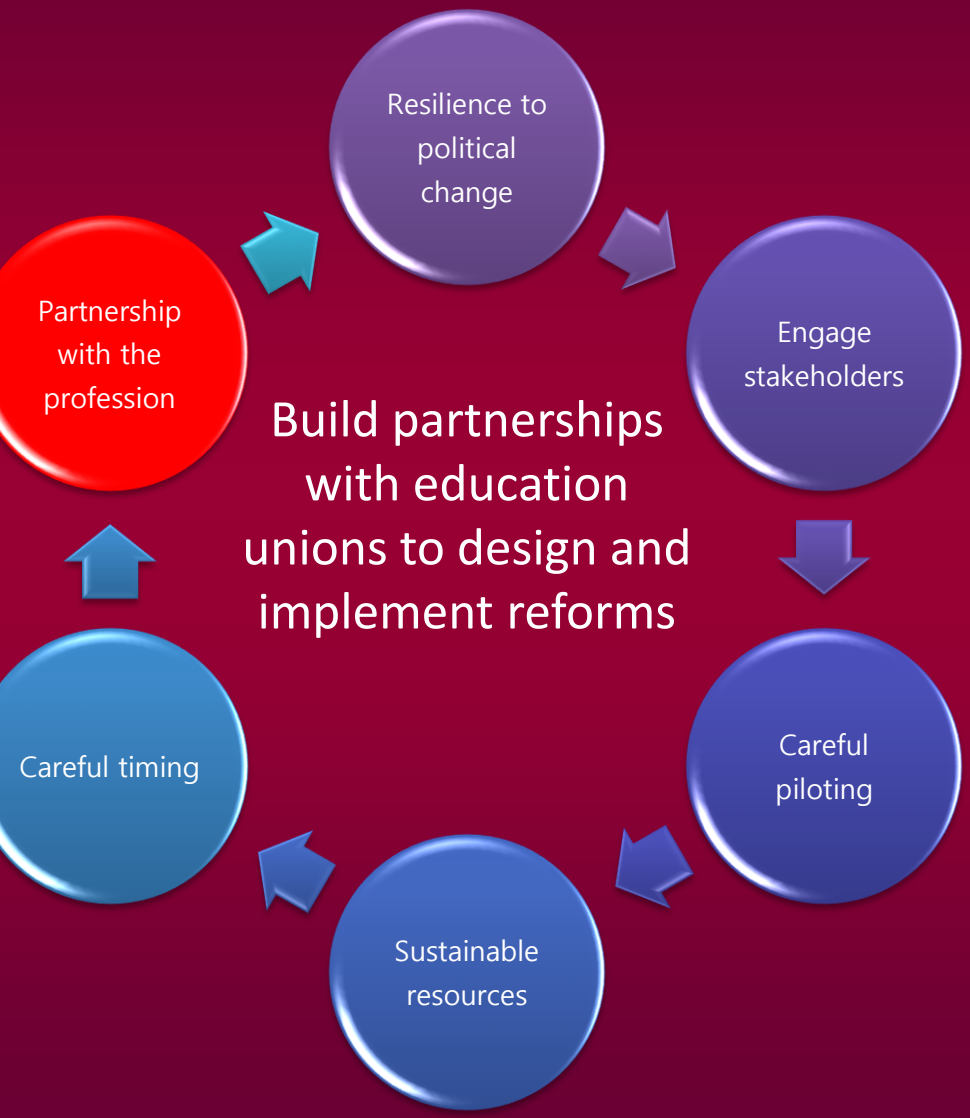
- The benefits for ‘winners’ are often insufficient to mobilise support, the costs for ‘losers’ are concentrated
- Need for consistent, co-ordinated efforts to persuade those affected of the need for change and, in particular, to communicate the costs of inaction

Successful reform implementation



- All political players and stakeholders need to develop realistic expectations about the pace and nature of reforms to improve outcomes
- Certain reform measures are best introduced before others, particularly because of the substantial gap between the time at which the initial cost of reform is incurred, and the time when the intended benefits of reforms materialise
- Time is needed to learn about and understand impact, to build trust and develop capacity for the next stage .

Successful reform implementation



- Putting the teaching profession at the heart of education reform requires a fruitful dialogue between governments and unions
- Teachers should not just be part of the implementation of reforms but also part of their design
- Conflict isn't best addressed by weak unions but by strong social partnership .

What it all means

The old bureaucratic system		The modern enabling system
Some students learn at high levels	Student inclusion	**All** students need to learn at high levels
Routine cognitive skills	Curriculum, instruction and assessment	Conceptual understanding, complex ways of thinking, ways of working
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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and remember:

Without data, you are just another person with an opinion