Preparing students for their future, not our past

Things we can do to build better schools

Chief Executive Summit, 2 June 2018

Andreas Schleicher, Director, OECD – Directorate for Education and Skills

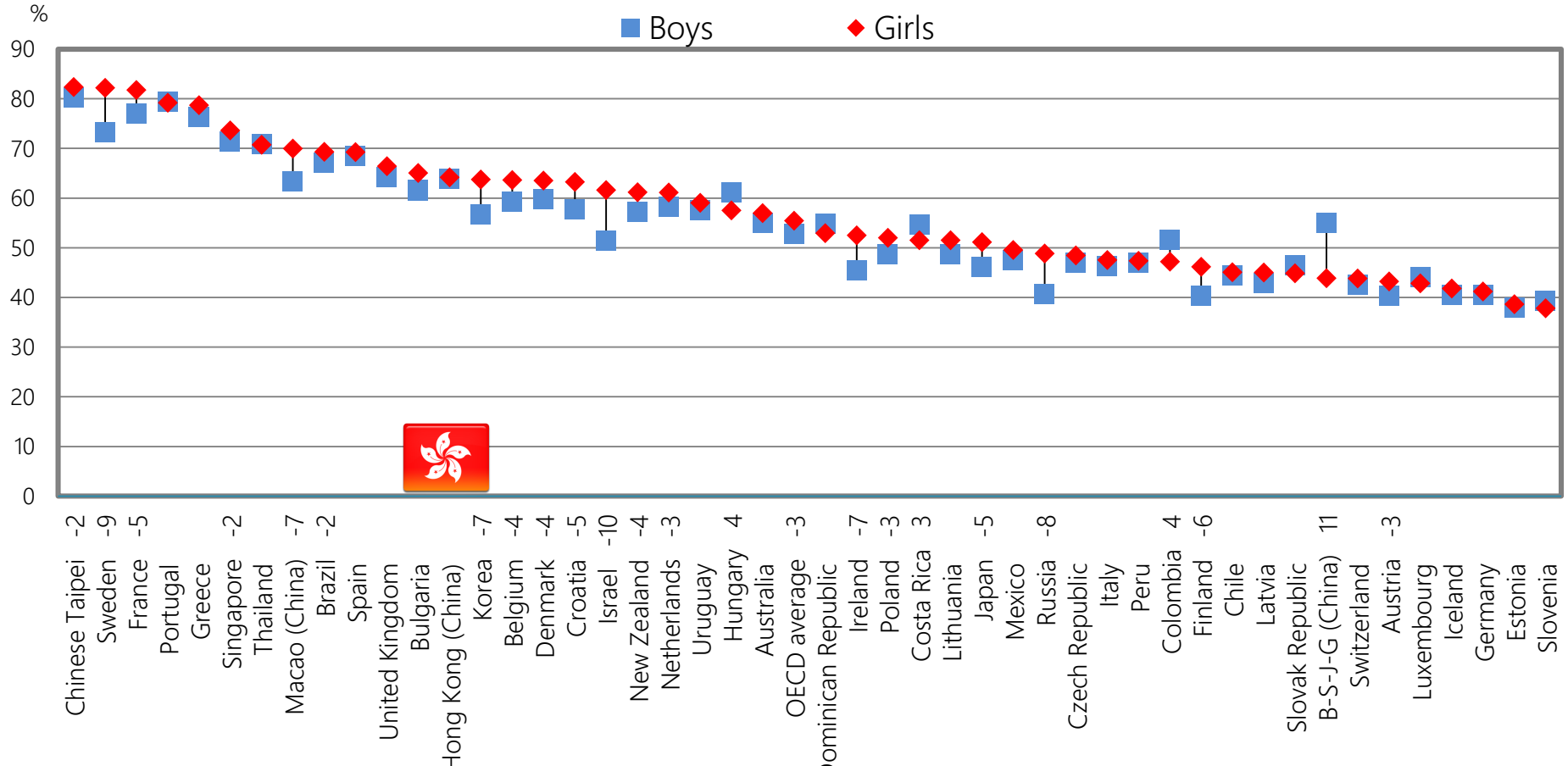
The post-truth world where reality becomes fungible

- Virality seems privileged over quality in the distribution of information
- Truth and fact are losing currency

Scarcity of attention and abundance of information

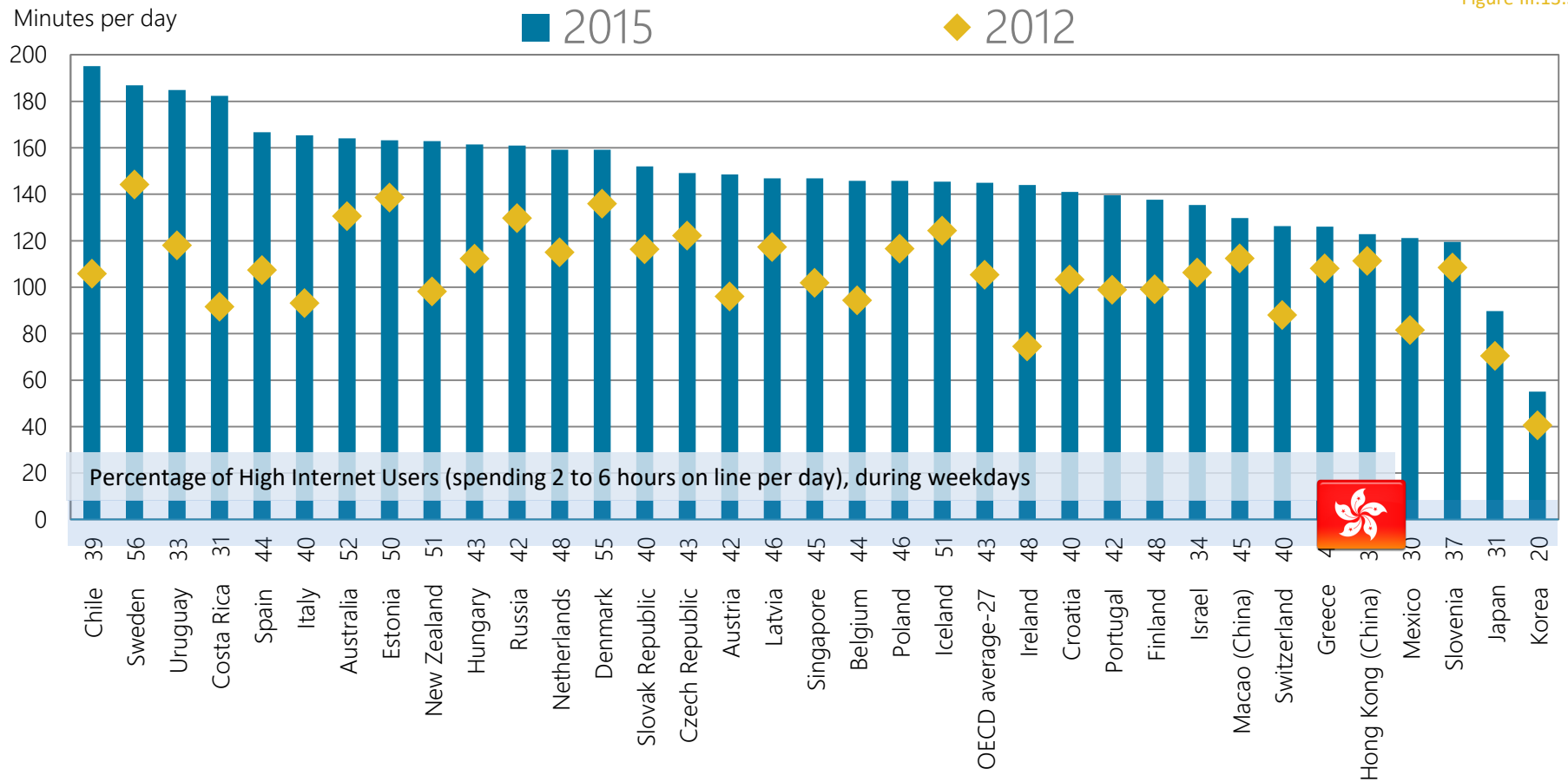
- Algorithms sort us into groups of like-minded individuals create echo chambers that amplify our views, leave us uninformed of opposing arguments, and polarise our societies

15-year-olds feeling bad if not connected to the Internet (PISA)



Students are using more time online outside school on a typical school day (PISA)

Figure III.13.3



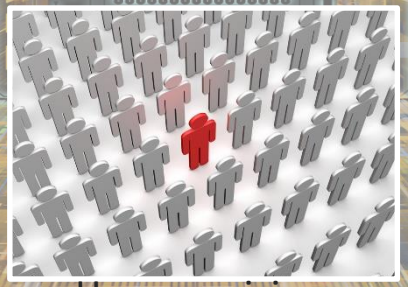
Digitalisation and education

Democratizing

Particularizing

Empowering

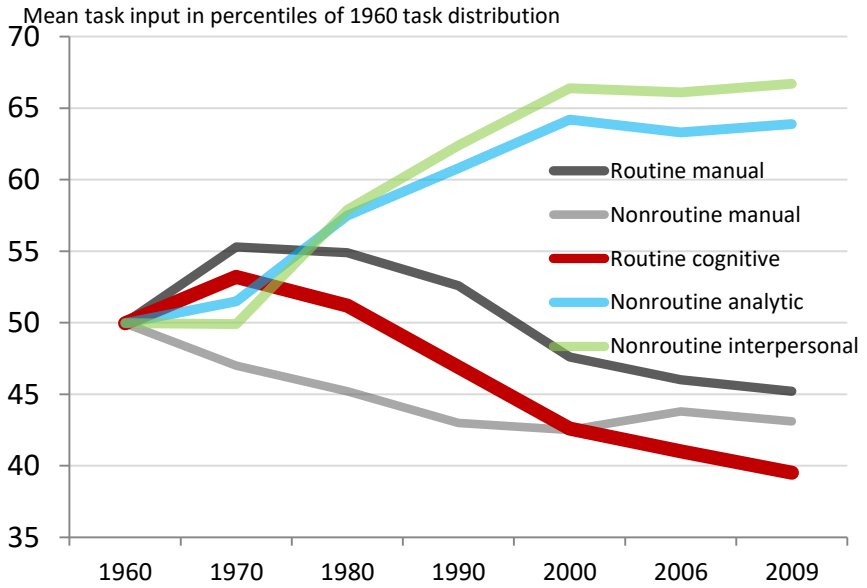
Concentrating



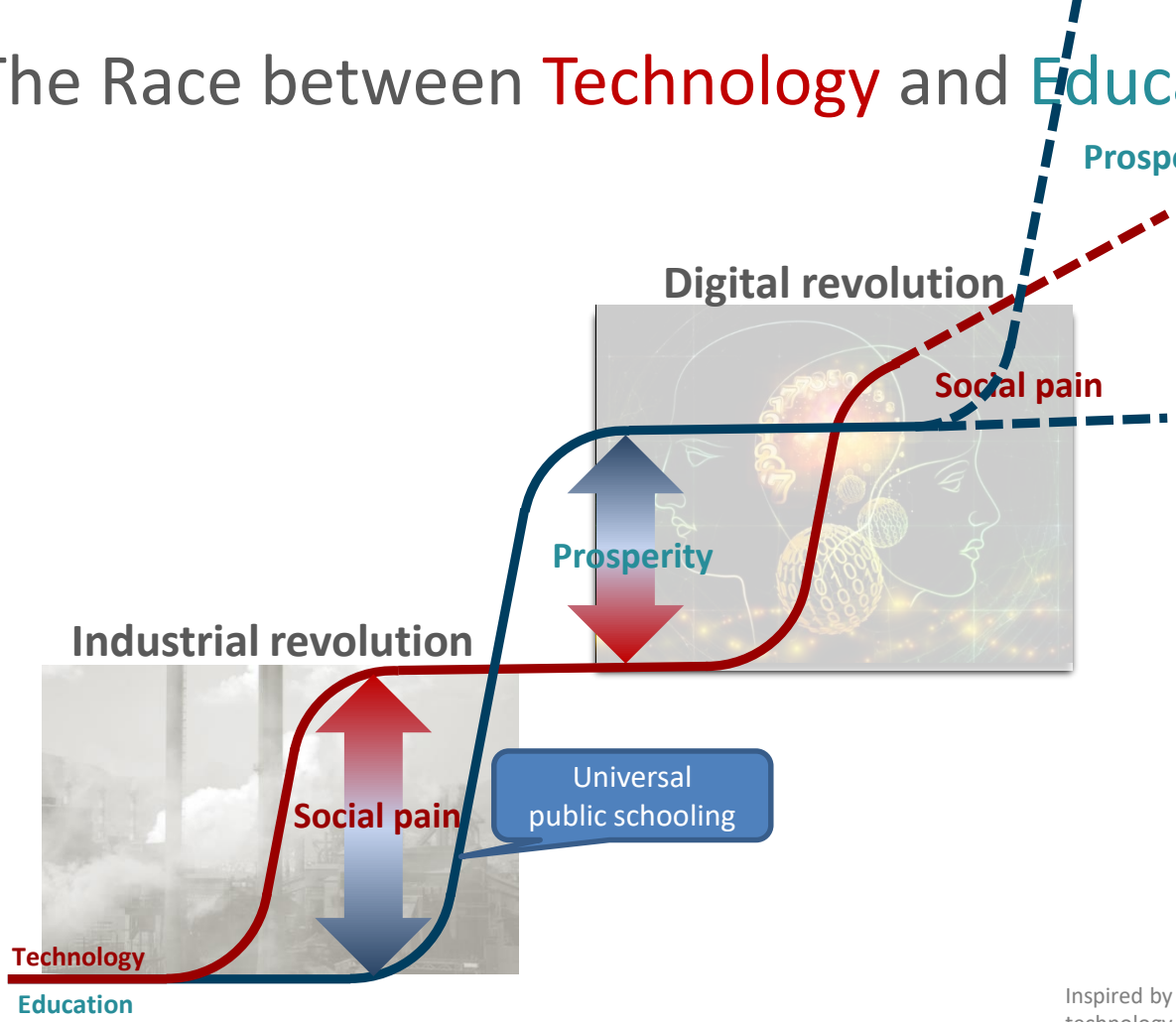
Homogenizing

Disempowering

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



The Race between Technology and Education



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

Trends in science performance (PISA)

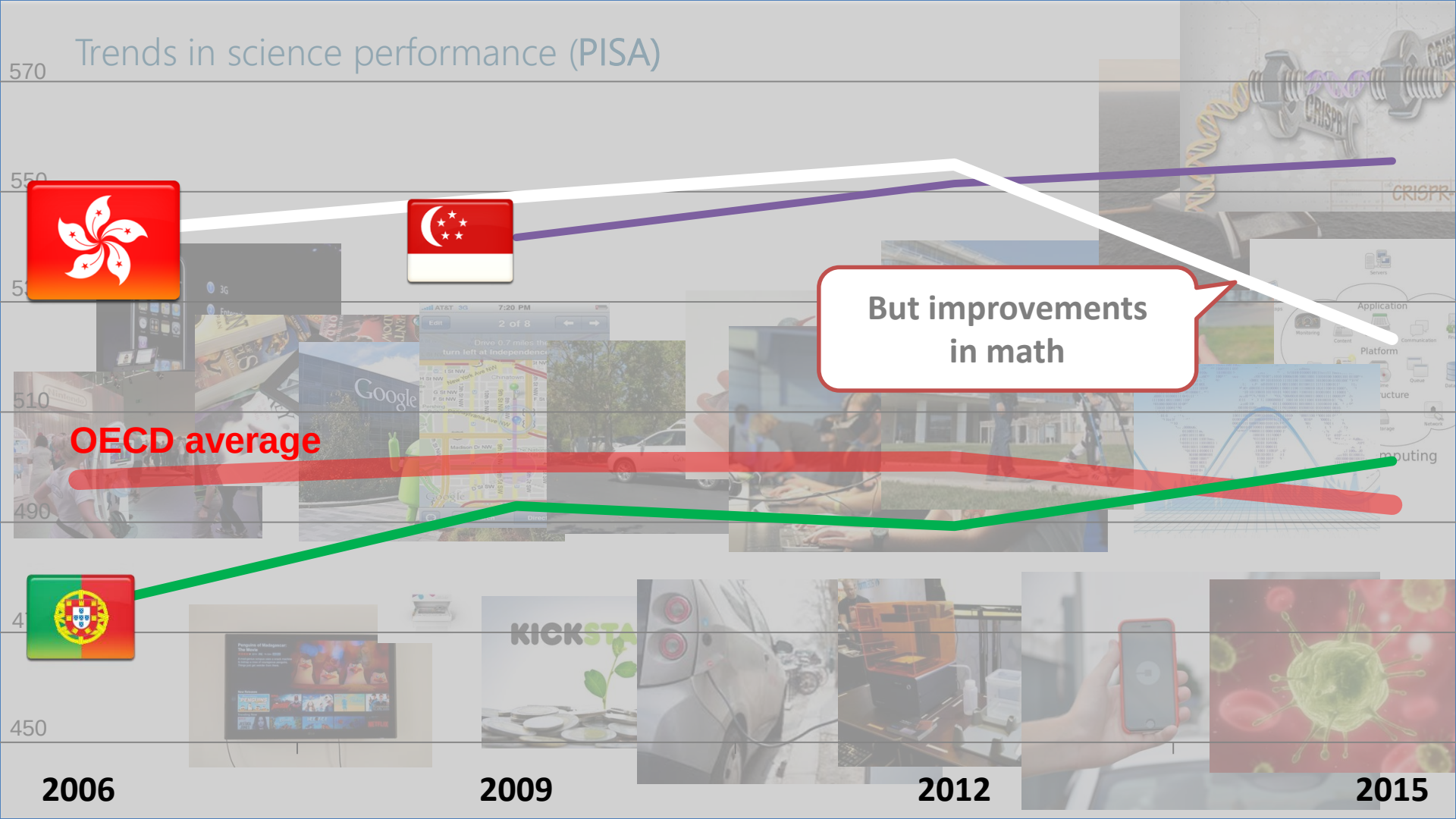
Student performance

570
550
530
510
490
470
450

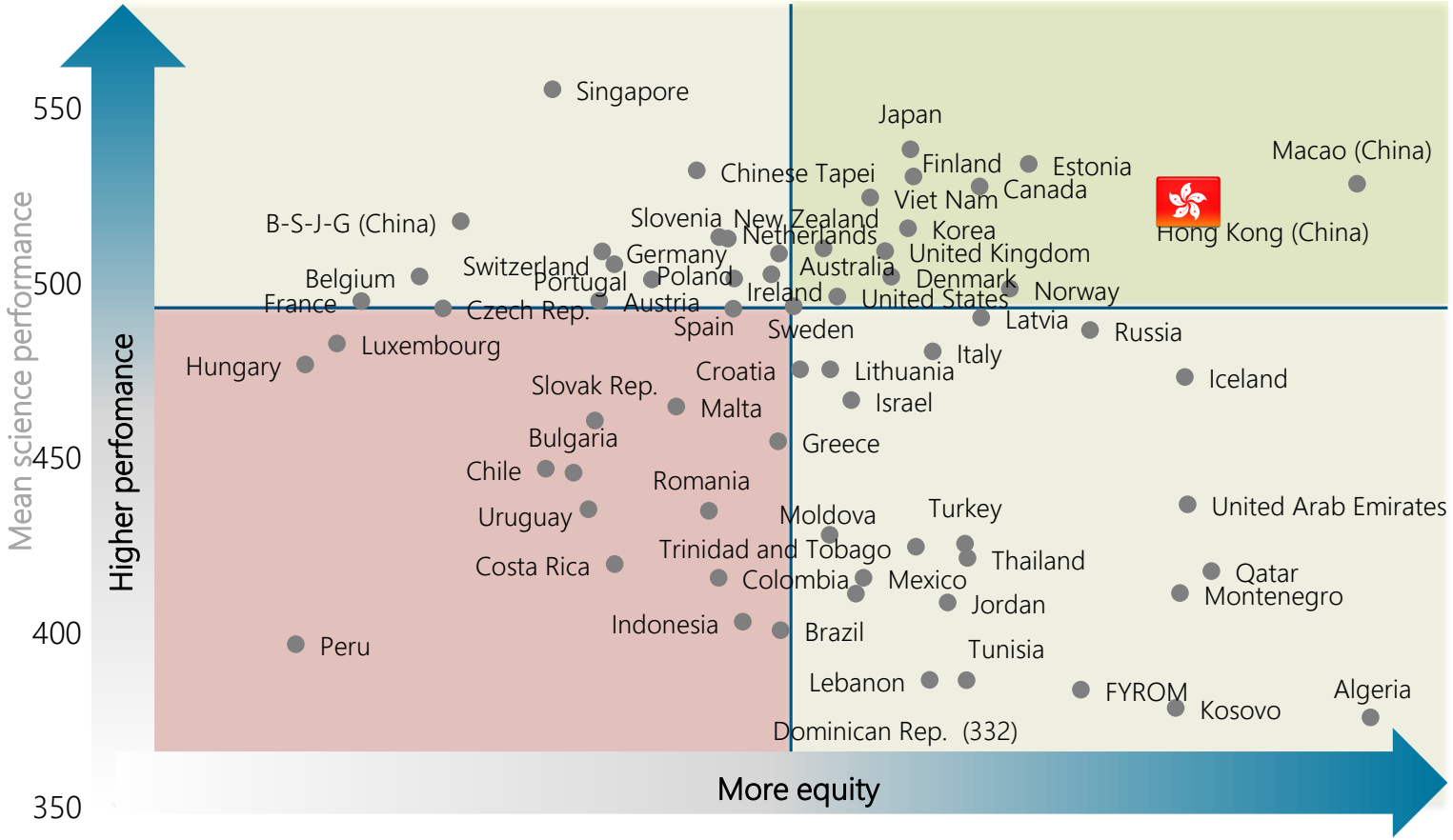
OECD average

2006 2009 2012 2015

Trends in science performance (PISA)

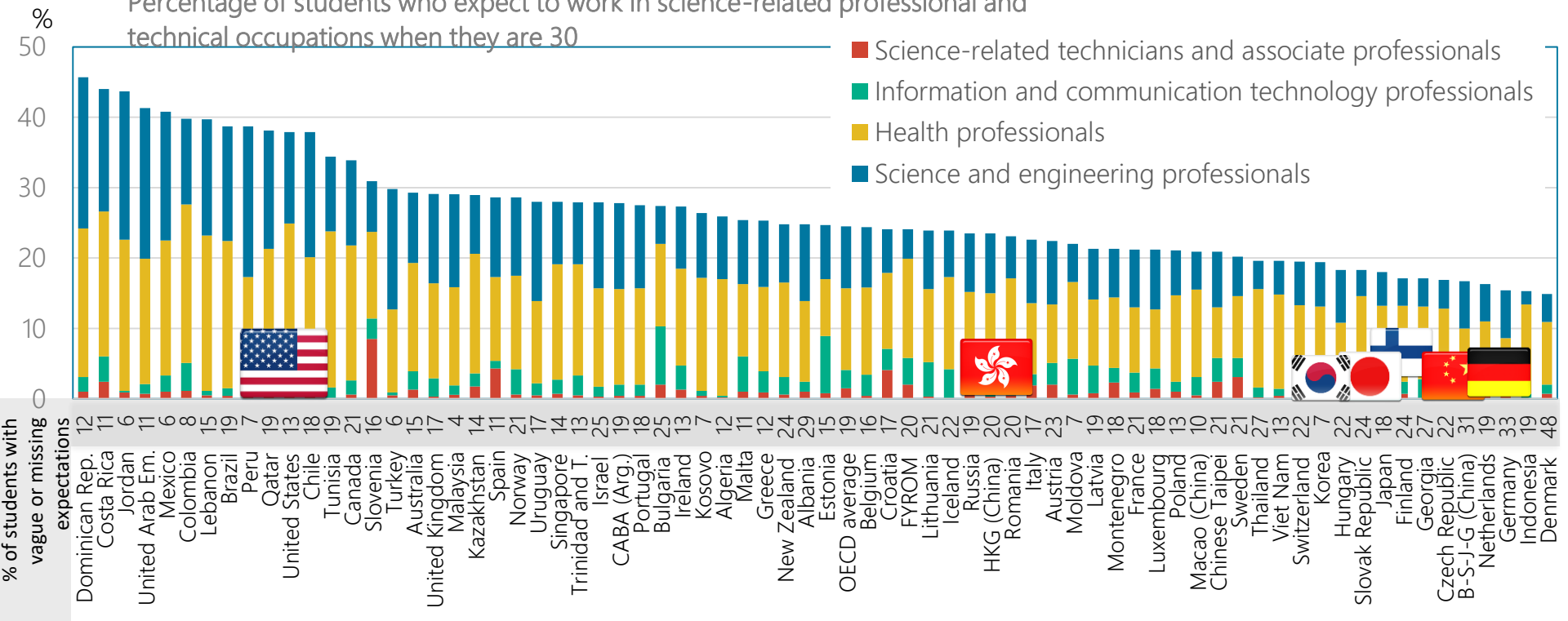


Science performance and equity in PISA (2015)



Some countries combine excellence with equity

Students expecting a career in science



Multiple outcomes

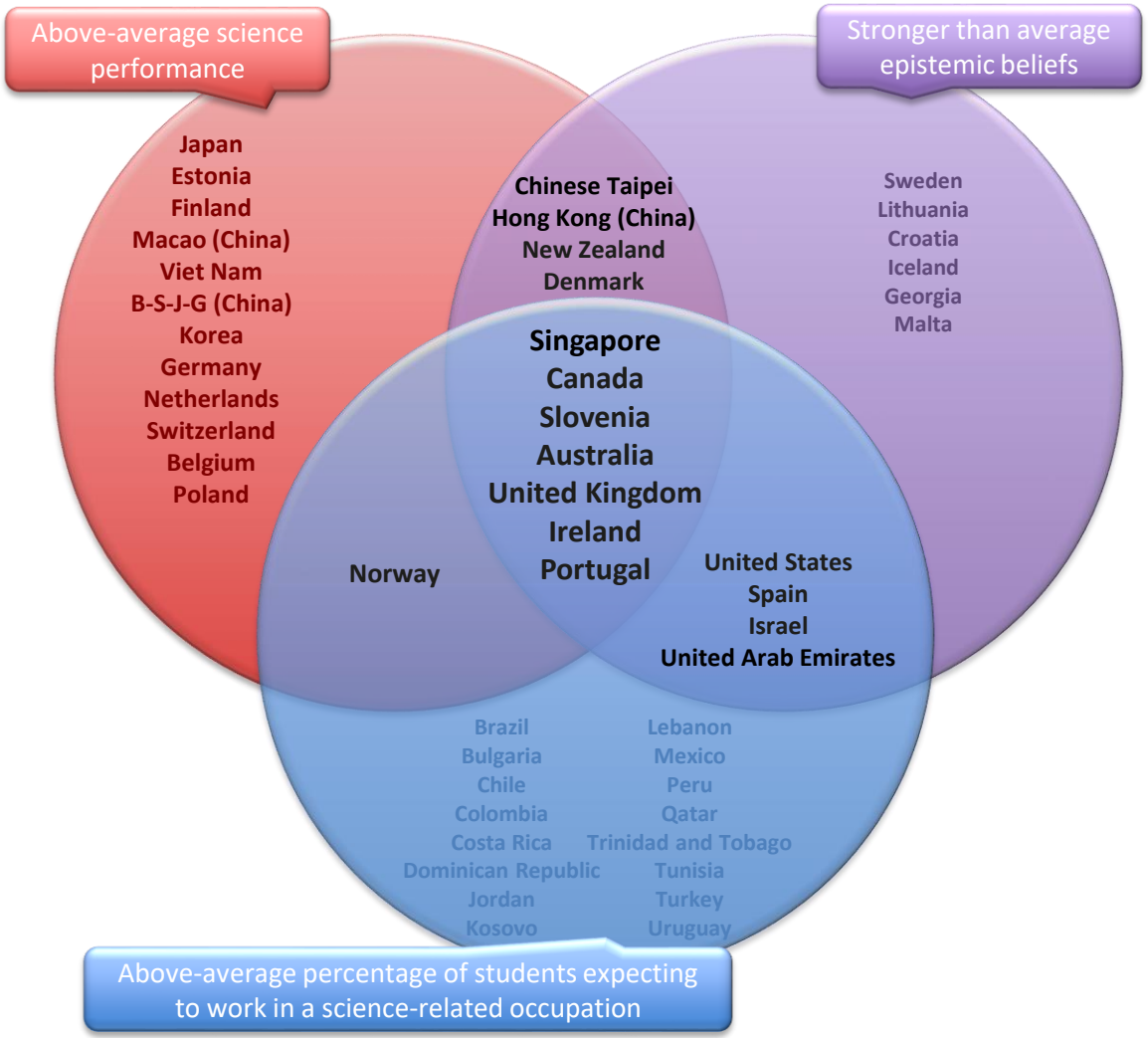
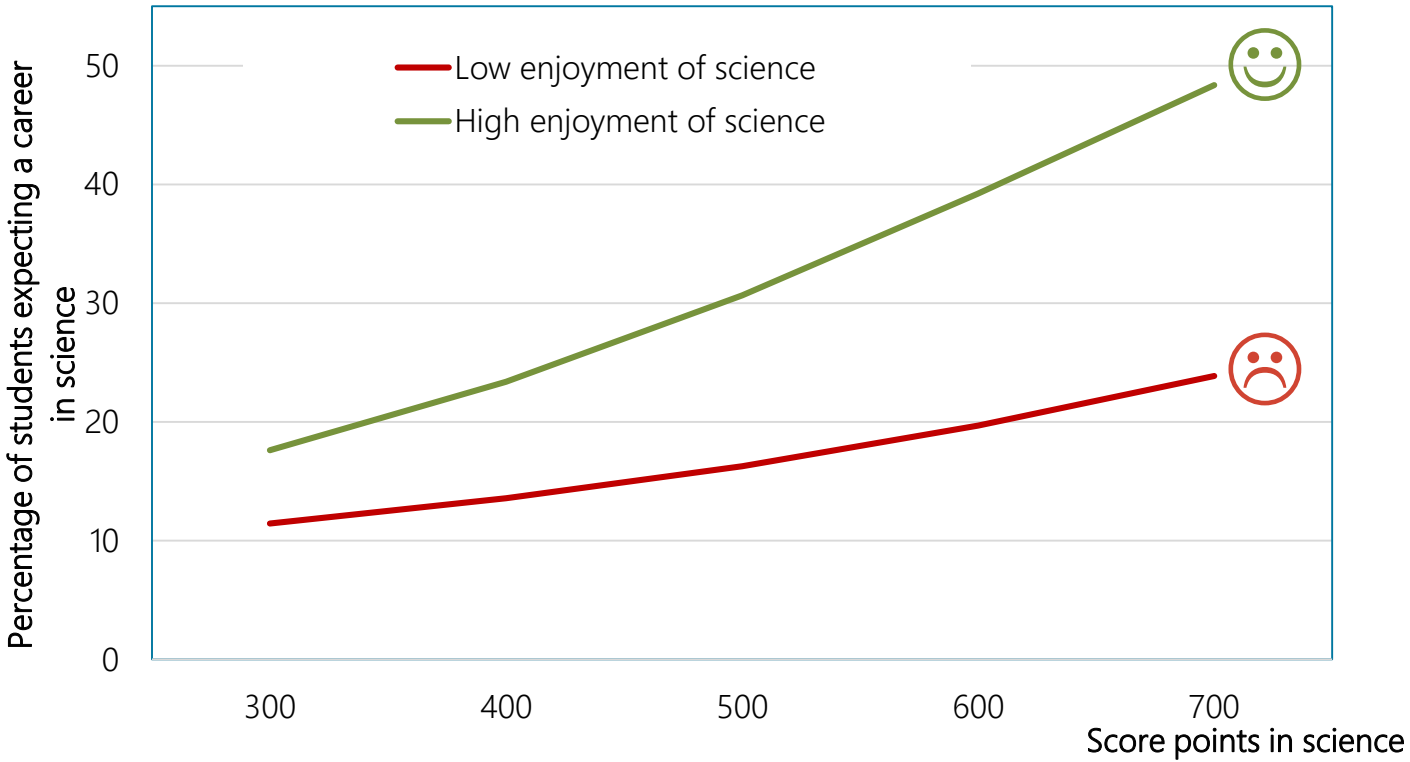


Figure I.3.17

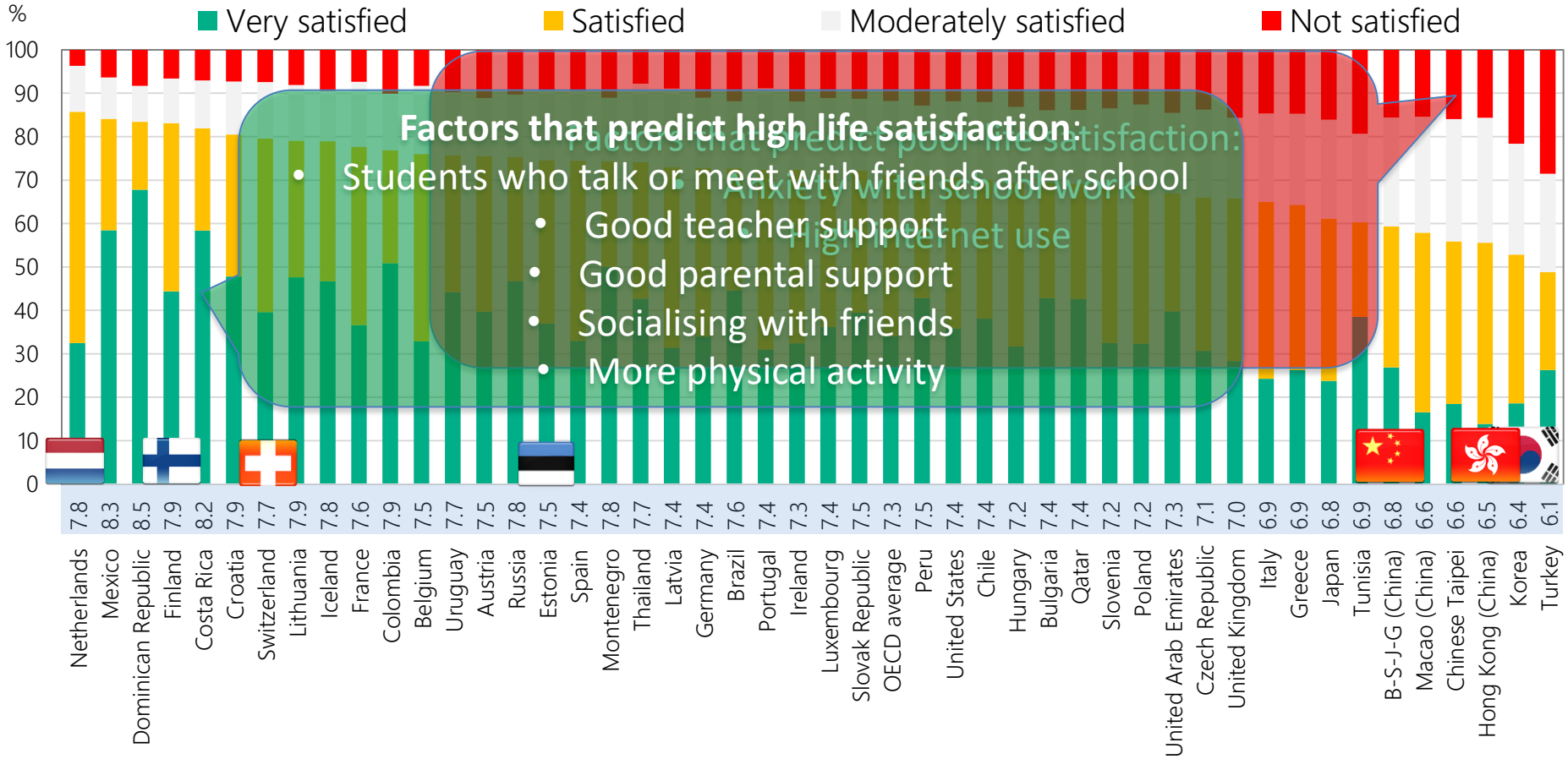
Students expecting a career in science

by performance and enjoyment of learning



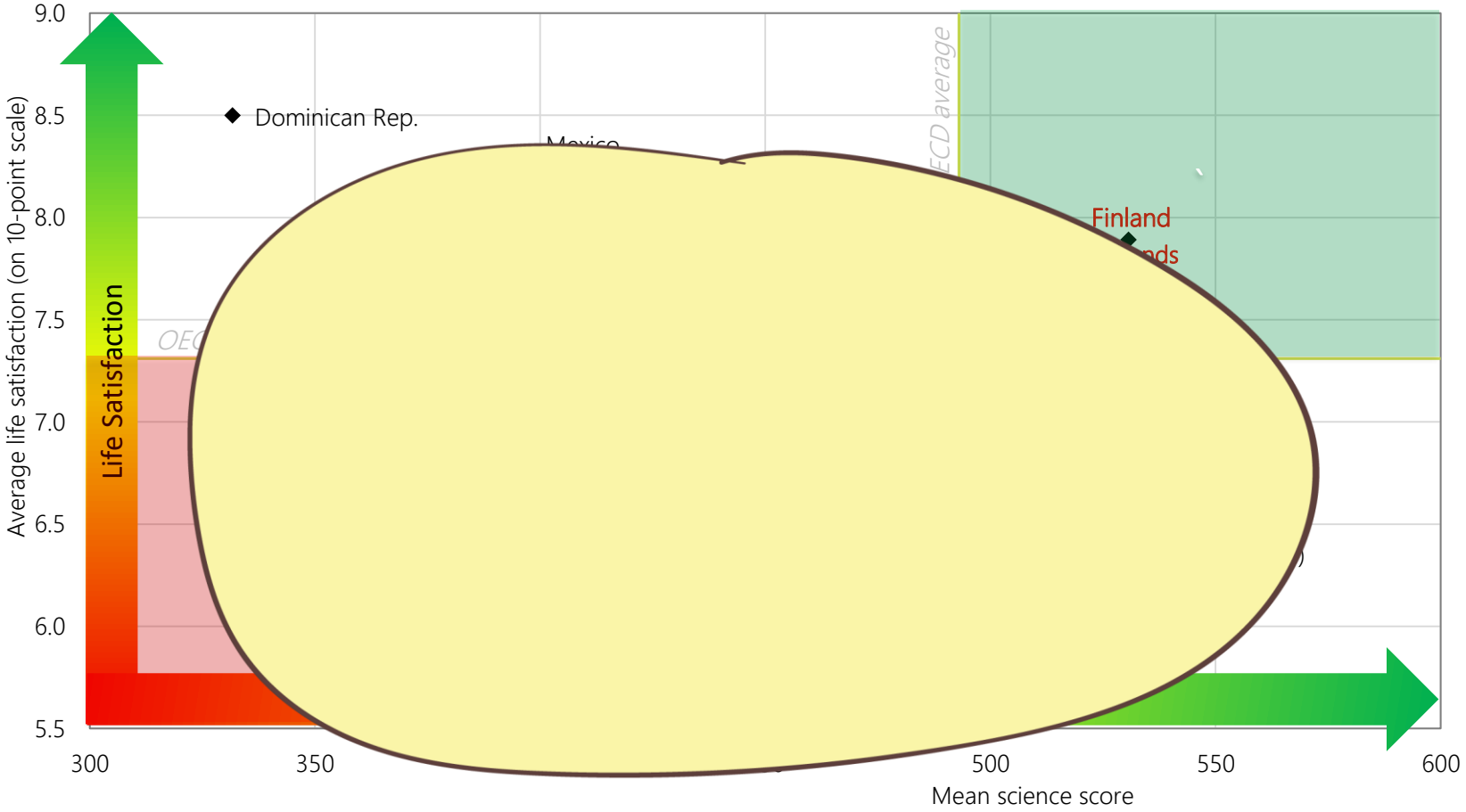
Life satisfaction among 15-year-old students

Figure III.3.1



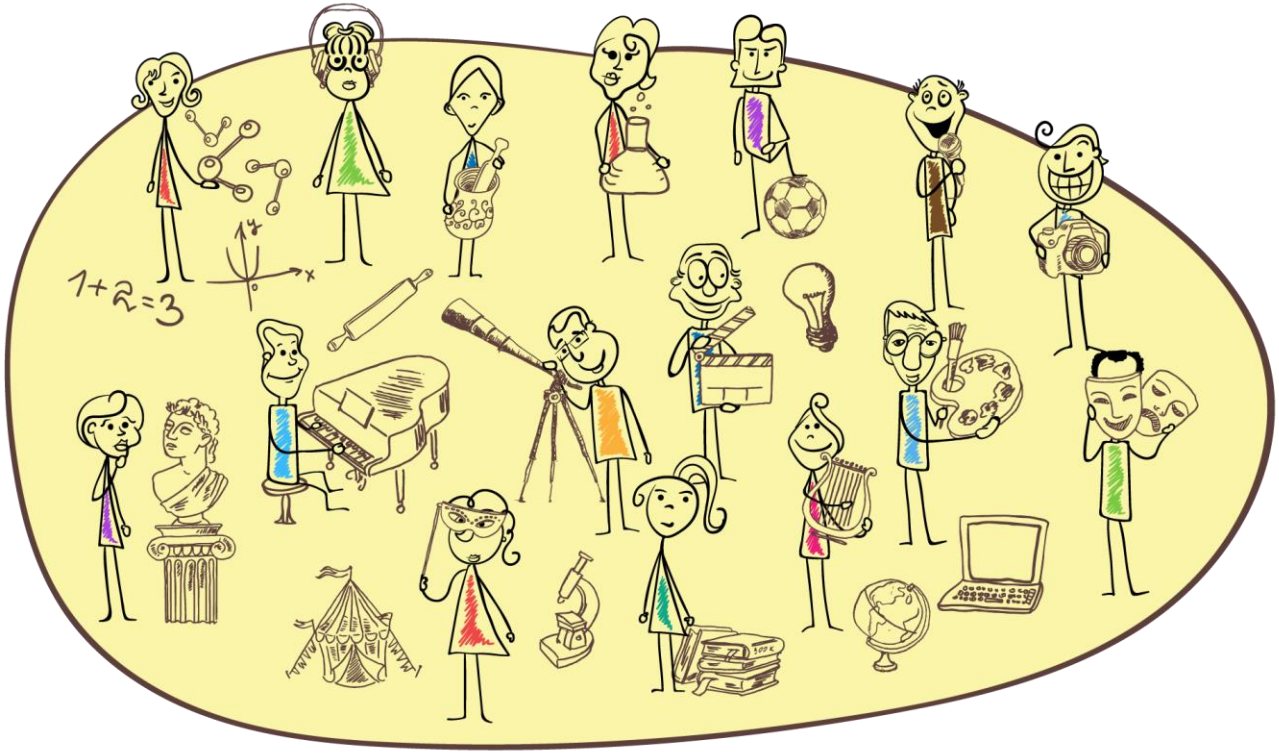
Life satisfaction and student performance can go together

Figure III.3.3

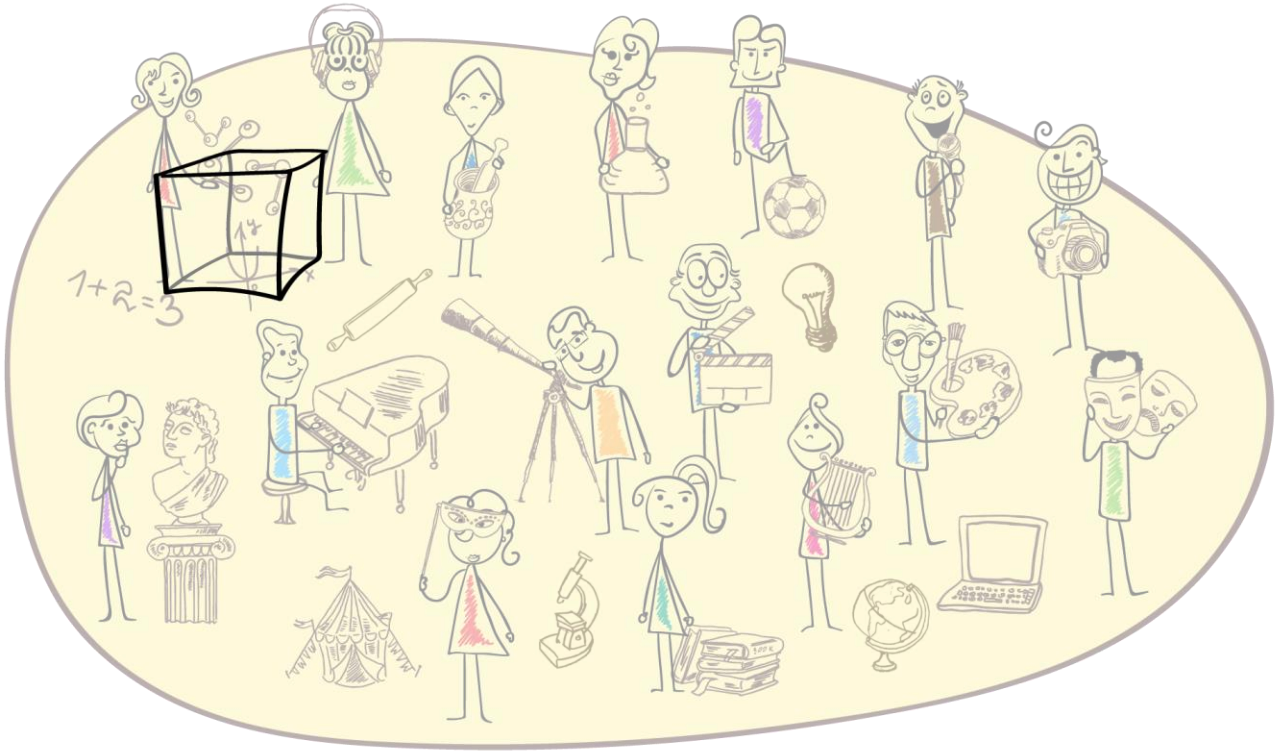


The multi-faceted world of knowledge

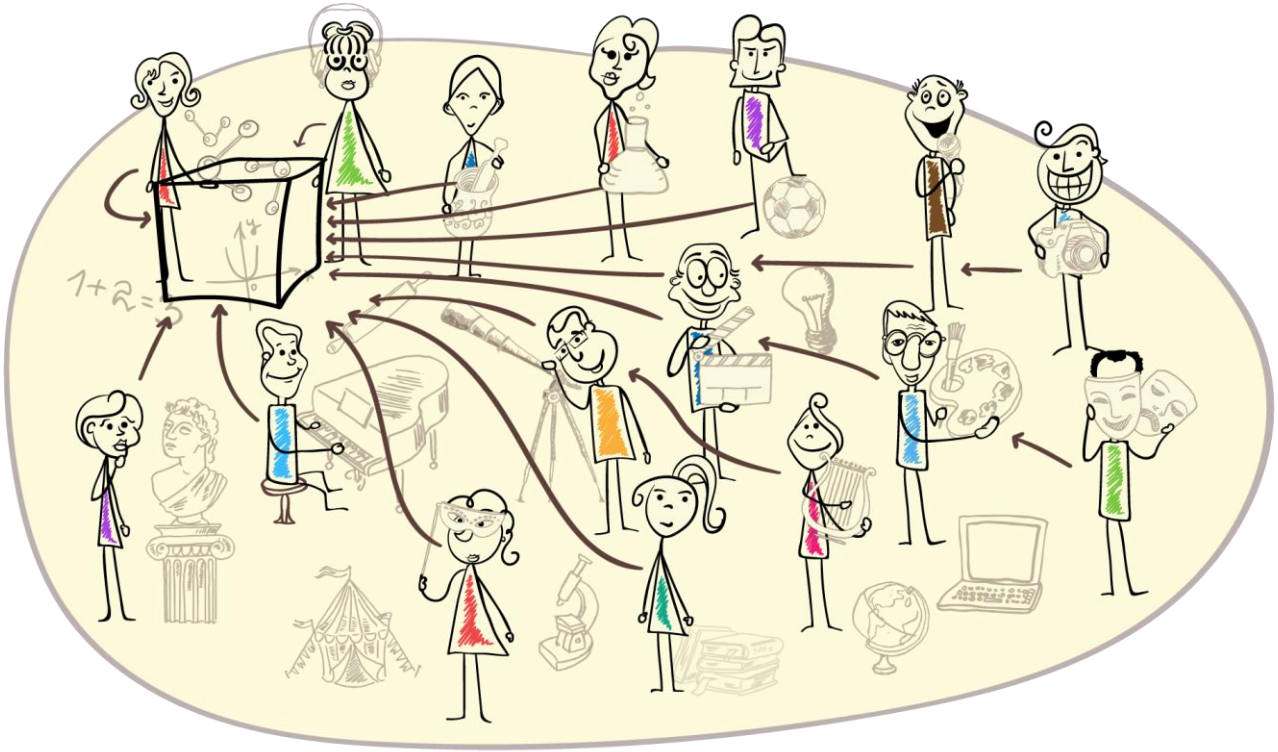
The human world of knowledge



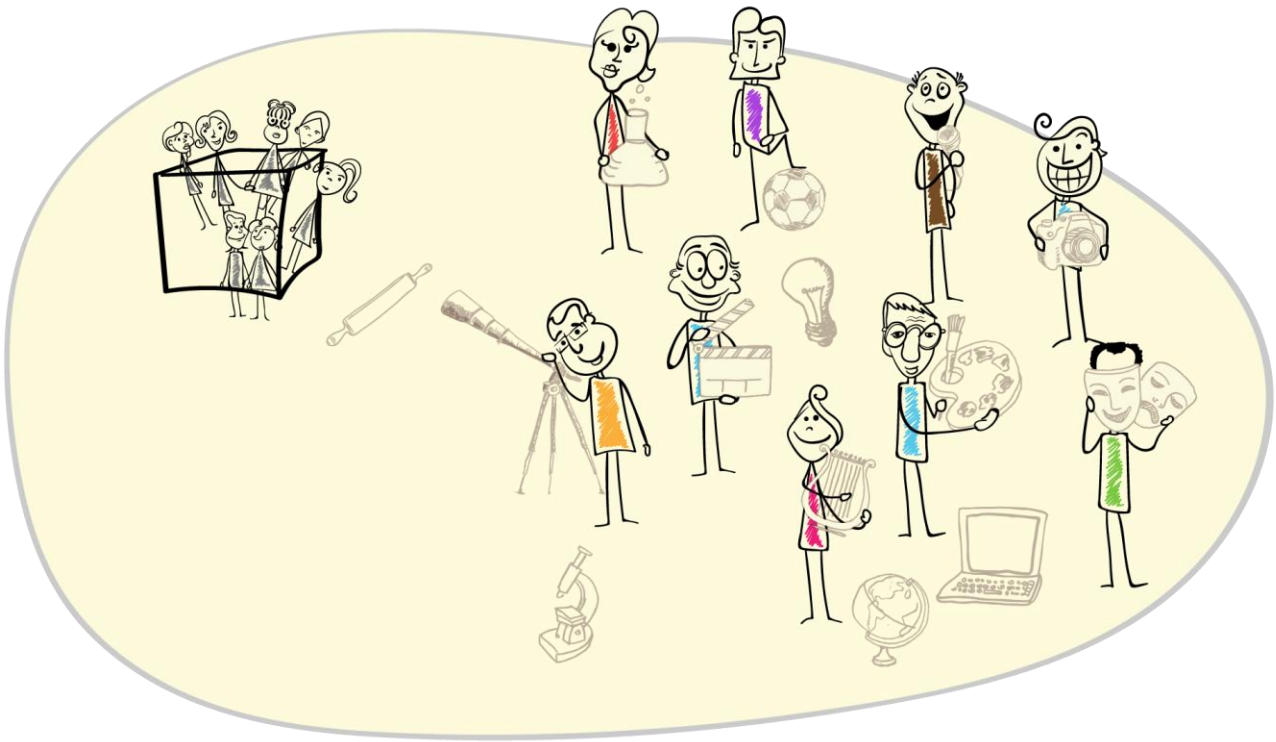
The small world of the curriculum



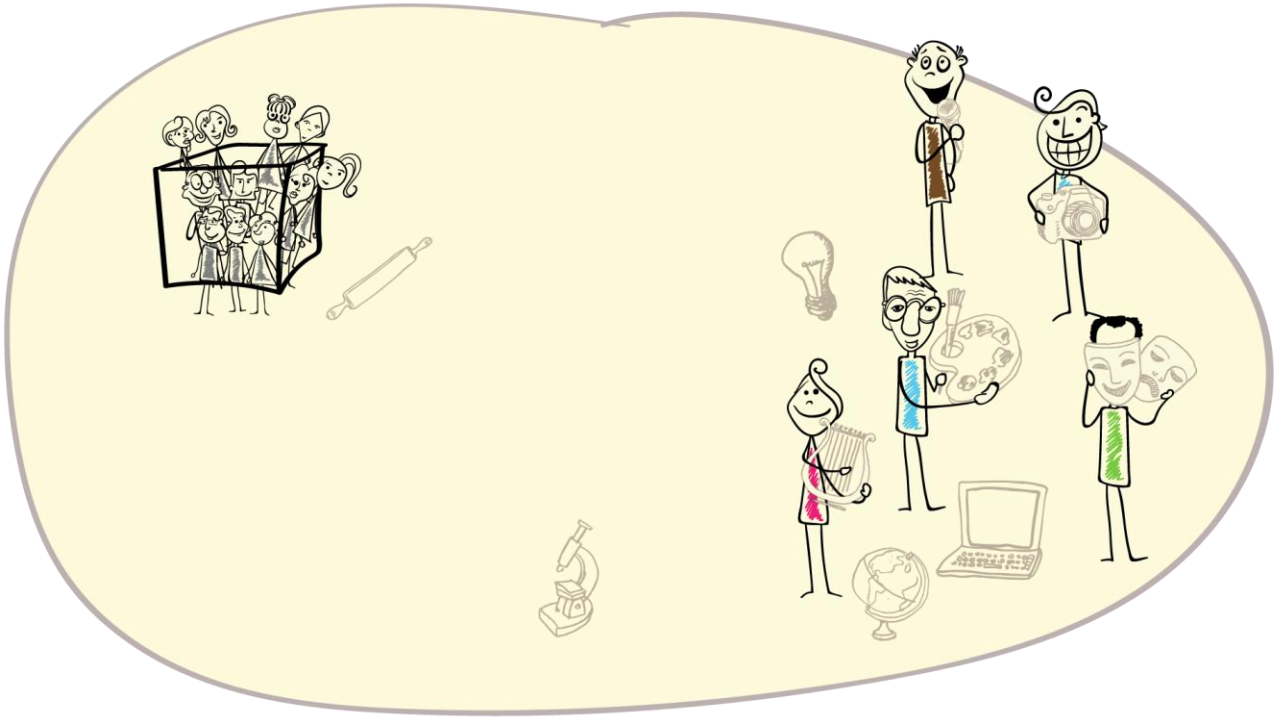
The small world of the curriculum



The small world of the curriculum

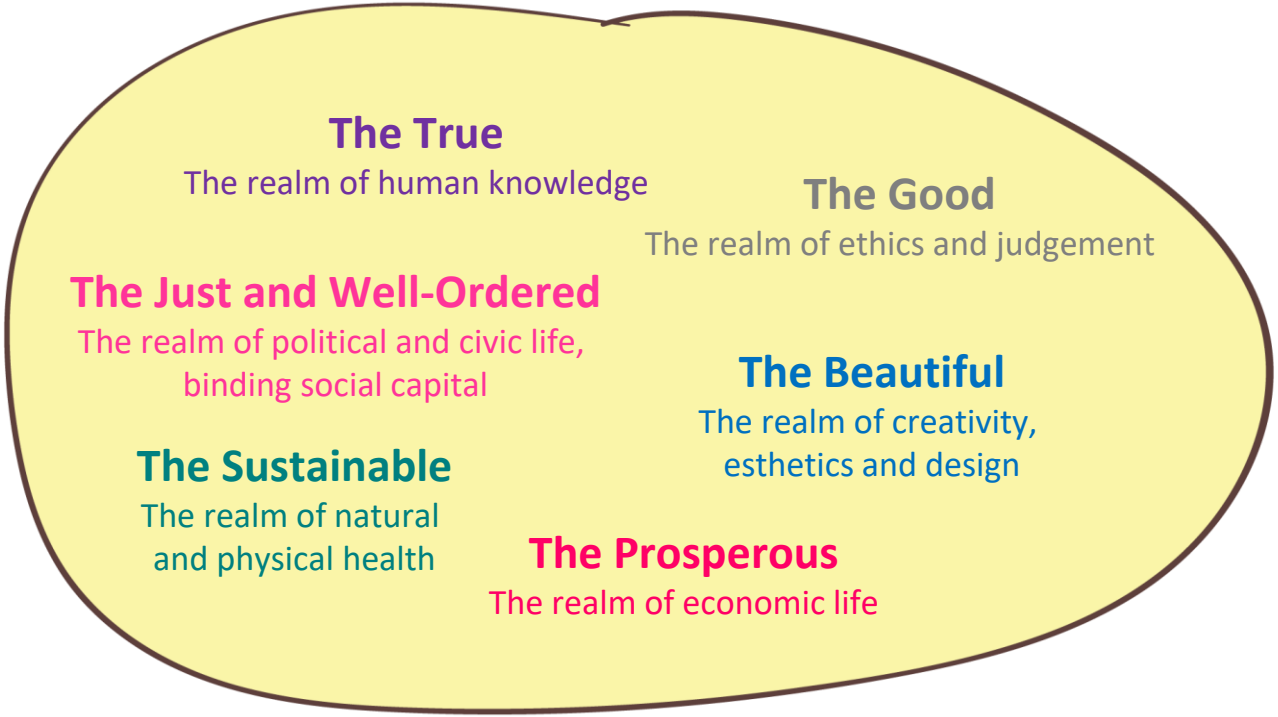


The small world of the curriculum



The small world of the curriculum

The big world of learning



Learning time and science performance

Figure II.6.23

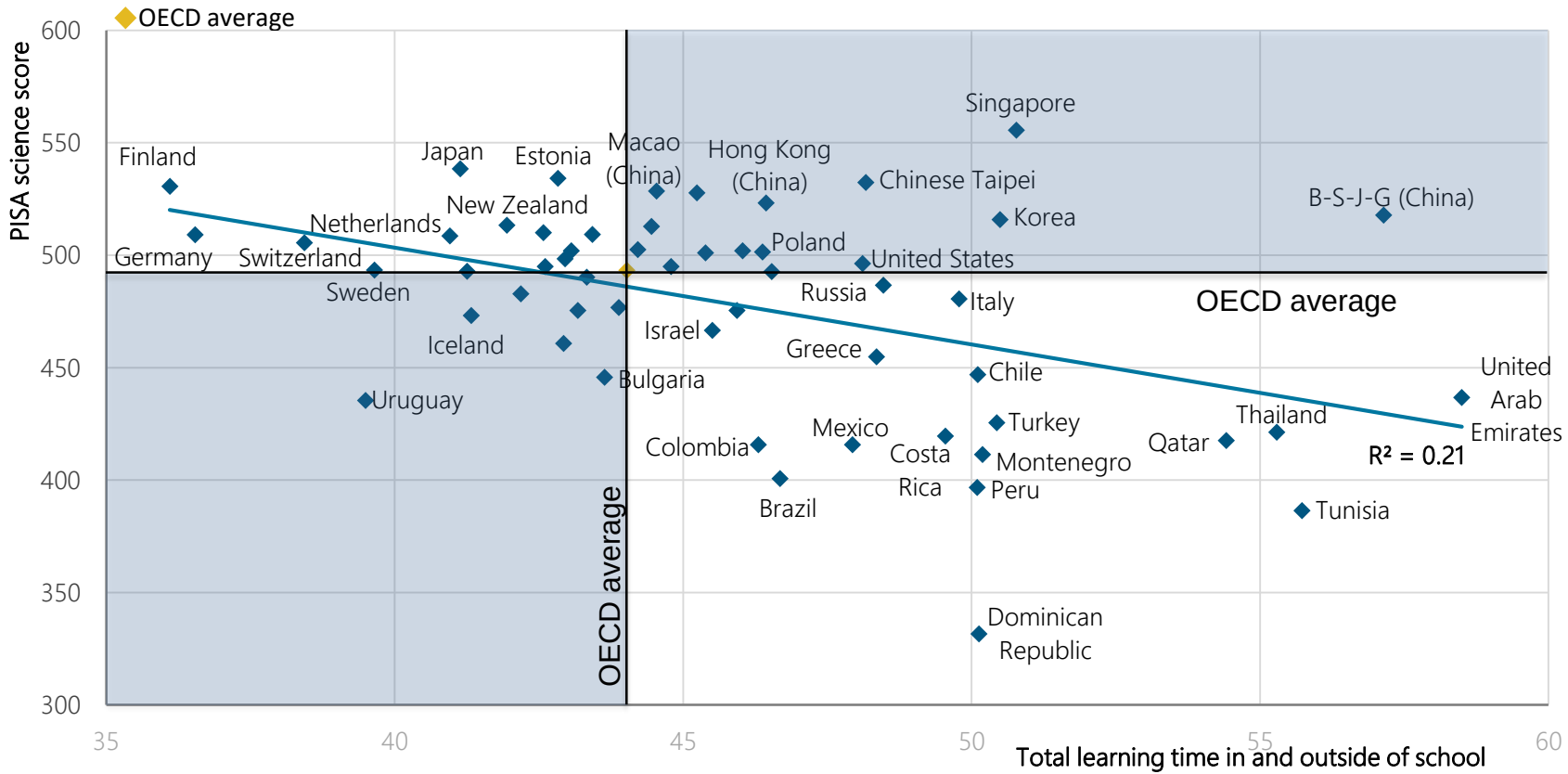
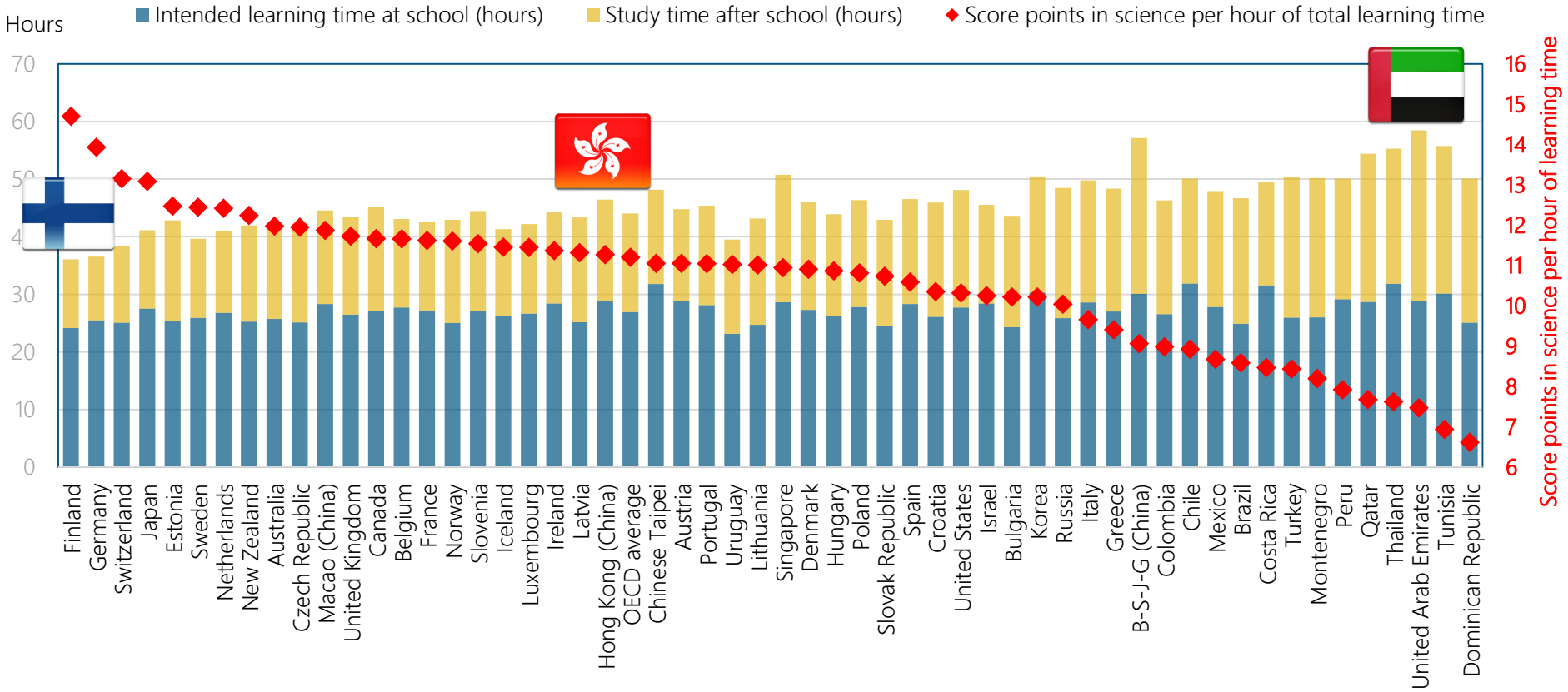


Figure II.6.23

Learning time and science performance (PISA)



System transformations

Industrial systems		World class systems
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

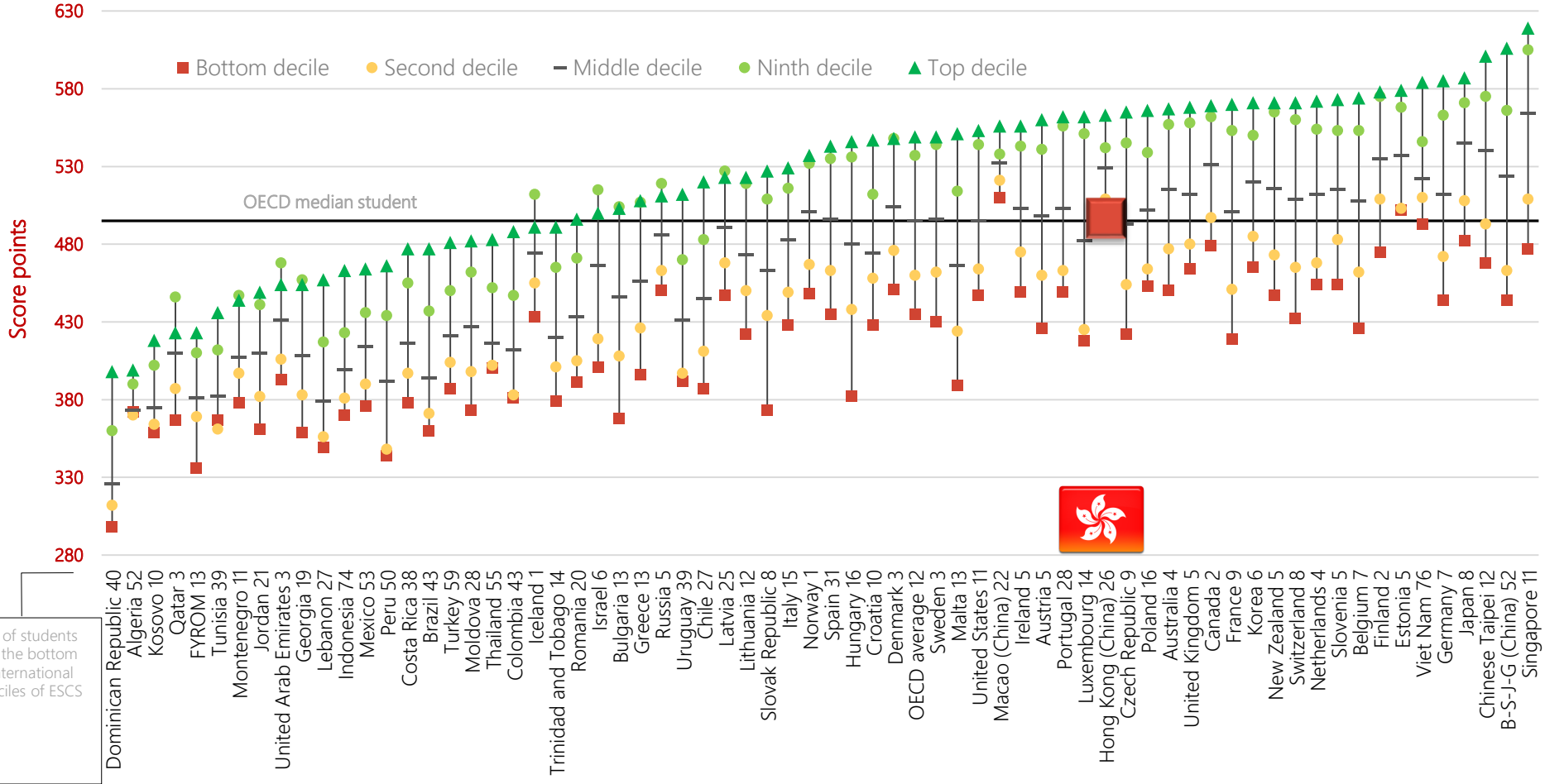

Some students learn at high levels


All students learn at high levels

Comparing like with like –

Figure I.6.7

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



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

Figure II.6.2

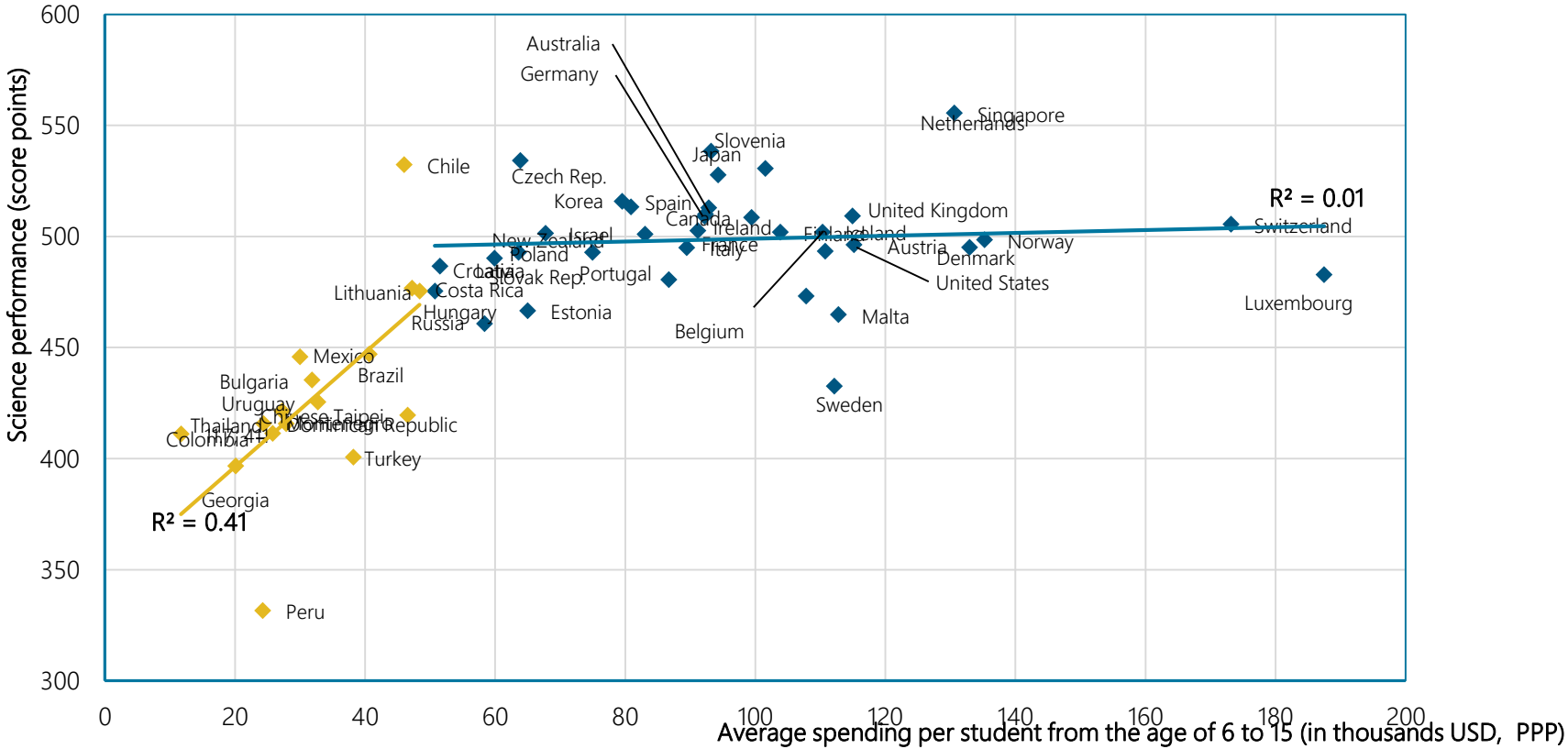
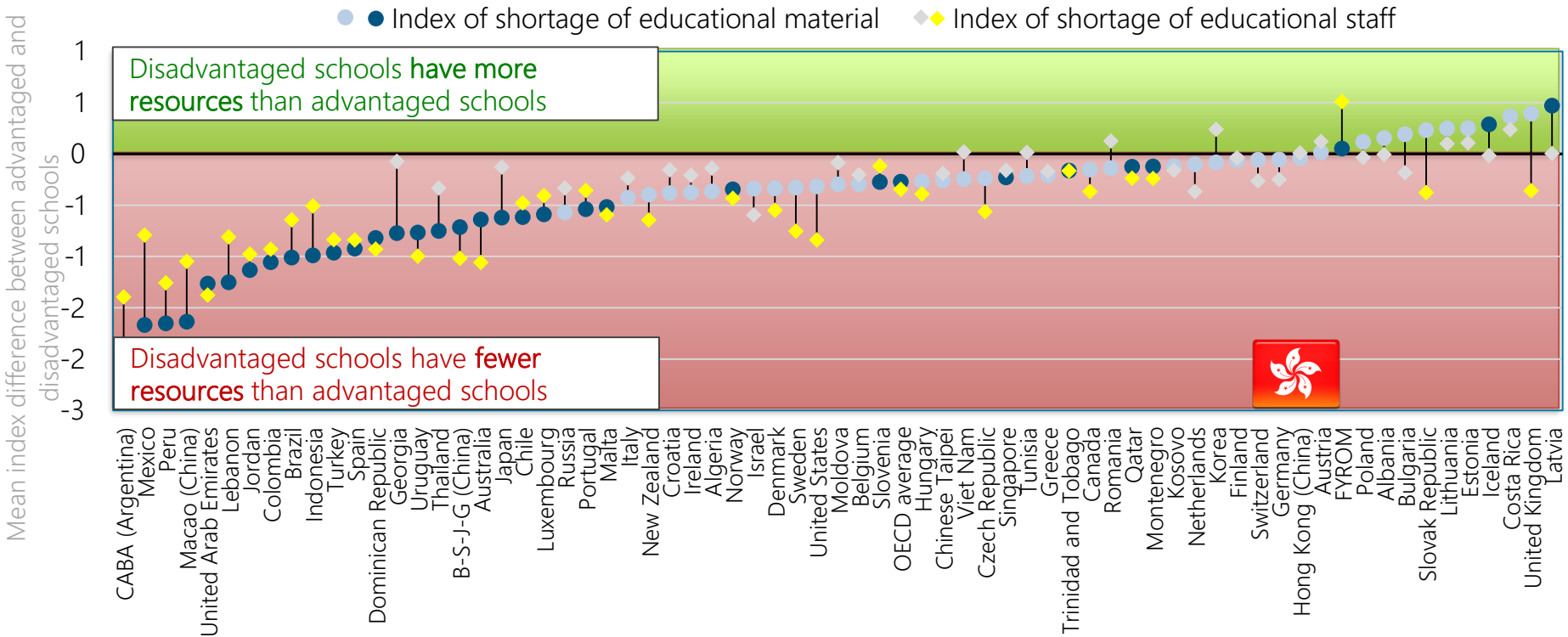


Figure I.6.14

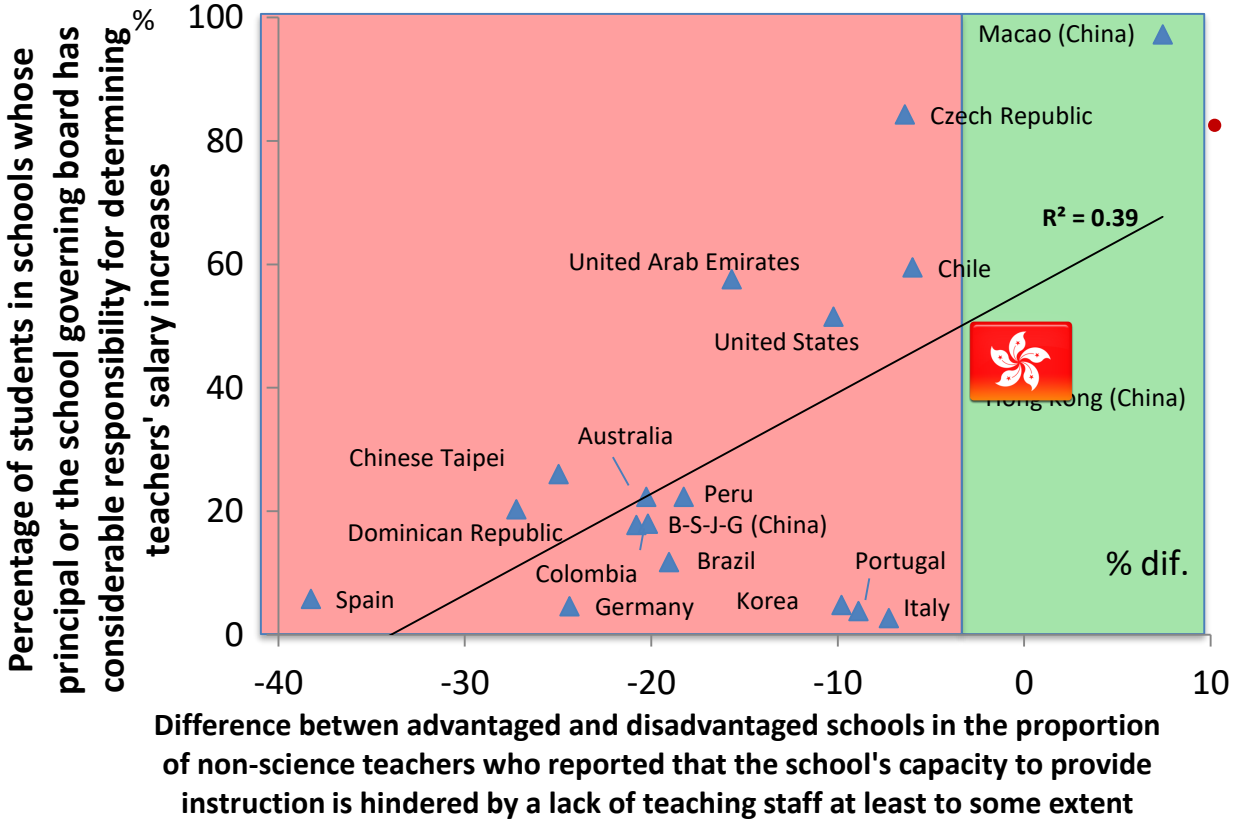
Differences in educational resources

between advantaged and disadvantaged schools



Does greater school autonomy go together with greater inequity?

Figure 3.16

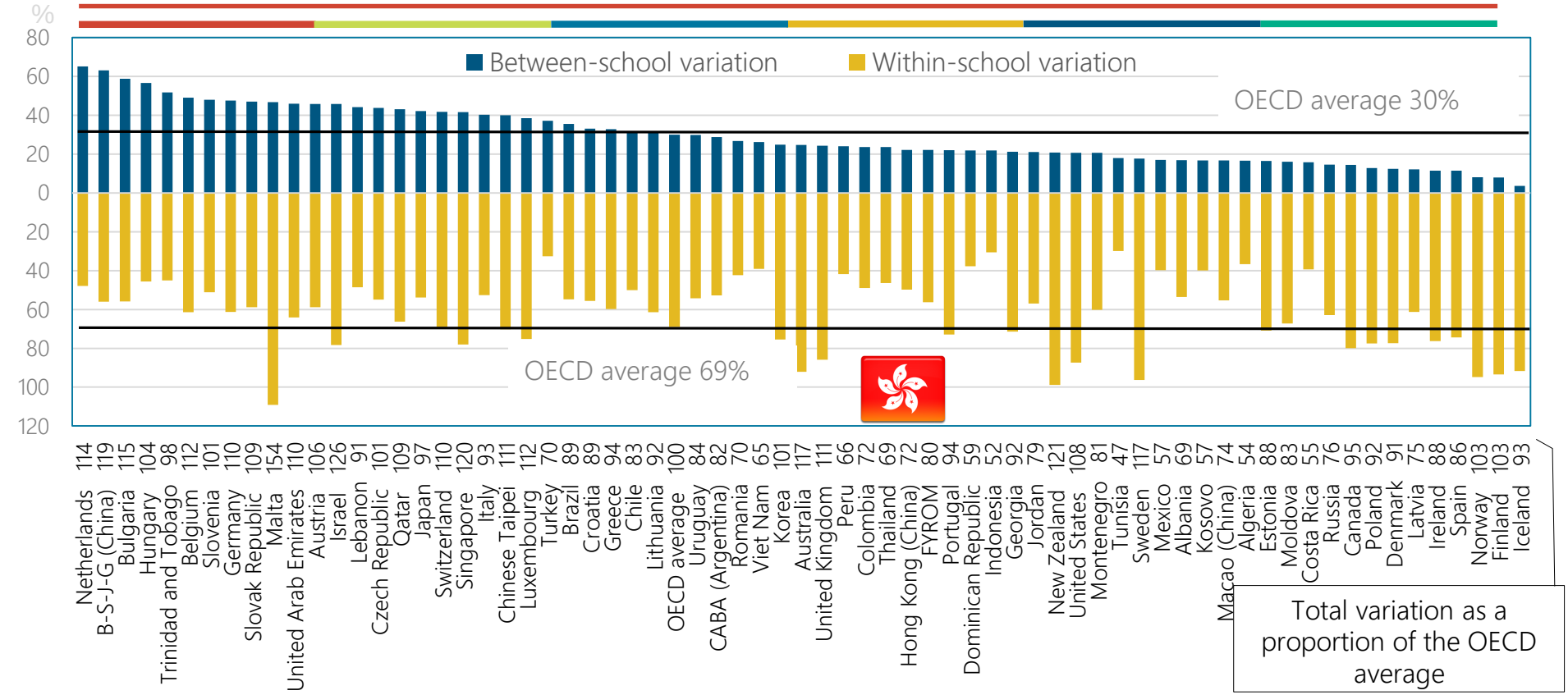


- **No** : Where school responsibility for hiring/firing teachers and setting salaries is greater, inequitable teacher sorting appears LESS frequent!

What can policy do?

- Manage/ consolidate school network
- Formula-based approaches to school financing
- Admission policies, controlled choice
- Foster collaboration /pairing among schools
- Engaging parents and stakeholders

Variation in performance between and within schools



Schools and communities: a virtuous relationship

Schools can become partners in serving the needs of local communities, especially in disadvantaged communities

Extracurricular activities that enrich communities in sports, social care and volunteering

Service learning

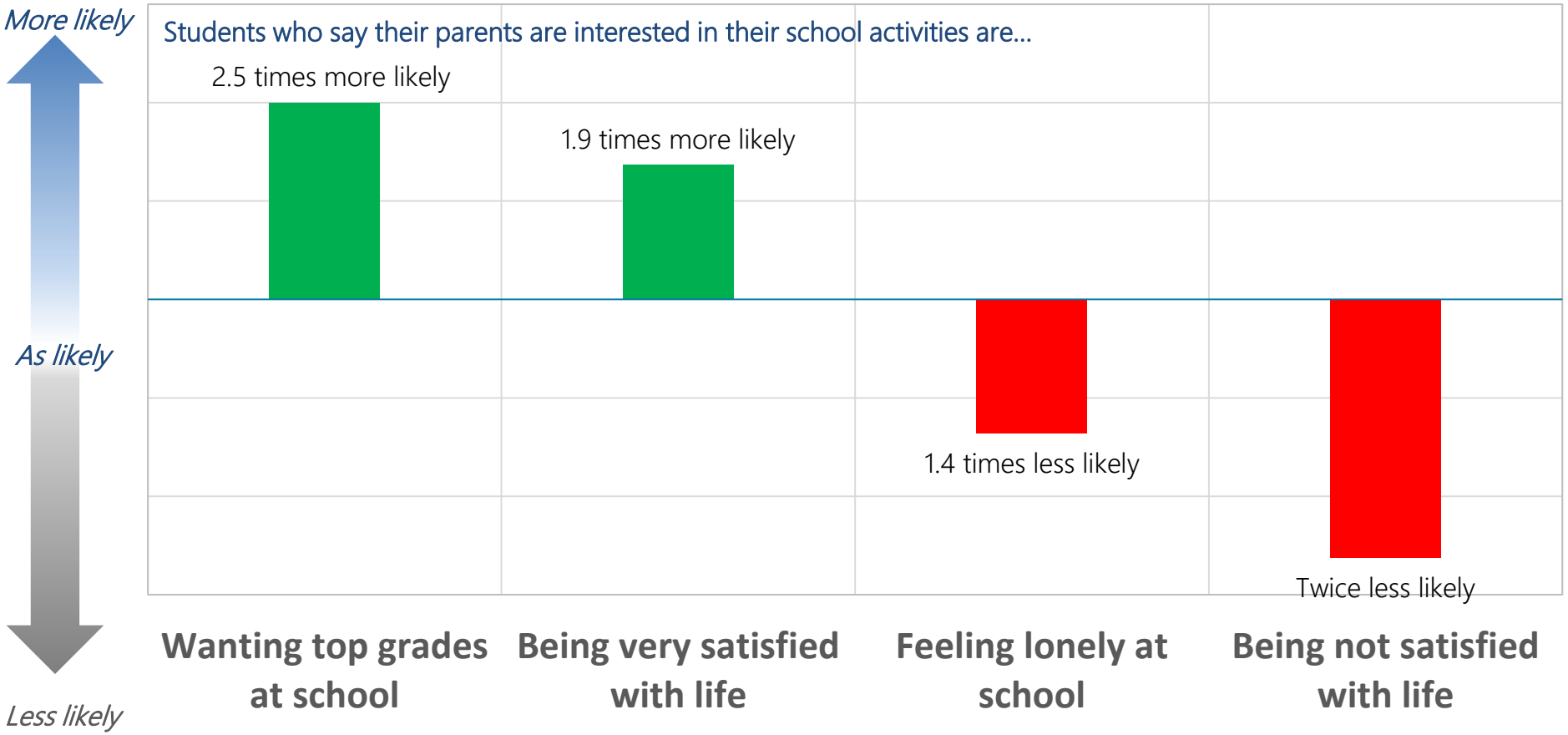
Successful schools draw on the resources and support of their communities

Schools engage parents and families in learning, and also draw on resources of local enterprises, community organisations, social services, and sports and cultural institutions, such as museums, theatres or libraries

Schools are vital to the social health of their local communities

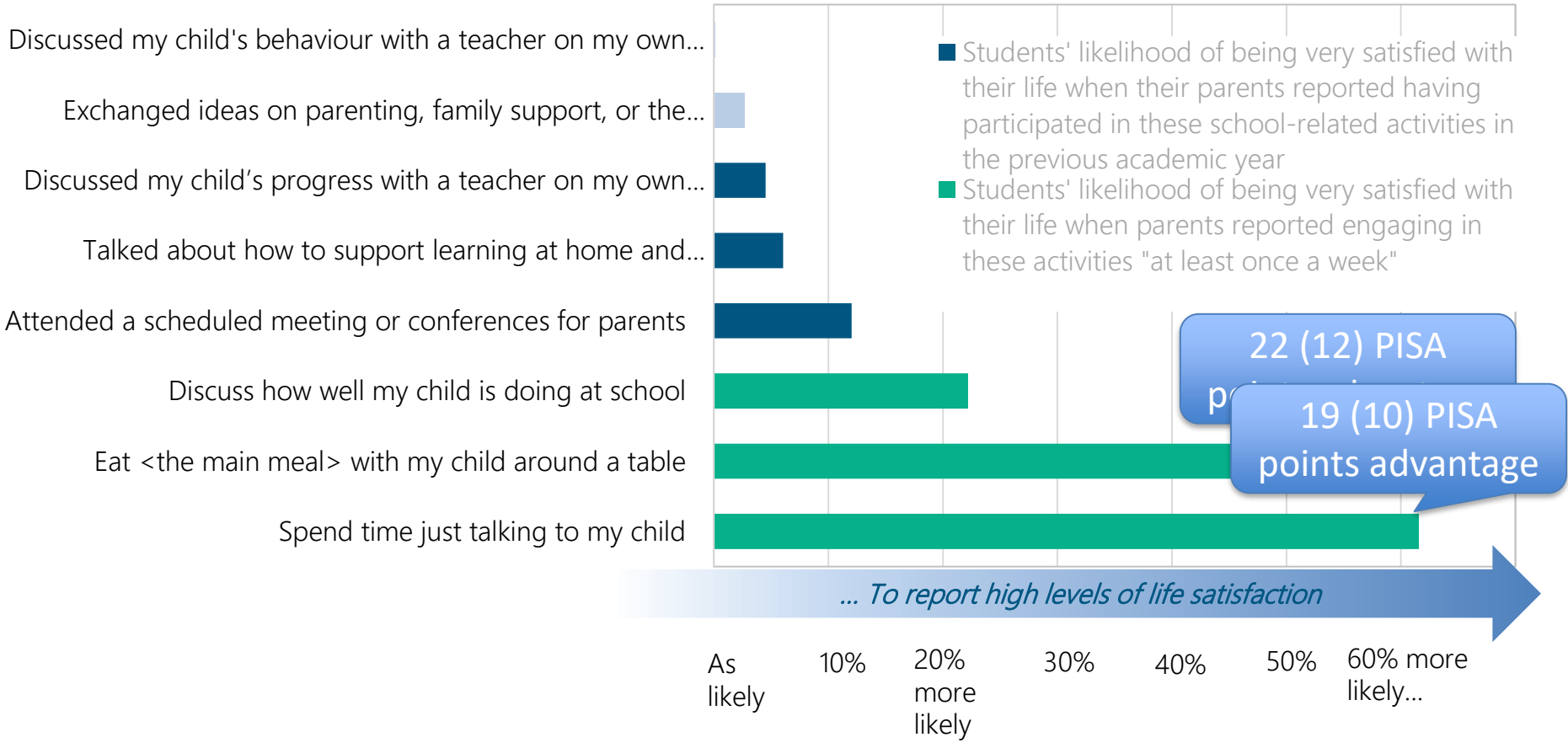
Research projects offer innovative answers to the needs of local enterprises, while enhancing entrepreneurialism among students and providing real-world experiences.

Parents' interest in their child's activities at school and well-being (average)



Parents' activities and students' life satisfaction, Average-18

Figure III.9.4




Prescription


Informed profession

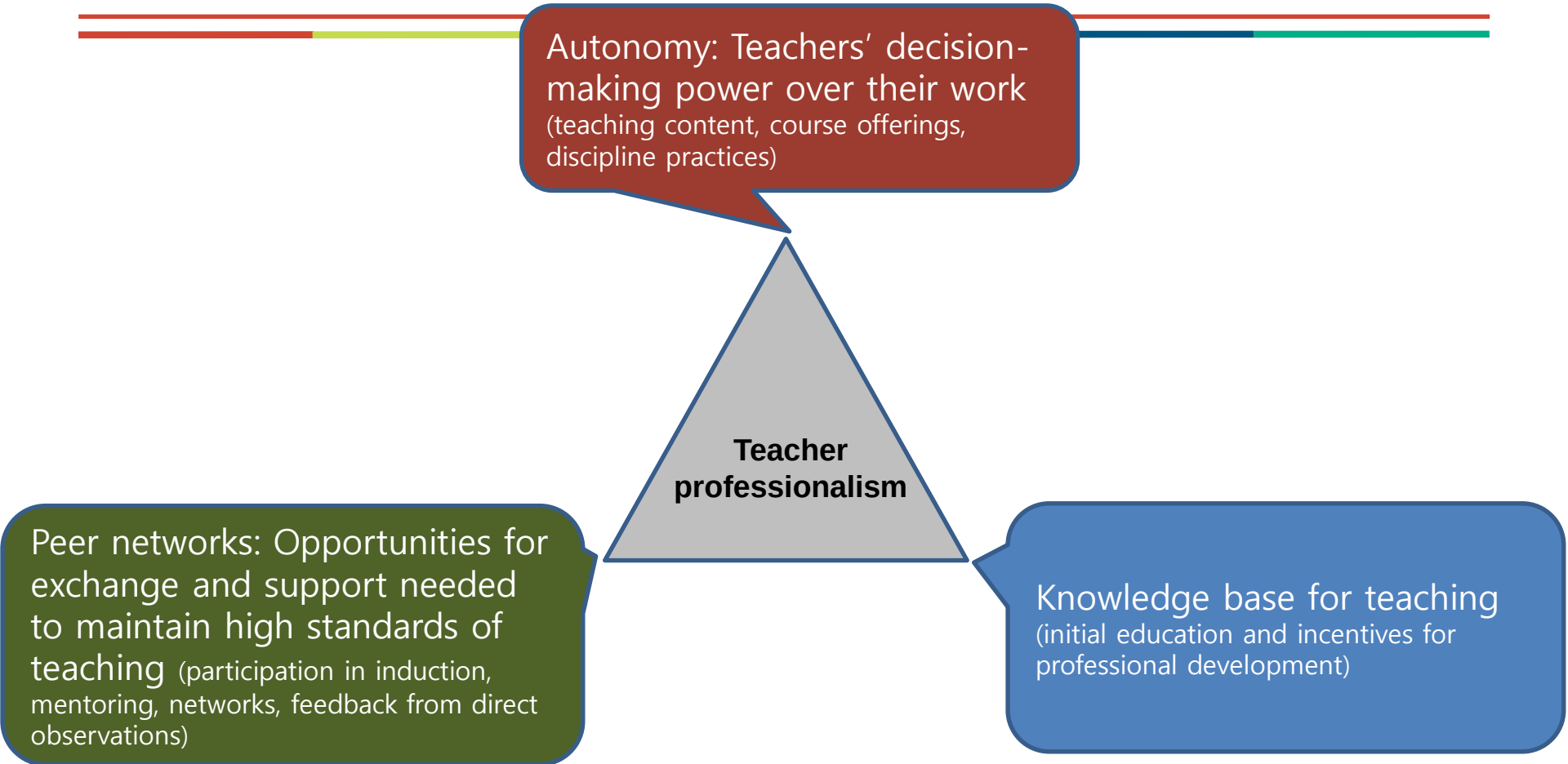
Administrative control and accountability

Professional forms of work organisation

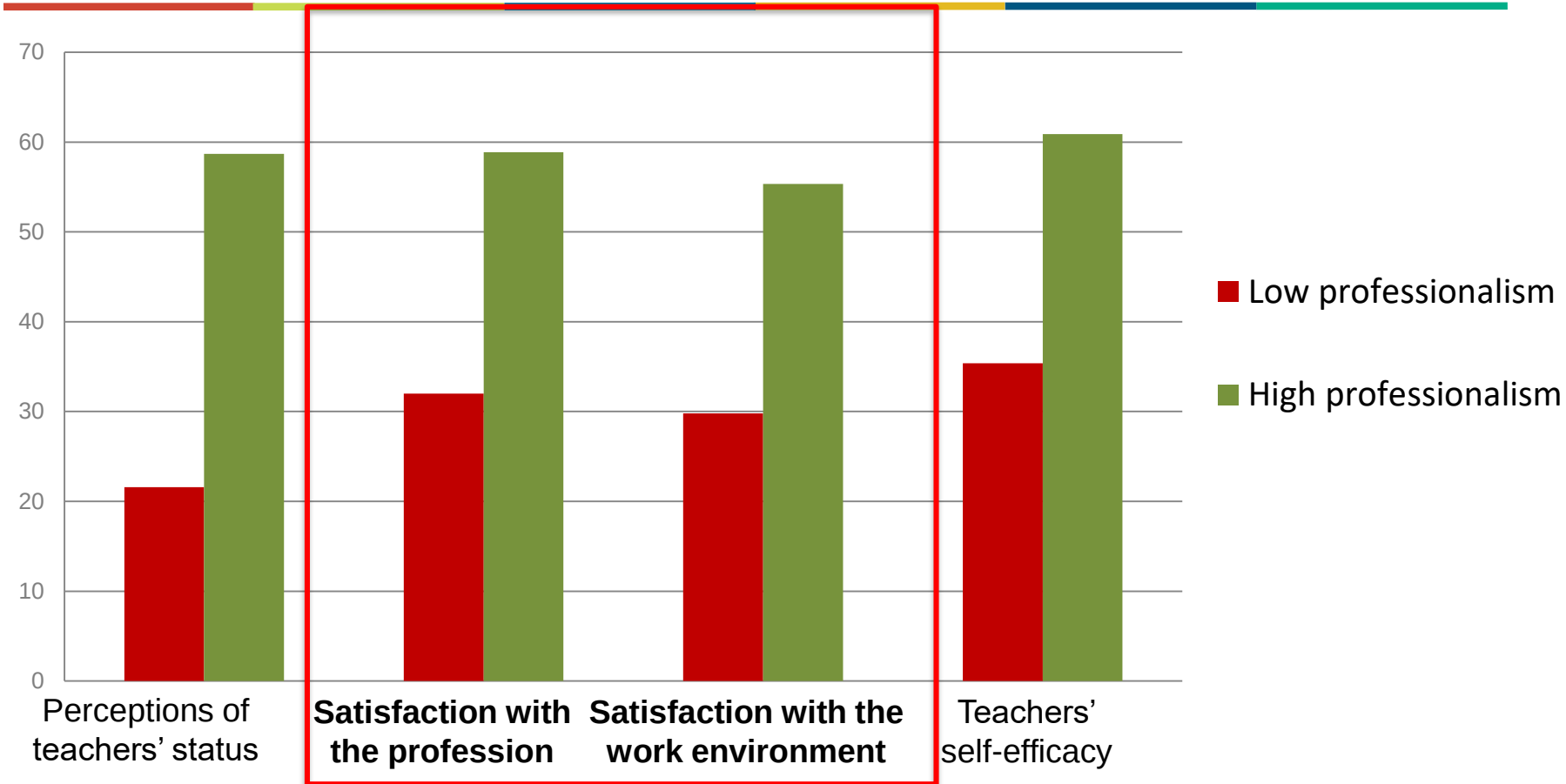
Professionalism

- 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

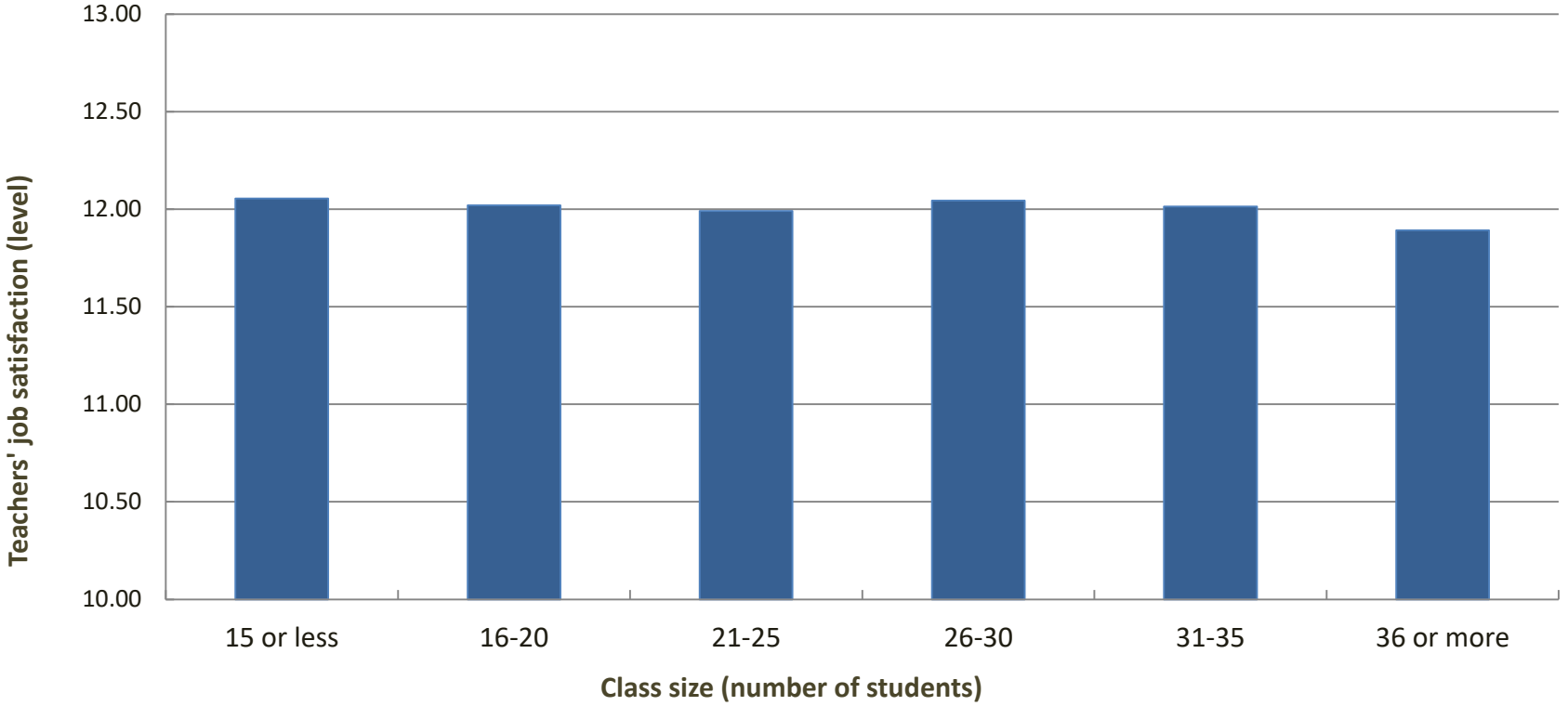
Policy levers to teacher professionalism



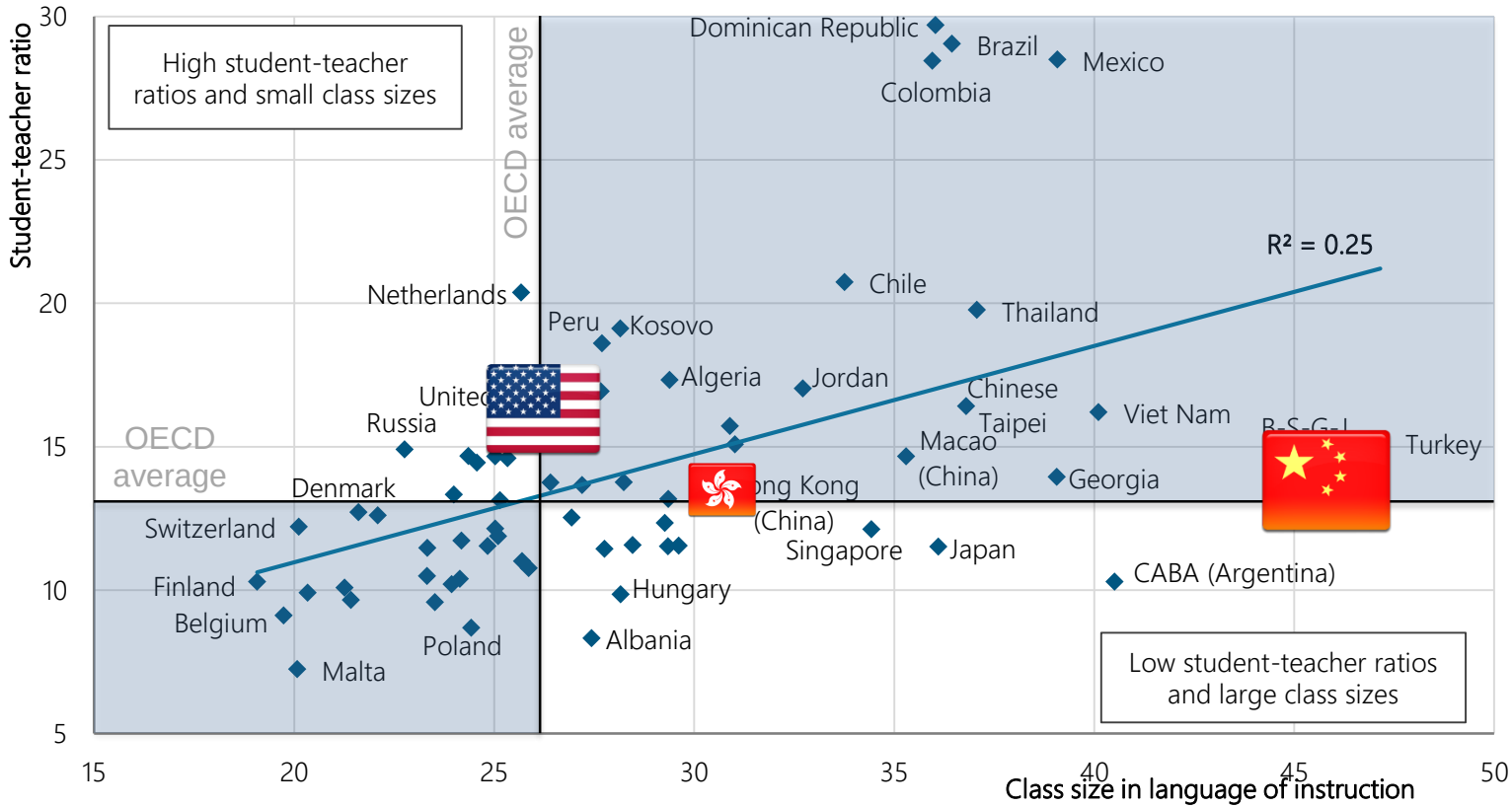
Teacher job satisfaction and professionalism



Teachers' job satisfaction and class size



Student-teacher ratios and class size

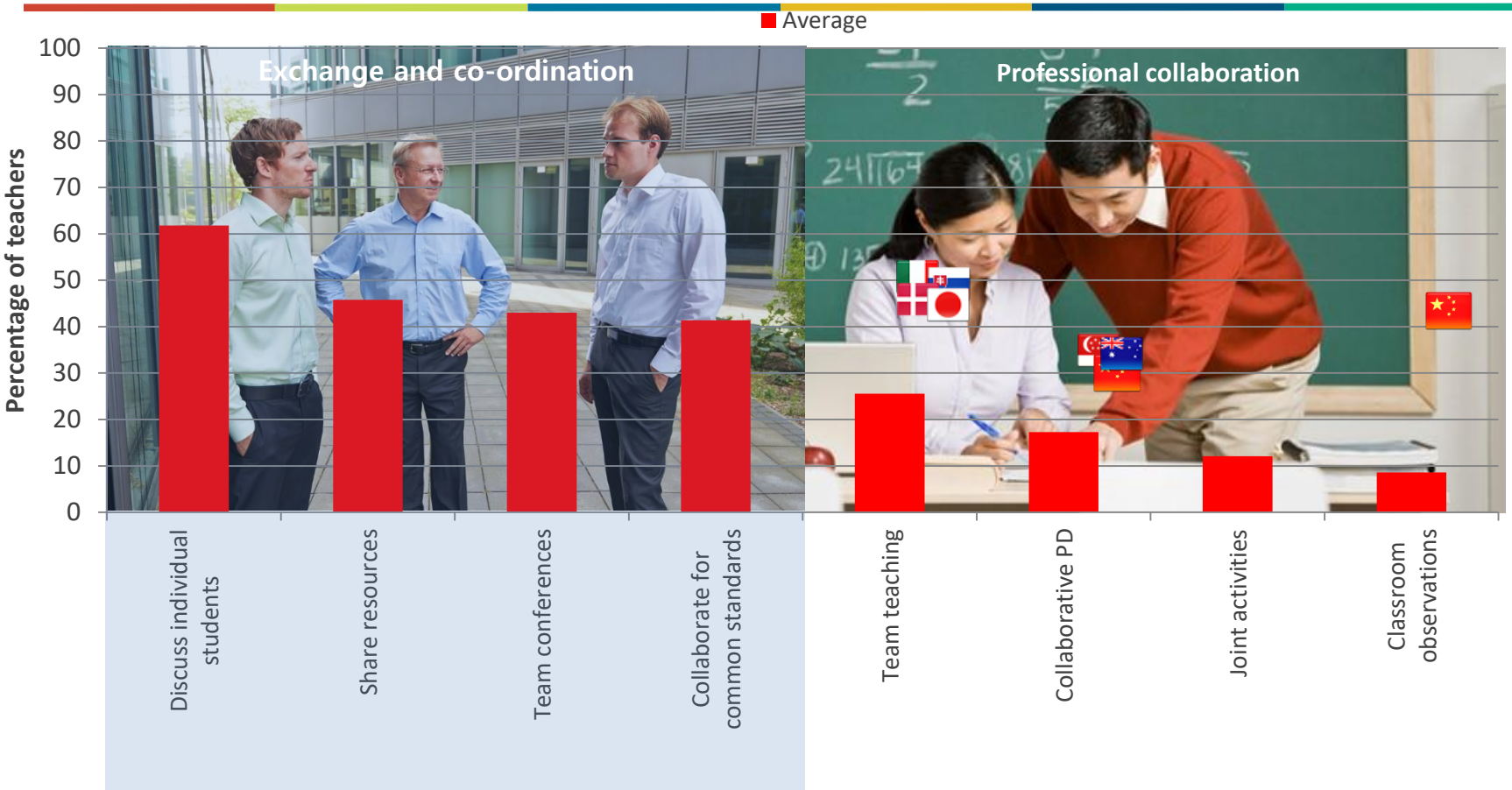



Bureaucratic Look-up

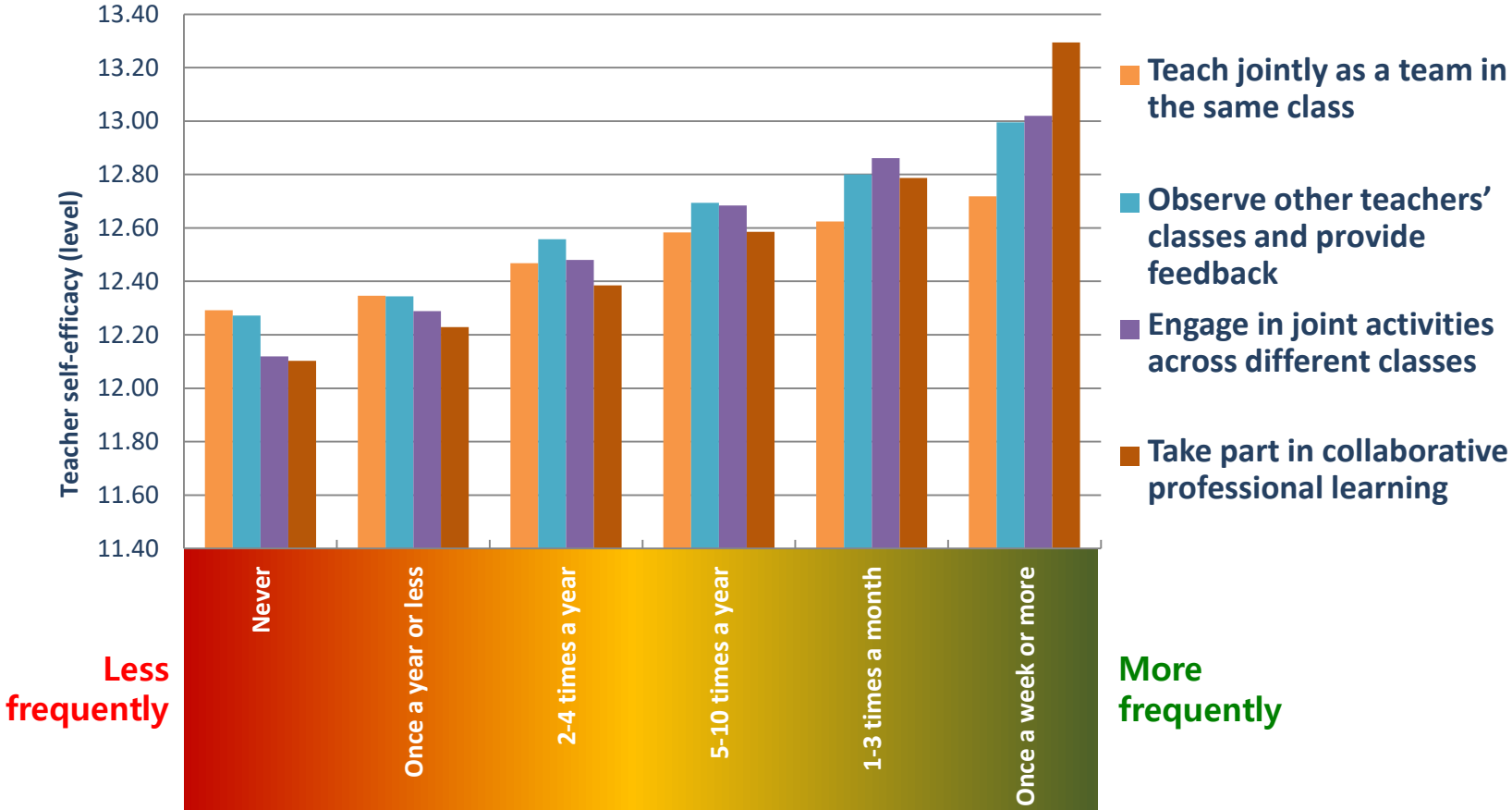

Devolved Look-outward

Teacher professional collaboration

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



Teachers' self-efficacy and professional collaboration




Prescription

Ownership of professional practice

Powerful learning environments are constantly creating synergies and finding new ways to enhance professional, social and cultural capital with others. They do that with families and communities, with higher education, with other schools and learning environments, and with businesses.

What teachers say and what teachers do

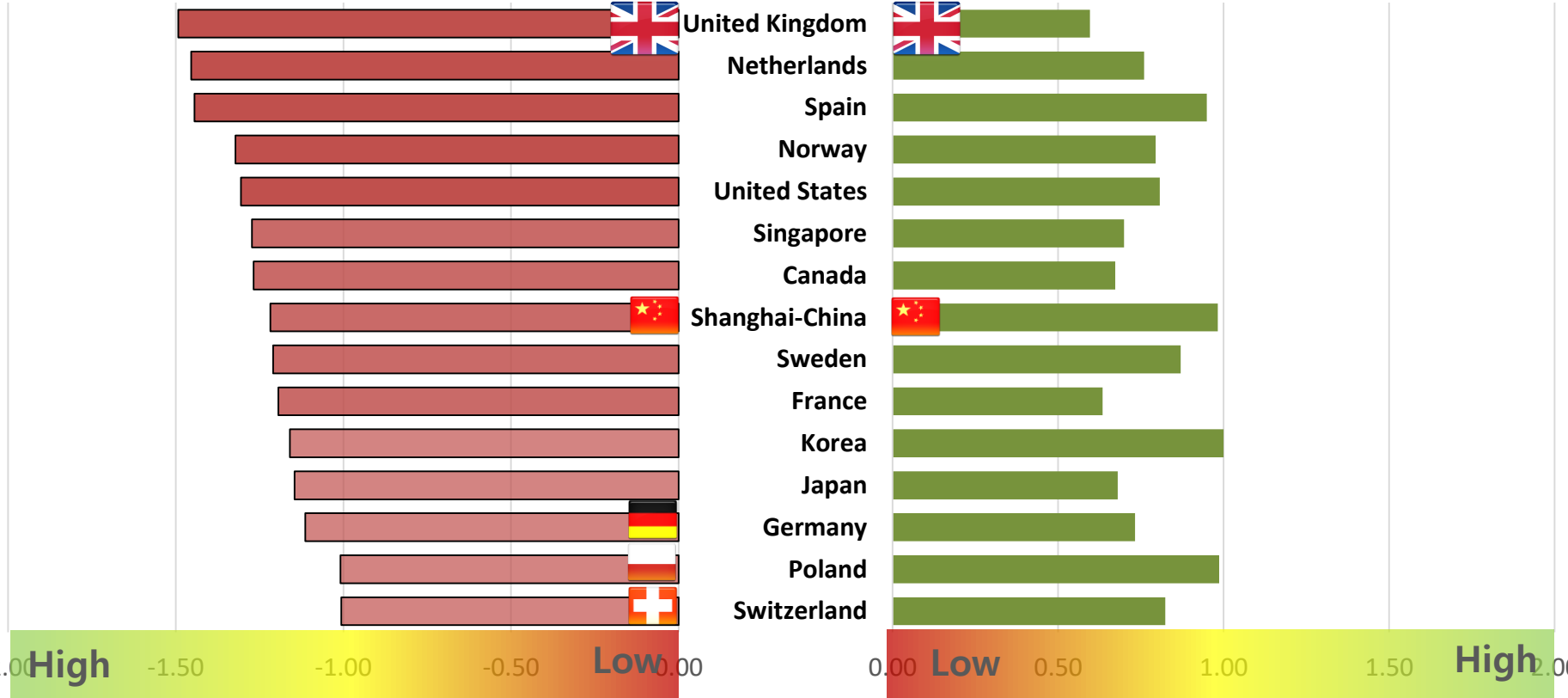

96% of teachers: My role as a teacher is to facilitate students own inquiry

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


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

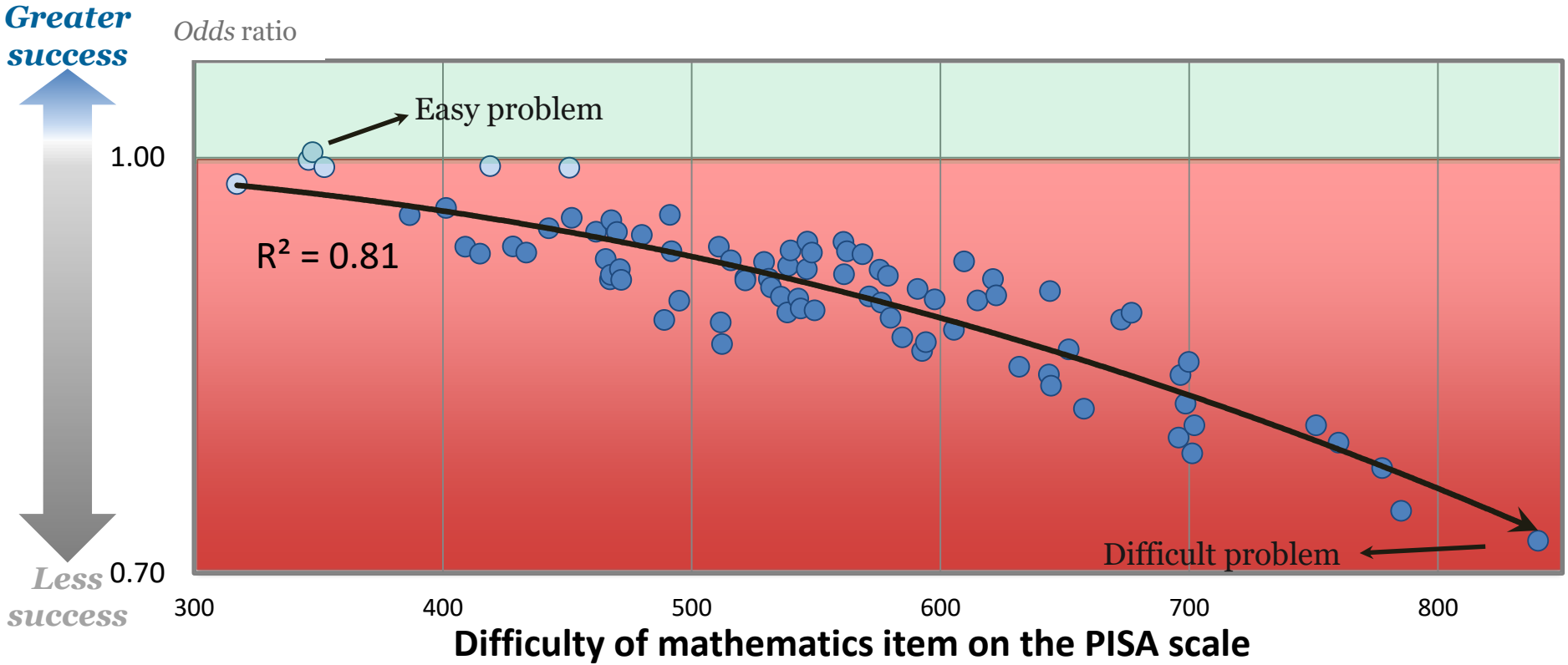
Prevalence of **memorisation**
rehearsal, routine exercises, drill and practice and/or repetition

Prevalence of **elaboration**
reasoning, deep learning, intrinsic motivation, critical thinking, creativity, non-routine problems



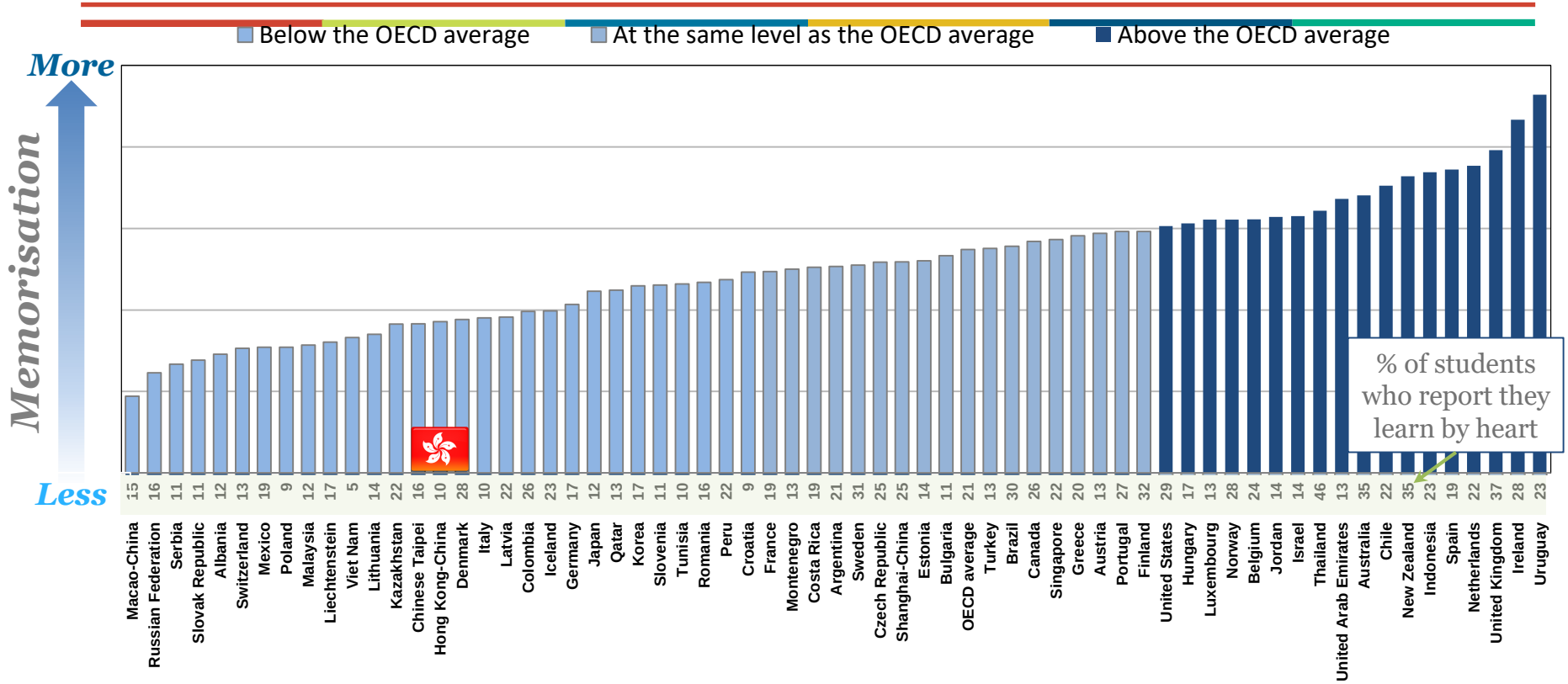
Memorisation is less useful as problems become more difficult

(OECD average)



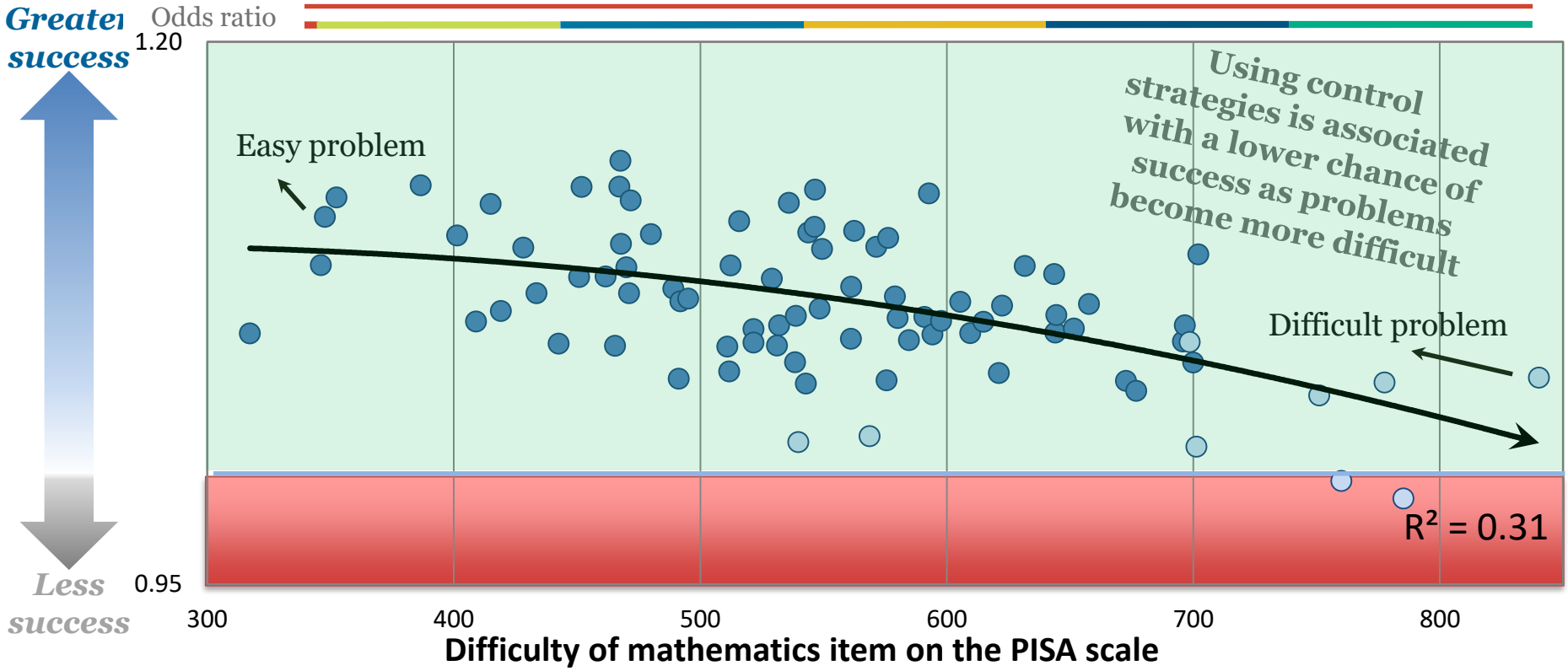
Source: Figure 4.3

Students' use of **memorisation strategies**



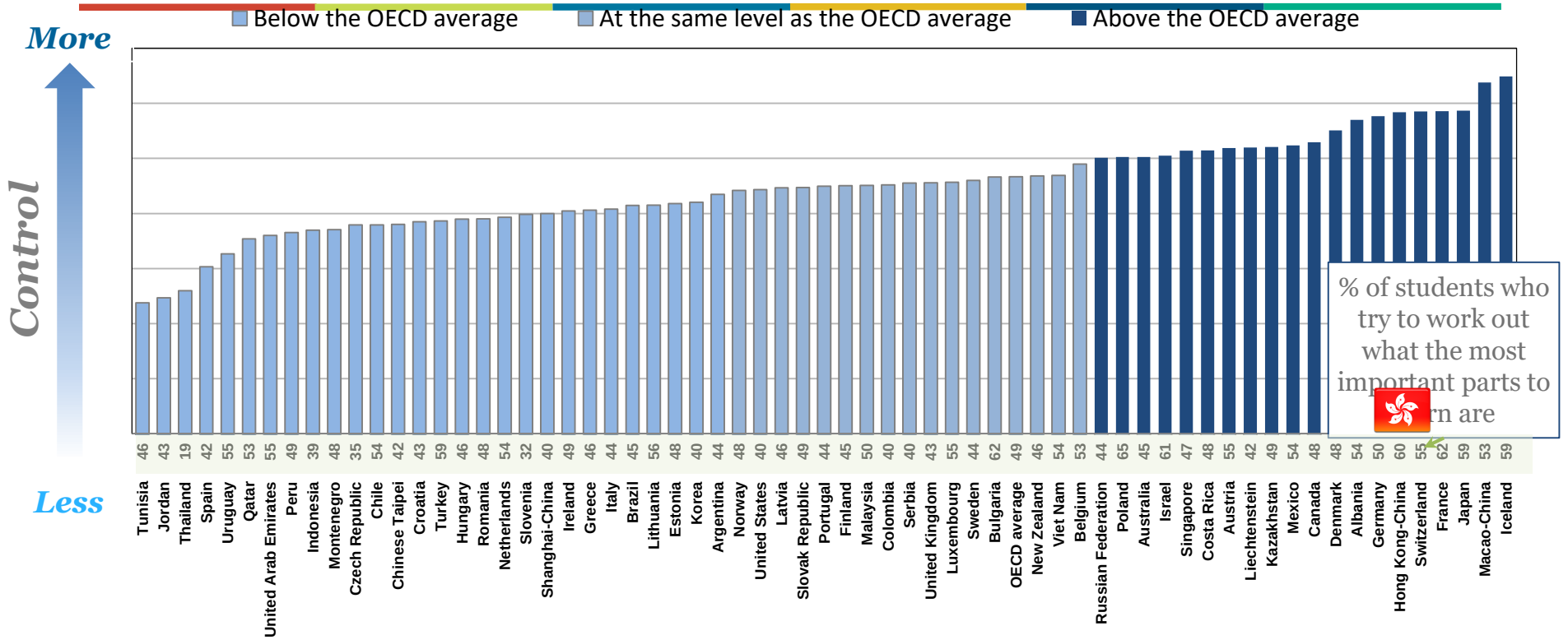
Source: Figure 4.1

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



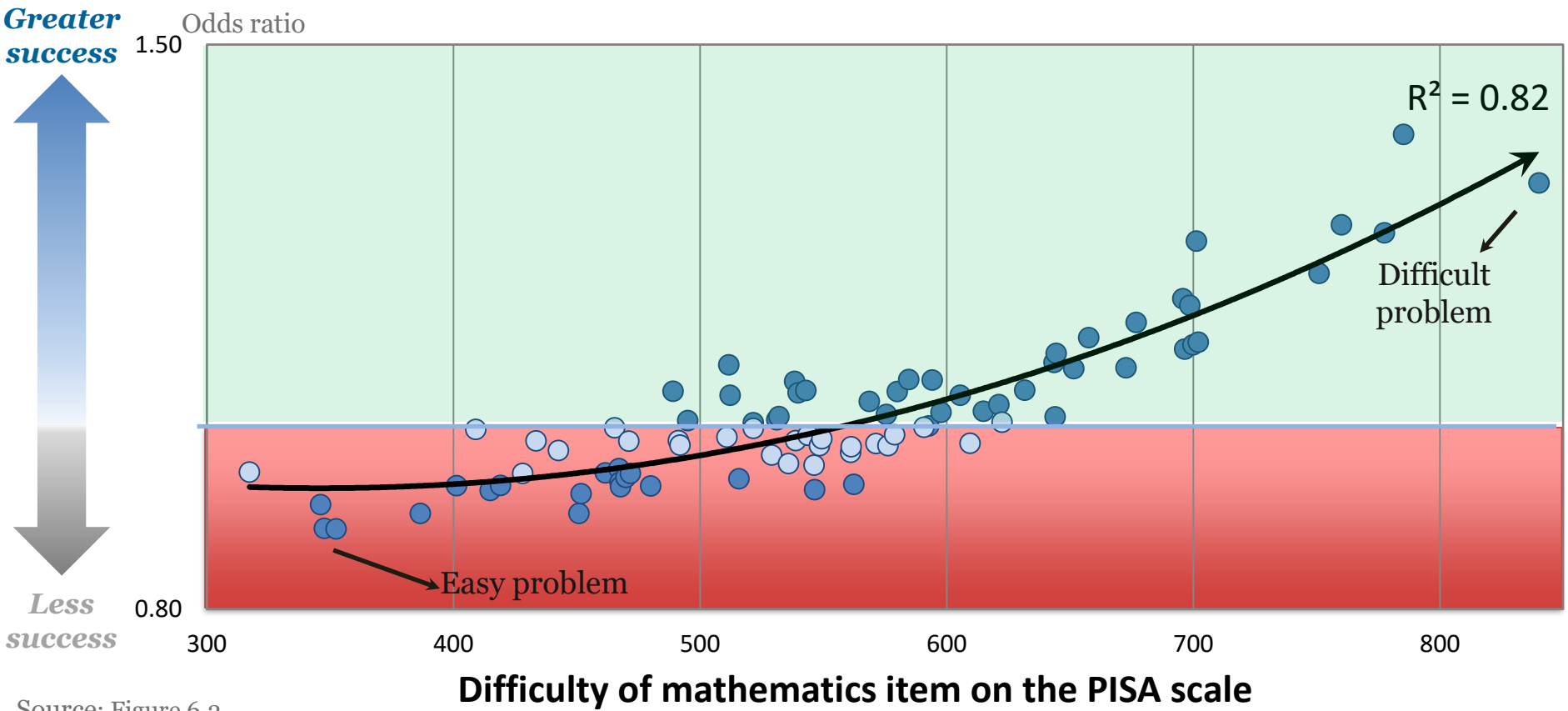
Source: Figure 5.2

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



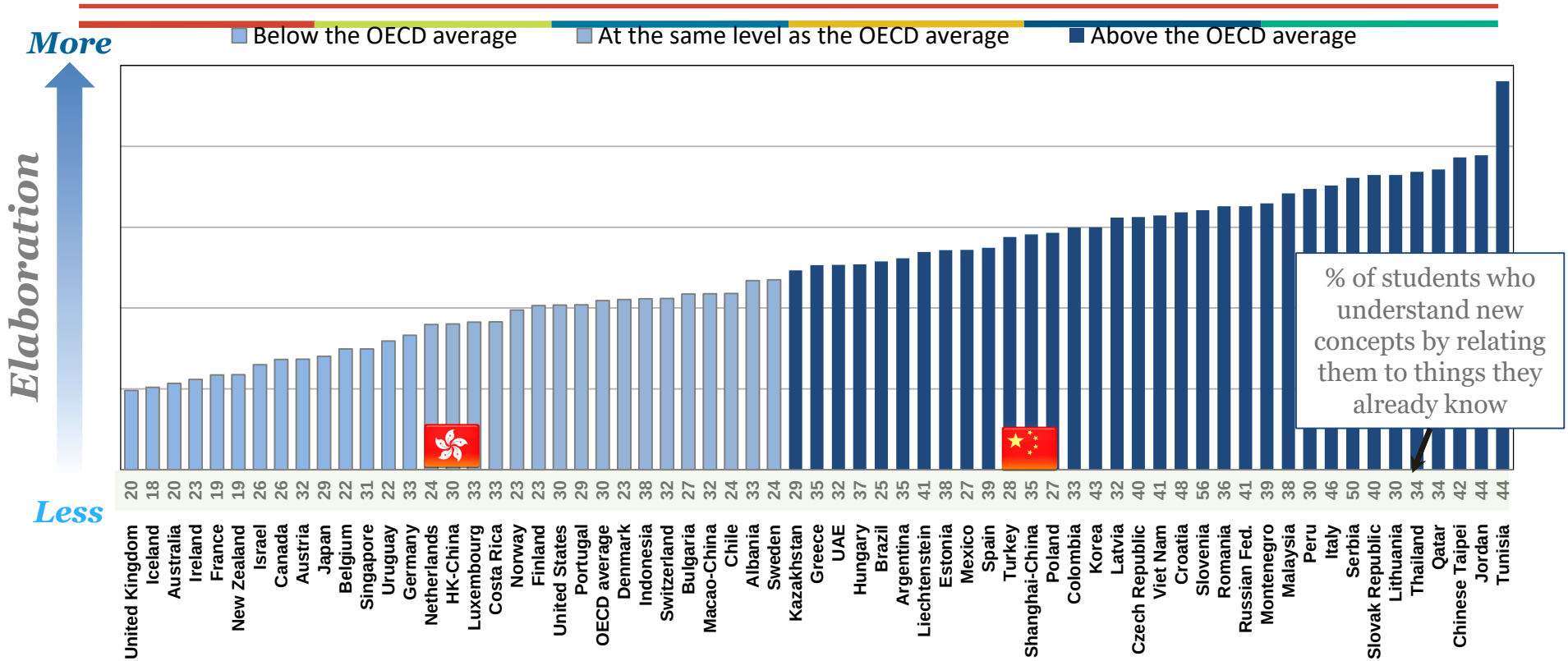
Source: Figure 5.1

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



Source: Figure 6.2

Students' use of **elaboration strategies**



Source: Figure 6.1

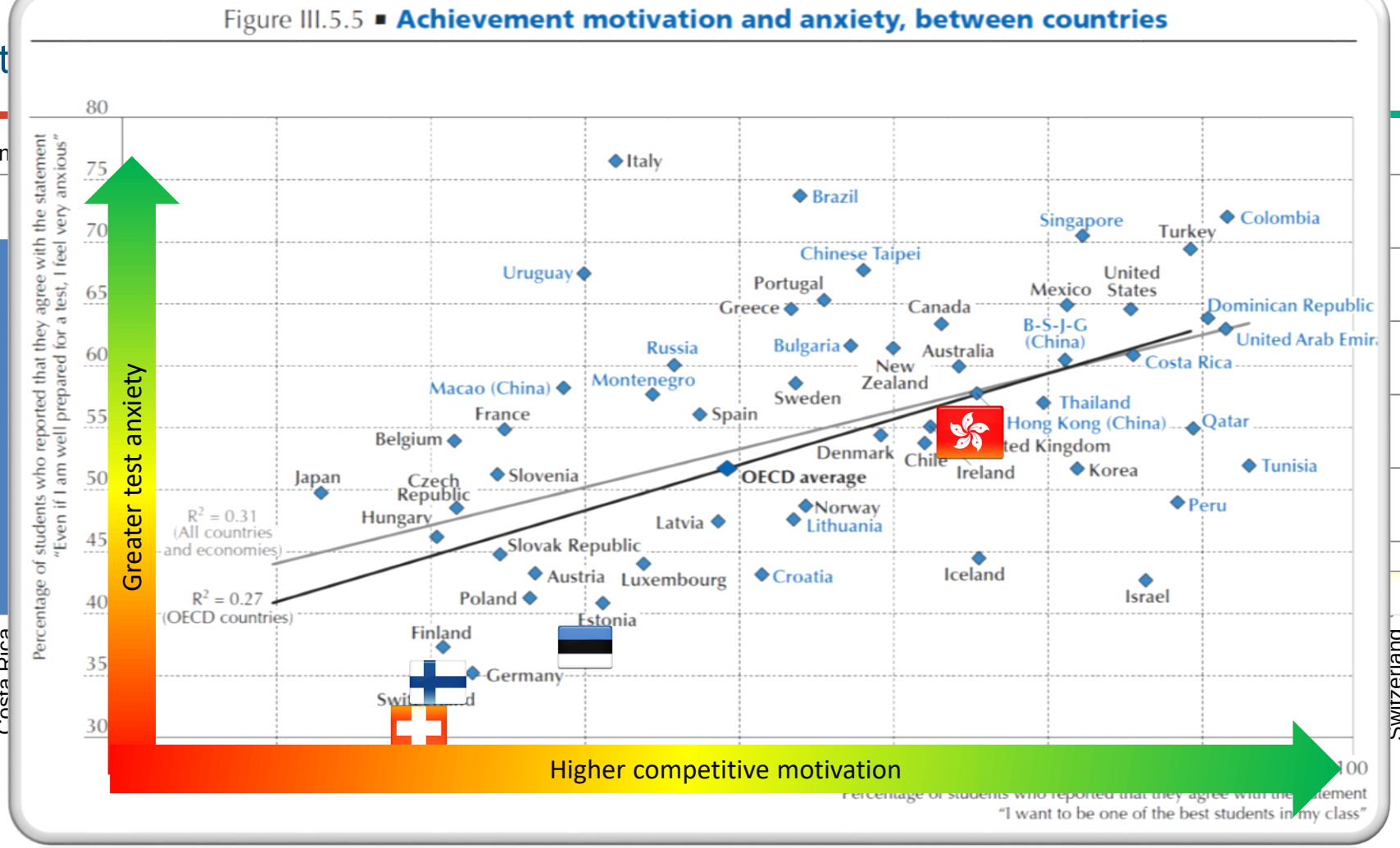
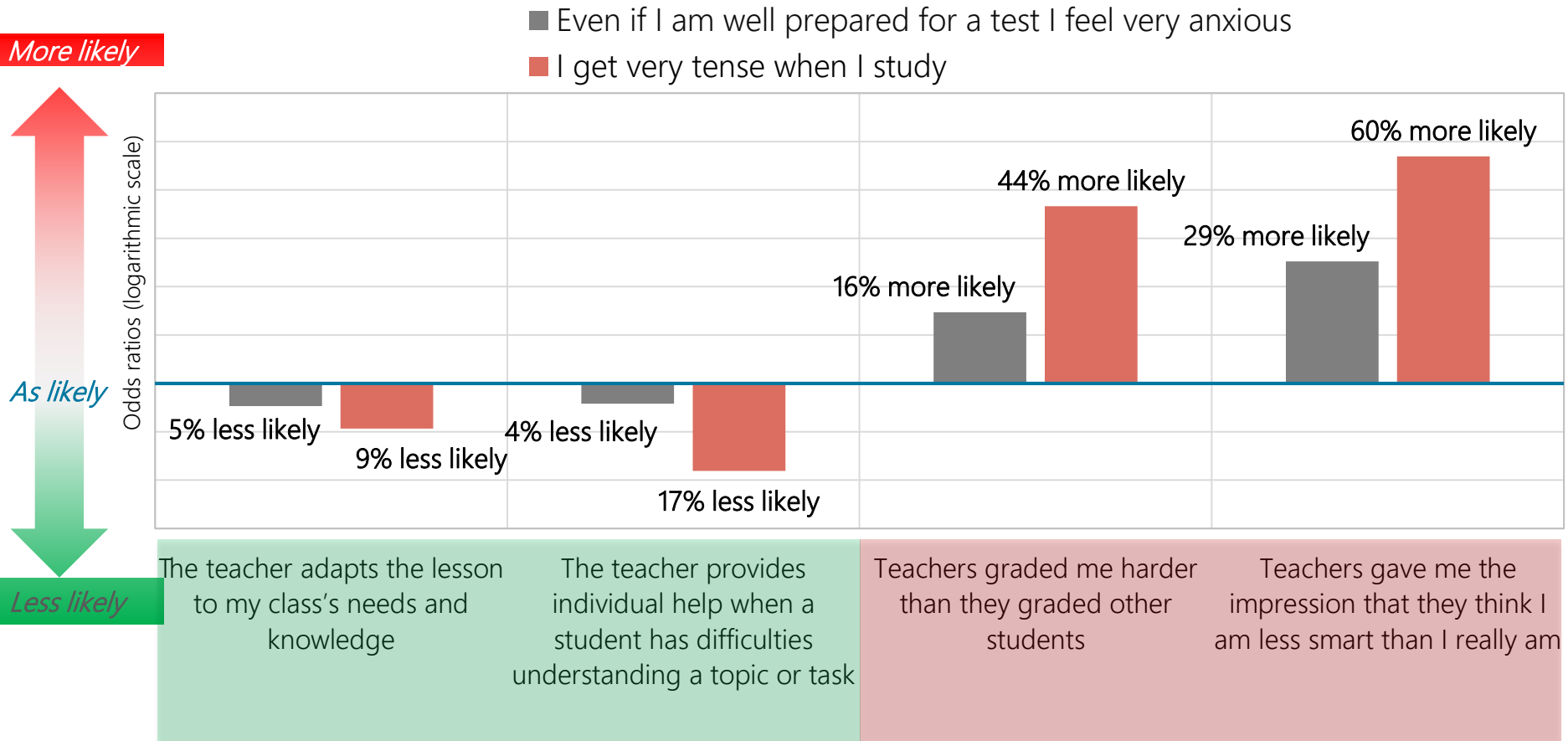


Figure III.4.1

More teacher support and less anxiety

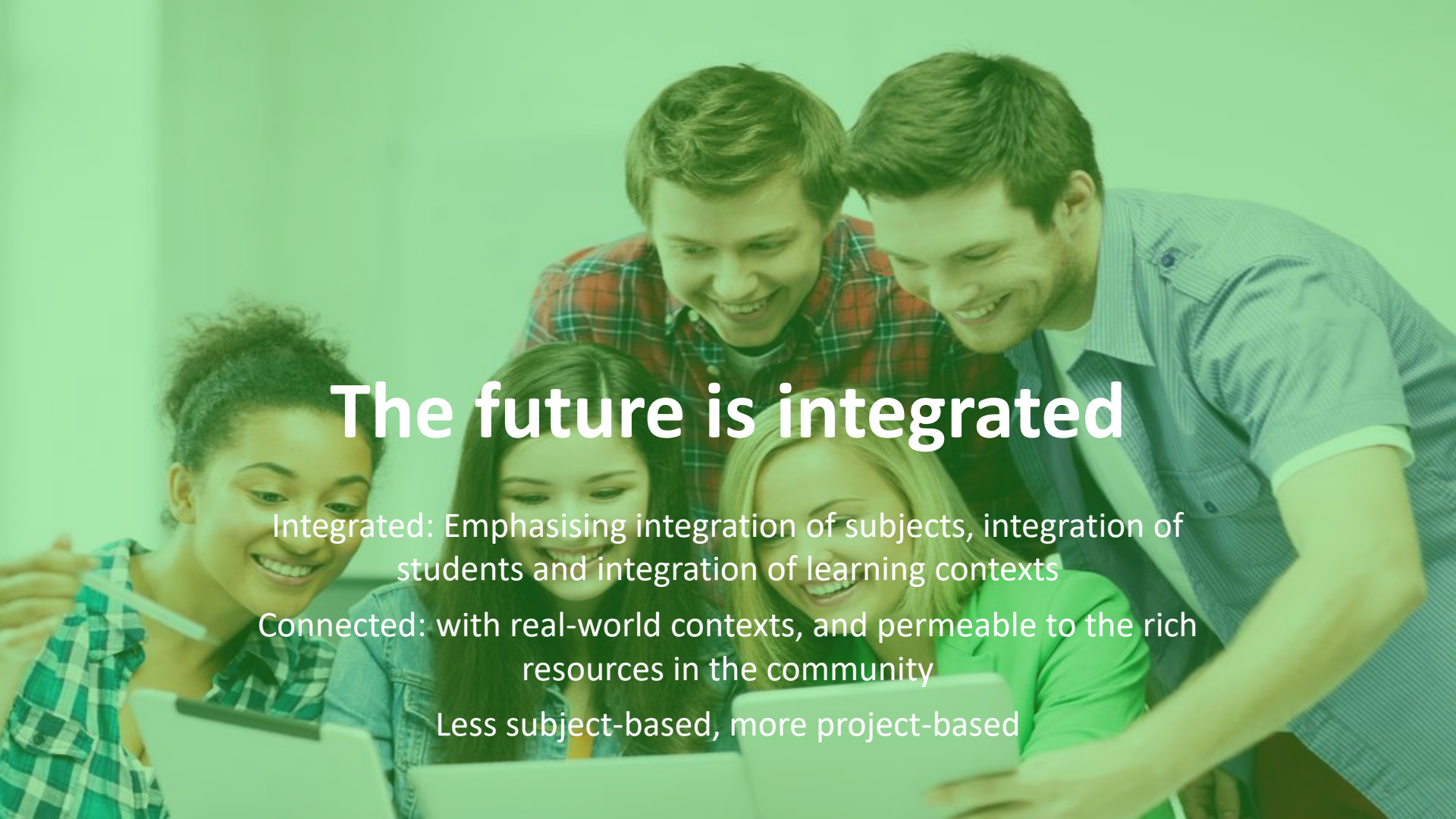
Figure III.4.5



The past was divided

Teachers and content divided by subjects and student destinations

Schools designed to keep students inside, and the rest of the world outside



The future is integrated

Integrated: Emphasising integration of subjects, integration of students and integration of learning contexts

Connected: with real-world contexts, and permeable to the rich resources in the community

Less subject-based, more project-based

Learning a place

Schools as technological islands, that is technology was deployed mostly to support existing practices for efficiency gains

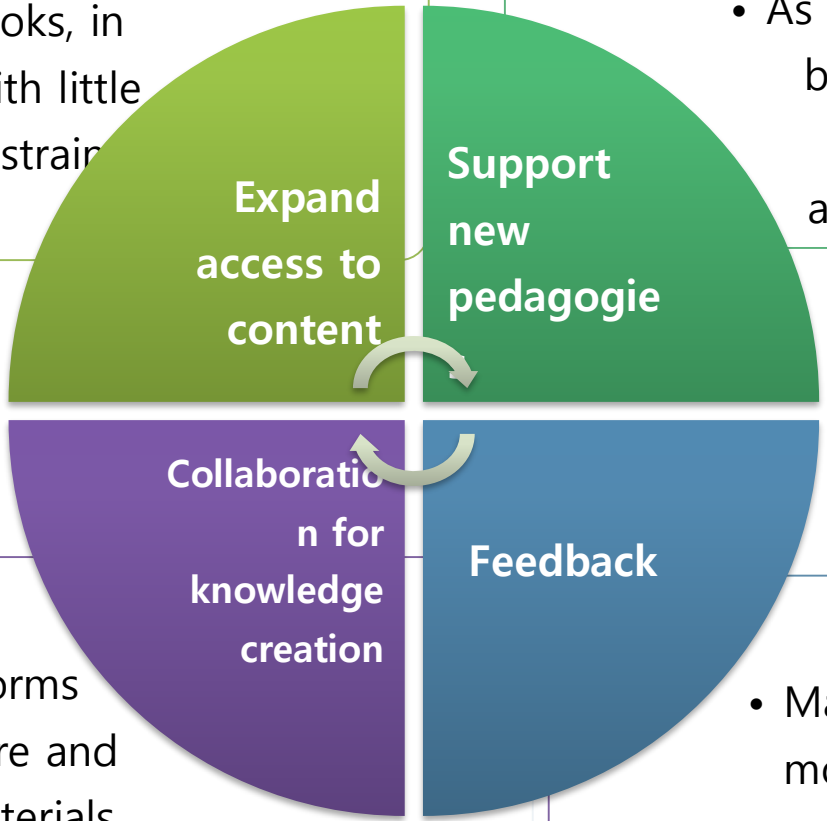
Learning an activity

Technologies liberating learning from past conventions and connect learners in new and powerful ways. The past was interactive, the future is participative

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

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

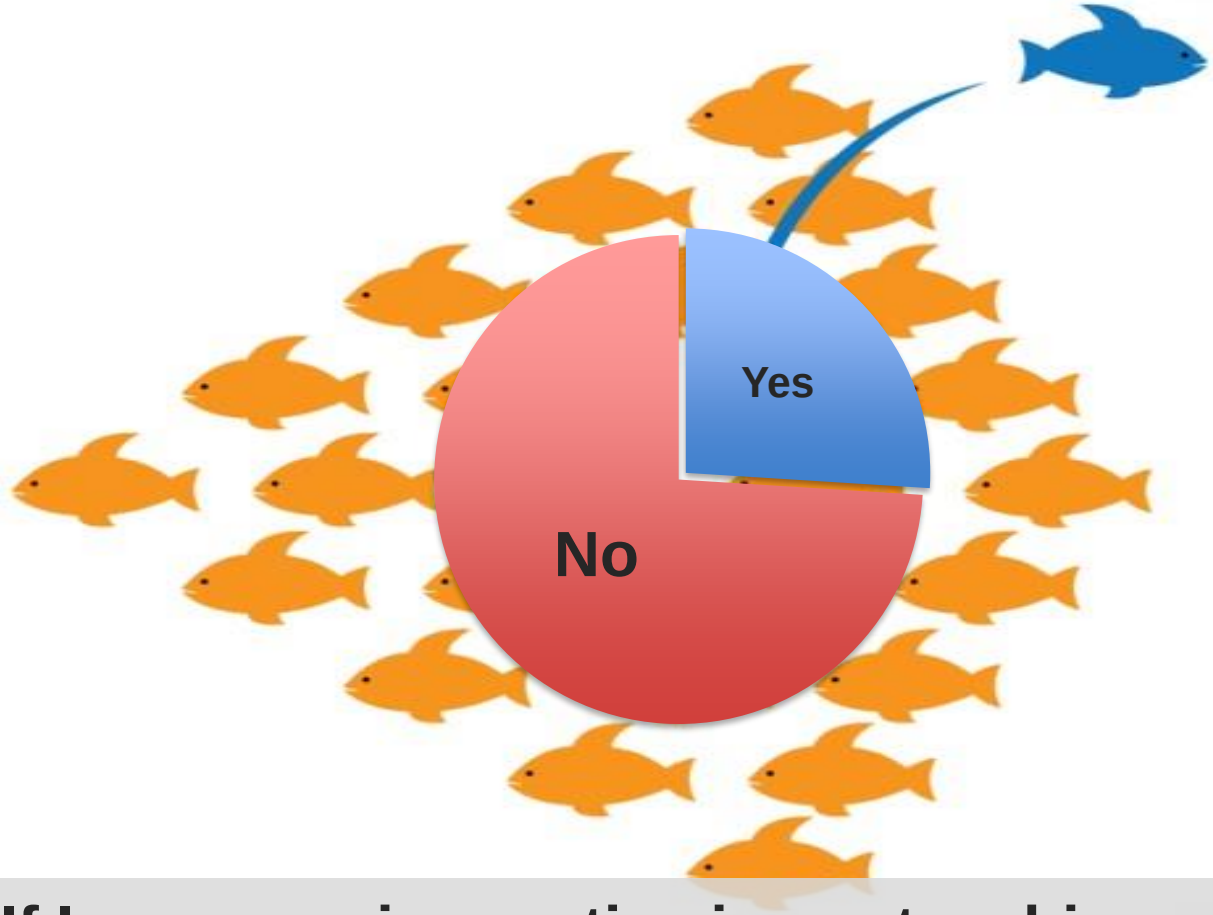
Source: Figure 6.5

Standardisation and Conformity

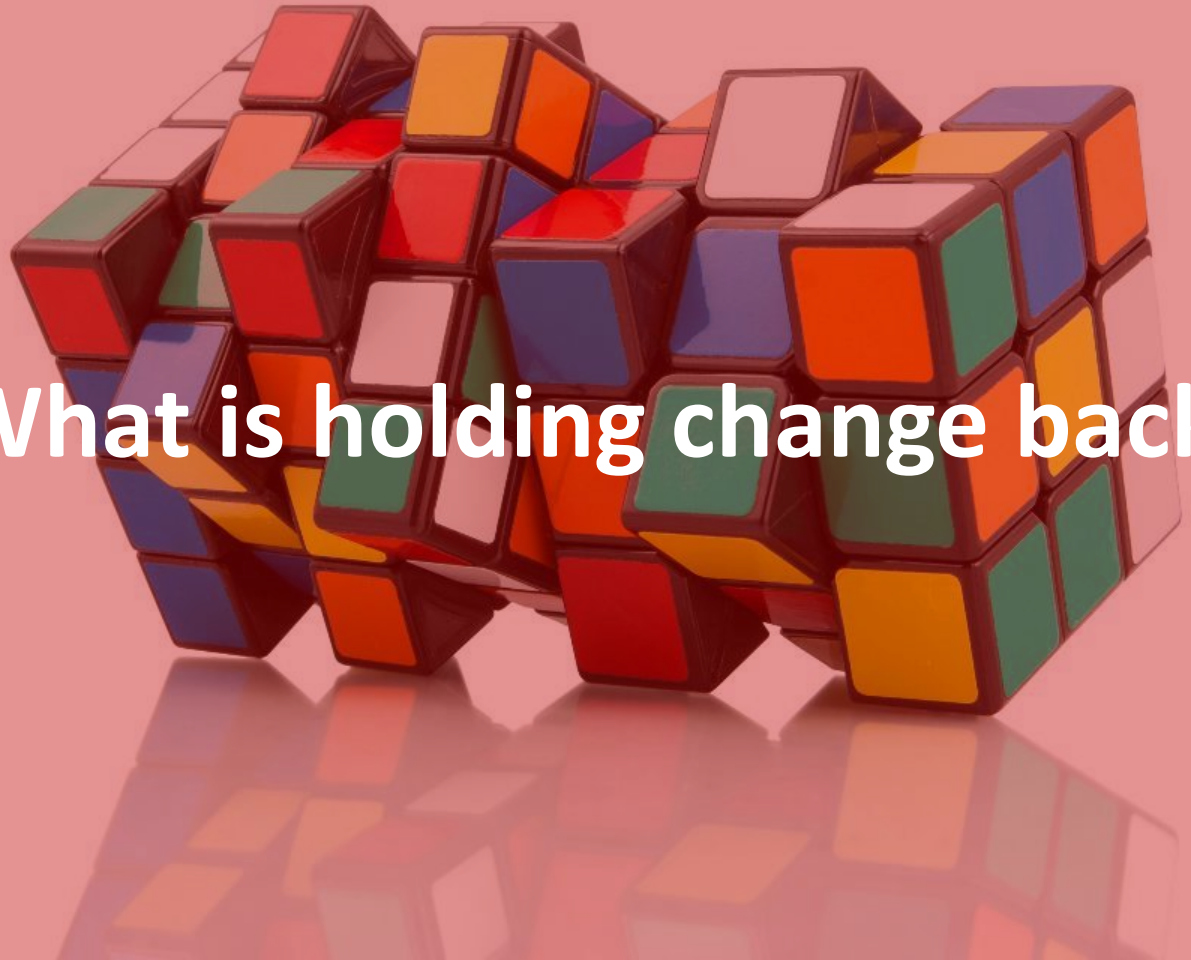
Standardisation and compliance lead students to be e
ducated in batches of age, following the same standar
d curriculum, all assessed at the same time.

Ingenious

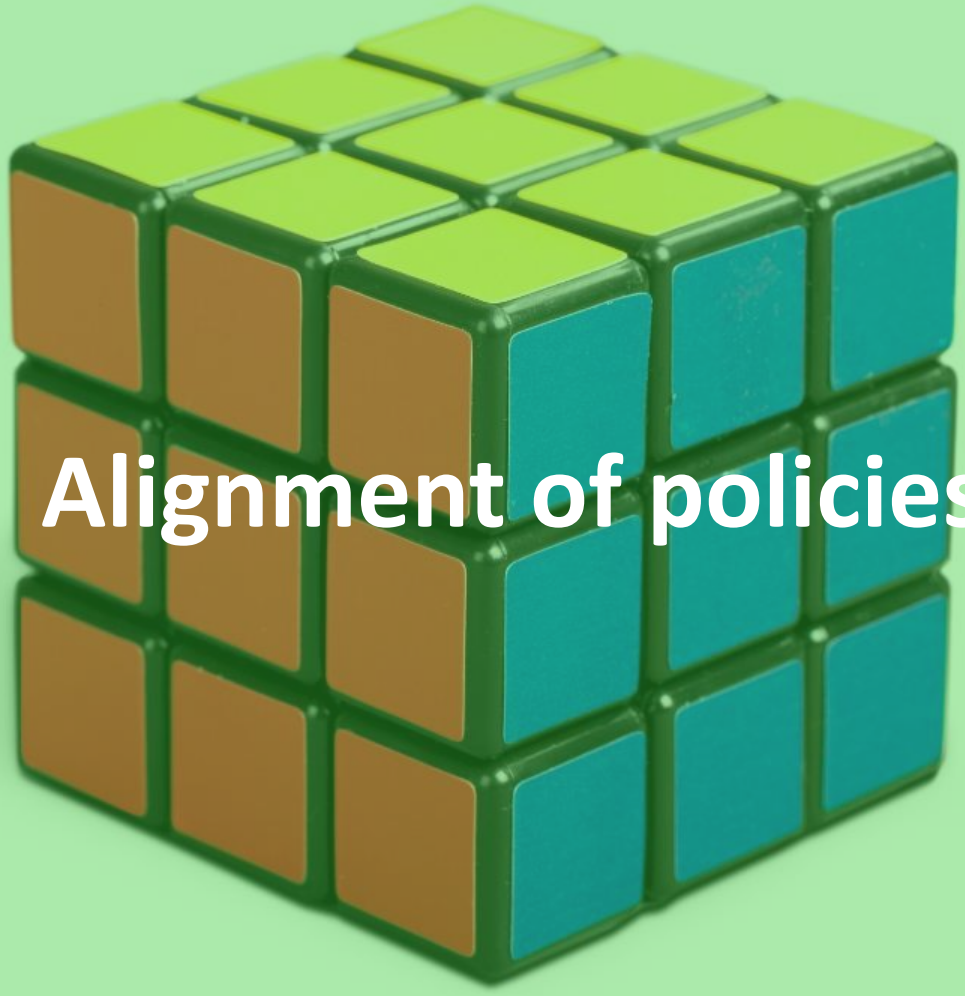
Building instruction from student passions and capacities, helping students personalise their learning and assessme nt in ways that foster engagement and talents.



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



What is holding change back?



Alignment of policies

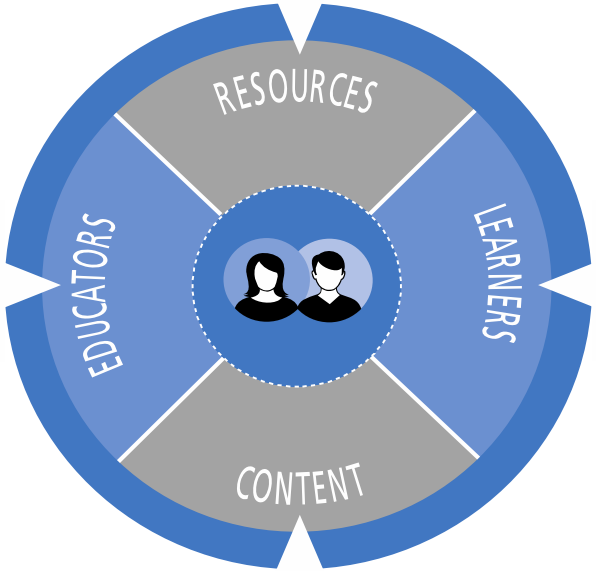
What is holding change back?

- Scale and reach of the sector
  - Everyone has participated, so everyone has an opinion
- Everyone has a stake
  - Everyone supports reform – except for their own children
  - Those who promote reforms often change their mind when they understand what change actually entails
- Education has a highly visible presence
  - There is no reform by stealth
- The frogs don’t clear the swamp
  - The loss of privilege is pervasive simply because of the extent of vested interests in maintaining the status quo.

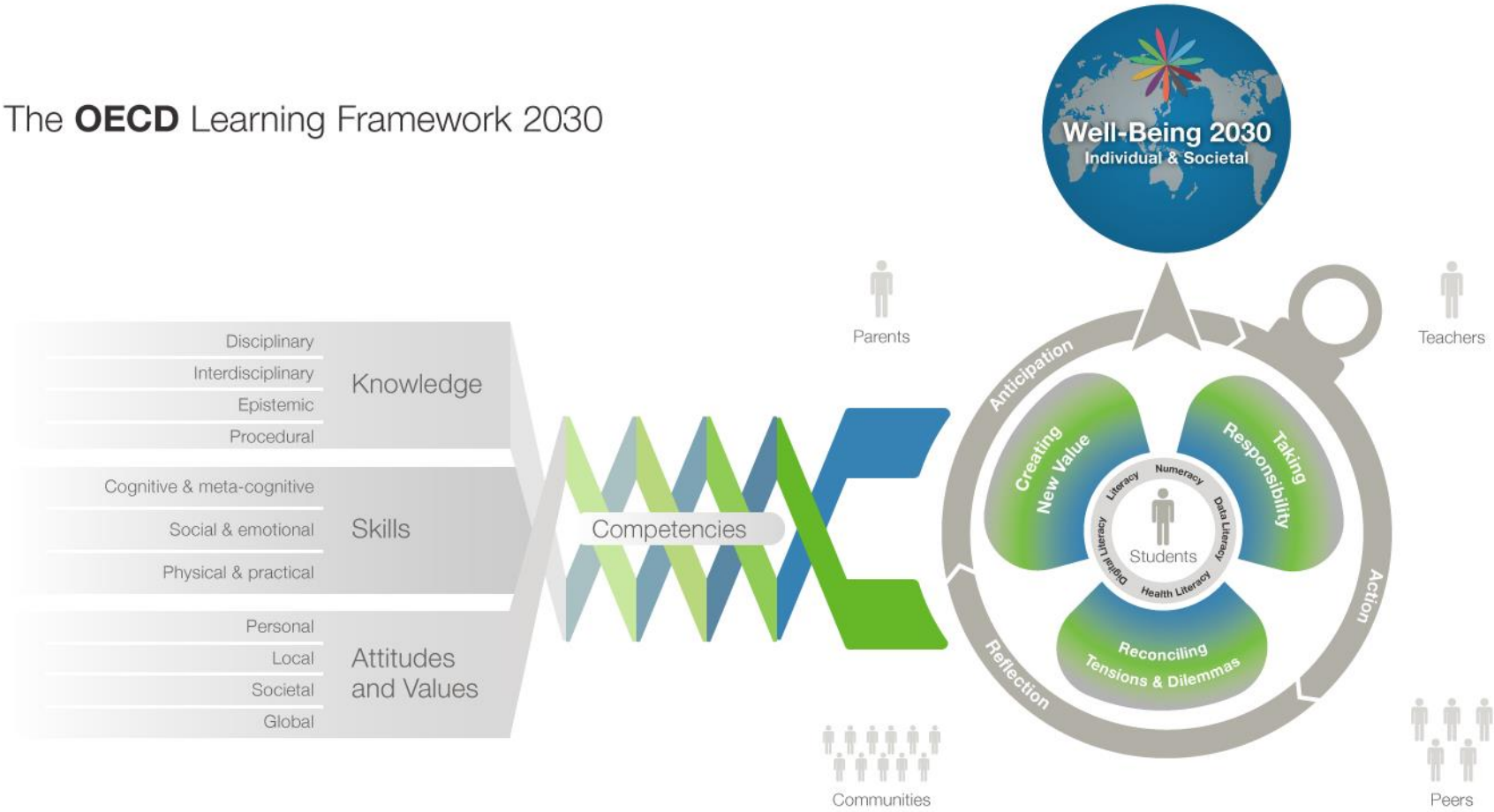
What is holding change back?

- You can lose an election but you don’t win one over education
  - Complexity and length of reform trajectory that extend electoral cycles
  - A substantial gap between the time when the cost of reform is incurred, and the time when benefits materialise
- Asymmetry of costs and benefits of educational reform
  - Reform is easy to derail by vocal interest groups
  - Costs are certain, benefits not
- Provider capture
  - Teachers often command greater public trust than politicians
  - Even when parents have a poor opinion of the education system, they will generally view the school of their children and its teachers positively

When fast gets really fast, being slow to adapt makes you really slow



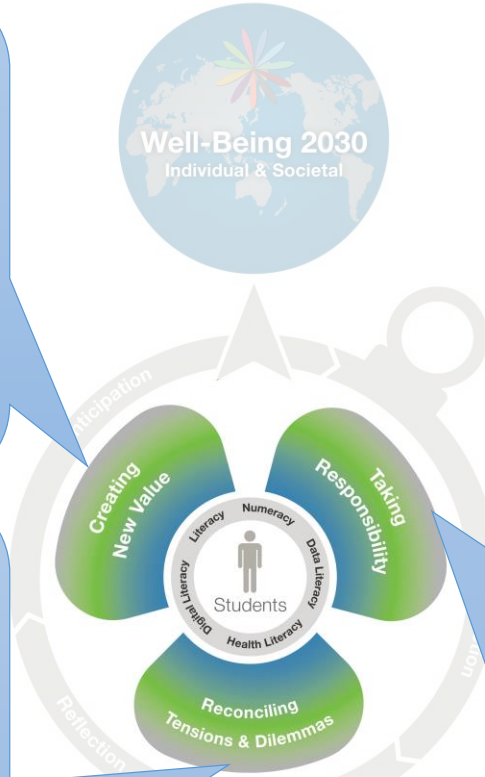
The **OECD** Learning Framework 2030




Well-Being 2030
Individual & Societal
Parents
Teachers
Anticipation
Creating New Value
Taking Responsibility
Action
Reflection
Reconciling Tensions & Dilemmas
Numeracy
Data Literacy
Health Literacy
Digital Literacy
Literacy
Students
Communities
Peers

Creating new value connotes processes of creating, making, bringing into being and formulating; and outcomes that are innovative, fresh and original, contributing something of intrinsic positive worth.
The constructs that underpin the competence are creativity/ creative thinking/ inventive thinking, curiosity, global mind-set, …
.

In a structurally imbalanced world, the imperative of reconciling diverse perspectives and interests, in local settings with sometimes global implications, will require young people to become adept in handling tensions, dilemmas and trade-offs.
Underlying constructs are empathy, resilience/stress resistance
trust, …

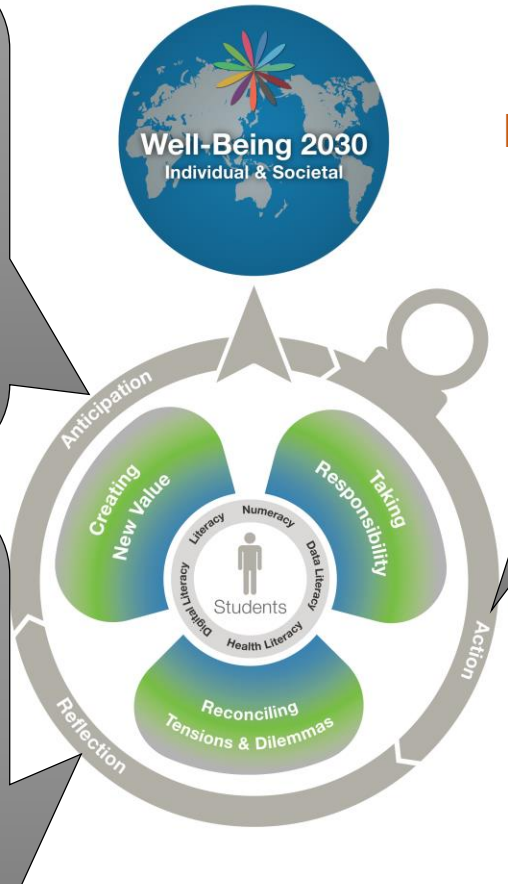


Dealing with novelty, change, diversity and ambiguity assumes that individuals can think for themselves and work with others. This suggests a sense of responsibility, and moral and intellectual maturity, with which a person can reflect upon and evaluate their actions in the light of their experiences and personal and societal goals; what they have been taught and told; and what is right or wrong
Underlying constructs include critical thinking skills, meta-learning skills (including learning to learn skills), mindfulness, problem solving skills, responsibility, …

Implications for pedagogy

Anticipation mobilises cognitive skills, such as analytical or critical thinking, to foresee what may be needed in the future or how actions taken today might have consequences for the future

Reflective practice is the ability to take a critical stance when deciding, choosing and acting, by stepping back from what is known or assumed and looking at a situation from other, different perspectives



Both reflective practice and anticipation contribute to the willingness to take responsible actions

Some lessons

- Rigor, focus and coherence
- Remain true to the disciplines
  - but aim at interdisciplinary learning and the capacity of students to see problems through multiple lenses
  - Balance knowledge of disciplines and knowledge about disciplines
- Focus on areas with the highest transfer value
  - Requiring a theory of action for how this transfer value occurs
- Authenticity
  - Thematic, problem-based, project-based, co-creation in conversation
- Some things are caught not taught
  - Immersive learning propositions

Thank you

Find out more about our work at www.oecd.org/pisa

- **All publications**
- **The complete micro-level database**

Email: **Andreas.Schleicher@OECD.org**

Twitter: **SchleicherOECD**

Wechat: **AndreasSchleicher**