Educating Learners for Their Future – Not Our Past
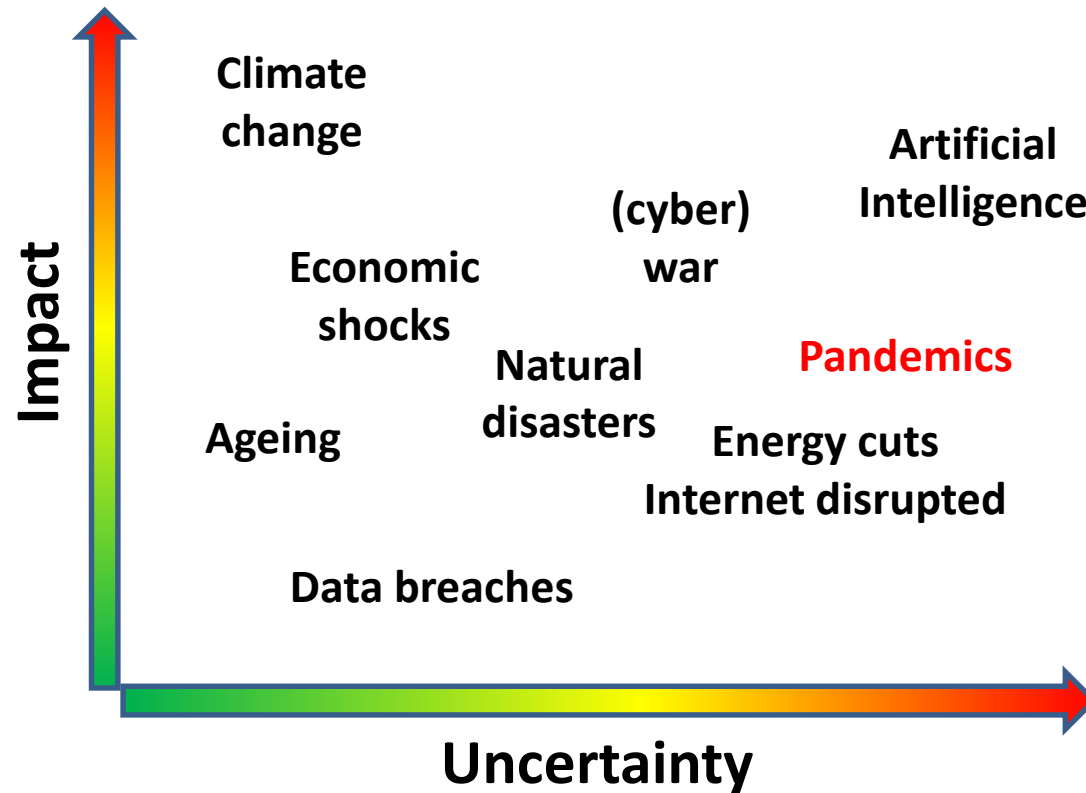
ALiTE International Webinar Series for Exemplary Scholarship, Hong Kong
Andreas Schleicher

The future will continue to surprise us!

Climate change

Economic shocks

Ageing

Natural disasters

(cyber) war

Artificial Intelligence

Pandemics

Energy cuts
Internet disrupted
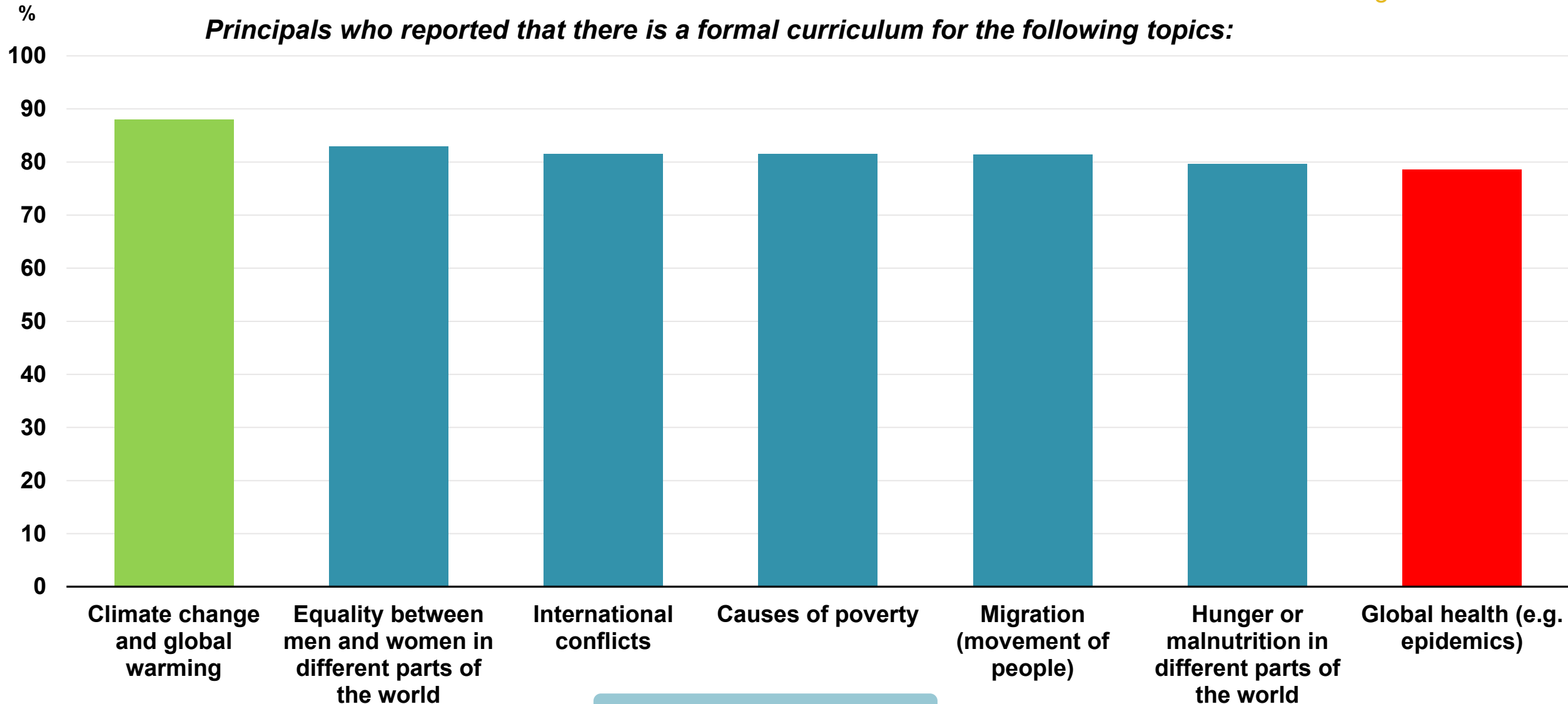
Data breaches

Impact

Uncertainty

Sustainability issues covered in the curriculum (PISA, OECD average)

Fig VI.7.8

Principals who reported that there is a formal curriculum for the following topics:
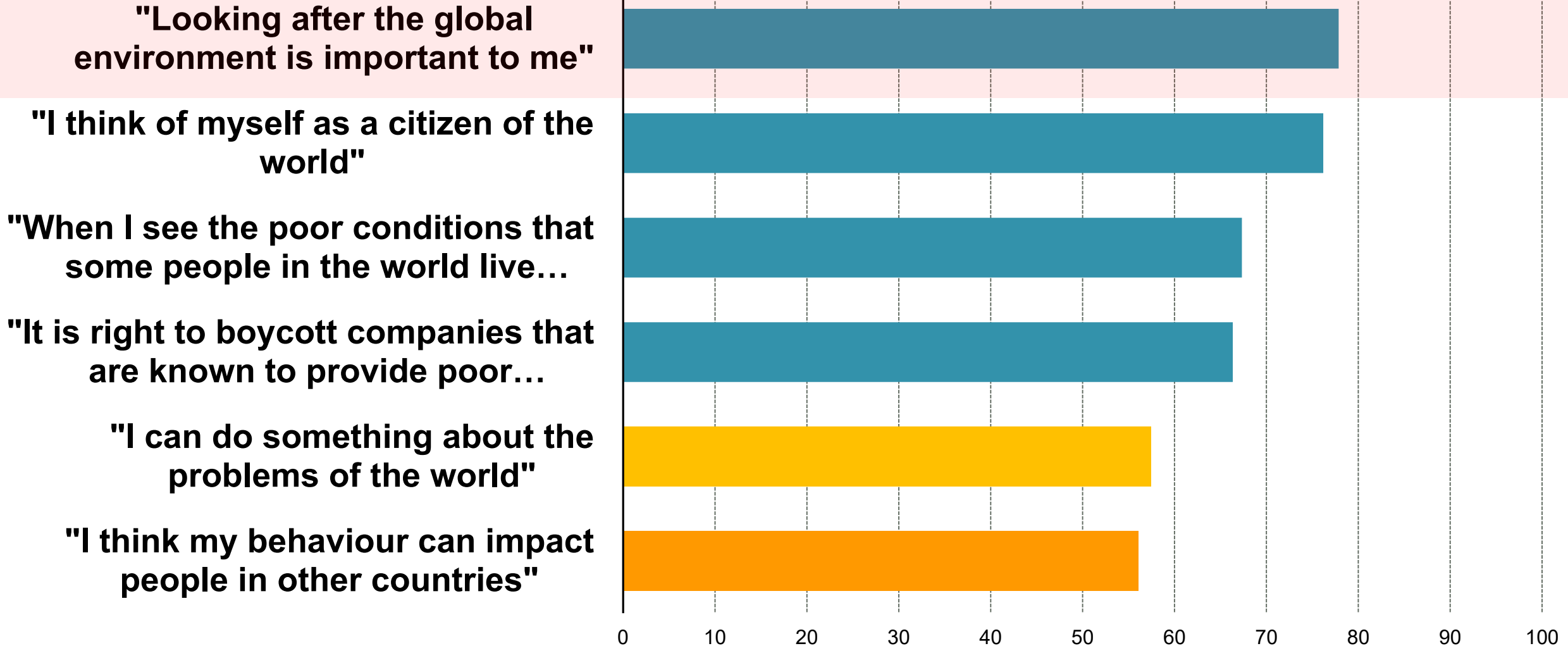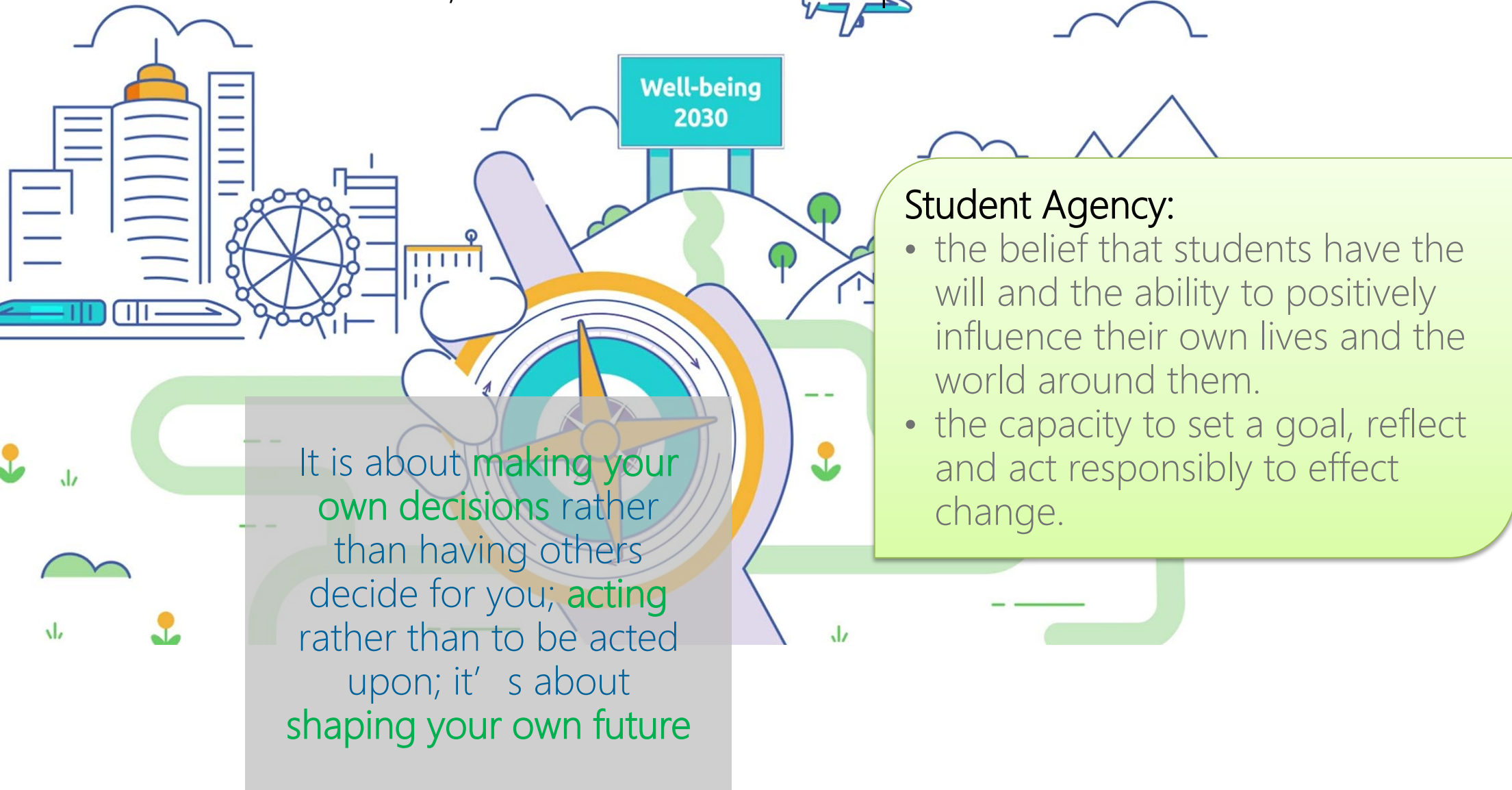
Based on principals' reports

Students' agency regarding global issues (PISA, OECD average)

Fig VI.5.1a

Percentage of students who agreed or strongly agreed with the following statements:

- "Looking after the global environment is important to me"
- "I think of myself as a citizen of the world"
- "When I see the poor conditions that some people in the world live…"
- "It is right to boycott companies that are known to provide poor…"
- "I can do something about the problems of the world"
- "I think my behaviour can impact people in other countries"

To thrive in the VUCA world, students need to learn to navigate oneself towards the world of well-being- well-being of oneself, of others and of the planet.

Well-being 2030

Student Agency:
- the belief that students have the will and the ability to positively influence their own lives and the world around them.
- the capacity to set a goal, reflect and act responsibly to effect change.

It is about making your own decisions rather than having others decide for you; acting rather than to be acted upon; it's about shaping your own future

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

Industrial systems   World class systems

Curriculum, instruction and assessment

Routine cognitive skills   Complex ways of thinking and working

Student inclusion

Some students learn at high levels   **All** students learn at high levels

Role of teachers

Standardisation and compliance   High-level professional knowledge workers

Work organisation

'Tayloristic', industrial   Flat, collegial, entrepreneurial

Accountability

Primarily to authorities   Primarily to peers and stakeholders
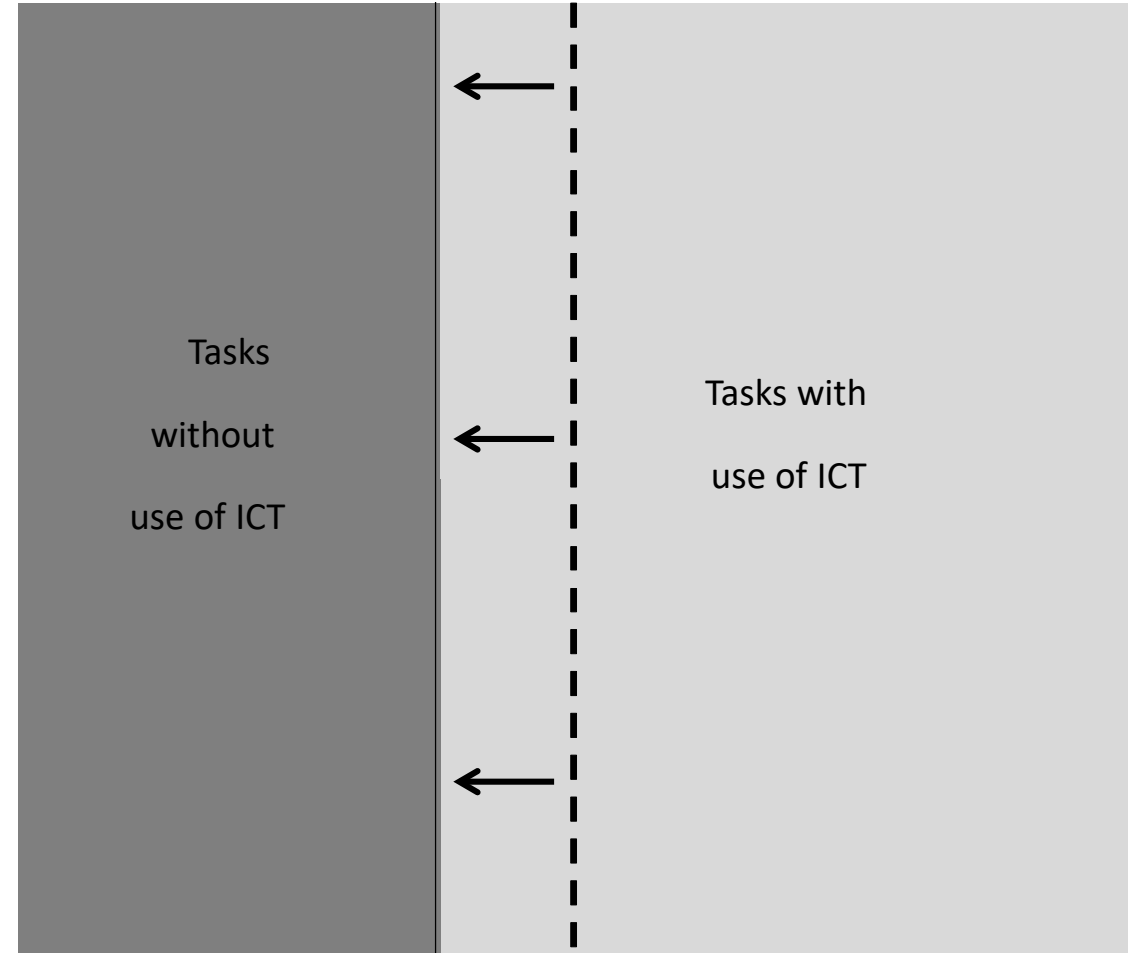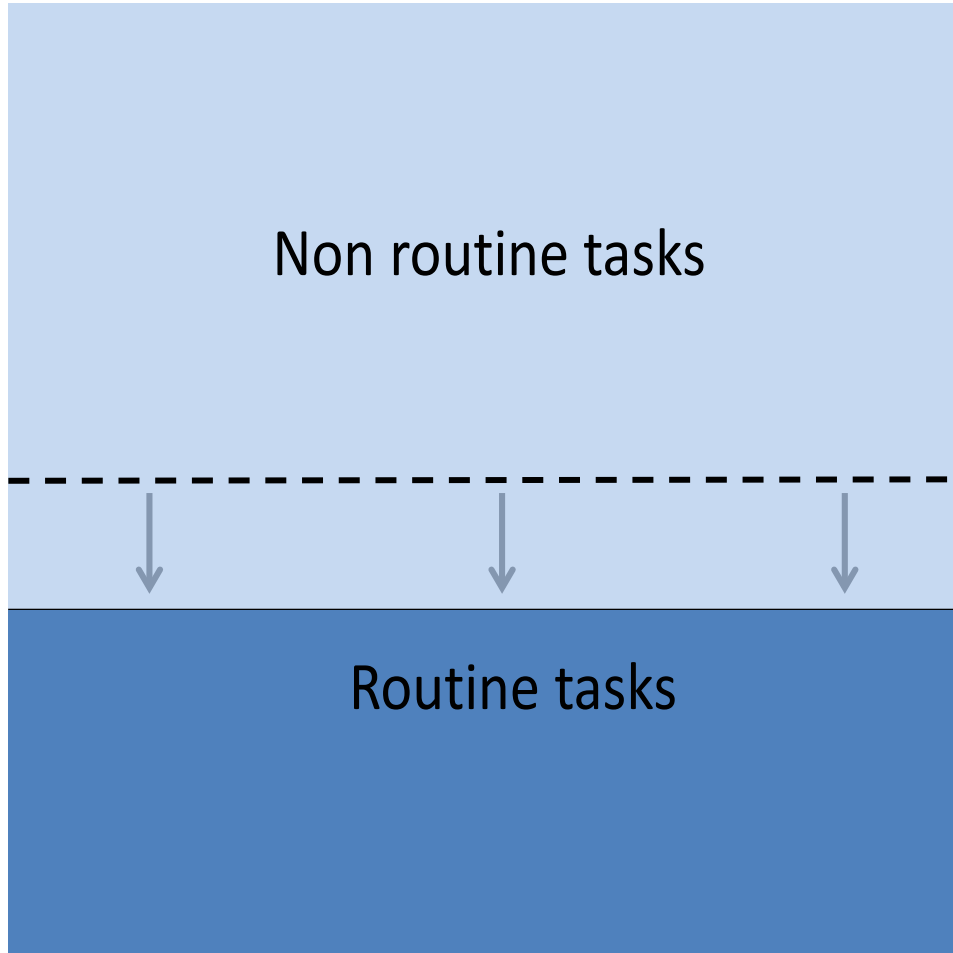
Reproducing knowledge

Creating knowledge

Think for yourself and work with others

Two effects of digitalisation

Two effects of digitalisation

Non routine tasks, **Low use of ICT**	**Non routine tasks,** **High use of ICT**
Routine tasks, **Low use of ICT**	**Routine tasks,** **High use of ICT**
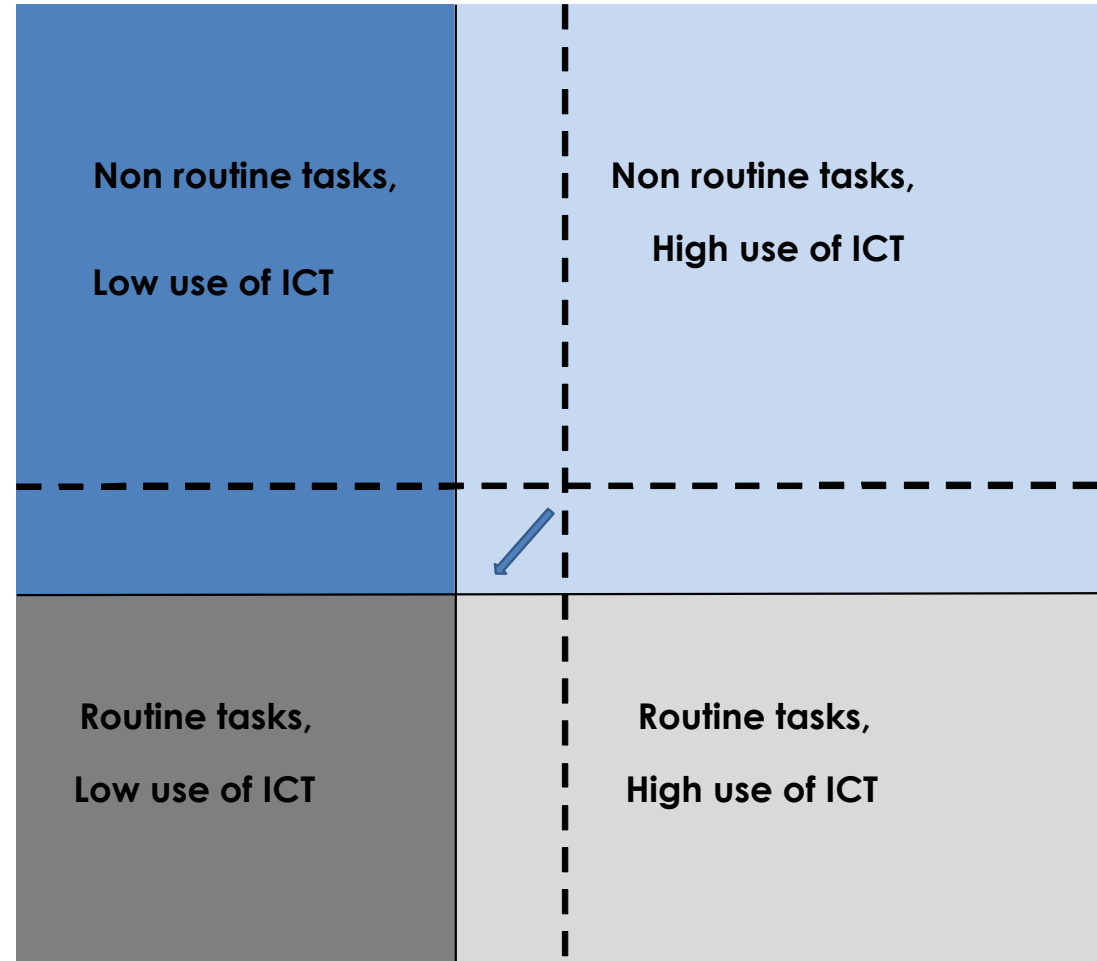
Skills and the risk of automation

$R^2 = 0.273$
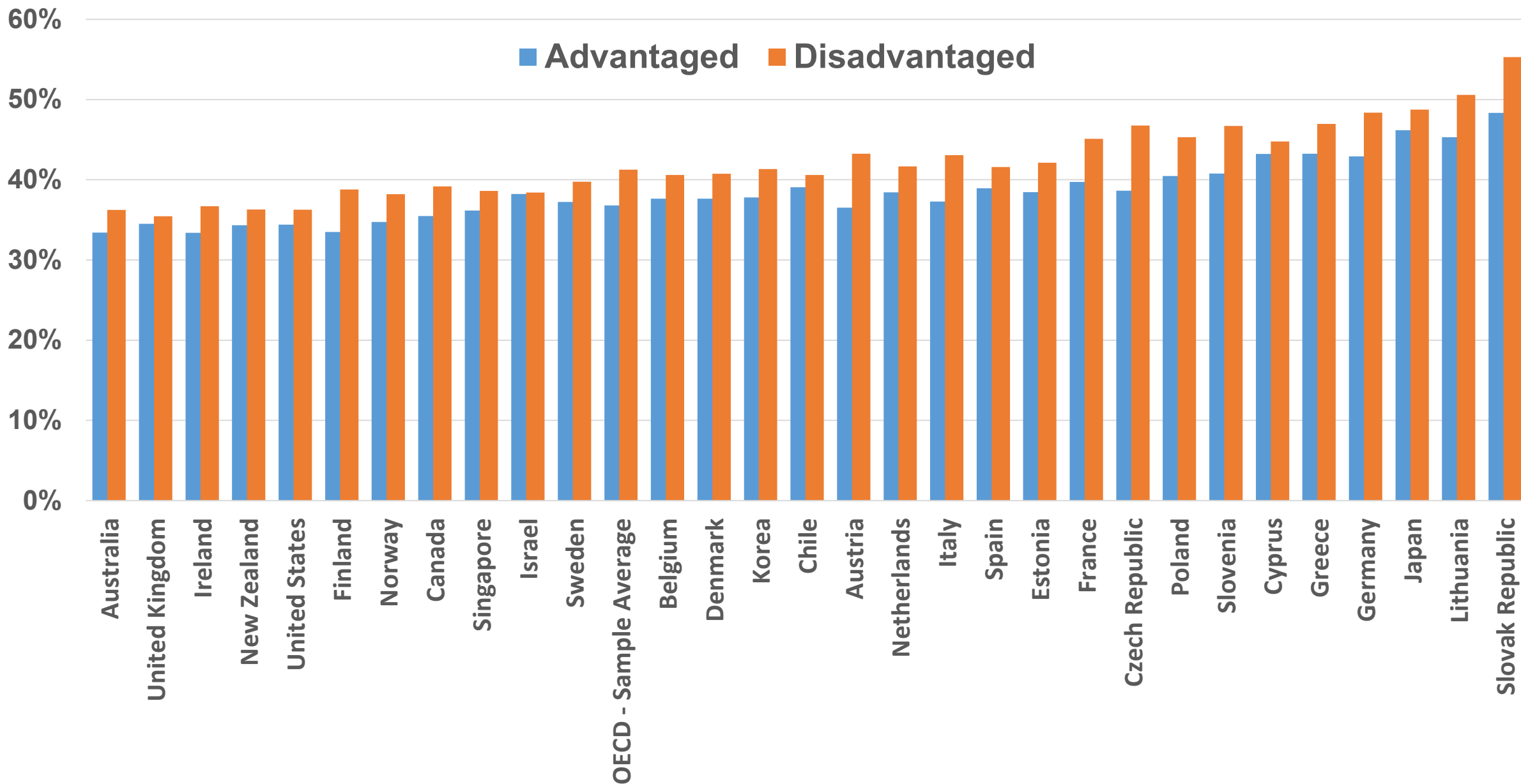
Skills (PIAAC Numeracy) — vertical axis (170 to 310)

Risk of automation — horizontal axis (35 to 70)

Data points: Sweden, Denmark, Netherlands, Flanders (Belgium), Australia, Estonia, Austria, Czech Republic, England (UK), Canada, Hungary, Germany, Slovak Republic, Korea, Russian Federation², Cyprus¹, Lithuania, United States 2012/2014, Singapore, OECD average, Poland, Slovenia, United States 2017, Ireland, Israel, France, Greece, Northern Ireland (UK), Italy, Kazakhstan, Spain, Japan, Turkey, Mexico, Chile, Ecuador, Peru

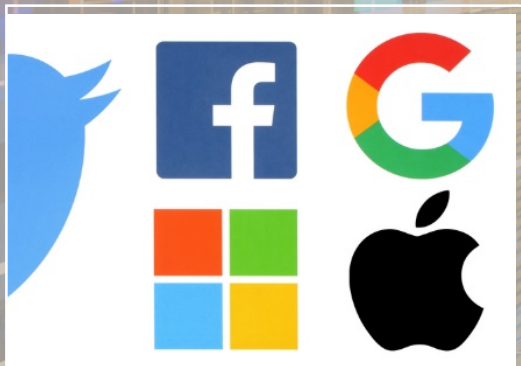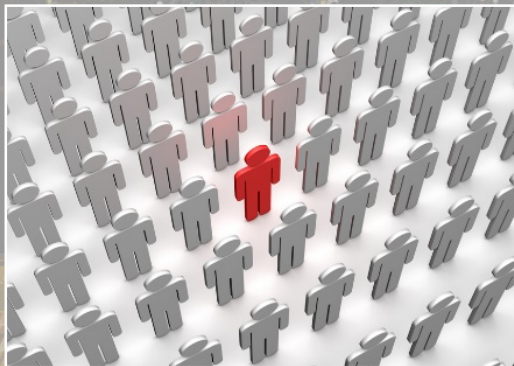# Many teenagers aspire to jobs that are at high risk of automation (PISA)

Digitalisation

Democratizing

Particularizing

Empowering

Concentrating
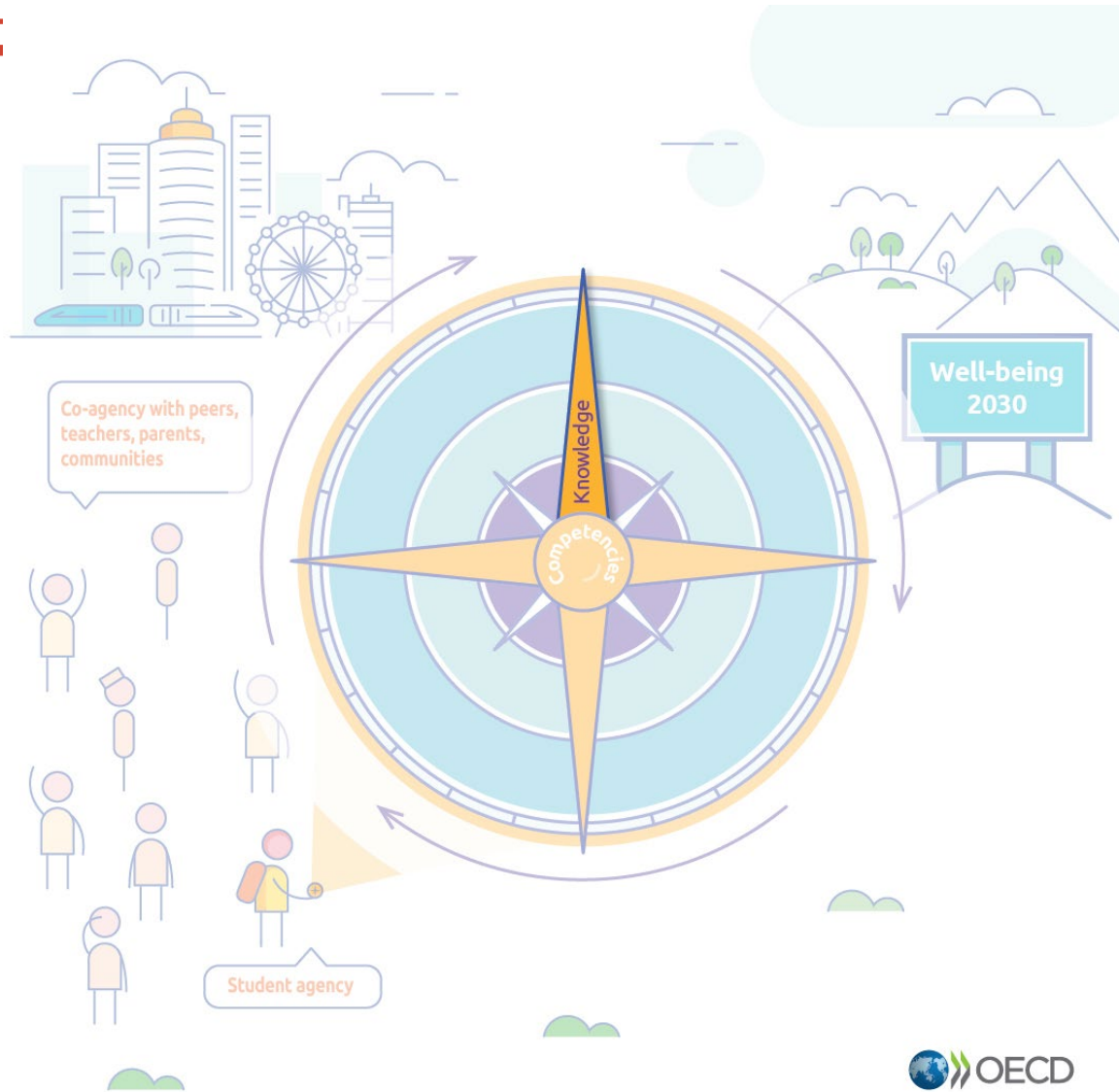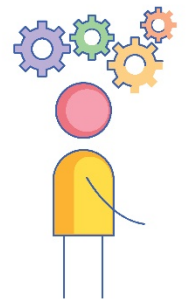

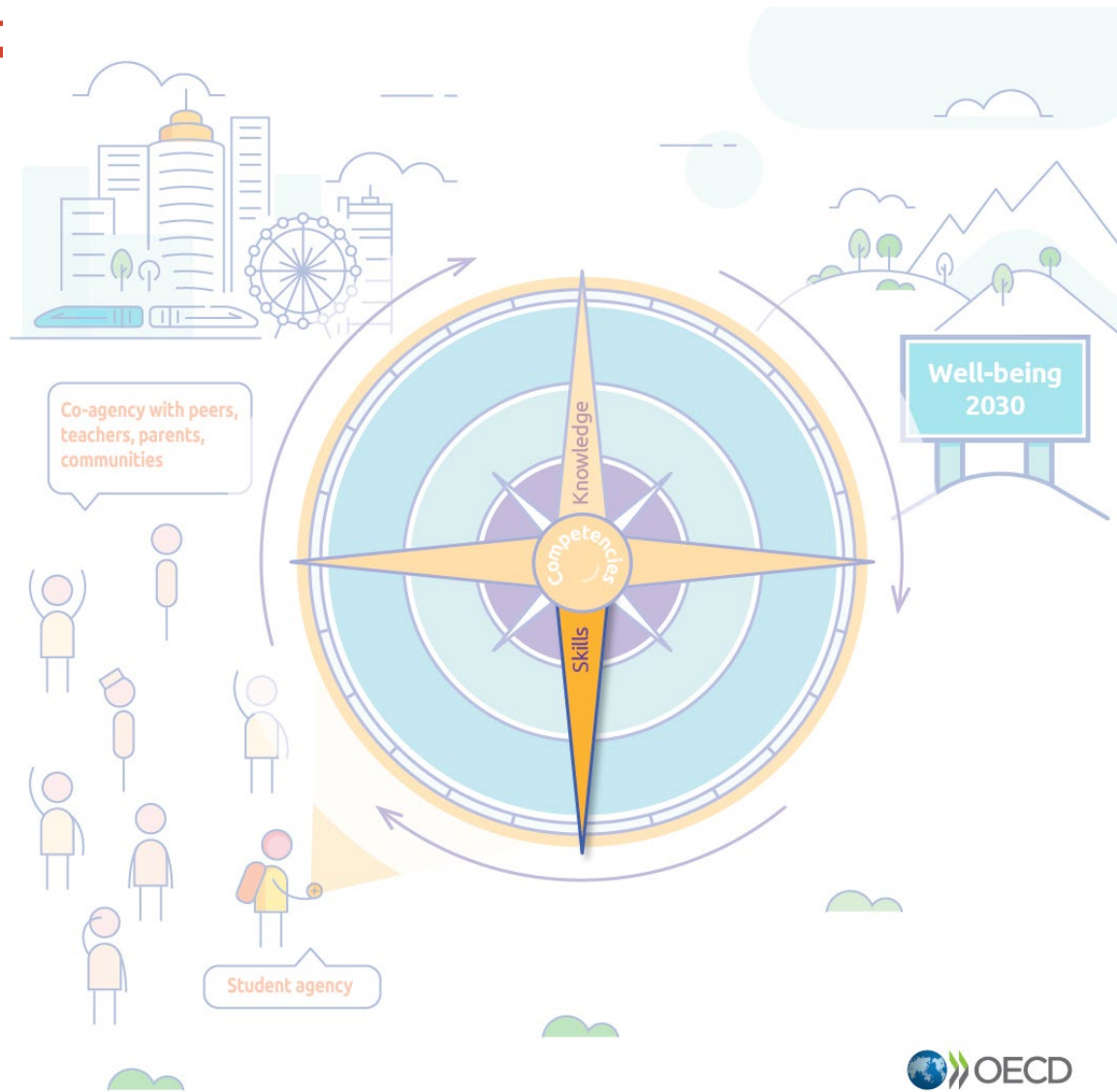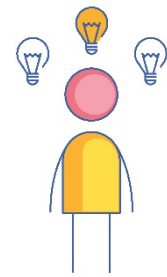Homogenizing

Disempowering

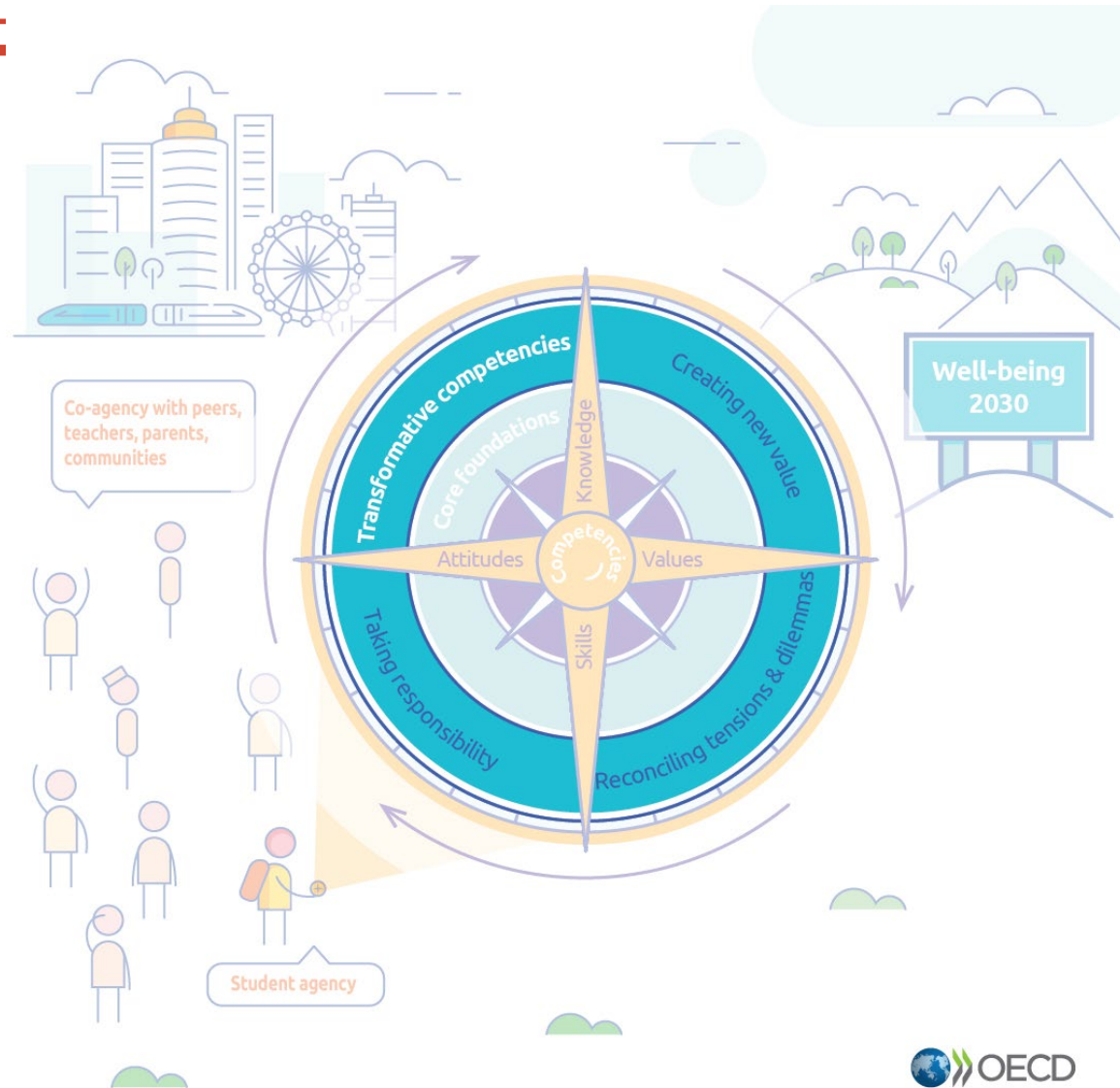# Learning compass: Knowledge

- Disciplinary

- Interdisciplinary

- Epistemic

- Procedural

Learning compass: Skills

- Cognitive & meta-cognitive

- Social & emotional

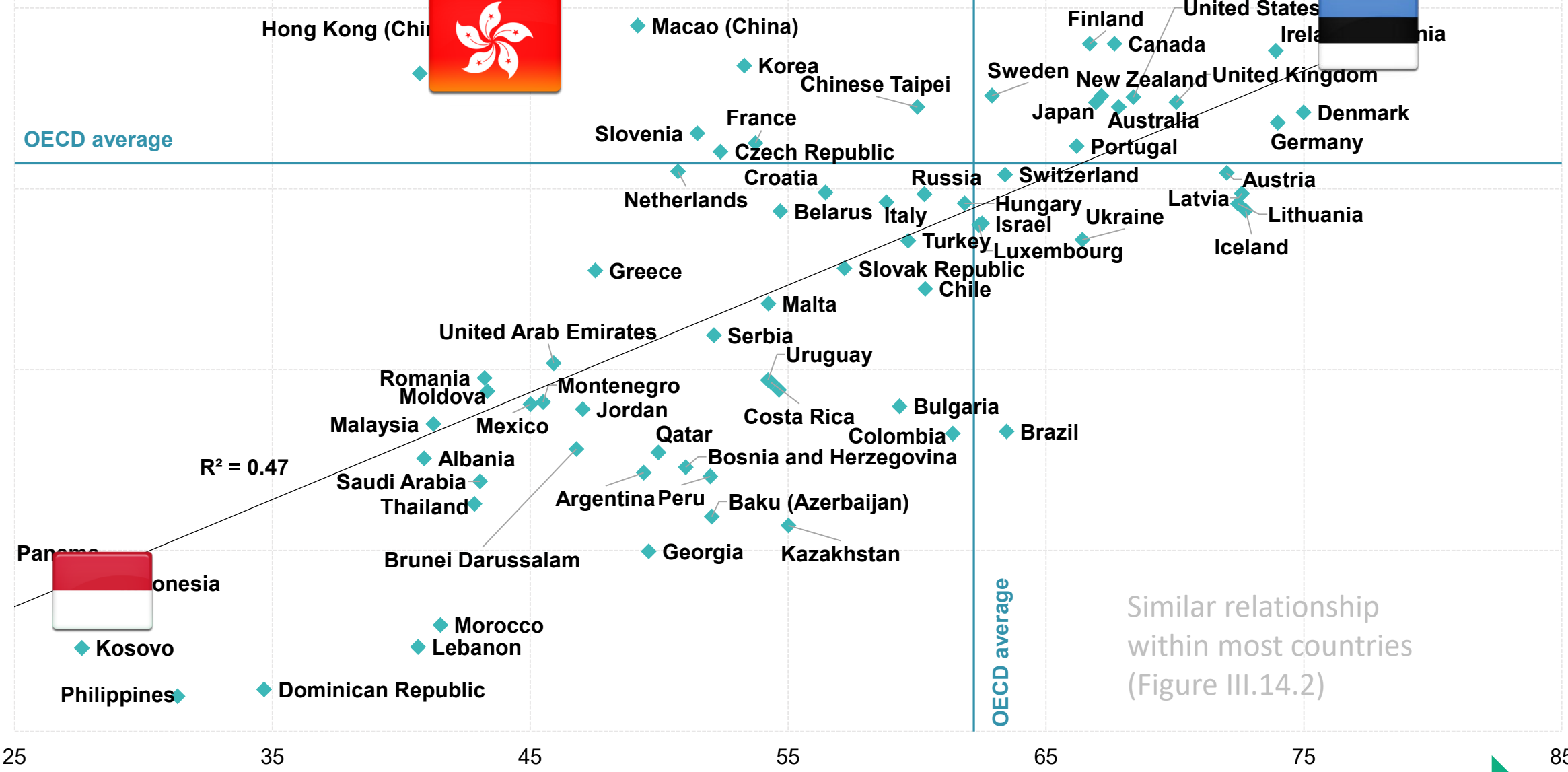- Physical & practical

Transformative competencies

- Creating new value

- Taking responsibility

- Reconciling tensions & dilemmas

Growth mindset and reading performance

Fig II.14.3

Higher performance

Average reading score

More students holding a growth mindset

Percentage of students who disagreed or strongly disagreed that their intelligence cannot change very much (%)

OECD average

R² = 0.47

Similar relationship within most countries (Figure III.14.2)

B-S-J-Z (China), Singapore, Hong Kong (China), Macao (China), Finland, United States, Ireland, Estonia, Korea, Chinese Taipei, Sweden, Canada, New Zealand, United Kingdom, Japan, Australia, Denmark, France, Portugal, Germany, Slovenia, Czech Republic, Croatia, Russia, Switzerland, Austria, Netherlands, Belarus, Italy, Hungary, Ukraine, Latvia, Lithuania, Israel, Iceland, Turkey, Luxembourg, Greece, Slovak Republic, Chile, Malta, Serbia, Uruguay, United Arab Emirates, Romania, Moldova, Montenegro, Jordan, Costa Rica, Bulgaria, Malaysia, Mexico, Colombia, Brazil, Albania, Qatar, Bosnia and Herzegovina, Saudi Arabia, Argentina, Peru, Baku (Azerbaijan), Thailand, Brunei Darussalam, Georgia, Kazakhstan, Panama, Indonesia, Morocco, Kosovo, Lebanon, Philippines, Dominican Republic

Growth mindset and student attitudes

Change in the following indices when students disagreed or strongly disagreed that "your intelligence is something about you that you can't change very much":

Fig III.14.5

Change in the index (y-axis): 0.04, 0.03, 0.02, 0.01, 0.00, -0.01, -0.02, -0.03, -0.04, -0.05

Categories: Motivation to master tasks, Self-efficacy, Fear of failure, Learning goals, Value of school

All linear regression models account for students' and schools' socio-economic profile
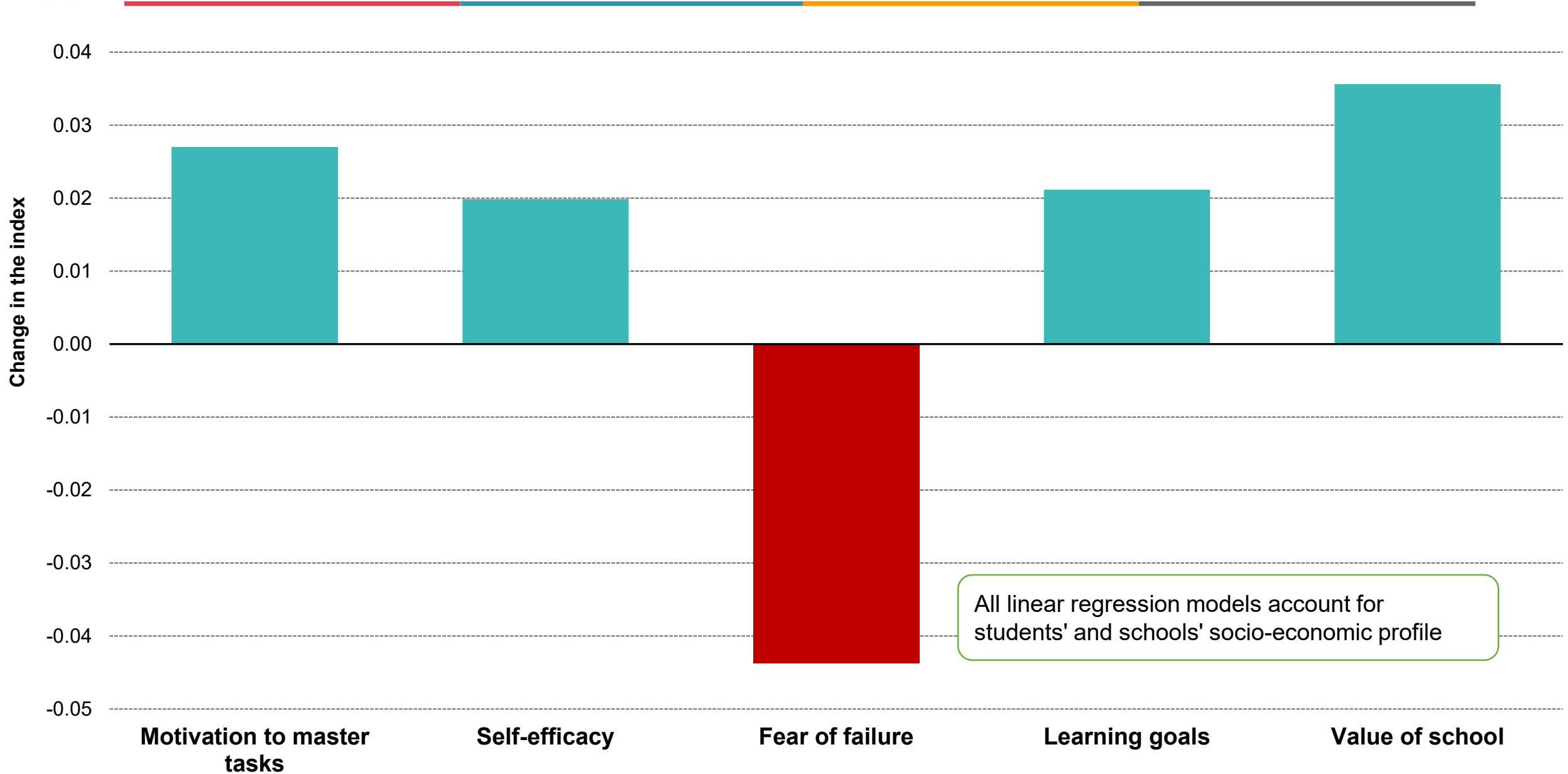
Some learn at high levels

All learn at high levels

Can the closest school be always the best school?

Fig II.4.1

Variation in reading performance between and within schools

- Between-school variation
- Within-school variation

Performance variation between schools

Performance variation within schools

Percentage of the total variation in performance across OECD countries

Finland, Iceland, Baku (Azerbaijan), Norway, Ireland, Denmark, Canada, Portugal, New Zealand, Estonia, Poland, Sweden, United Kingdom, Kosovo, Latvia, Albania, Mexico, Georgia, United States, Bosnia and Herzegovina, Saudi Arabia, Malaysia, Australia, Kazakhstan, Costa Rica, Belarus, Philippines, Jordan, Montenegro, Morocco, Chile, Indonesia, Macao (China), Moldova, Russia, Thailand, Dominican Republic, Ukraine, Greece, Colombia, France, Korea, Chinese Taipei, Lithuania, Panama, Croatia, B-S-J-Z (China), Uruguay, Malta, Brazil, Hong Kong (China), Peru, Brunei Darussalam, North Macedonia, Singapore, Luxembourg, Japan, Switzerland, Argentina, Slovenia, Romania, Serbia, Belgium, Italy, Qatar, Turkey, Czech Republic, Hungary, Slovak Republic, Germany, Bulgaria, United Arab Emirates, Netherlands, Lebanon, Israel
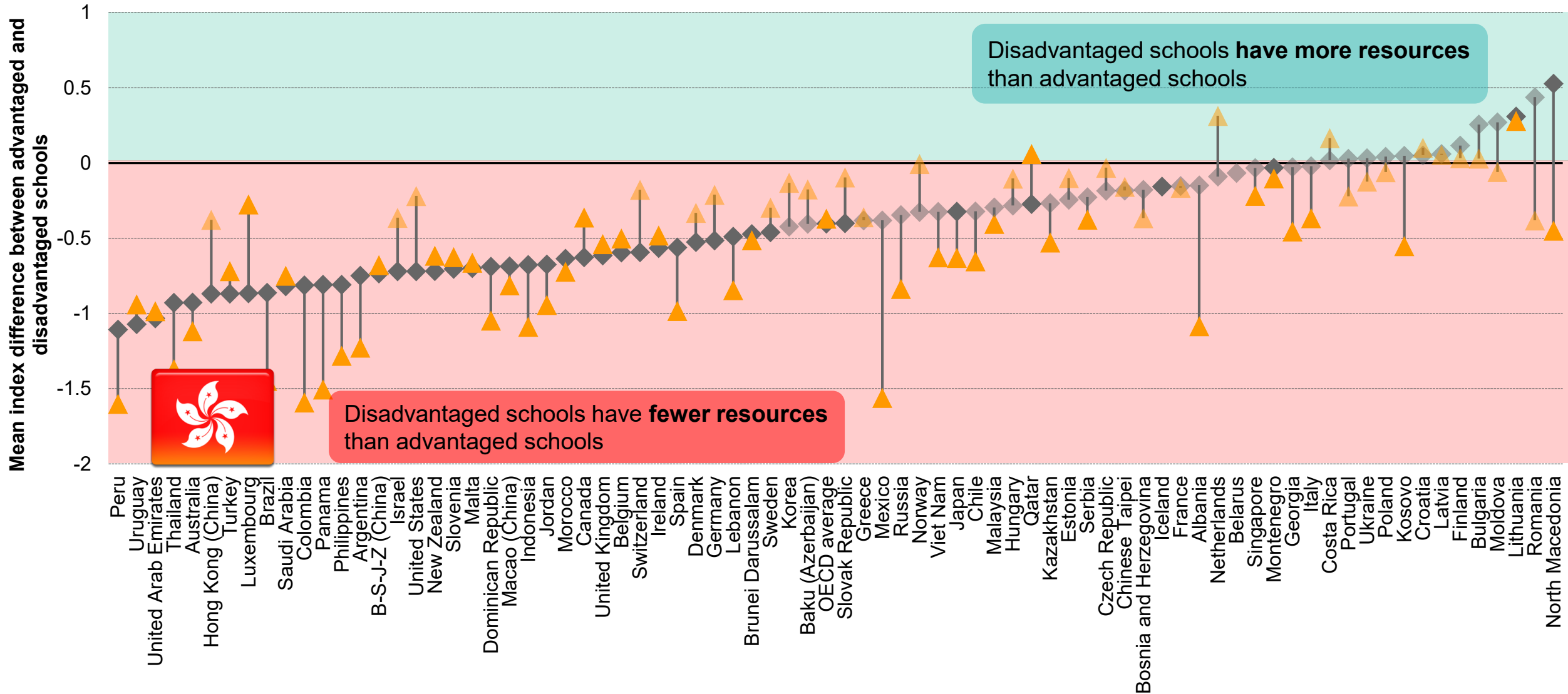
Few systems align resources with needs

Based on principals' reports

Fig II.5.5

◆ **Index of shortage of education staff**   ▲ **Index of shortage of educational material**

Disadvantaged schools **have more resources** than advantaged schools

Disadvantaged schools have **fewer resources** than advantaged schools

Mean index difference between advantaged and disadvantaged schools

Bureaucratic Look-up

Devolved Look-outward

Policy levers to teacher professionalism

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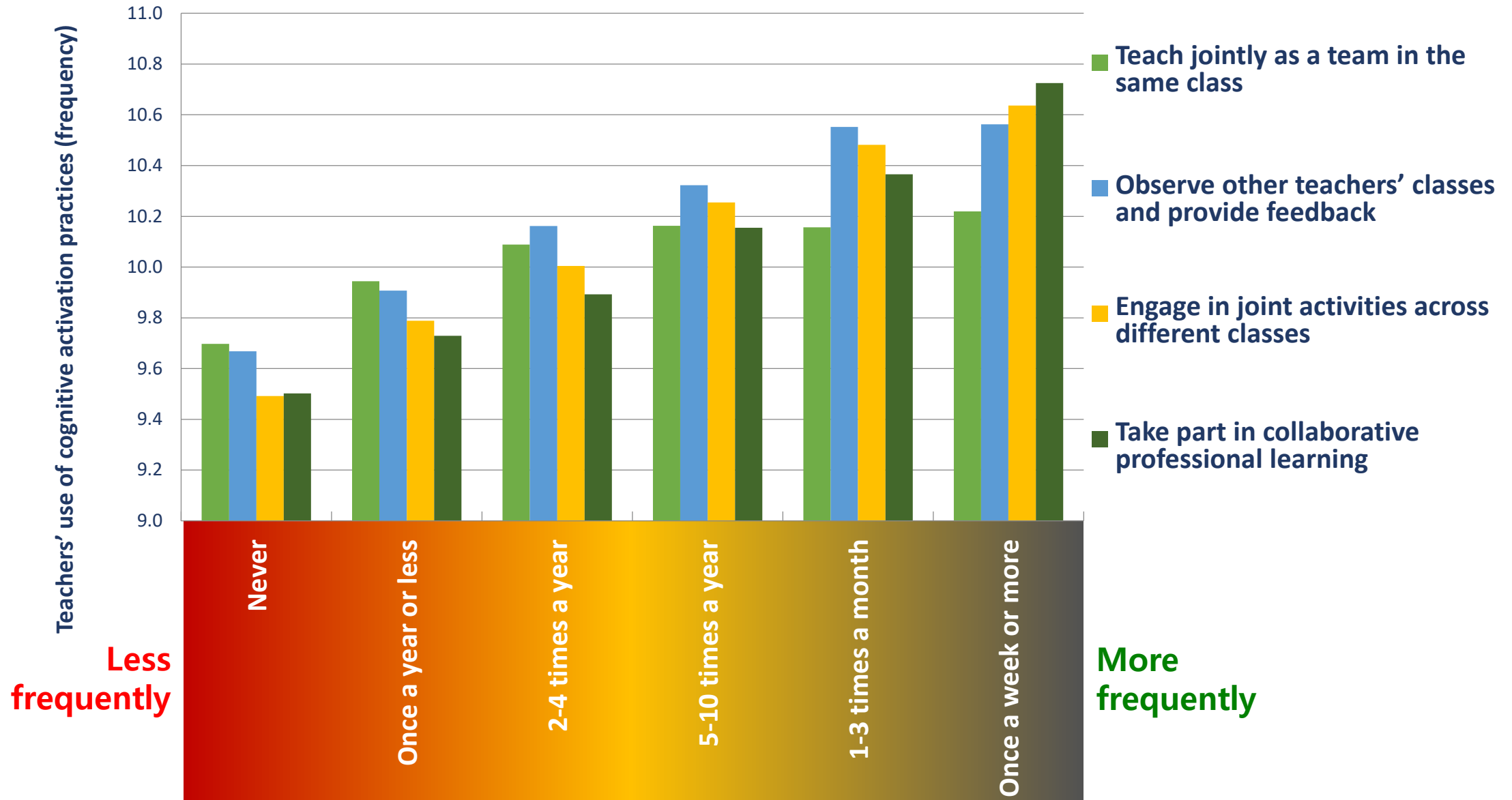
Teacher professionalism

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

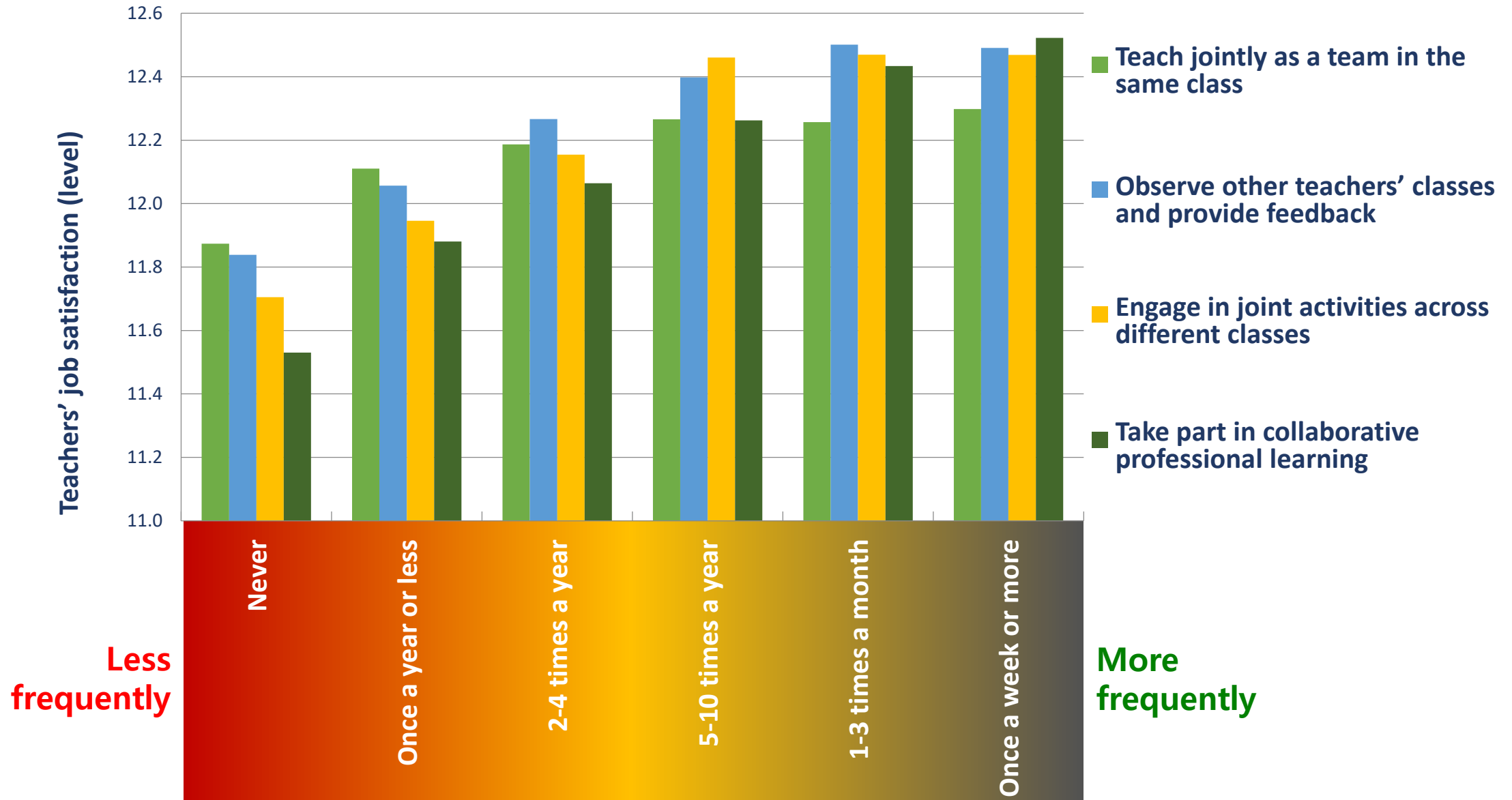Knowledge base for teaching (initial education and incentives for professional development)

Teachers' use of effective teaching practices and professional collaboration

OECD average-31

Teachers' use of cognitive activation practices (frequency)

- Teach jointly as a team in the same class
- Observe other teachers' classes and provide feedback
- Engage in joint activities across different classes
- Take part in collaborative professional learning

Never — Once a year or less — 2-4 times a year — 5-10 times a year — 1-3 times a month — Once a week or more

Less frequently

More frequently

Teachers' job satisfaction and professional collaboration

OECD average-31

Teachers' job satisfaction (level)

Less frequently

More frequently

Never | Once a year or less | 2-4 times a year | 5-10 times a year | 1-3 times a month | Once a week or more

- Teach jointly as a team in the same class
- Observe other teachers' classes and provide feedback
- Engage in joint activities across different classes
- Take part in collaborative professional learning

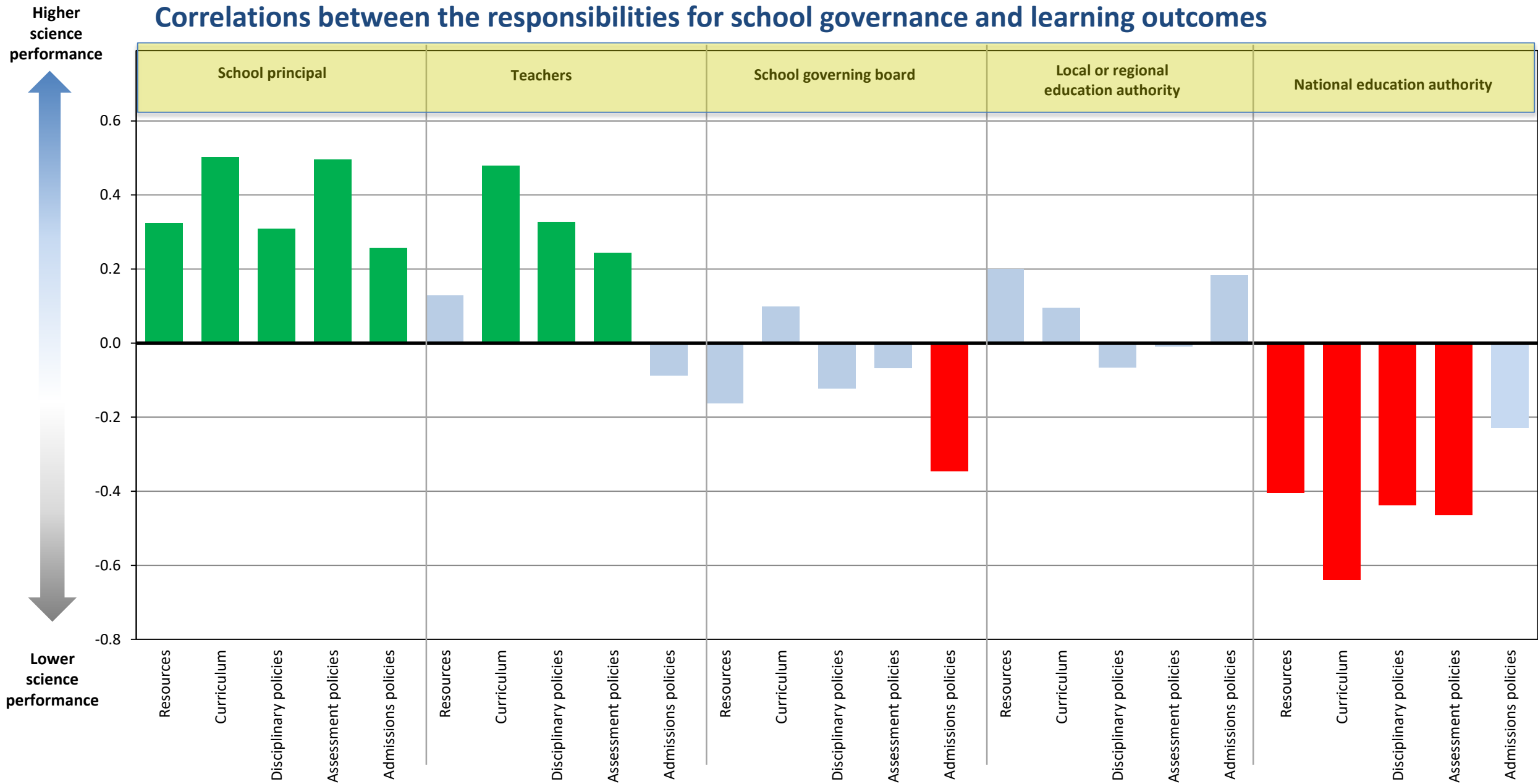# Prescription

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.

Who decides?

Percentage of decisions taken at each level of government in public lower secondary education (2017)

Legend: School, Local, Regional or Sub-regional, Central or State, Multiple levels
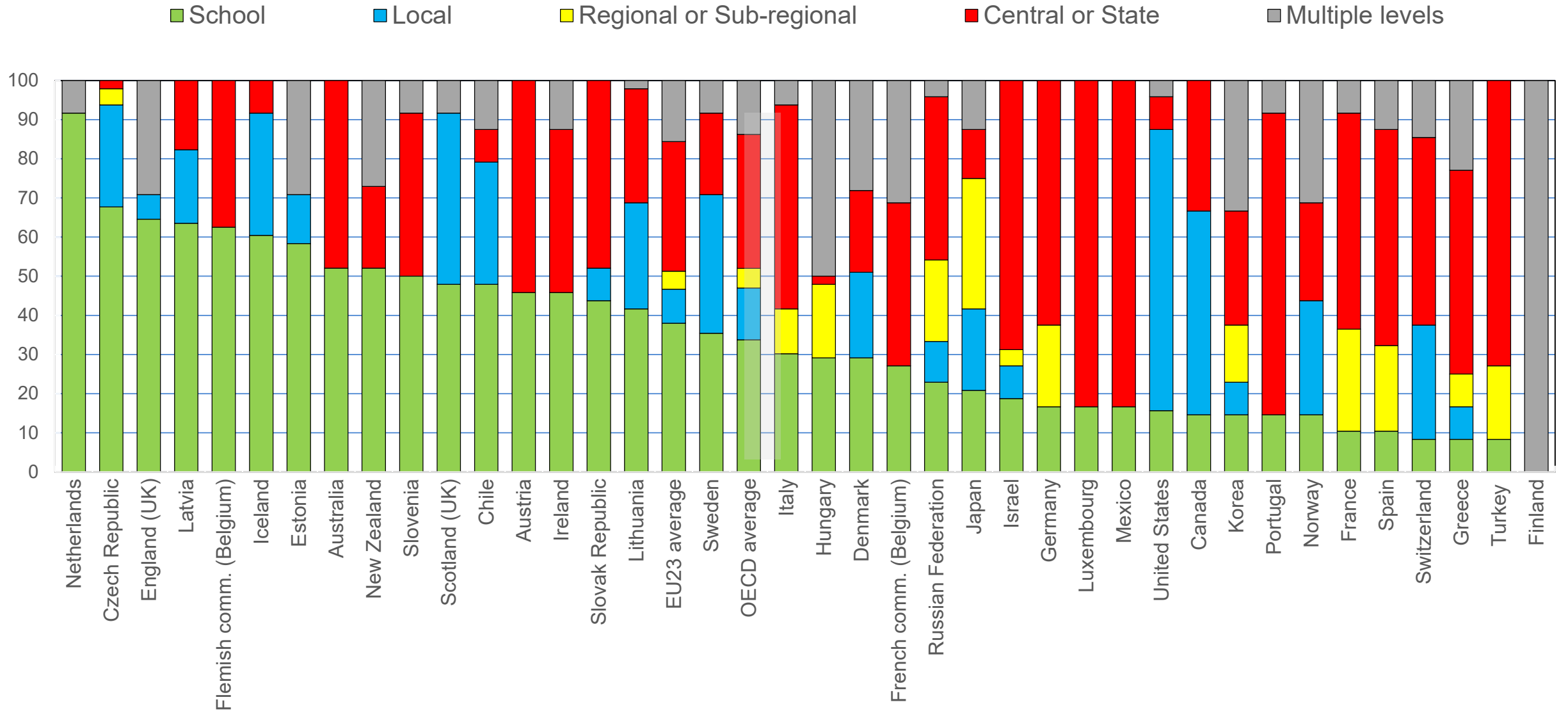
Correlations between the responsibilities for school governance and learning outcomes

Source: OECD, PISA 2015 Database.

PISA Figure II.4.8

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
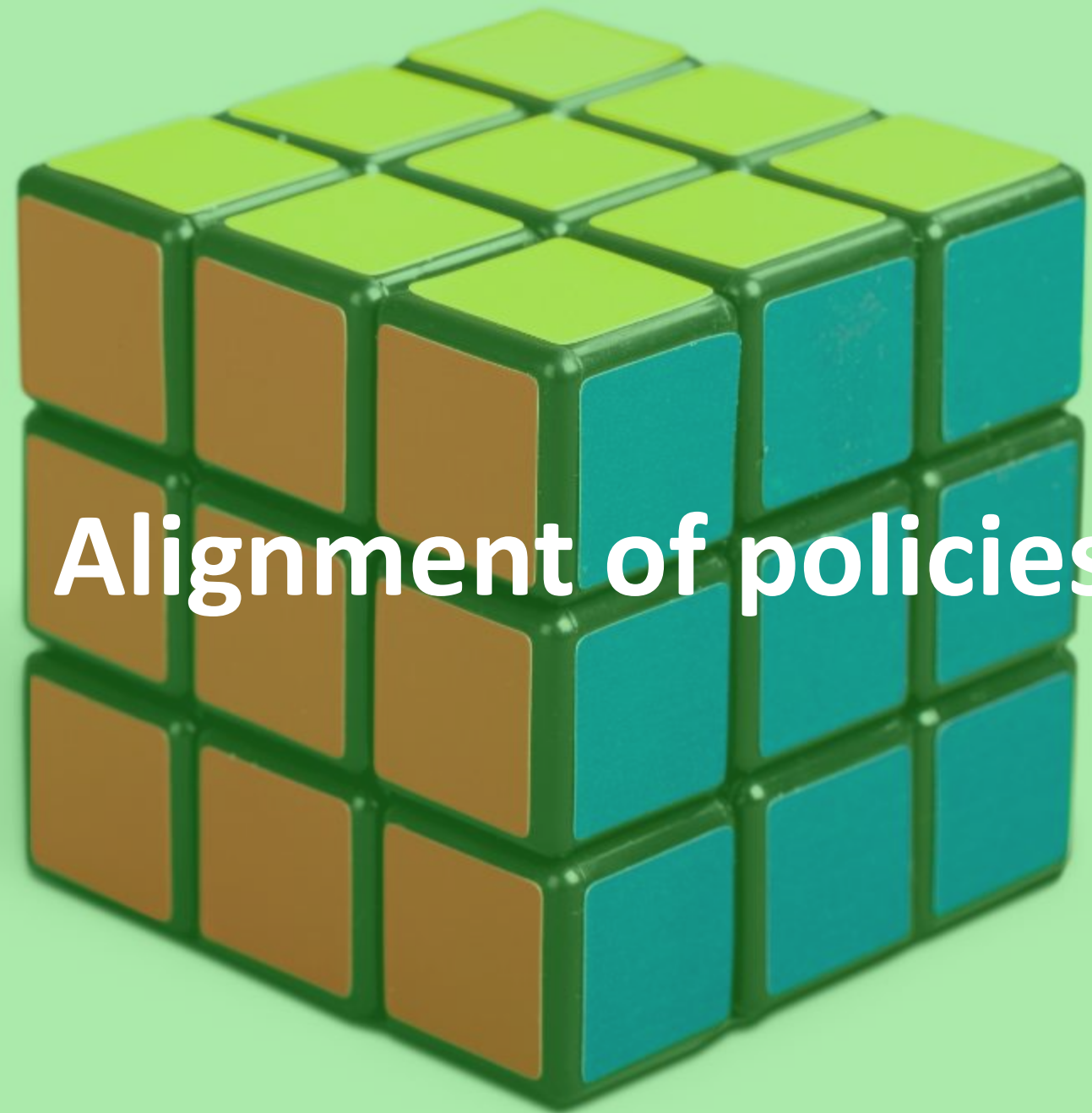
Less subject-based, more project-based

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

More likely

As likely

Less likely

Students who say their parents are interested in their school activities are…

2.5 times more likely

1.9 times more likely

1.4 times less likely

Twice less likely

Wanting top grades at school

Being very satisfied with life

Feeling lonely at school

Being not satisfied with life
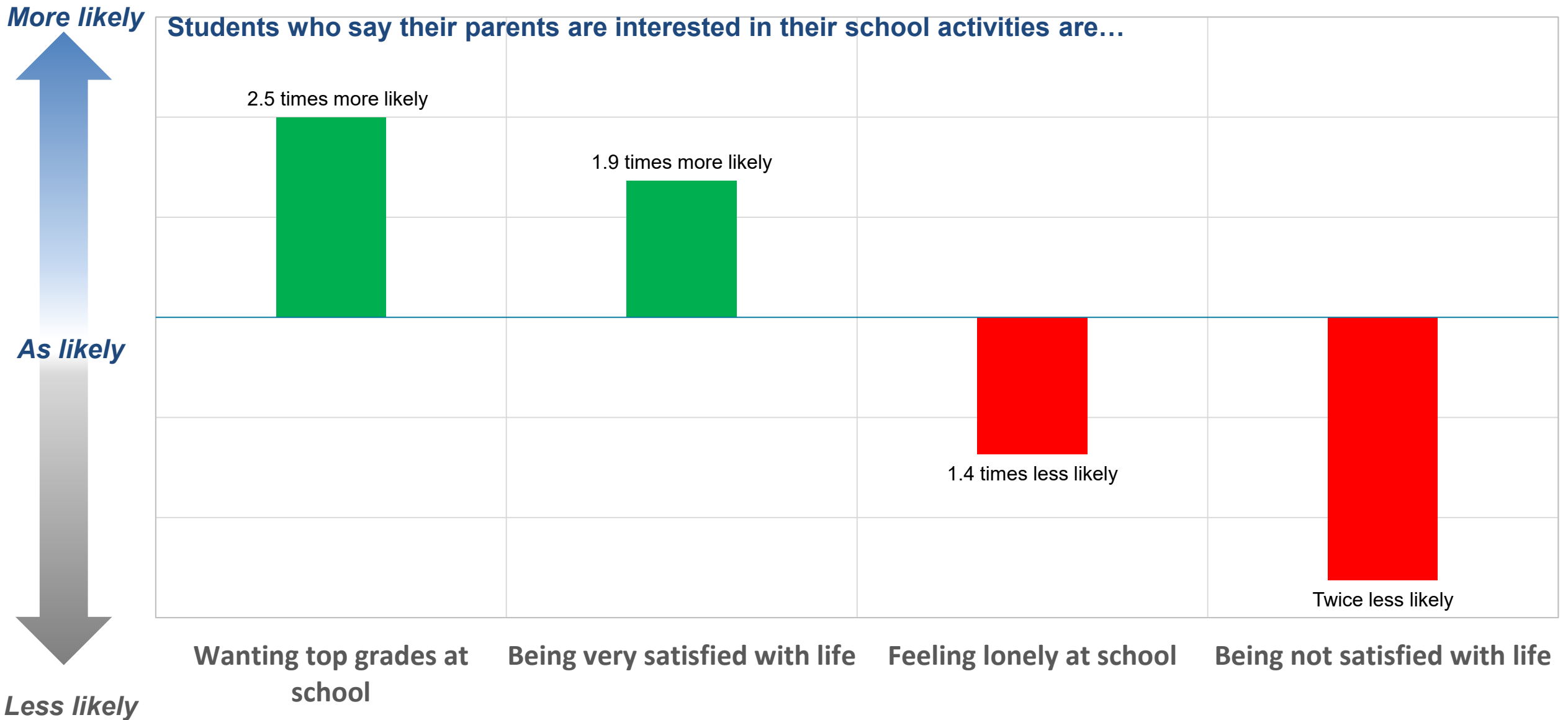
Ideosyncratic policy

Alignment of policies

Scenario 1: Schooling Extended

Participation in formal education continues to expand. International collaboration and technological advances support more individualised learning. The structures and processes of schooling remain.
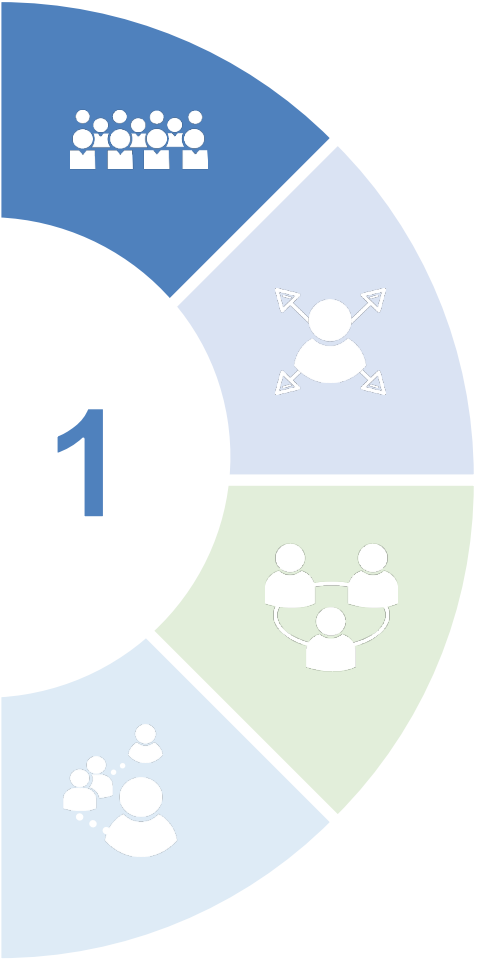
Goals and functions

Governance and geopolitics

Organisation and structures

The teaching workforce

Educational monopolies remain: Schools are key actors in socialisation, qualification, care and credentialing.

International collaboration and digital technologies power more personalised teaching and learning practices.

Distinct teacher corps remain, although with new divisions of tasks and greater economies of scale.

Scenario 2: Education Outsourced

Traditional schooling systems break down as society becomes more directly involved in educating its citizens. Learning takes place through more diverse, possibly privatised and flexible arrangements, with digital technology a key driver.

2

Goals and functions

Governance and geopolitics

Organisation and structures

The teaching workforce

Fragmentation of demand with self-reliant "clients" looking for flexible services.

Schooling systems as players in a wider (local, national, global) education market. Diversification of structures: multiple organisational forms available to individuals.
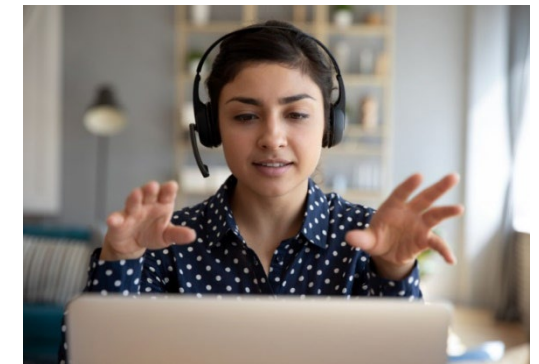
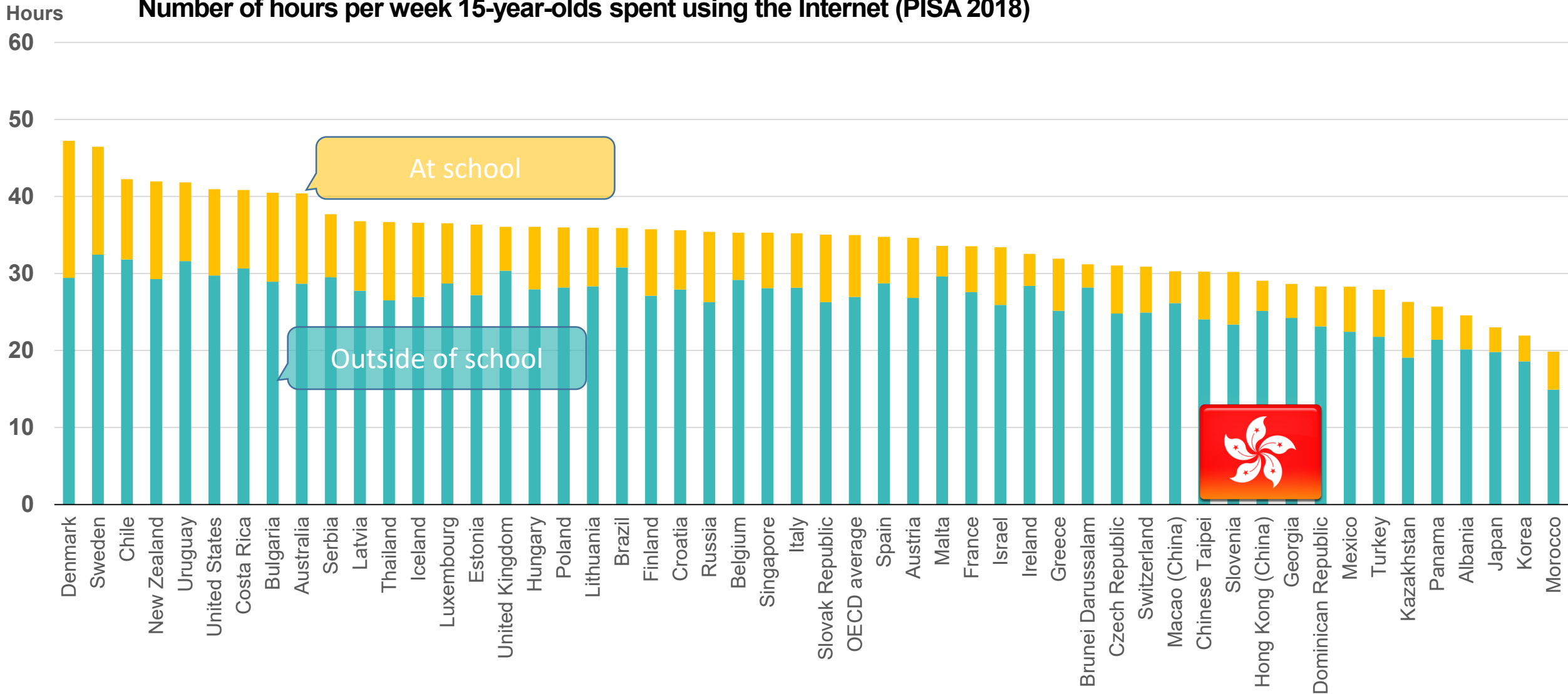Diversity of instructional roles and teaching status operating within and outside of schools.

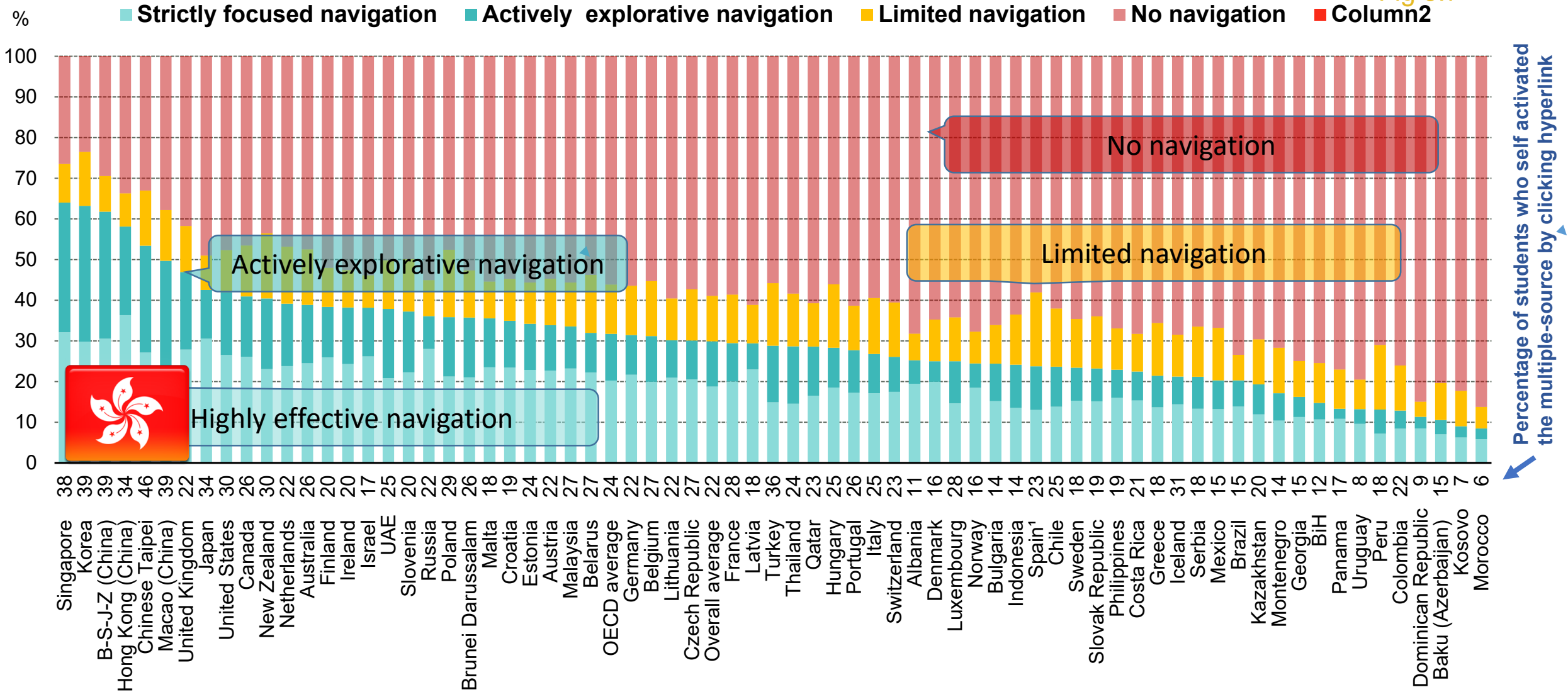# The digital world has become the real world

Number of hours per week 15-year-olds spent using the Internet (PISA 2018)

Task-oriented navigation activities (PISA 2018)

Fig 3.7

New learning experiences

- Many online and distance learning and other innovative approaches such as AR, VR and AI were created, adapted and expanded.
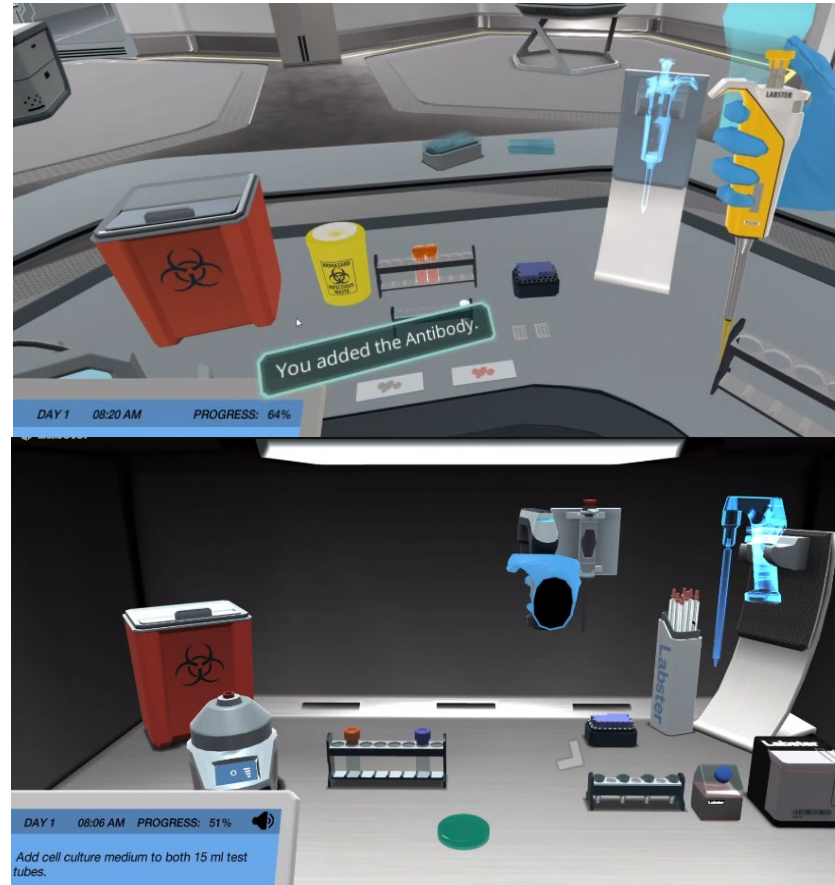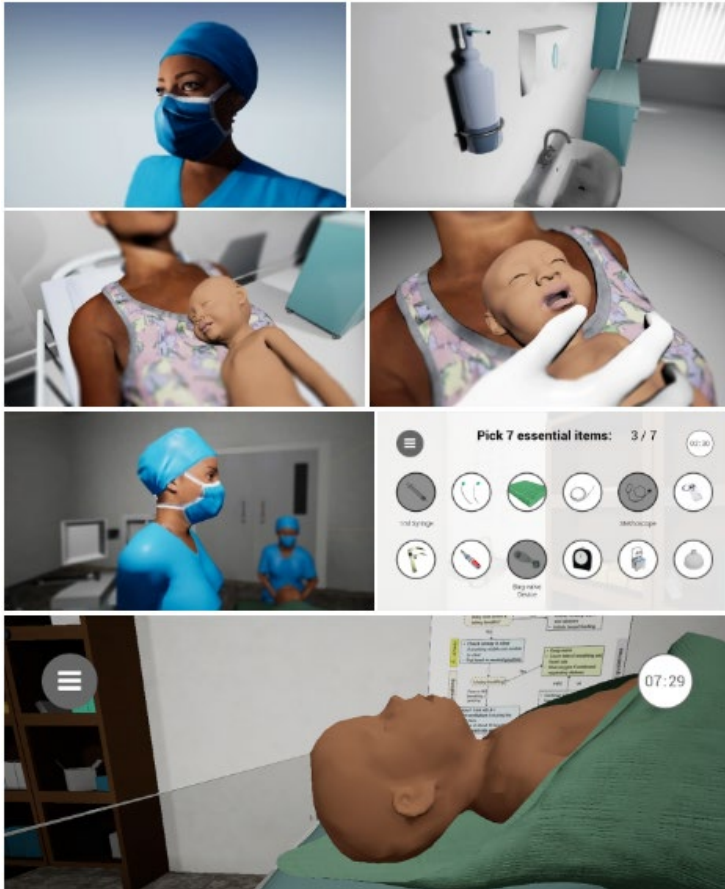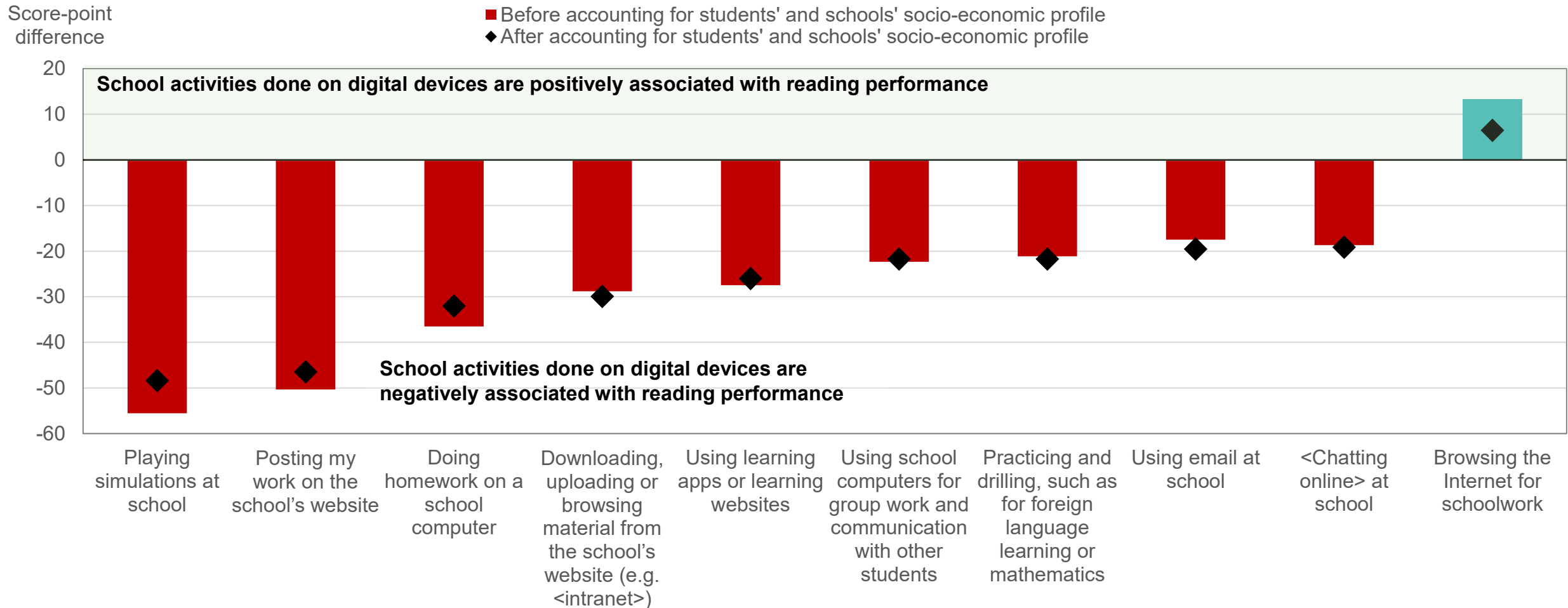

Image sources: Electude Classroom and Labster Labs' virtual labs; Oxford University's LIFE project, a smartphone-based virtual learning platform

Relationship between reading performance and the type of school activities done on digital devices (PISA 2018)

Score-point difference in reading between students who reported using digital devices for the following activities at school compared to those who reported that never did, OECD average

Fig 6.13

Score-point difference

■ Before accounting for students' and schools' socio-economic profile
◆ After accounting for students' and schools' socio-economic profile

School activities done on digital devices are positively associated with reading performance

School activities done on digital devices are negatively associated with reading performance

Categories:
- Playing simulations at school
- Posting my work on the school's website
- Doing homework on a school computer
- Downloading, uploading or browsing material from the school's website (e.g. <intranet>)
- Using learning apps or learning websites
- Using school computers for group work and communication with other students
- Practicing and drilling, such as for foreign language learning or mathematics
- Using email at school
- <Chatting online> at school
- Browsing the Internet for schoolwork

Scenario 3: Schools as Learning Hubs

Schools remain, but diversity and experimentation have become the norm. Opening the "school walls" connects schools to their communities, favouring ever-changing forms of learning, civic engagement and social innovation.

3

Goals and functions

Governance and geopolitics

Organisation and structures

The teaching workforce

Strong focus on local decisions; self-organising units in diverse partnerships. Schools as hubs function to organise multiple configurations of local-global resources.

Flexible schooling arrangements permit greater personalisation and community involvement.

Professional teachers as nodes of wider networks of flexible expertise.

OECD

Scenario 4: Learn-as-you-go

Education takes place everywhere, anytime. Distinctions between formal and informal learning are no longer valid as society turns itself entirely to the power of the machine.

4

Goals and functions

Governance and geopolitics

Organisation and structures

The teaching workforce

Traditional goals and functions of schooling are overwritten by technology. Dismantling of schooling as a social institution.
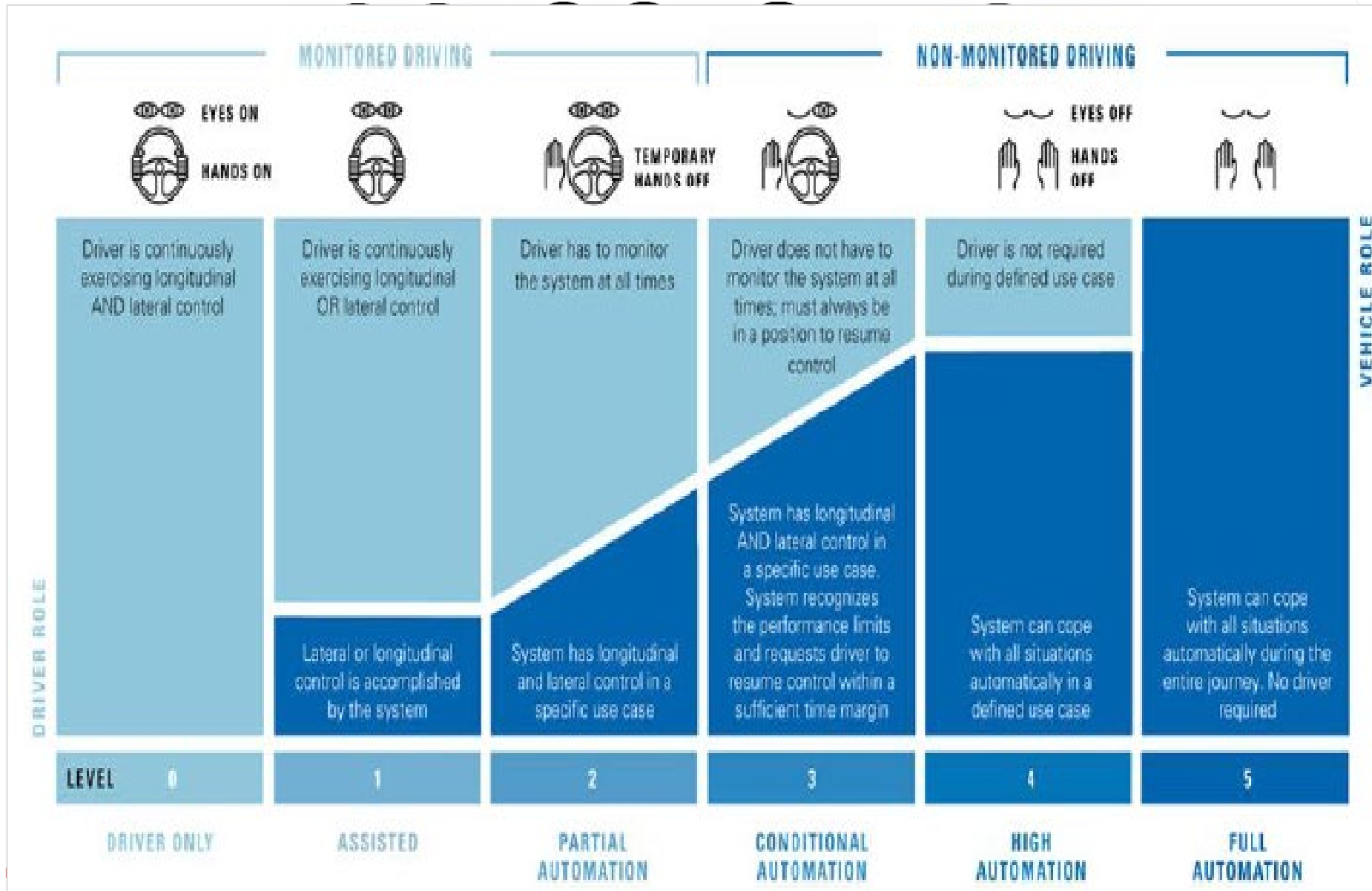
Open market of "prosumers" with a central role for communities of practice (local, national, global).

(Global) governance of data and digital technologies becomes key.

OECD

Finding a balance that puts humans at the centre

Global education venture capital

Venture capitalists have invested USD 16B$ in 2020, up from USD 2B in 2014

■ China ■ United States ■ India ■ EU + UK □ Others
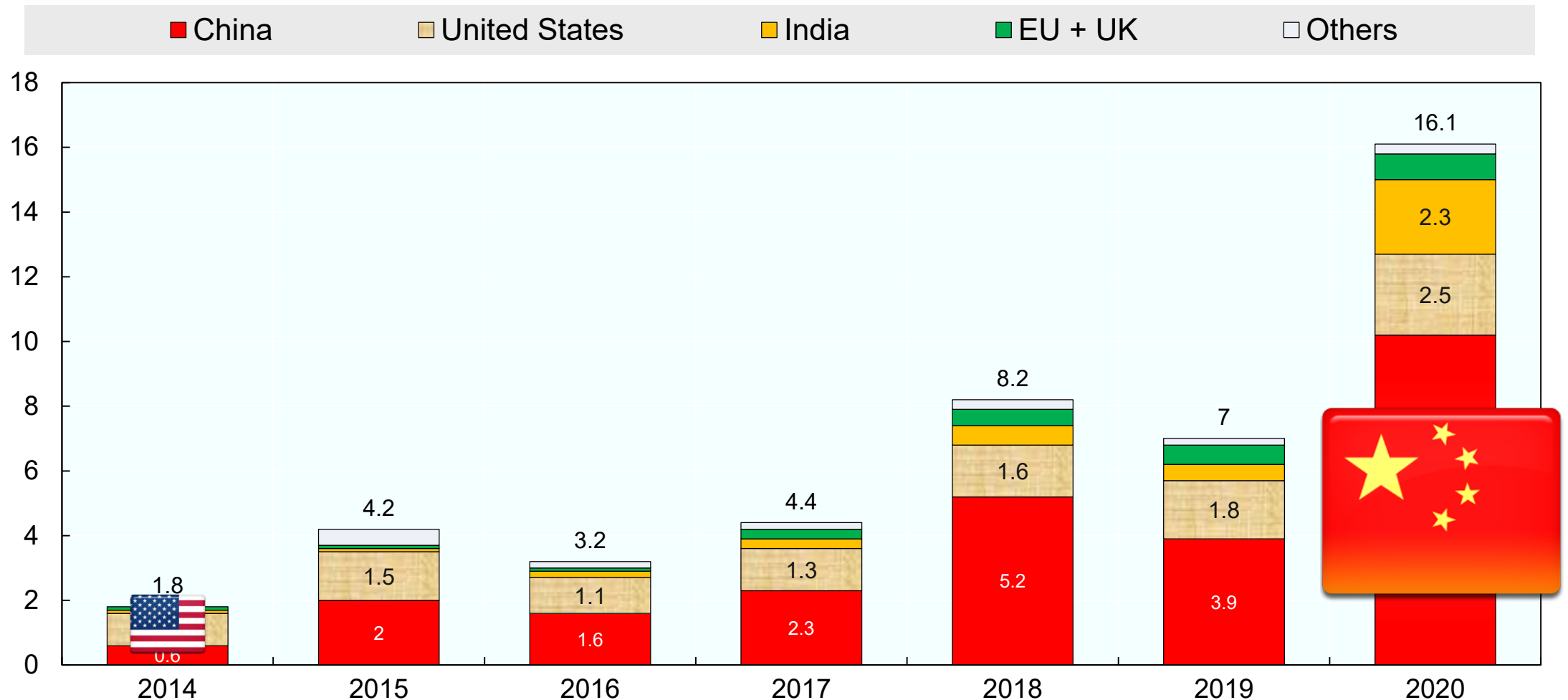
OECD Scenarios for the Future of Schooling	Goals and functions	Organisation and structures	The teaching workforce	Governance and geopolitics	Challenges for public authorities
Scenario 1 **Schooling extended**	Schools are key actors in socialisation, qualification, care and credentialing.	Educational monopolies retain all traditional functions of schooling systems.	Teachers in monopolies, with potential new economies of scale and division of tasks.	Strong role for traditional administration and emphasis on international collaboration.	Accommodating diversity and ensuring quality across a common system. Potential trade-off between consensus and innovation.
Scenario 2 **Education outsourced**	Fragmentation of demand with self-reliant "clients" looking for flexible services.	Diversification of structures: multiple organisational forms available to individuals.	Diversity of roles and status operating within and outside of schools.	Schooling systems as players in a wider (local, national, global) education market.	Supporting access and quality, fixing "market failures". Competing with other providers and ensuring information flows.
Scenario 3 **Schools as learning hubs**	Flexible schooling arrangements permit greater personalisation and community involvement.	Schools as hubs function to organise multiple configurations of local-global resources.	Professional teachers as nodes of wider networks of flexible expertise.	Strong focus on local decisions. Self-organising units in diverse partnerships.	Diverse interests and power dynamics; potential conflict between local and systemic goals. Large variation in local capacity.
Scenario 4 **Learn-as-you-go**	Traditional goals and functions of schooling are overwritten by technology.	Dismantling of schooling as a social institution.	Open market of "prosumers" with a central role for communities of practice (local, national, global).	(Global) governance of data and digital technologies becomes key.	Potential for high interventionism (state, corporate) impacts democratic control and individual rights. Risk of high social fragmentation.

Assessing risks, leveraging opportunities
Tensions and paradoxes require smart responses

MODERNISING	⟵----------⟶	DISRUPTING
NEW GOALS	⟵----------⟶	OLD STRUCTURES
GLOBAL	⟵----------⟶	LOCAL
INNOVATION	⟵----------⟶	RISK AVOIDANCE
POTENTIAL	⟵----------⟶	REALITY
VIRTUAL	⟵----------⟶	FACE-TO-FACE
LEARNING	⟵----------⟶	EDUCATION
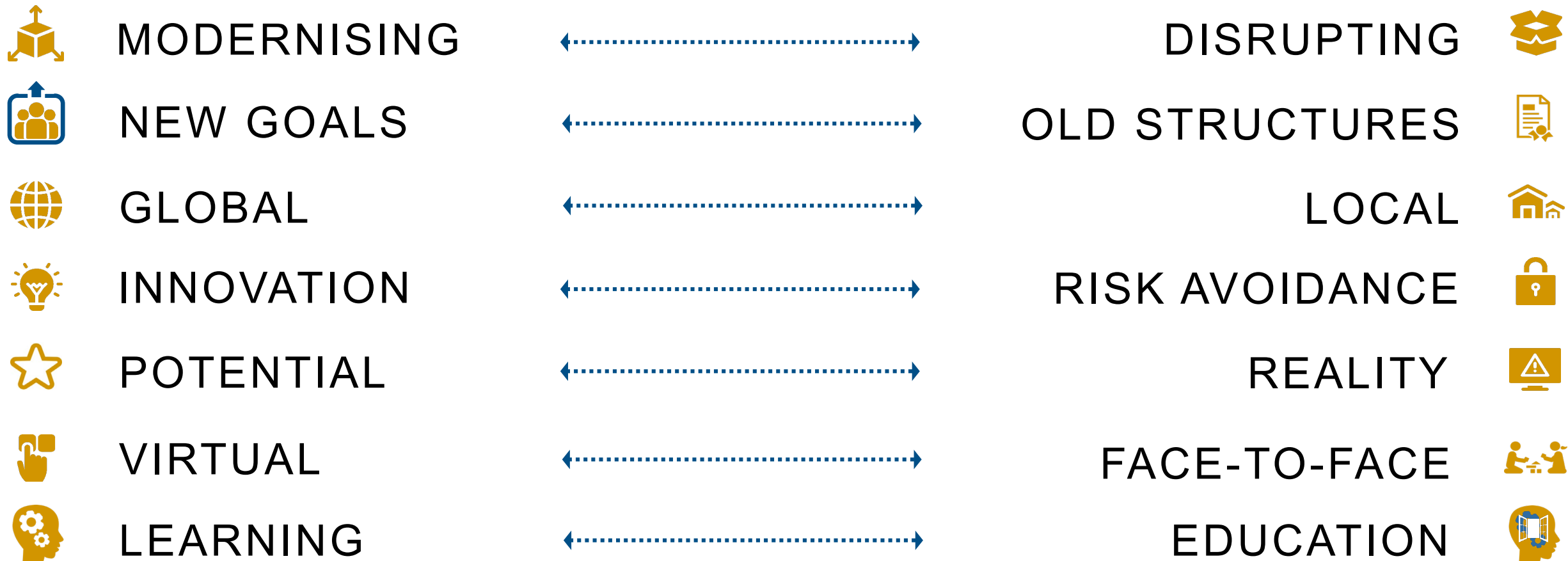
Thank you

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

- PISA 2018: *Insights and Implications*
- PISA 2018 Results (Volume I): *What Students Know and Can Do*
- PISA 2018 Results (Volume II): *Where All Students Can Succeed*
- PISA 2018 Results (Volume III): *What School Life Means for Students' Lives*

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FAQs: www.oecd.org/pisa/pisafaq

PISA indicators on Education GPS: http://gpseducation.oecd.org

PISA Data Explorer: www.oecd.org/pisa/data

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