What knowledge, skills, attitudes and values will today's students need to thrive and shape their world?

Andreas Schleicher, Director
OECD – Directorate for Education and Skills

Education 2030…

…seeks to establish

…a common

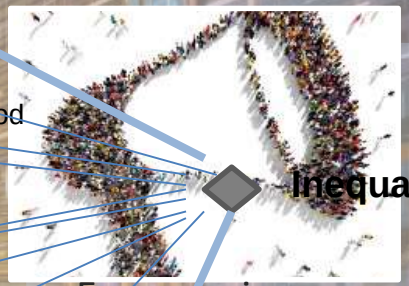
language

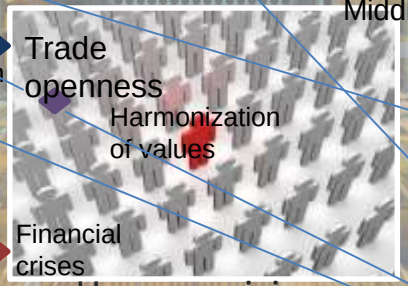
…a shared

space

…and to explore issues around the design of instructional systems

Digitalisation and education

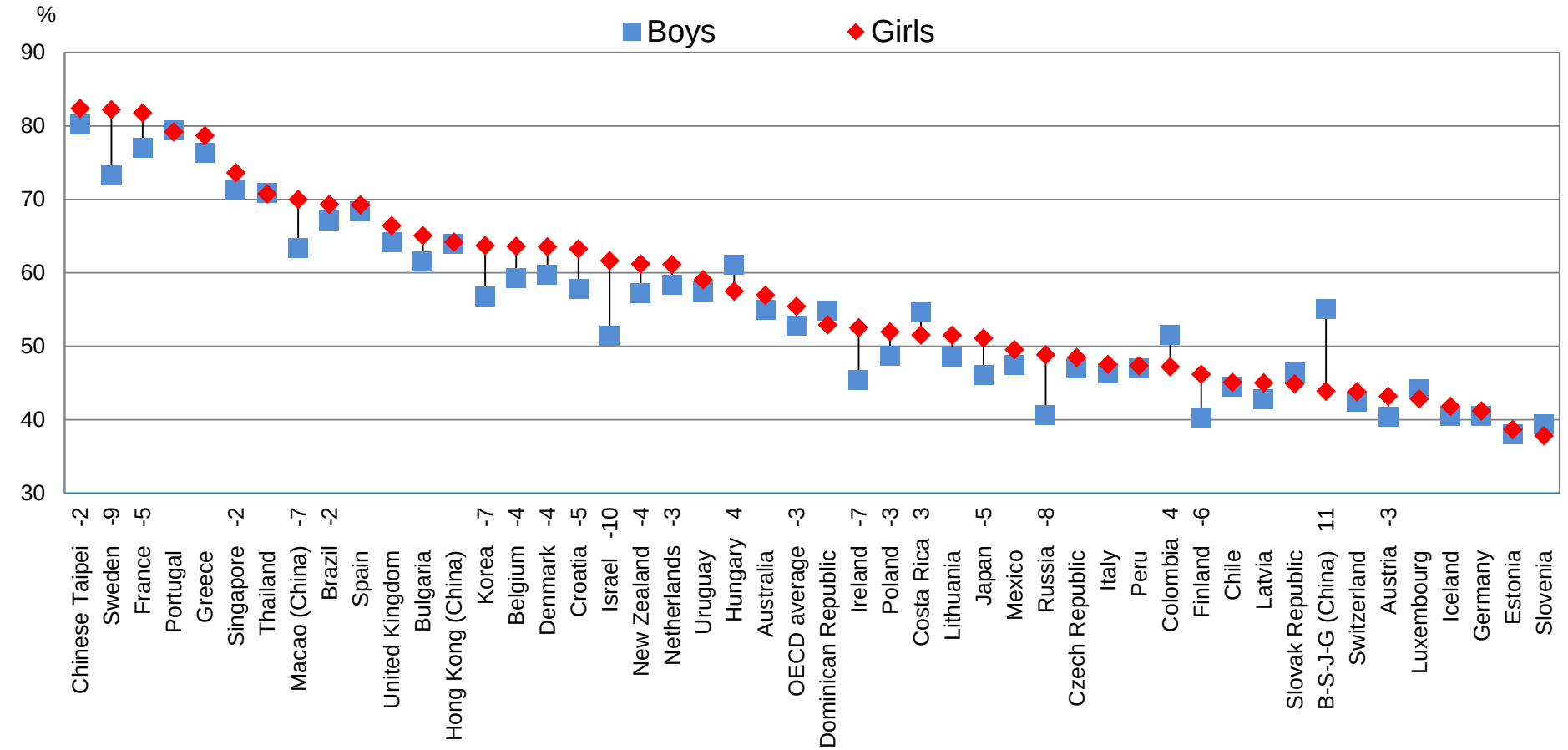




Climate change
Renewable energy
Loss of biodiversity
Environmental degradation
Natural disasters
Water and food shortages
Global integration
Inequality
International governance
Democratizing
Particularizing
Empowering
Tourism
Poverty
Ageing
Middle class
Multinational companies
Democratisation
Trade openness
Harmonization of values
Polarisation of societies
Radicalisation
Emerging economies
Financial crises
Nationalism
Concentrating
Homogenizing
Disempowering
Interdependent markets
Migration

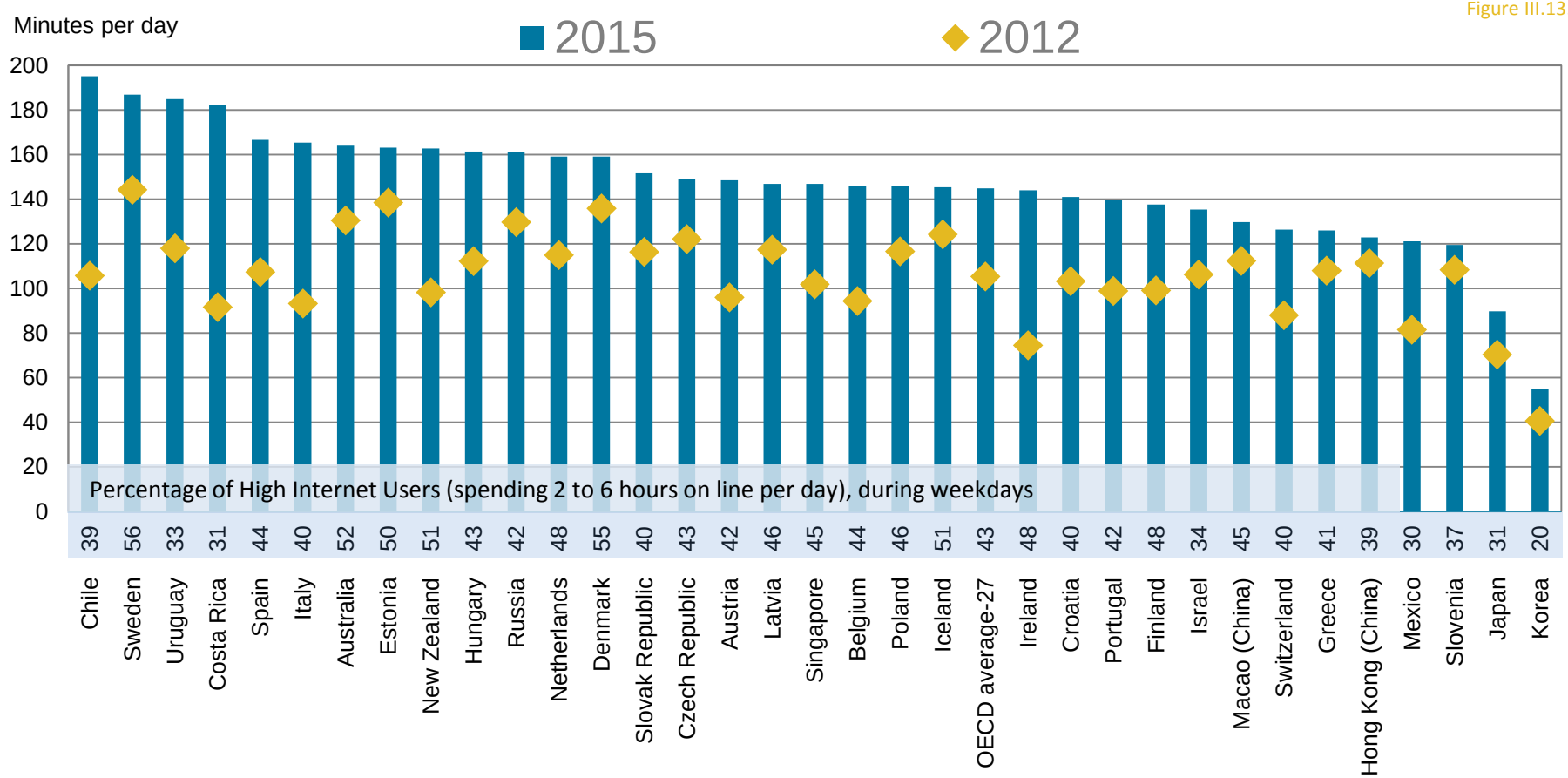
15-year-olds feeling bad if not connected to the Internet (PISA)

Figure III.13.6

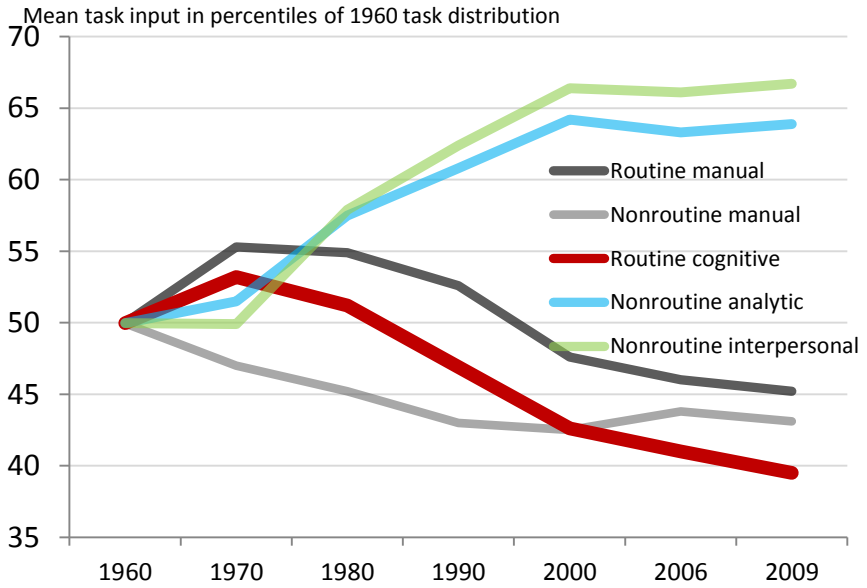


Students are using more time online outside school on a typical school day

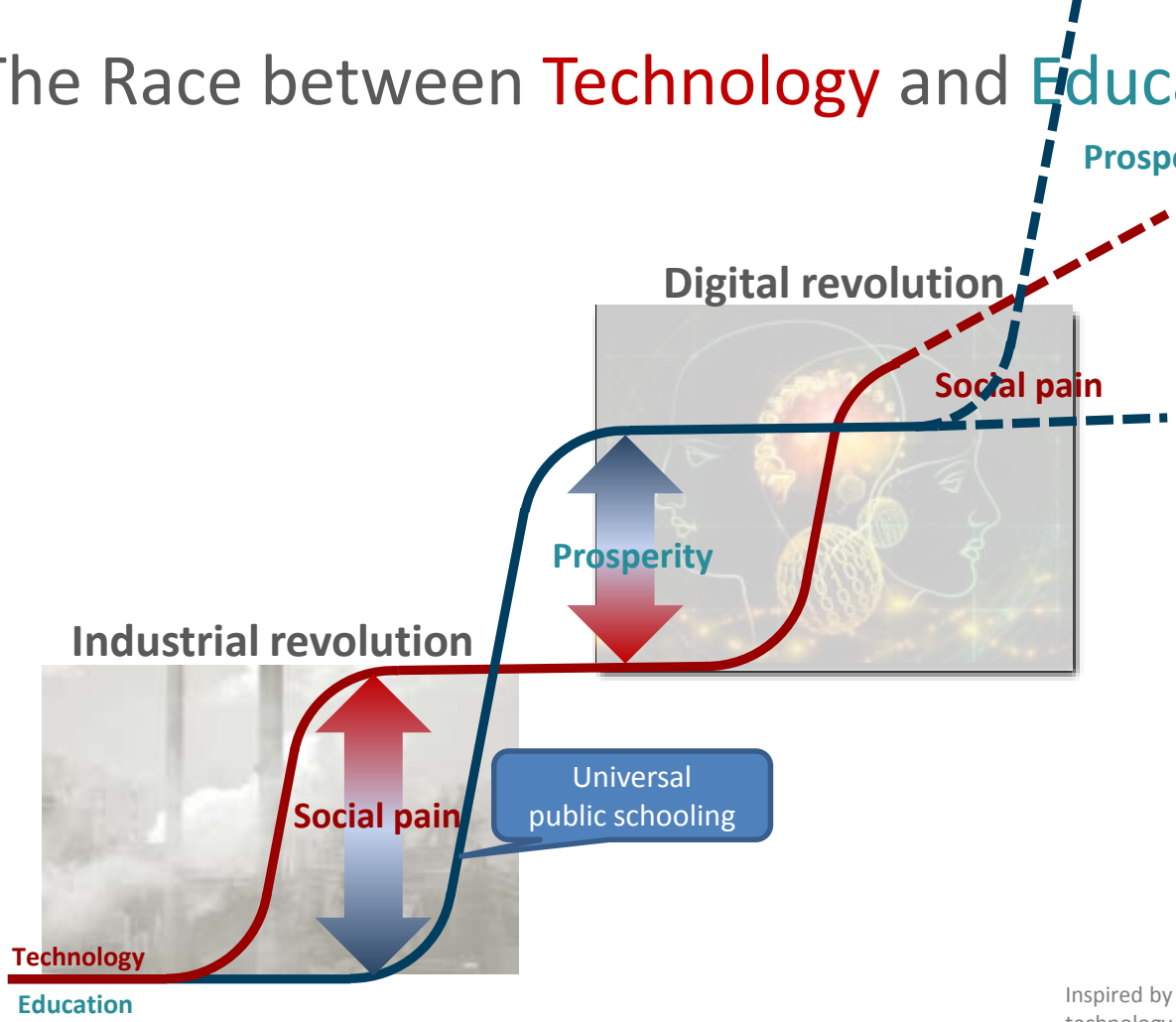
Figure III.13.3



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)

First phase (2015 – 2018)

what

to teach/ learn

Second phase (2019 and beyond…)

how

to teach/ learn

Conceptual Learning Framework

Stepping back and explore the **bigger picture** as well as the **longer-term challenges** facing education

Framework
Interactive tools

International Curriculum Analysis

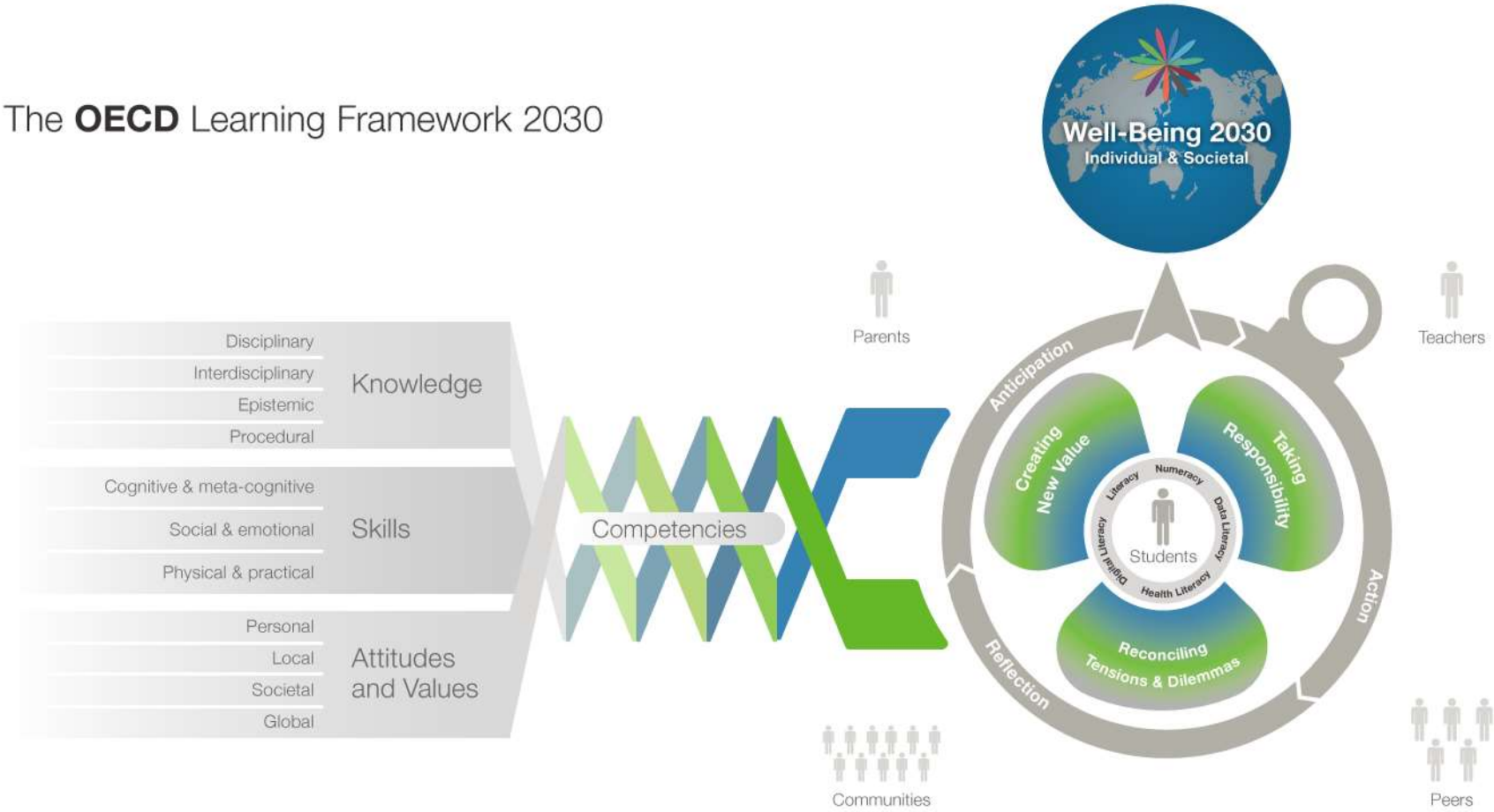
Making the process of curriculum design a **more evidence-based** and **systematic** process.

- **Policy Survey on Curriculum**
- **Curriculum Content Mapping**
- **Math Curriculum Analysis**
- **P.E. Curriculum Analysis**

OECD Learning Framework 2030

- Learning Compass -

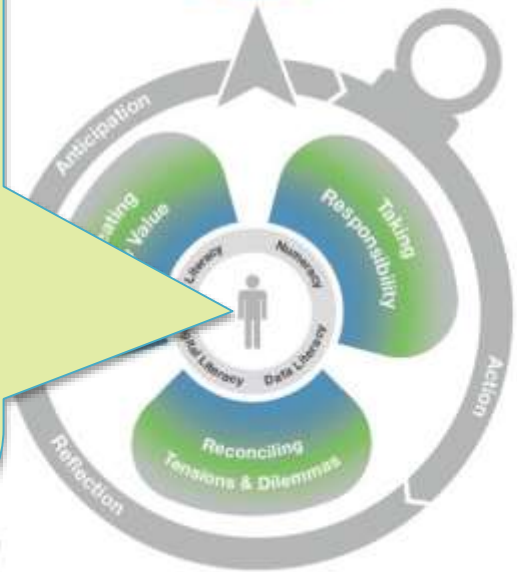
The **OECD** Learning Framework 2030



Agency: Young people will need to be innovative, responsible and aware. They will have a sense of right and wrong, sensitivity to the claims that others make and a grasp of the proper limits on individual and collective action.
Co-agency: The interactive, mutually supportive relationships that help learners to progress towards their valued goals. To help enable agency, educators need to recognise learners' individuality, and also acknowledge the wider set of relationships – with their teachers, peers, families and communities – that influence their learning.

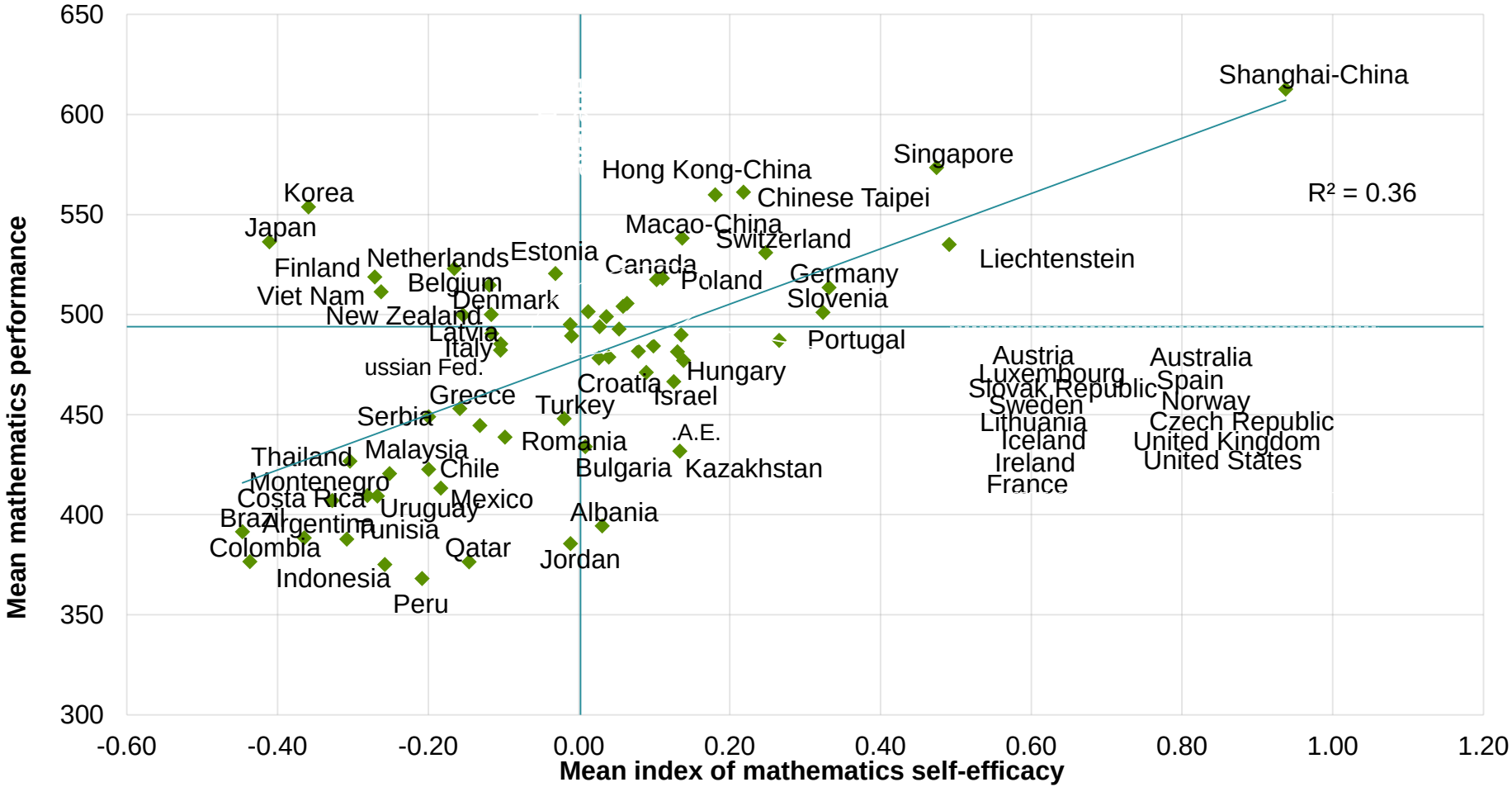
Well-being 2030 –
The future we want

Jobs, Income, Housing, Work-Life-Balance, Safety, Life-Satisfaction, Health, Civic Engagement, Environment, Education and Community



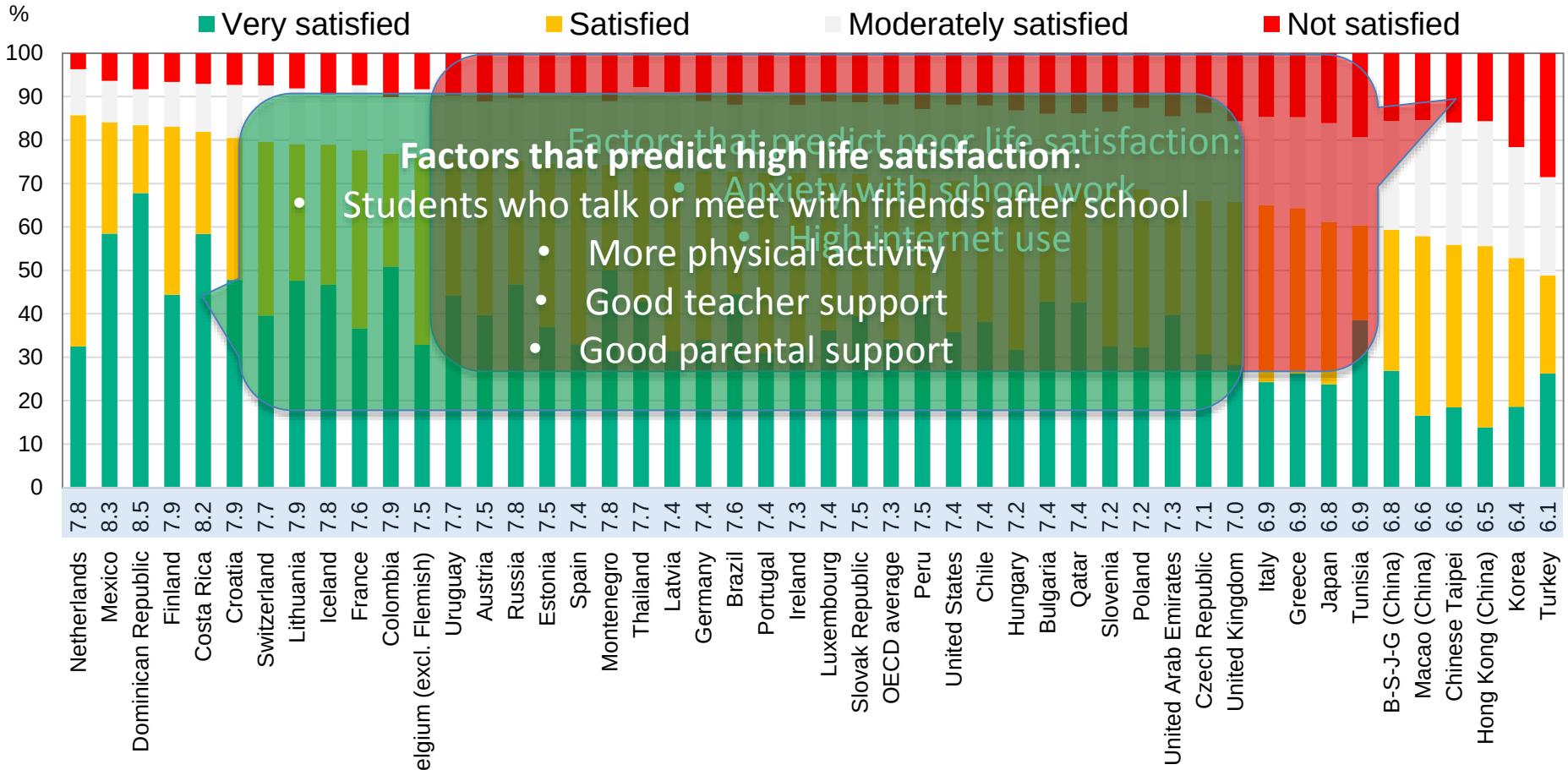
Countries where students have stronger beliefs in their abilities perform better in mathematics

Fig III.4.5



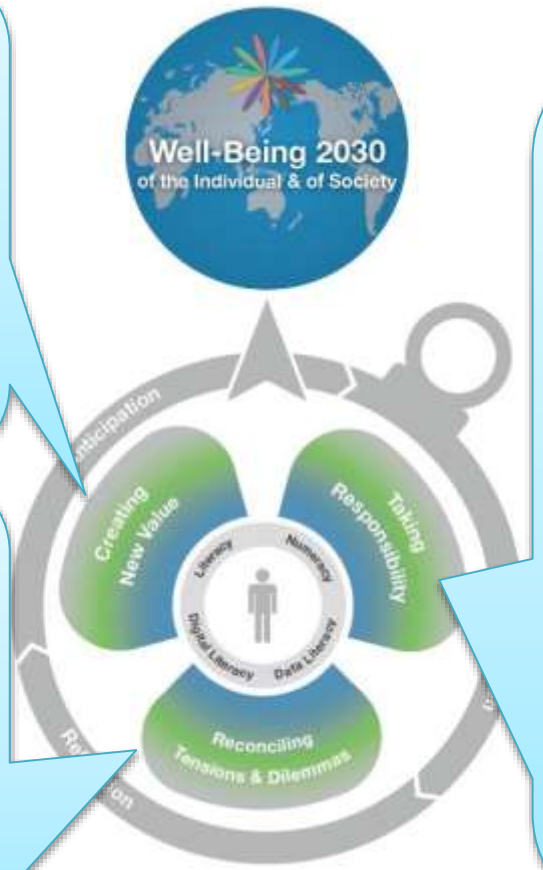
Education for whole child development

Life satisfaction among 15-year-old students



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, …
.

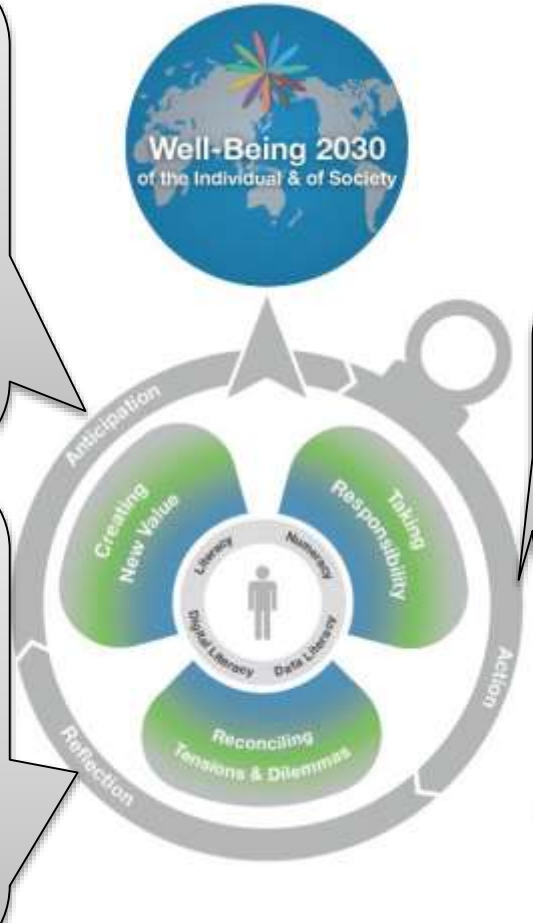
In a structurally imbalanced world, the imperative of reconciling diverse perspectives and interests, in local settings with sometimes global implications, will require young people to become adept in handling tensions, dilemmas and trade-offs.
Underlying constructs are empathy, resilience/stress resistance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



Dealing with novelty, change, diversity and ambiguity assumes that individuals can ‘think for themselves’. 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, …

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

OECD Curriculum Analysis 2030

Five commonly identified curriculum redesign issues in OECD countries

1. Managing time lag between future demands and today's curriculum

2. Curriculum overload

3. Quality of contents (focus, rigor, coherence)

4. Ensuring equity and quality

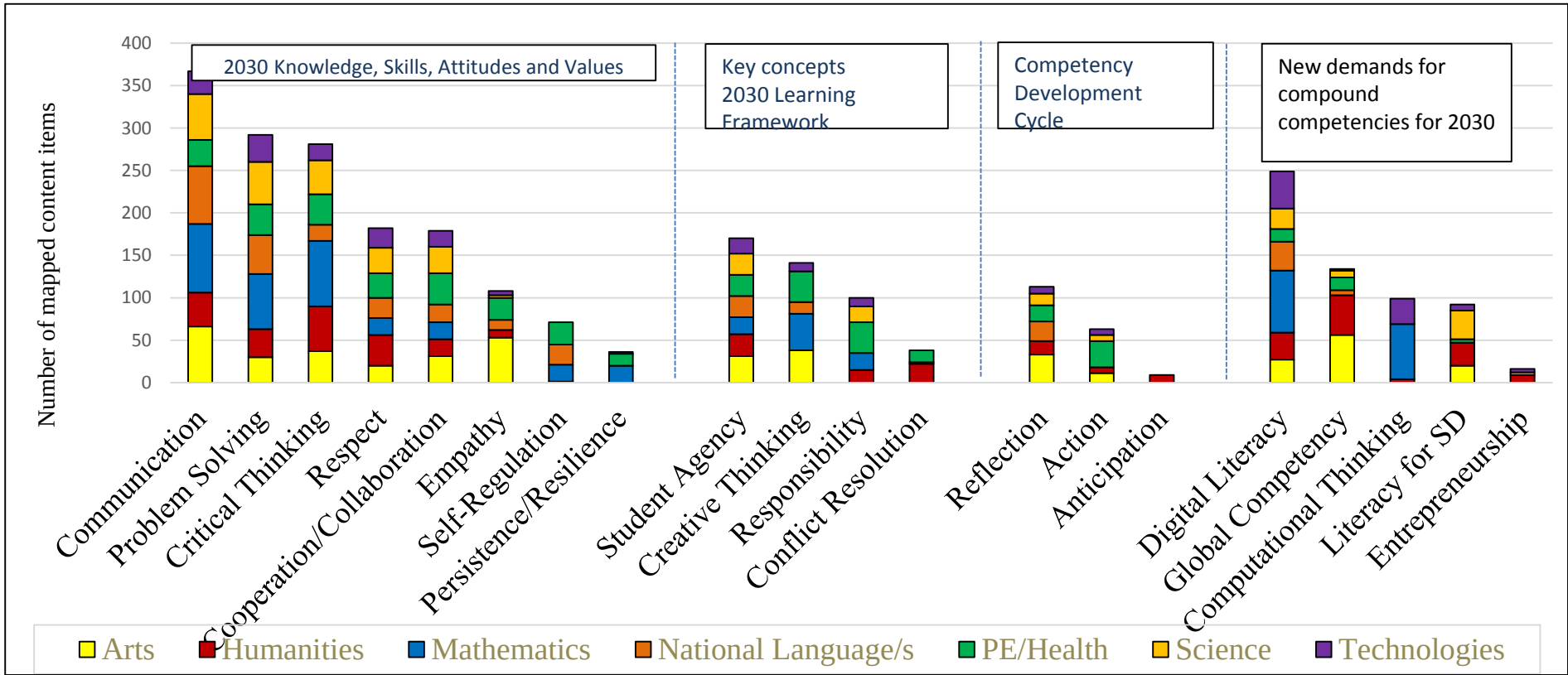
5. Planning for effective implementation and assessment

Issue 1: Managing time lag between future demands and today's curriculum

- How to embed new demands into existing subjects
- How to make timely and transformational changes while ensuring sustainable incremental changes
- How to involve multilevel stakeholders for their buy-in more effectively

Some of the new demands are accommodated in current curriculum changes in pilot countries; others are less articulated or made explicit.

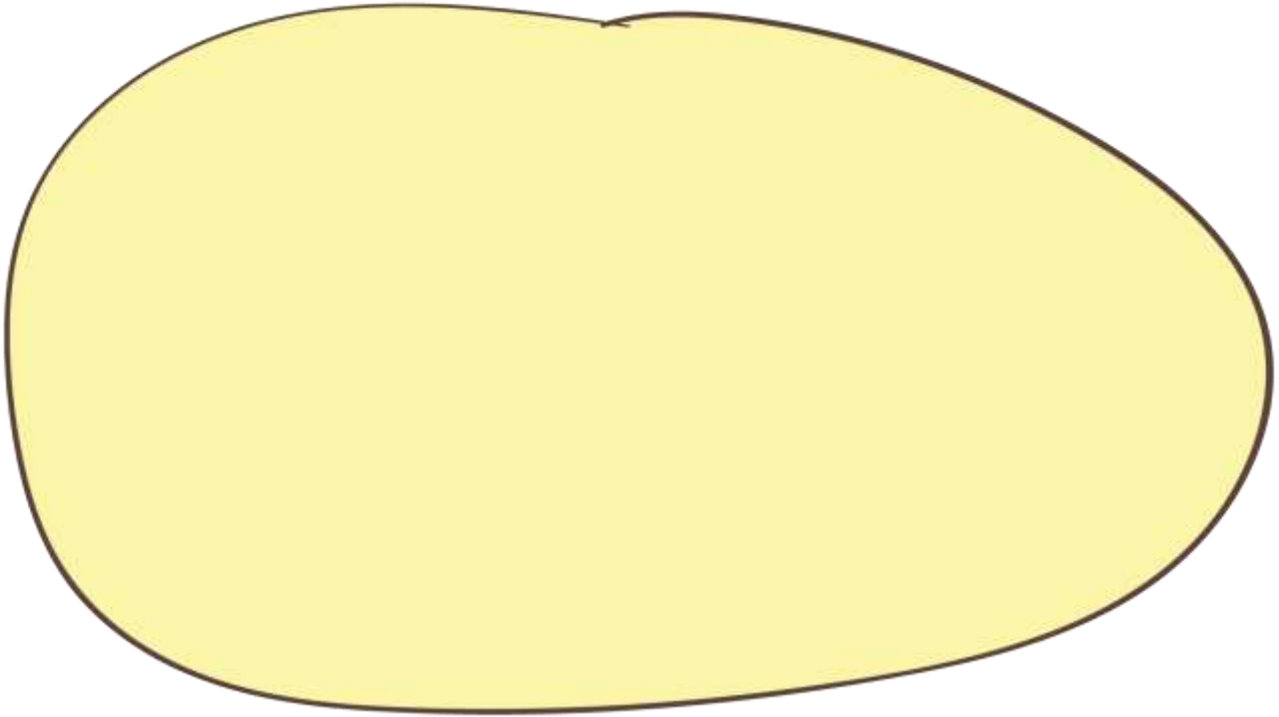
Preliminary Findings of Content Mapping: Main target competencies by learning areas (ISCED 2; 4 countries/ jurisdictions)



Issue 2: Curriculum overload

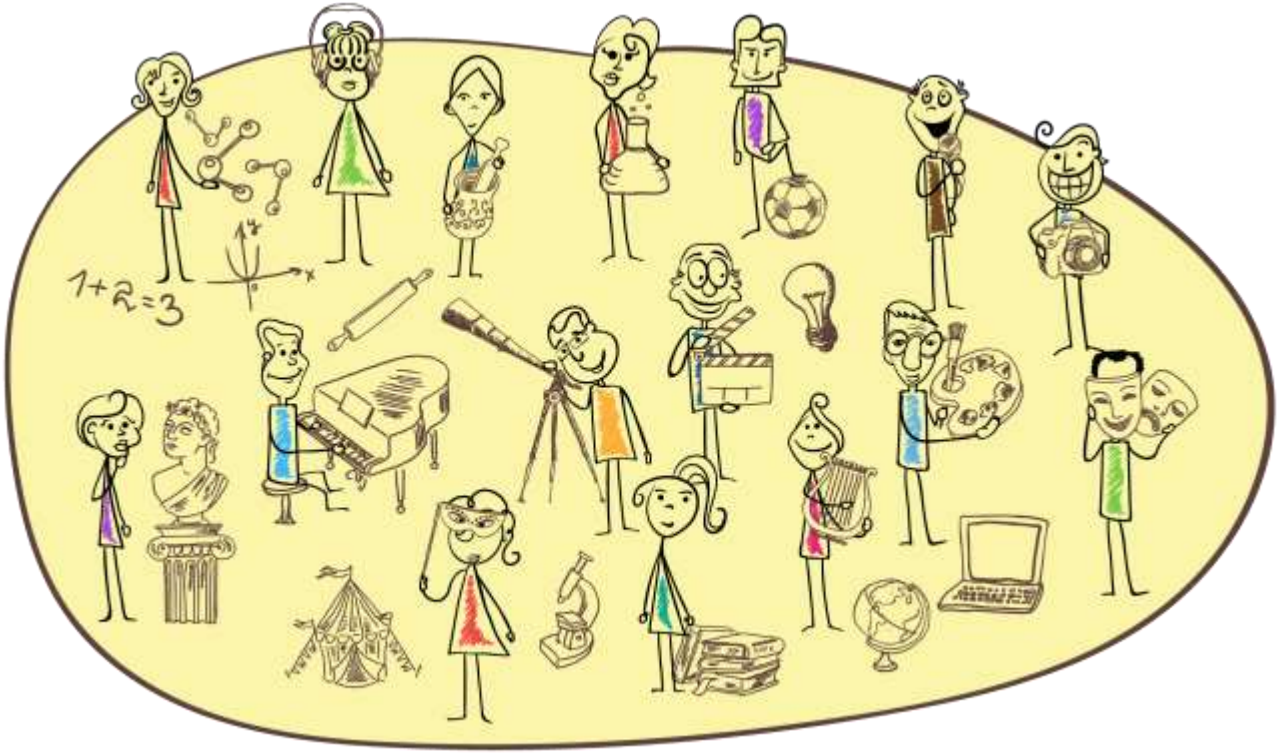
- Students often lack sufficient time to master key disciplinary concepts or, in the interests of a balanced life, to nurture friendships, to sleep and to exercise.
- How to decide on adding new and relevant contents and removing irrelevant contents
- Breadth vs depth: “deeper learning” or “quality learning time” instead of “more learning”
- How to balance generic competencies and locally-specific competencies required for 2030

Curriculum overload

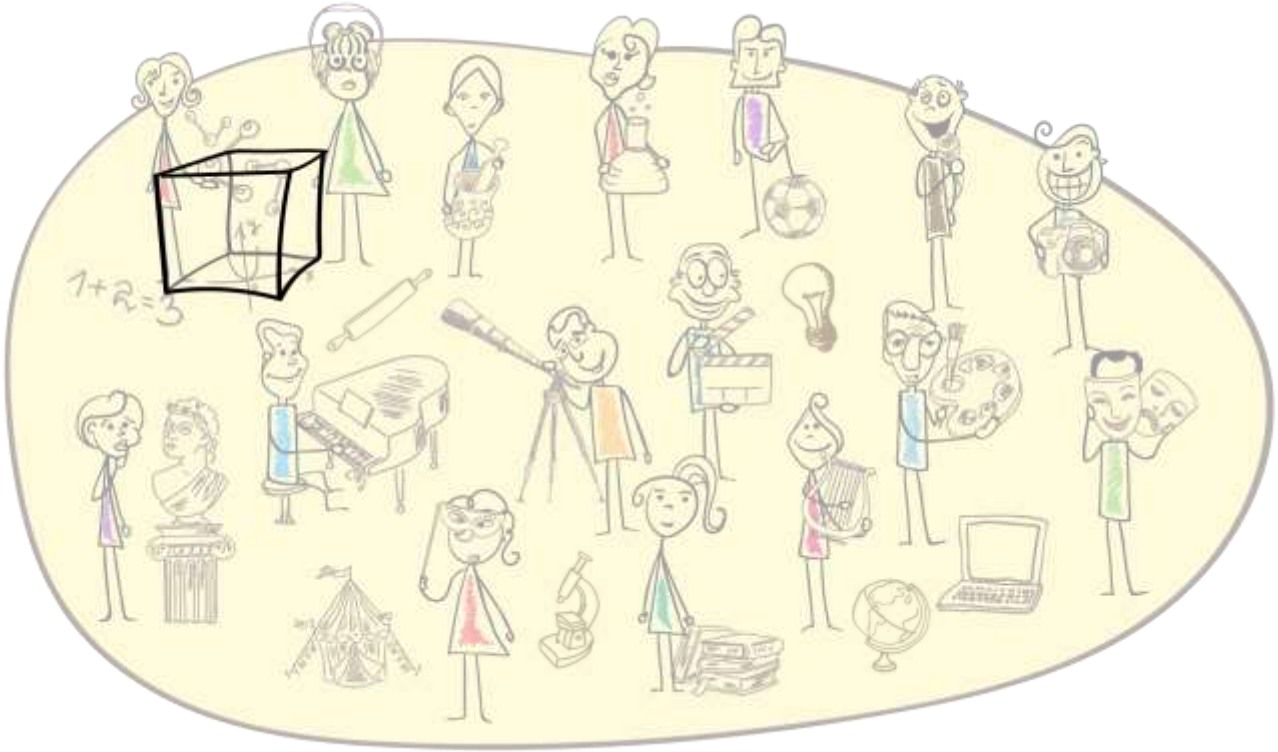


The multi-faceted world of knowledge

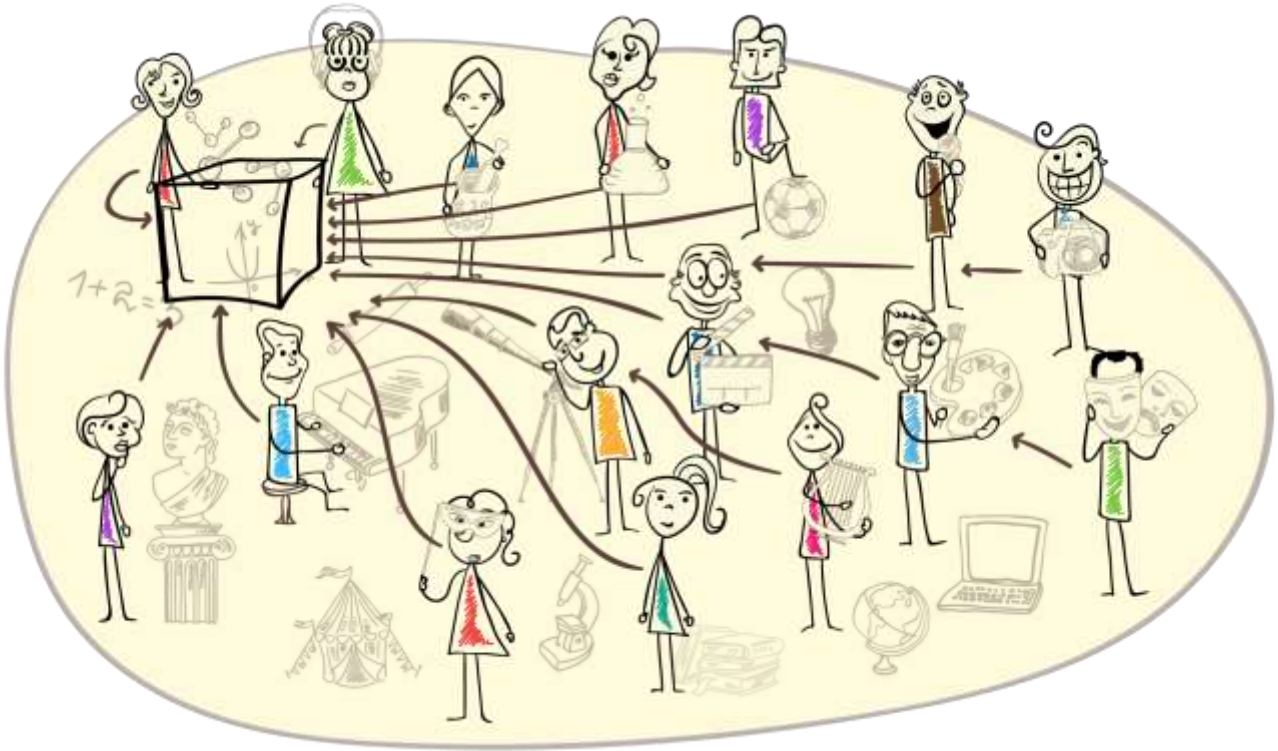
The human world of knowledge



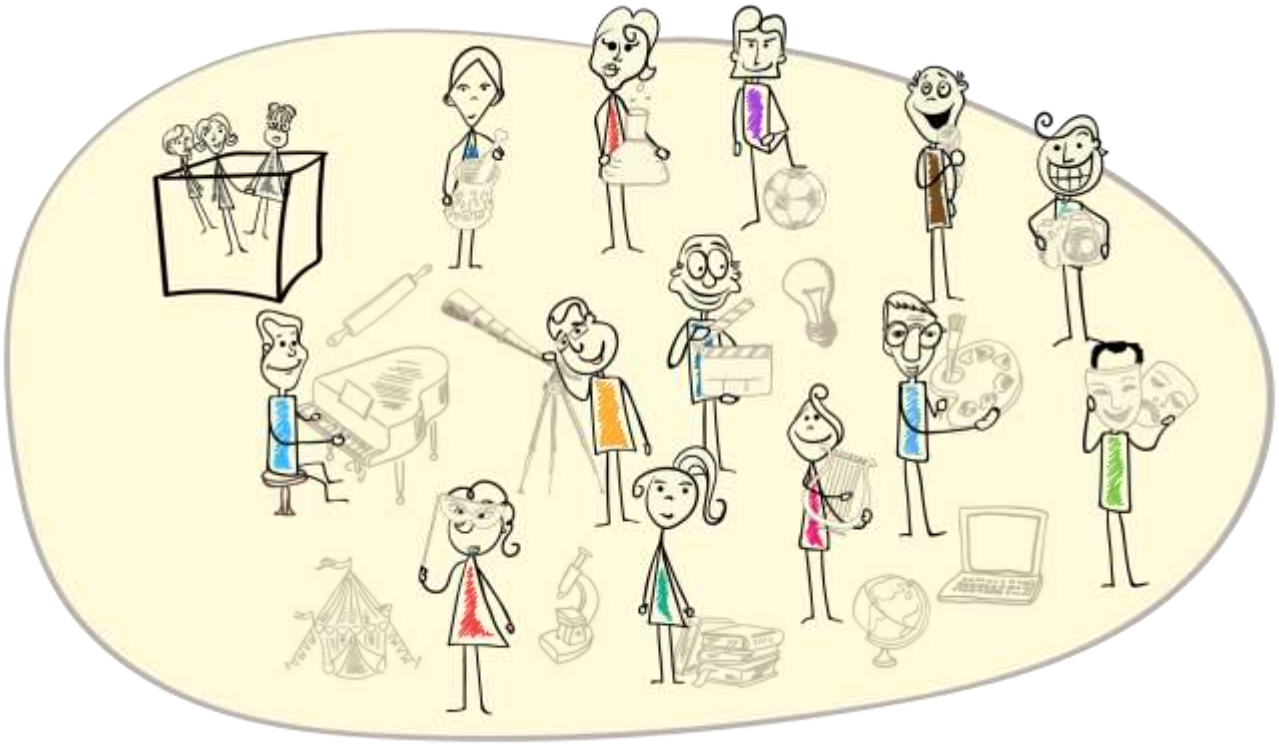
The small world of the curriculum



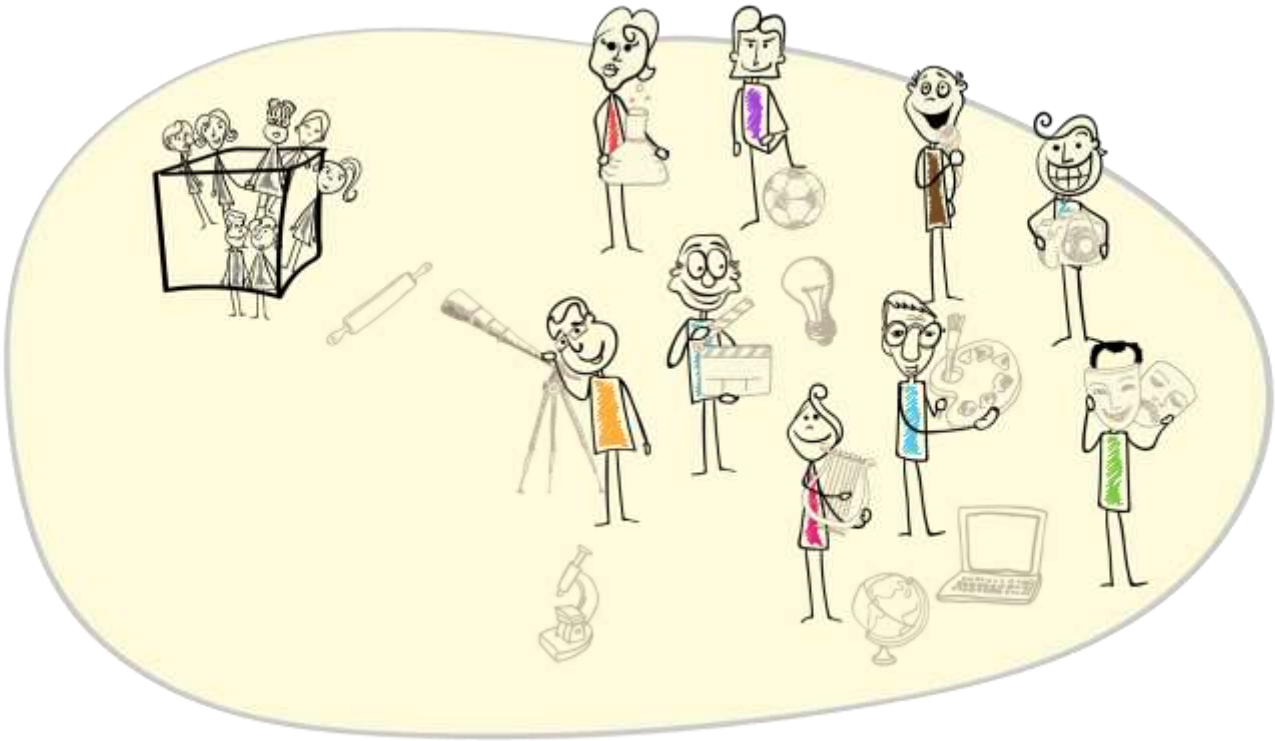
The small world of the curriculum



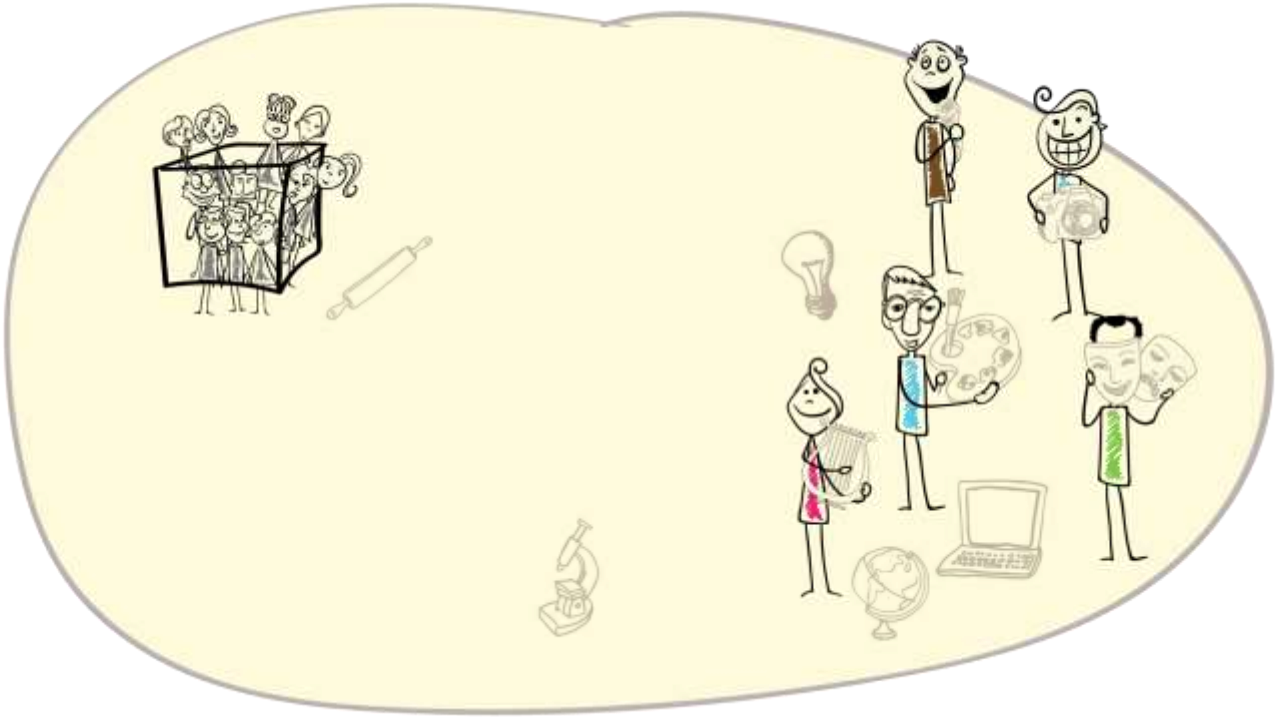
The small world of the curriculum



The small world of the curriculum

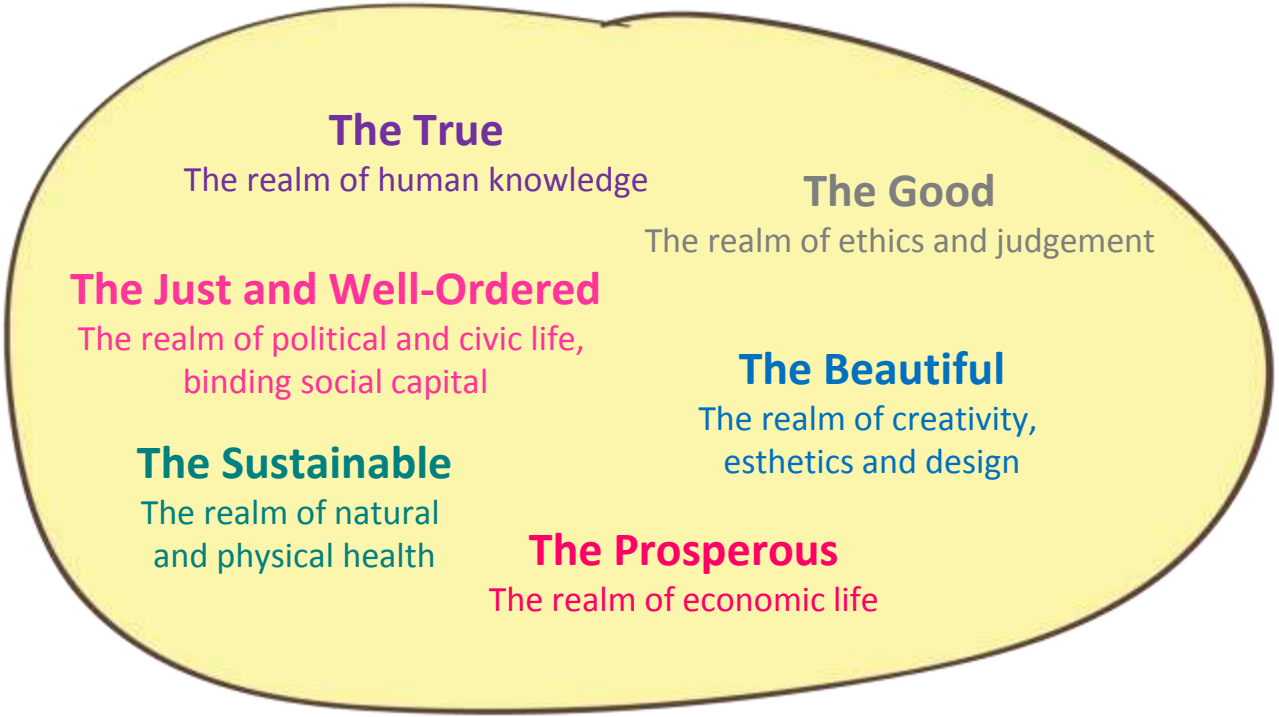


The small world of the curriculum

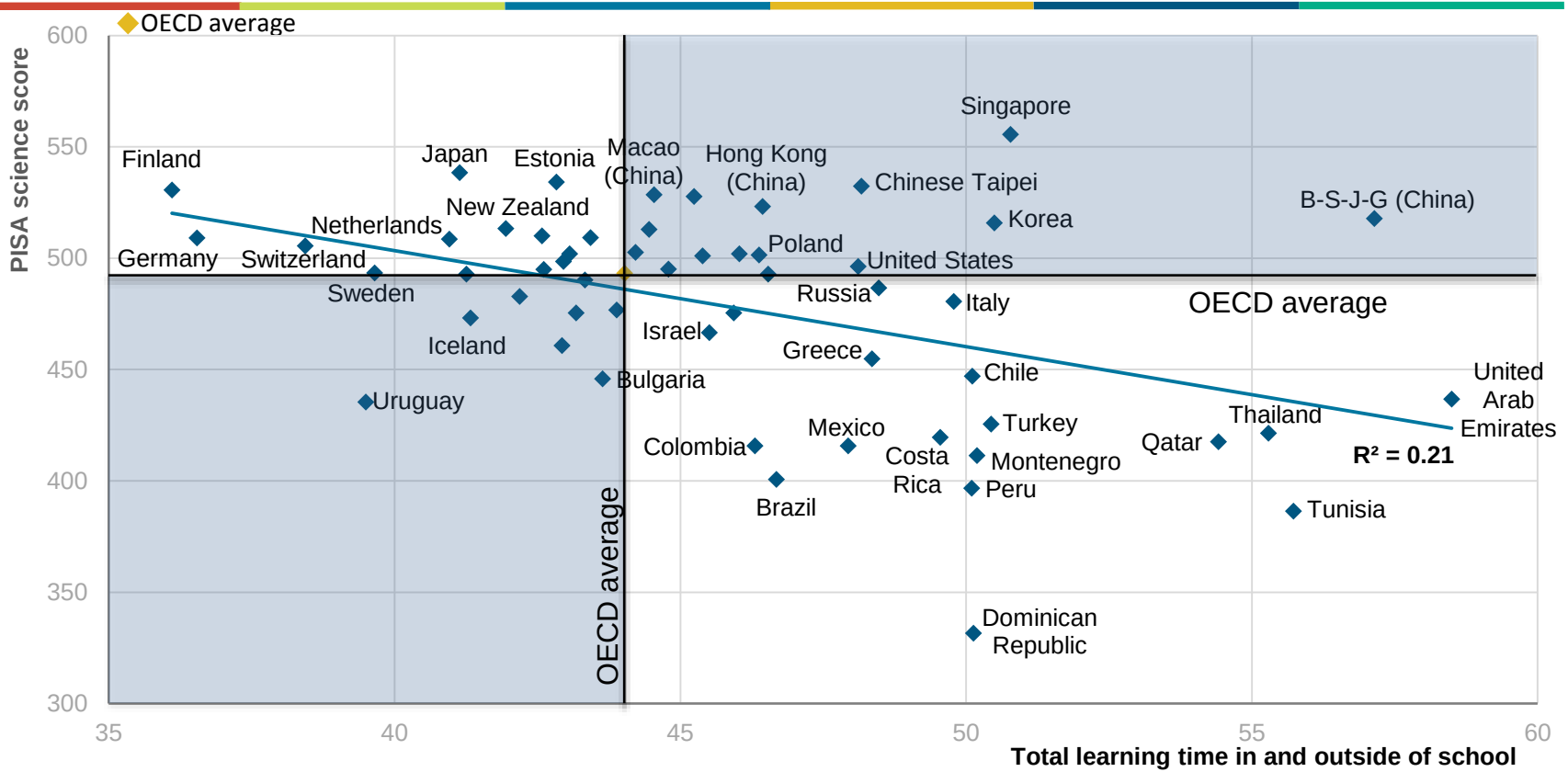


The small world of the curriculum

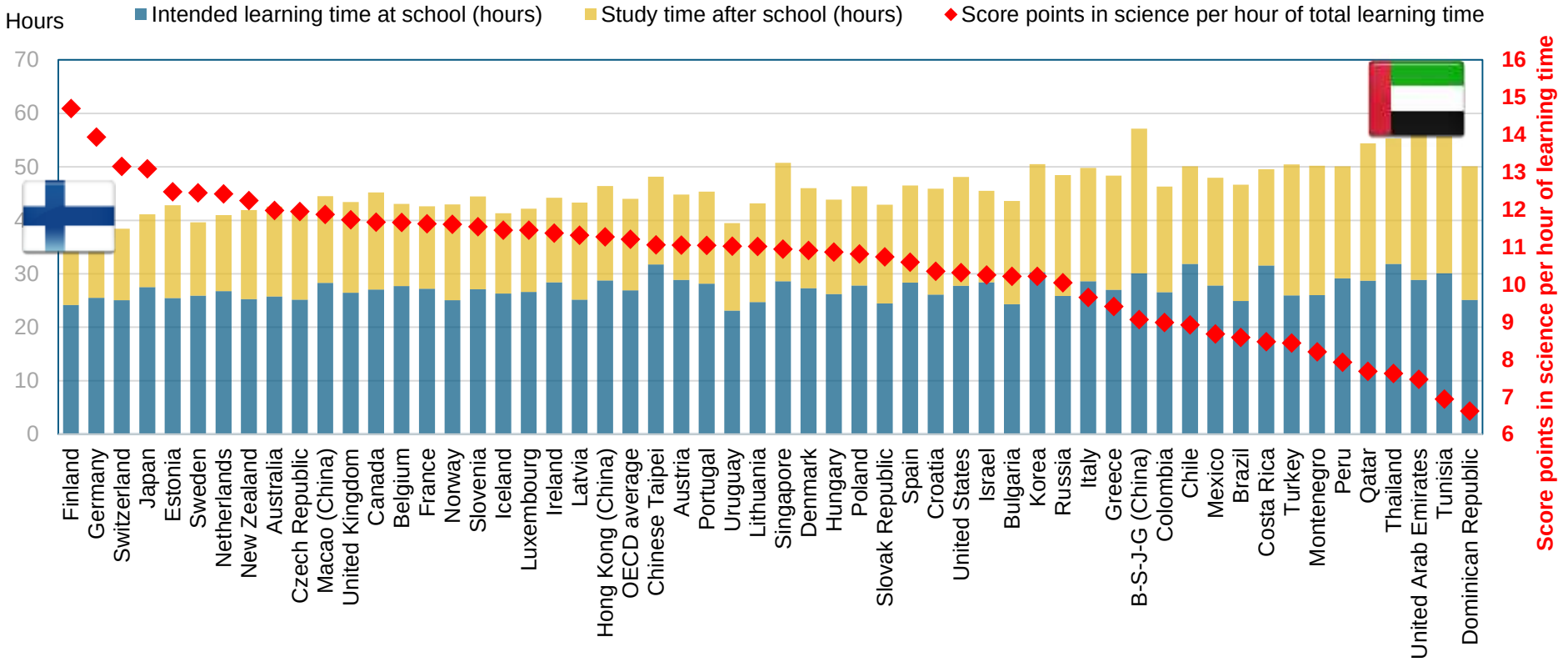
The big world of learning



Learning time and science performance



Learning time and science performance (PISA)



Issue 3: Quality of contents

- How to make changes based on evidence or political compromises
- What are the design principles based on evidence?
- How to set priorities (focus) for subjects and competencies (i.e. proper time allocation)

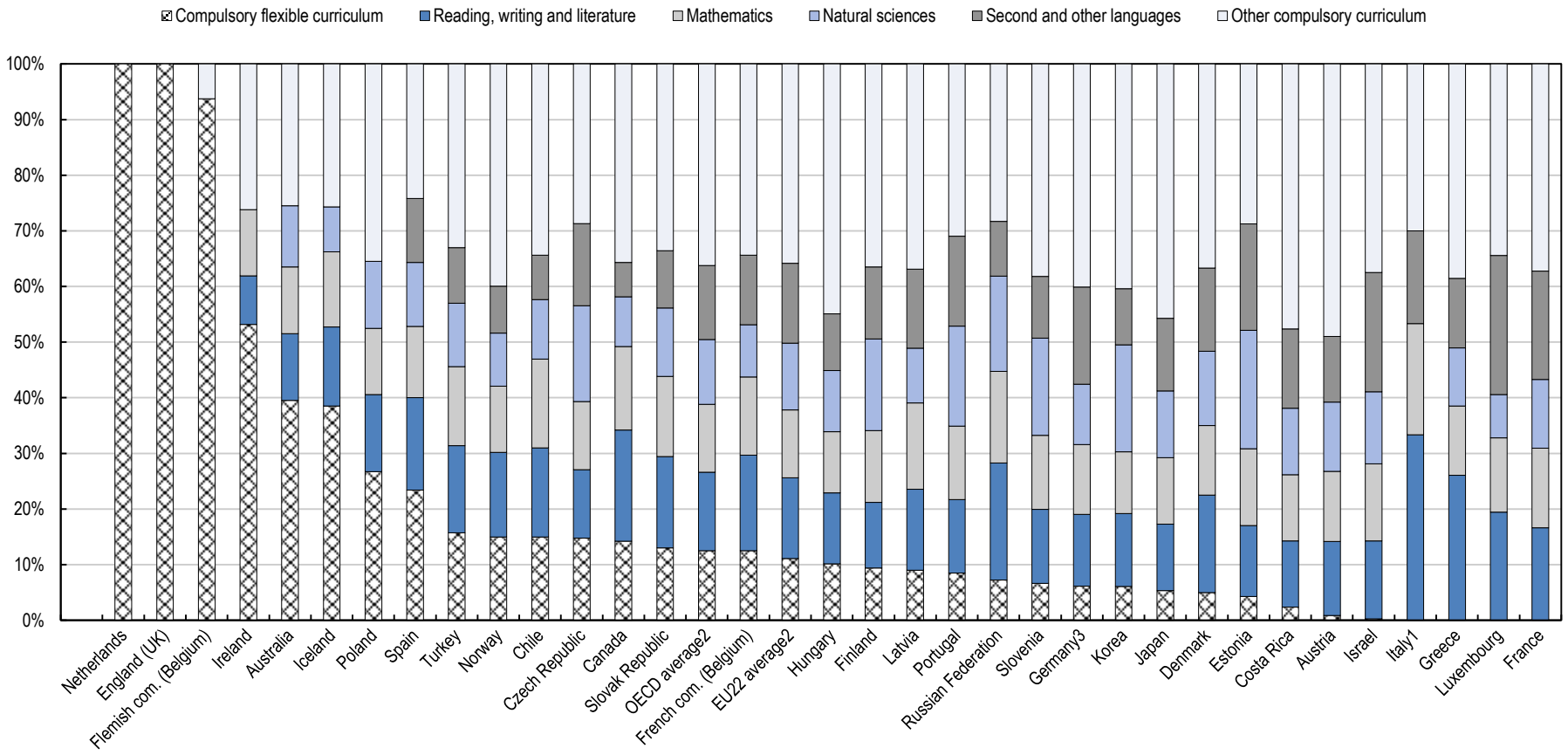
Some lessons

- **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
- **Equity**
  - Not just a proposition for the few but for the many

Issue 4: Ensuring equity and quality

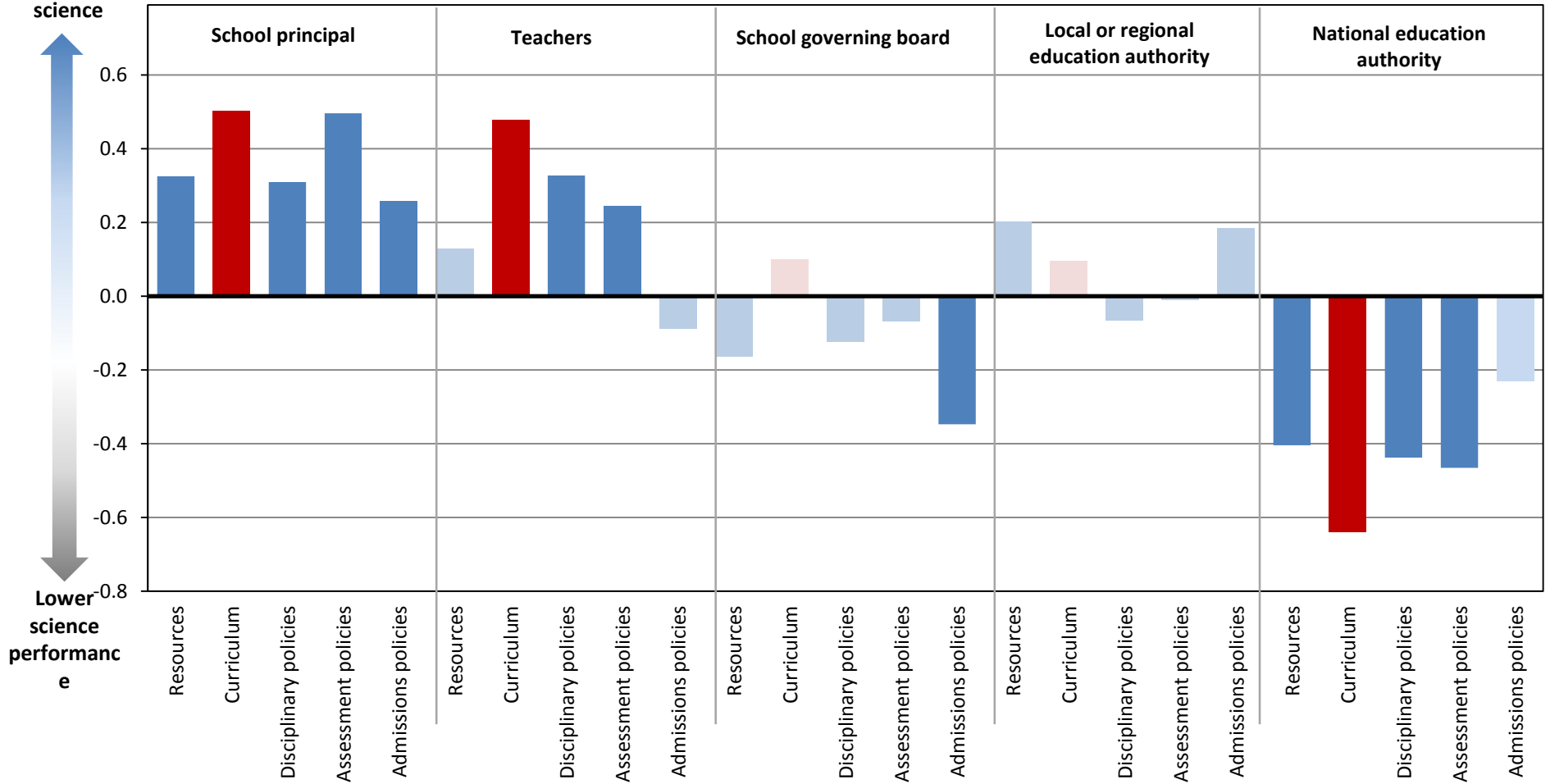
- How to allow different learning processes/ learning progression/ learning sequencing
- How to ensure curriculum flexibility and autonomy work for all
- How to make “student choice” in curriculum work for all
- How to make “personalised/ individualised learning” work for all
- How to make “innovations in education” (e.g. digitalisation) work for all

Instruction time per subject in general lower secondary education (2017)



Source: OECD (2017), Table D1.3b. See Source section for more information and Annex 3 for notes (www.oecd.org/education/education-at-a-glance-19991487.htm).

Correlations between the responsibilities for school governance[1] and science performance



Source: OECD, PISA 2015 Database.

PISA Figure II.4.8

Issue 5: Planning for effective implementation and assessment

- How to align curriculum redesign with initial teacher education, professional development, pedagogical guidelines, etc.
- How to support “overstretched teachers” with supportive resources and facilities, etc.
- How to measure “new” competencies, esp. social and emotional skills
- How to ensure “teacher agency” and foster “teacher team work/ network”
- How to create the right overall incentives system

What teachers say and what teachers do

lge, skills
alities do
require?

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require?

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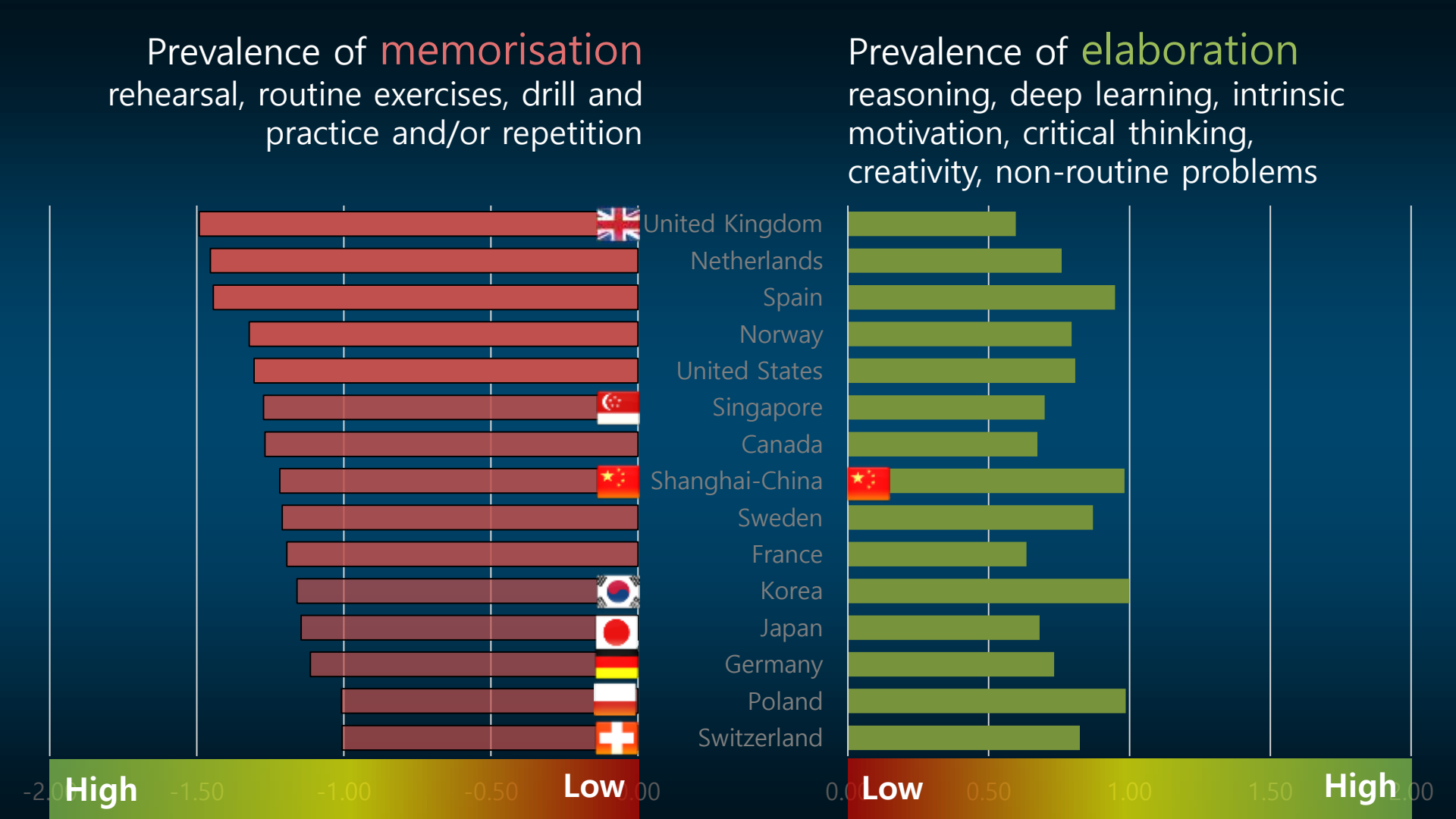
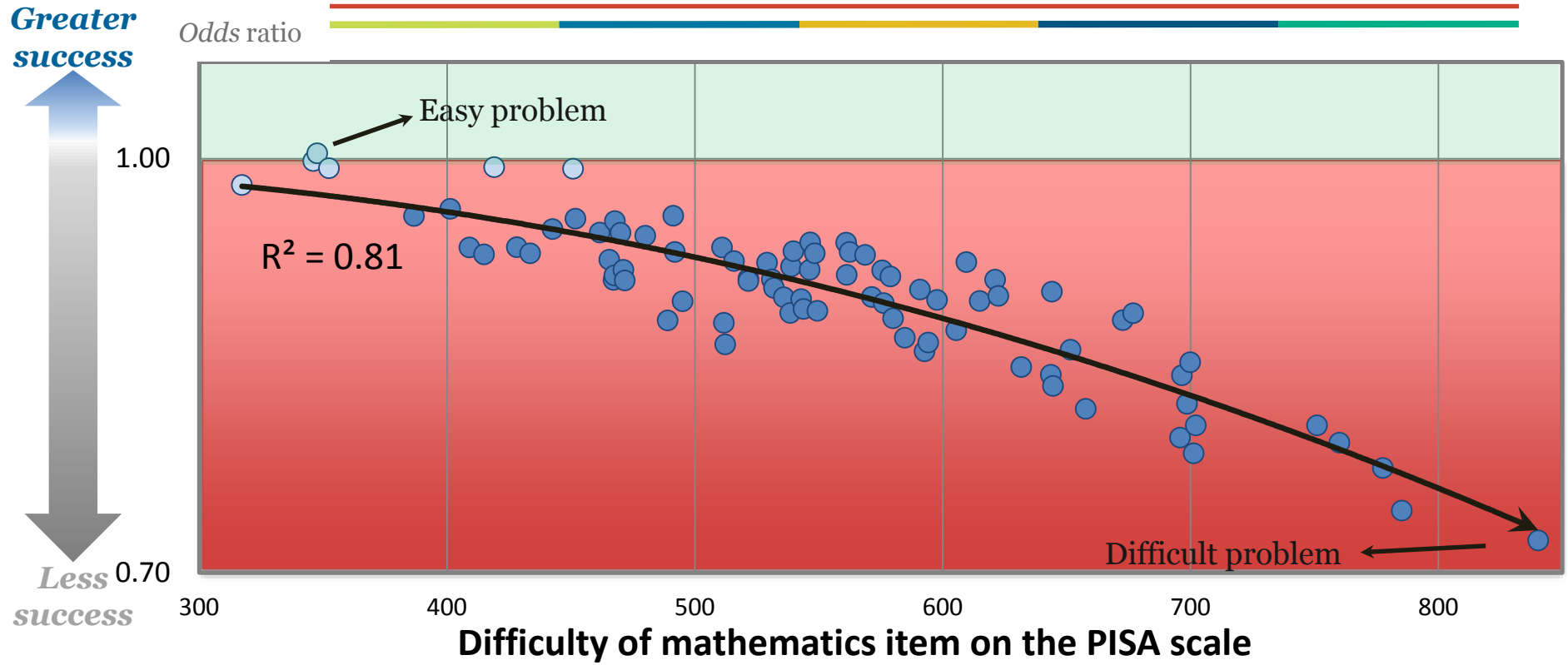
alities do
require?

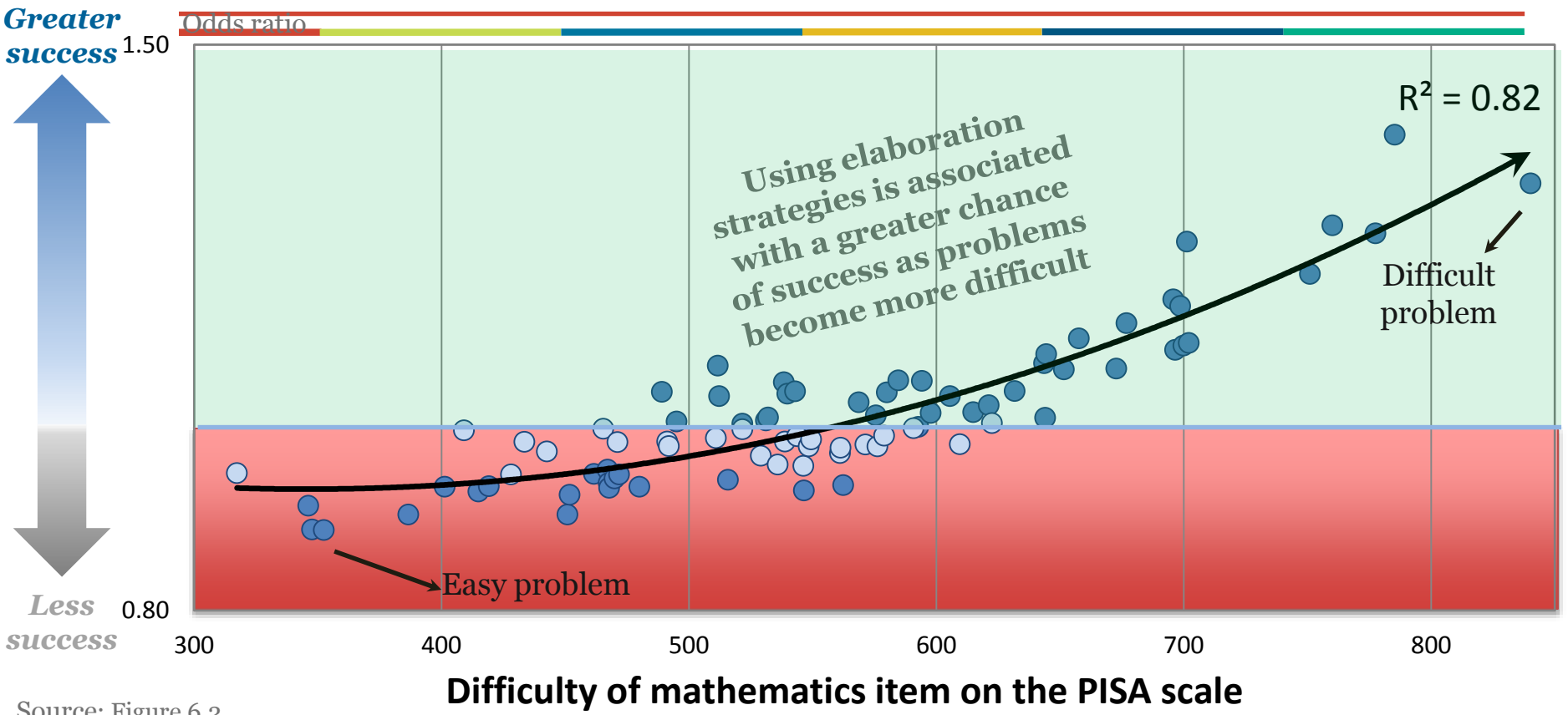

Prevalence of memorisation
rehearsal, routine exercises, drill and practice and/or repetition
Prevalence of elaboration
reasoning, deep learning, intrinsic motivation, critical thinking, creativity, non-routine problems
United Kingdom
Netherlands
Spain
Norway
United States
Singapore
Canada
Shanghai-China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

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



Source: Figure 4.3

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



Source: Figure 6.2

Next steps:

- Support national and local initiatives to redesign curriculum or new frameworks
- Invite those interested in translating our interim report into local languages
- Invite those interested in joining our working group – global & collective efforts - to refine our framework and to collect narratives and stories to accompany our framework and curriculum analysis
- From 2019 in Phase II: we will look into policy issues on curriculum implementation.