Preparing students for their future, not our past

Insights from OECD's review of Japan's education system

Andreas Schleicher, Director, OECD – Directorate for Education and Skills
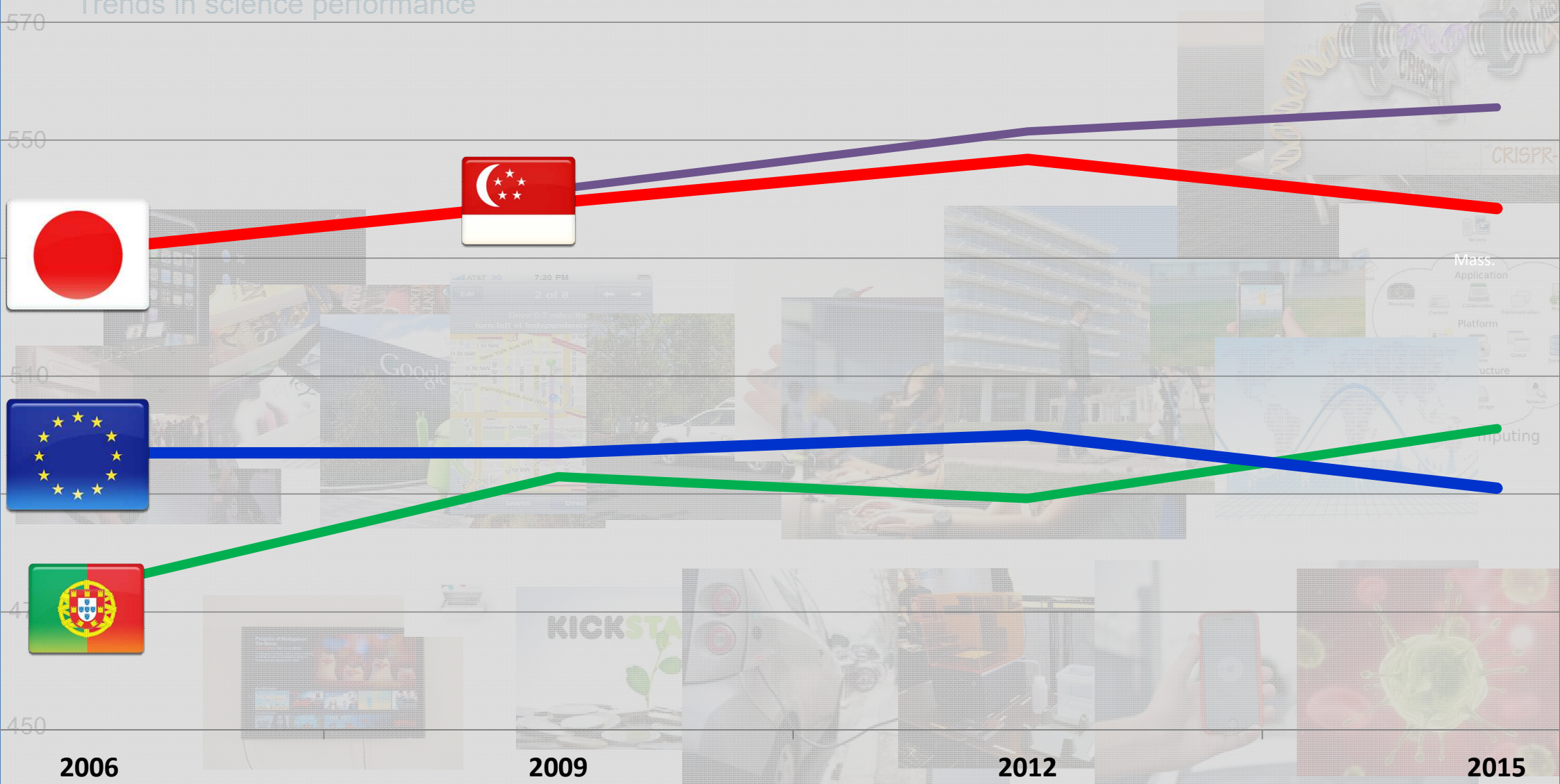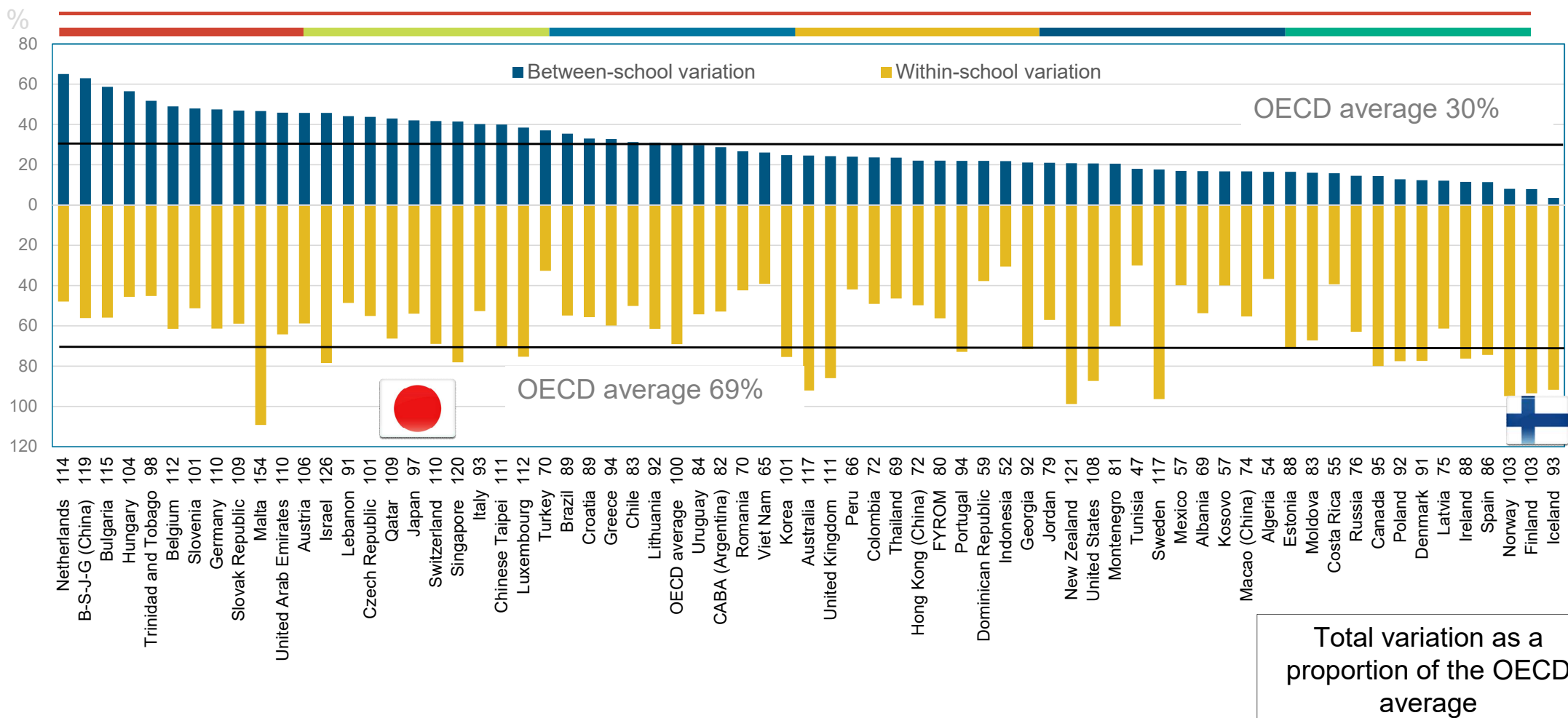
Trends in science performance **(PISA)**

Student Performance

570
550
510
470
450

2006 2009 2012 2015

Trends in science performance

570

550

510

450

2006   2009   2012   2015

Figure I.6.11

Variation in performance between and within schools

Figure I.6.14

Differences in educational resources
between advantaged and disadvantaged schools

Index of shortage of educational material   Index of shortage of educational staff

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

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

Mean index difference between advantaged and disadvantaged schools

CABA (Argentina), Mexico, Peru, Macao (China), United Arab Emirates, Lebanon, Jordan, Colombia, Brazil, Indonesia, Turkey, Spain, Dominican Republic, Georgia, Uruguay, Thailand, B-S-J-G (China), Australia, Japan, Chile, Luxembourg, Russia, Portugal, Malta, Italy, New Zealand, Croatia, Ireland, Algeria, Norway, Israel, Denmark, Sweden, United States, Moldova, Belgium, Slovenia, OECD average, Hungary, Chinese Taipei, Viet Nam, Czech Republic, Singapore, Tunisia, Greece, Trinidad and Tobago, Canada, Romania, Qatar, Montenegro, Kosovo, Netherlands, Korea, Finland, Switzerland, Germany, Hong Kong (China), Austria, FYROM, Poland, Albania, Bulgaria, Slovak Republic, Lithuania, Estonia, Iceland, Costa Rica, United Kingdom, Latvia

Japan's context: some concerning facts

Economy:

Japan's per capita relative to the top half of OECD countries

Japan's context: some concerning facts

Demography:

Japan's historical population and projection
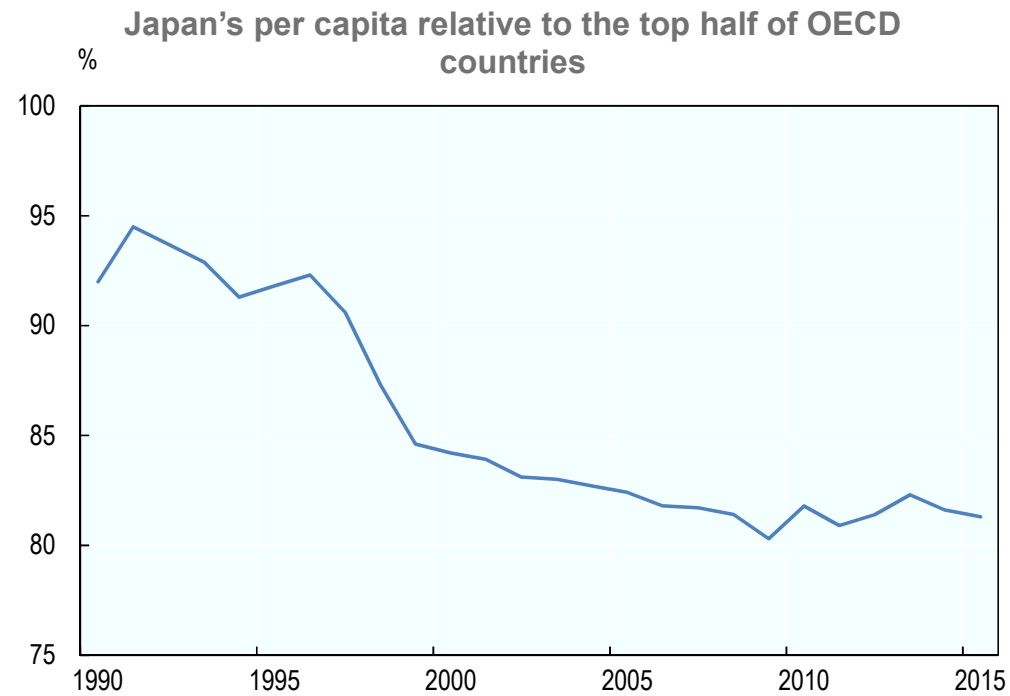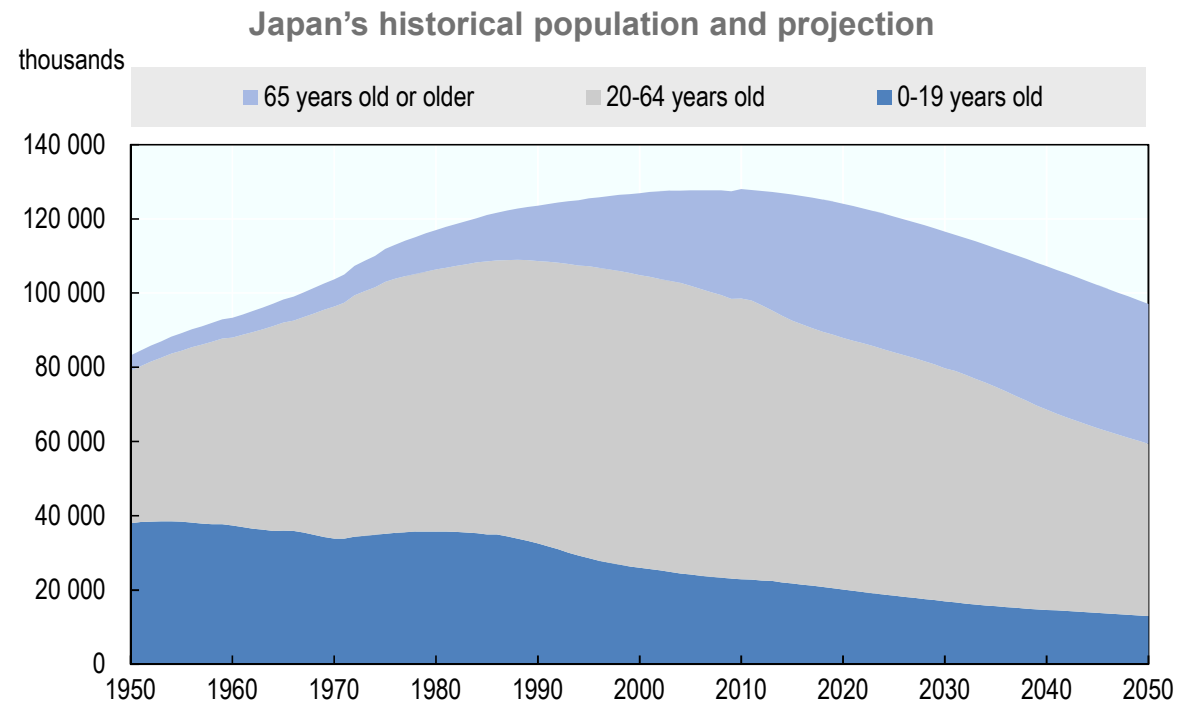
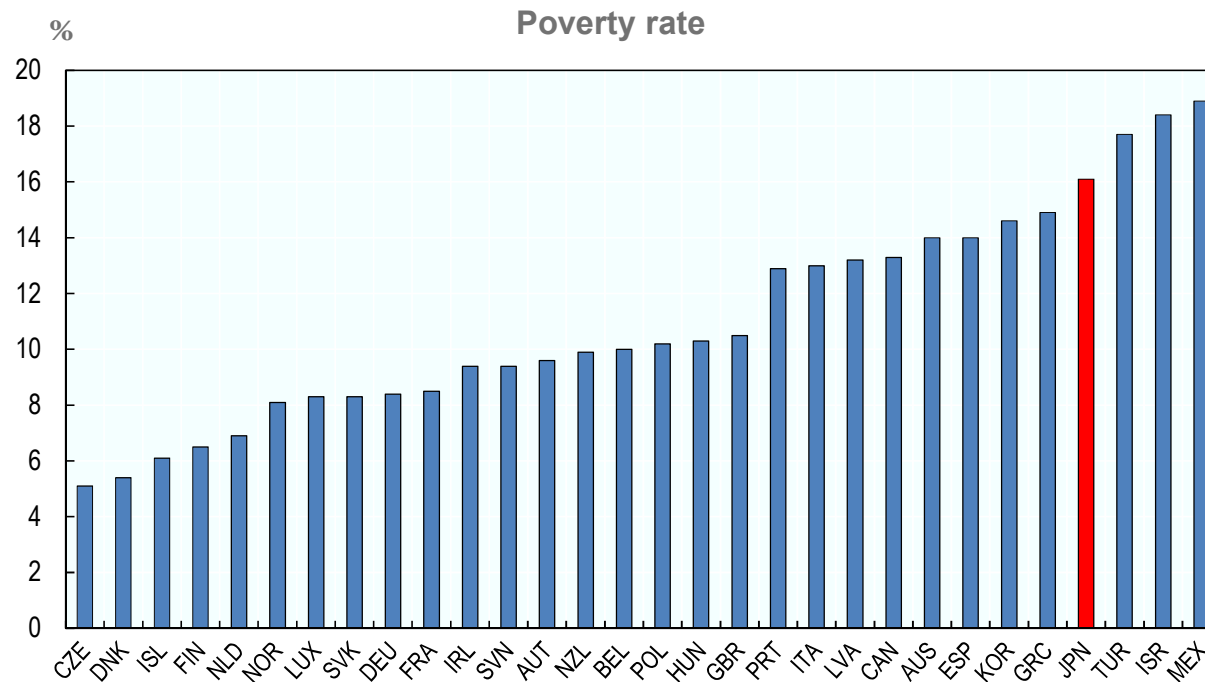
Source: OECD Eco Database

Japan's context: some concerning facts

Social inequality:

Poverty rate
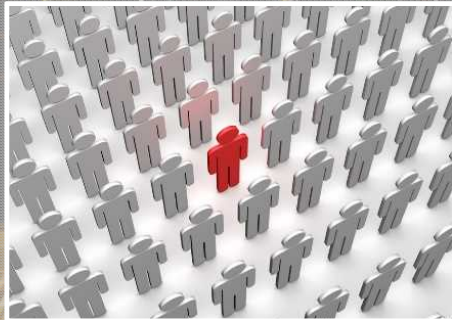
%

Digitalisation
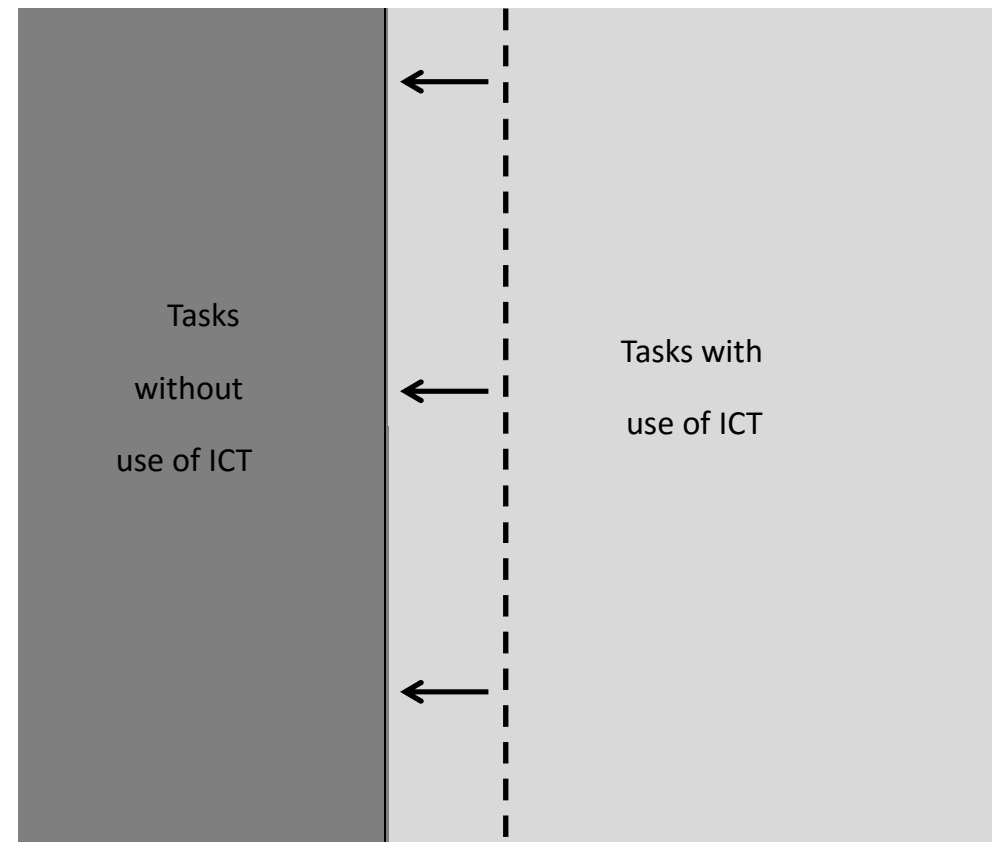

Democratizing

Particularizing

Empowering

Concentrating

Homogenizing

Disempowering

TWO EFFECTS OF DIGITALISATION

TWO EFFECTS OF DIGITALISATION

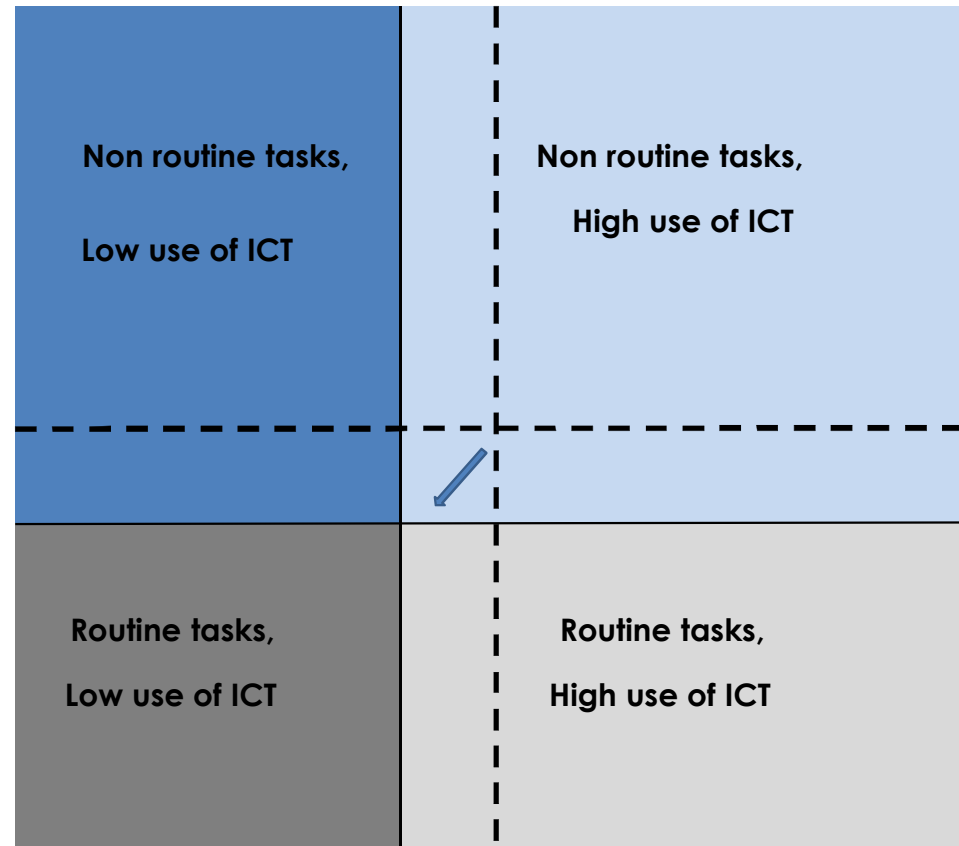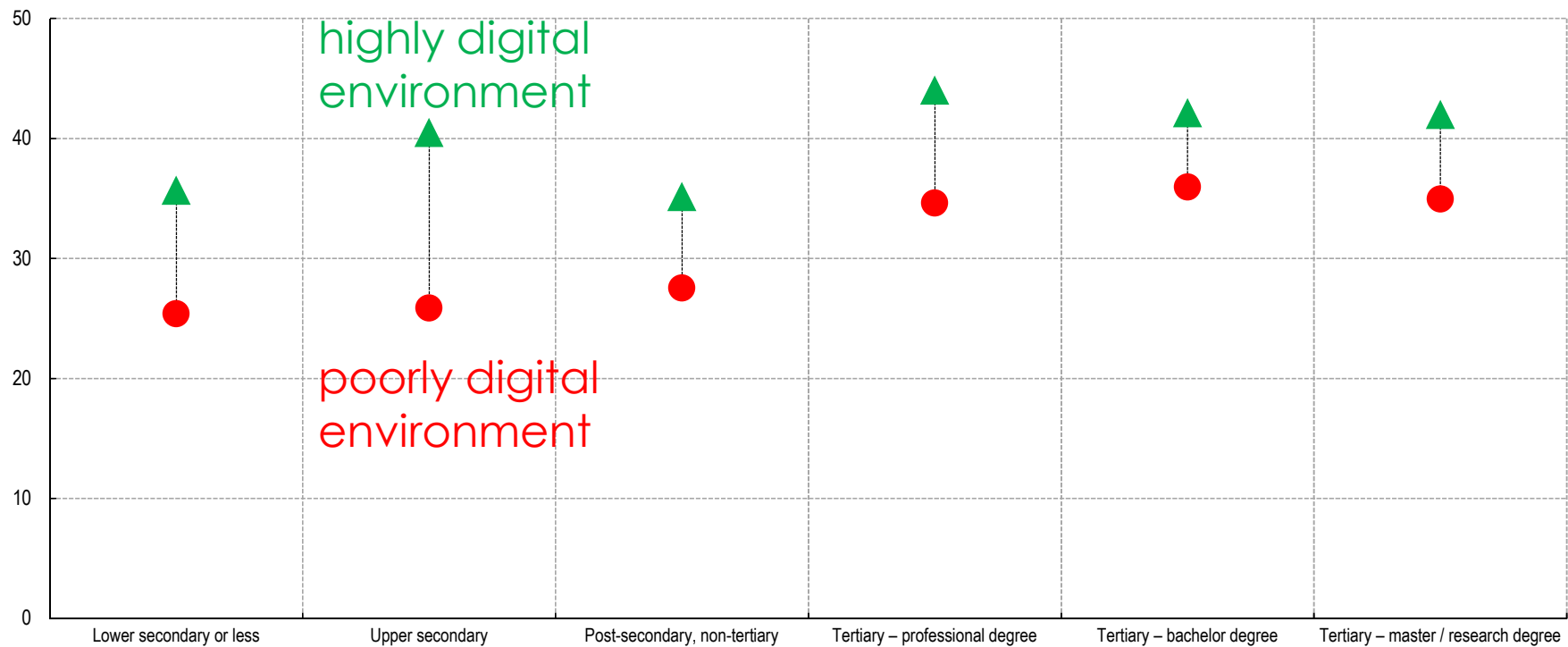| Non routine tasks, Low use of ICT	Non routine tasks, High use of ICT
Routine tasks, Low use of ICT	Routine tasks, High use of ICT
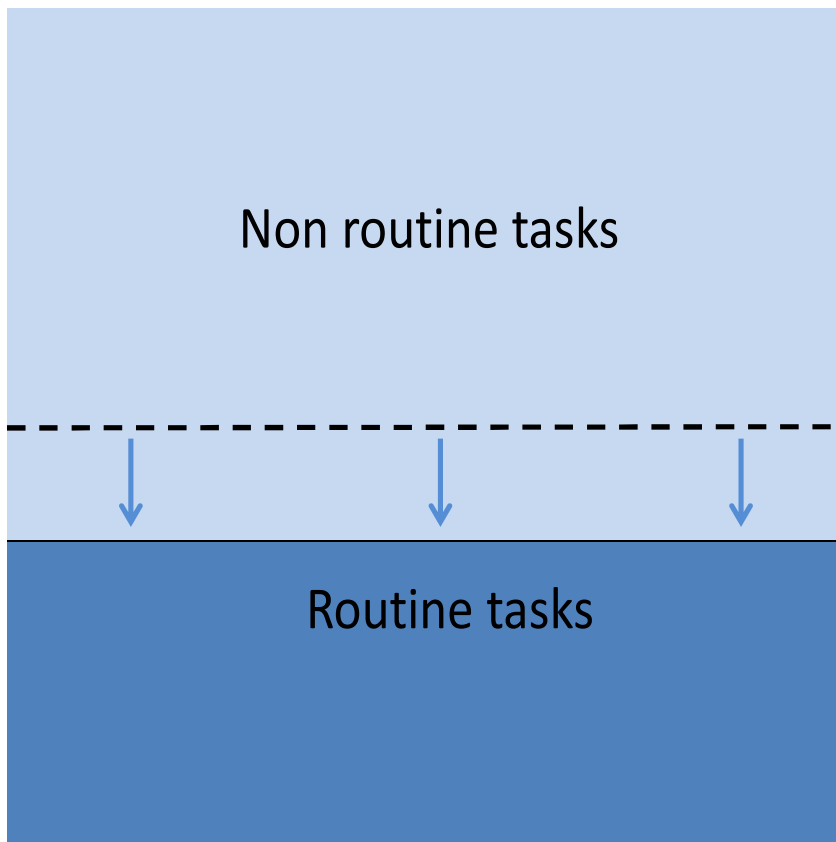
DIGITALISATION **RAISES** NEEDS FOR **TRAINING**

SHARE OF WORKERS REPORTING NEEDING FURTHER TRAINING FOR THEIR JOB BY EDUCATION LEVEL (%)

ICT USE AND NON-ROUTINE INTENSITY INCREASE COGNITIVE SKILL USE

EXPECTED EFFECT OF INCREASE FROM 50TH TO 75TH PCTILE OF DIGITAL EXPOSURE ON COGNITIVE SKILL INTENSITY
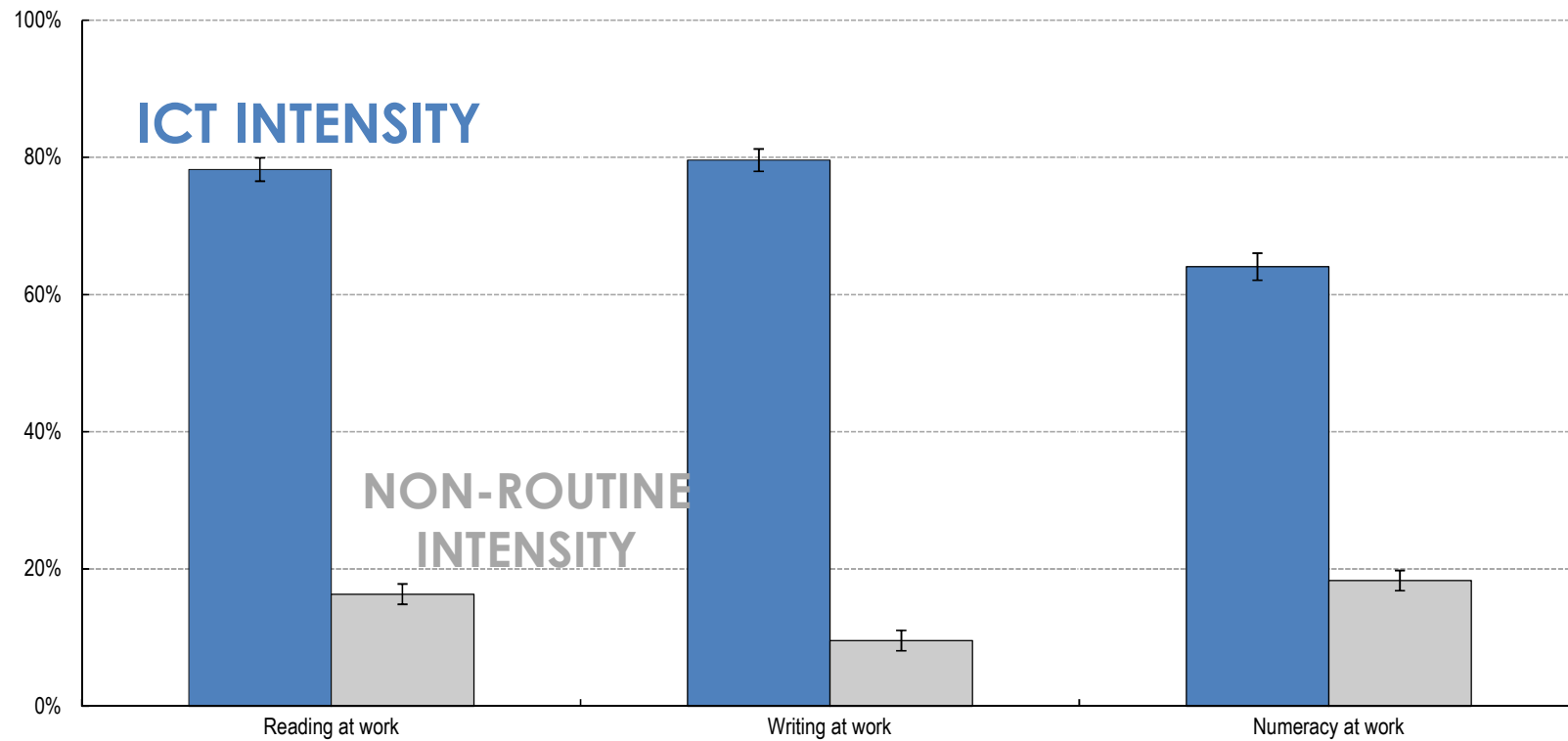
Source: Survey of Adult Skills (2012, 2015)

ICT USE AND NON-ROUTINE INTENSITY ENHANCE FORMS OF LEARNING

EXPECTED EFFECT OF INCREASE FROM 50TH TO 75TH PCTILE OF DIGITAL EXPOSURE ON PROBABILITY OF LEARNING AT LEAST ONCE A WEEK

ICT INTENSITY

NON-ROUTINE INTENSITY

Learning from co-workers   Learning by doing   Keeping up to date
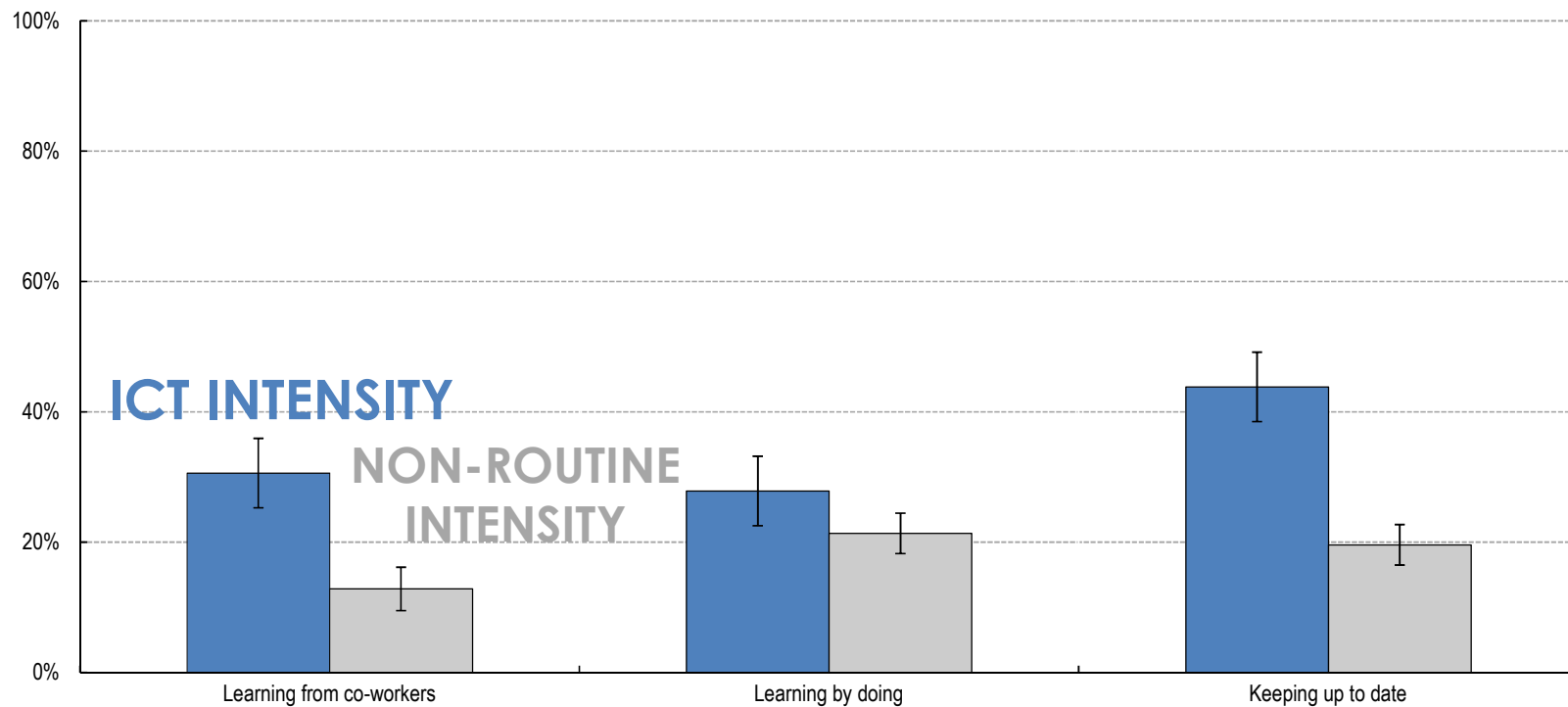
Source: Survey of Adult Skills (2012, 2015)

The Race between Technology and Education

Prosperity

Digital revolution

Social pain

Prosperity

Industrial revolution

Social pain

Universal public schooling

Technology
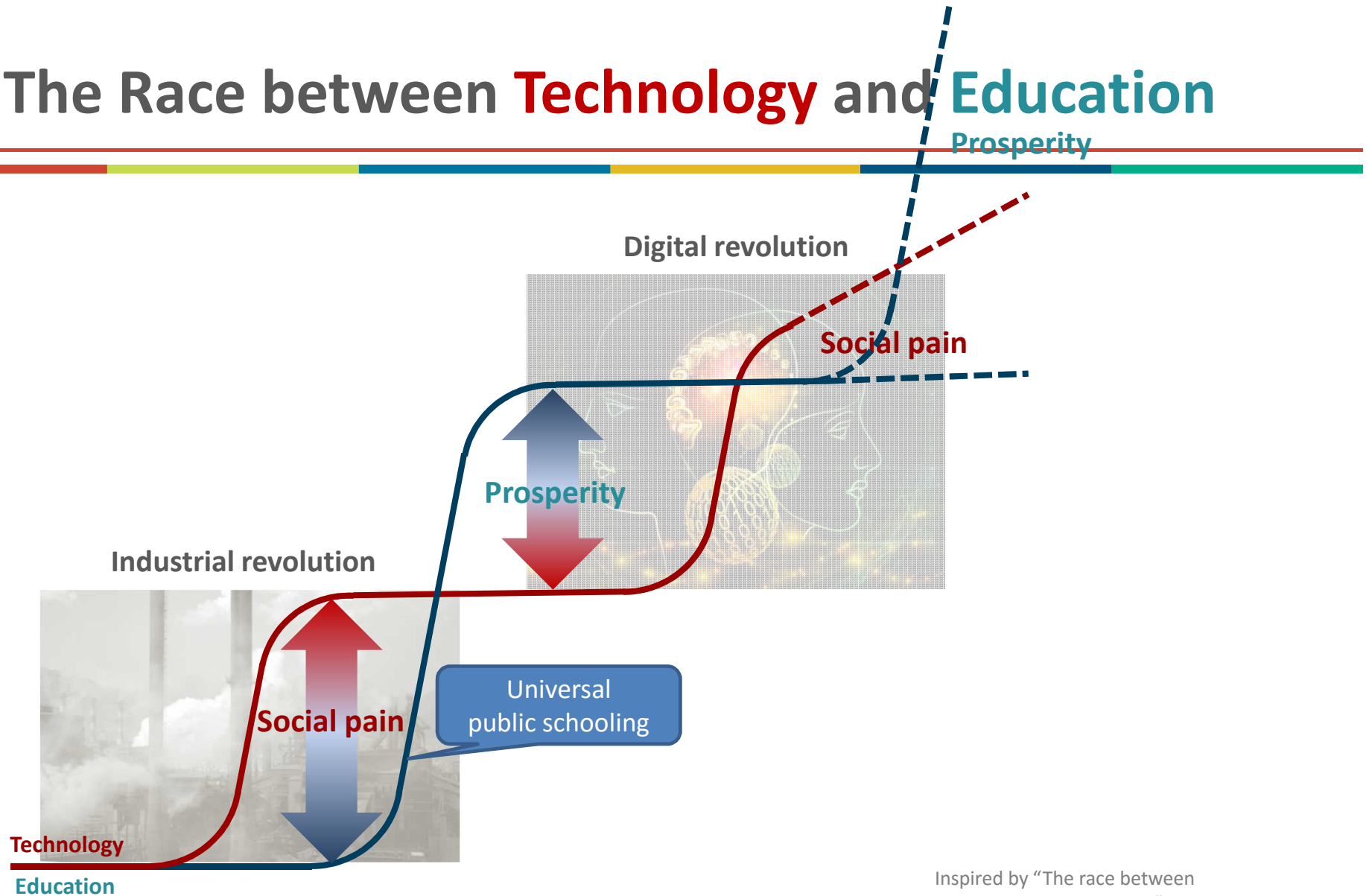
Education

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

The biggest risk to education today isn't its inefficiency,
but that our way of education is losing its purpose and relevance

Adult Literacy Skills in OECD Countries (PIAAC)

Near-term computer capabilities

Level 4-5
Level 3
Level 2
Level 1 and Below

Proficiency
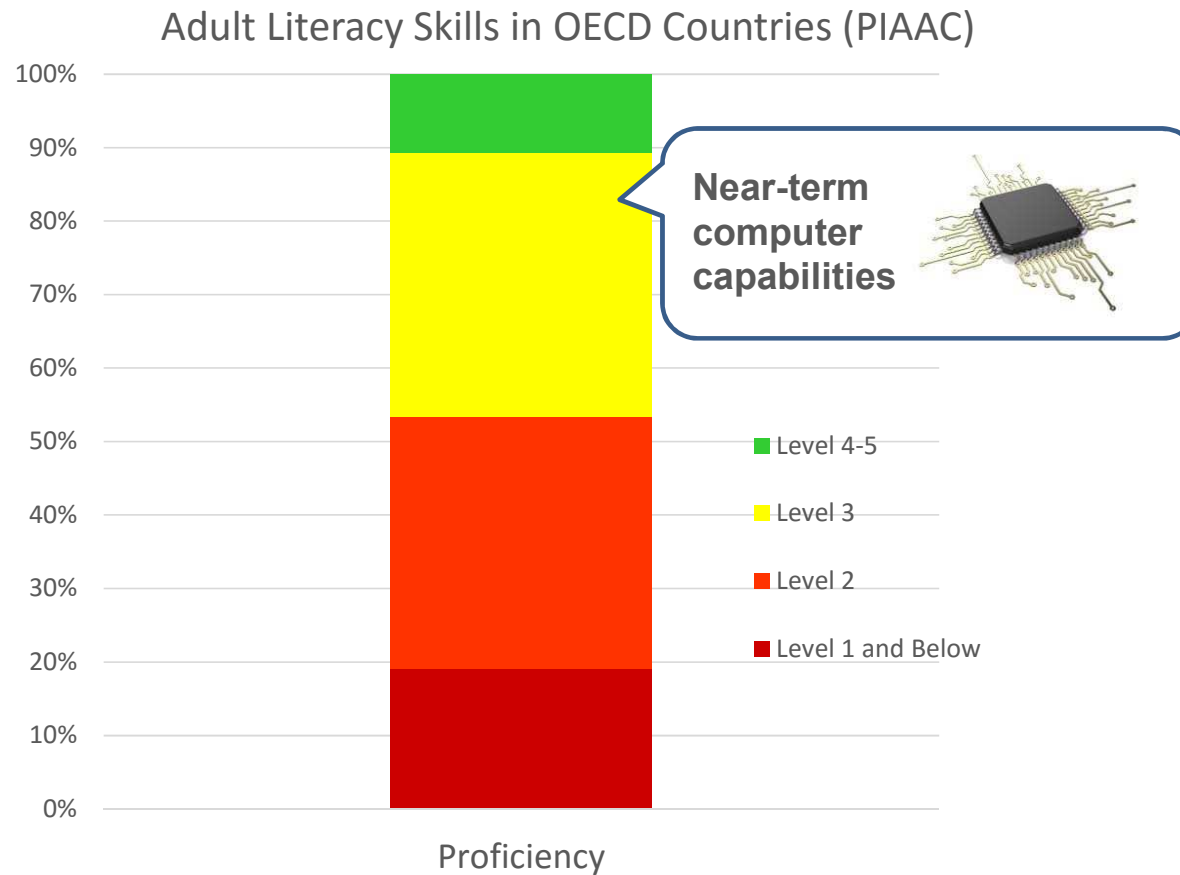
When fast gets really fast, being slow to adapt makes you really slow
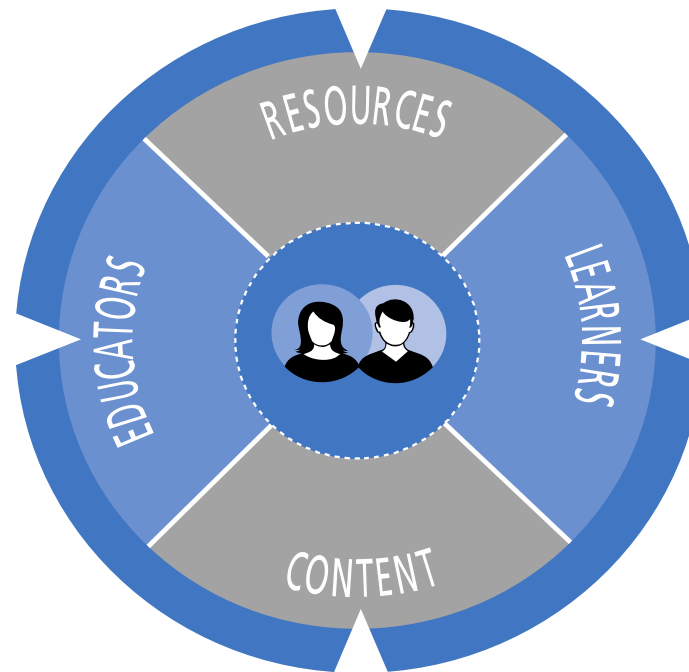
The post-truth world where reality becomes fungible

- 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)

%

■ Boys　　◆ Girls

**Students growing up with a great smartphone but a poor education
are going to face unprecedented risks**

Chinese Taipei -2
Sweden -9
France -5
Portugal
Greece -2
Singapore
Thailand
Macao (China) -7
Brazil -2
Spain
United Kingdom
Bulgaria
Hong Kong (China)
Korea -7
Belgium -4
Denmark -4
Croatia -5
Israel -10
New Zealand -4
Netherlands -3
Uruguay
Hungary 4
Australia
OECD average -3
Dominican Republic
Ireland -7
Poland -3
Costa Rica 3
Lithuania
Japan -5
Mexico
Russia -8
Czech Republic
Italy
Peru
Colombia 4
Finland -6
Chile
Latvia
Slovak Republic
B-S-J-G (China) 11
Switzerland
Austria -3
Luxembourg
Iceland
Germany
Estonia
Slovenia

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

Minutes per day

■ 2015   ◆ 2012

Percentage of High Internet Users (spending 2 to 6 hours on line per day), during weekdays

Country	%
Chile	39
Sweden	56
Uruguay	33
Costa Rica	31
Spain	44
Italy	40
Australia	52
Estonia	50
New Zealand	51
Hungary	43
Russia	42
Netherlands	48
Denmark	55
Slovak Republic	40
Czech Republic	43
Austria	42
Latvia	46
Singapore	45
Belgium	44
Poland	46
Iceland	51
OECD average-27	43
Ireland	48
Croatia	40
Portugal	42
Finland	48
Israel	34
Macao (China)	45
Switzerland	40
Greece	41
Hong Kong (China)	39
Mexico	30
Slovenia	37
Japan	31
Korea	20

The **OECD** Learning Framework 2030

Well-Being 2030
Individual & Societal

Knowledge
- Disciplinary
- Interdisciplinary
- Epistemic
- Procedural

Skills
- Cognitive & meta-cognitive
- Social & emotional
- Physical & practical

Attitudes and Values
- Personal
- Local
- Societal
- Global

Competencies

Parents

Teachers

Communities

Peers

Anticipation

Action

Reflection

Creating New Value

Taking Responsibility

Reconciling Tensions & Dilemmas

Literacy · Numeracy · Data Literacy · Health Literacy · Digital Literacy

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, …
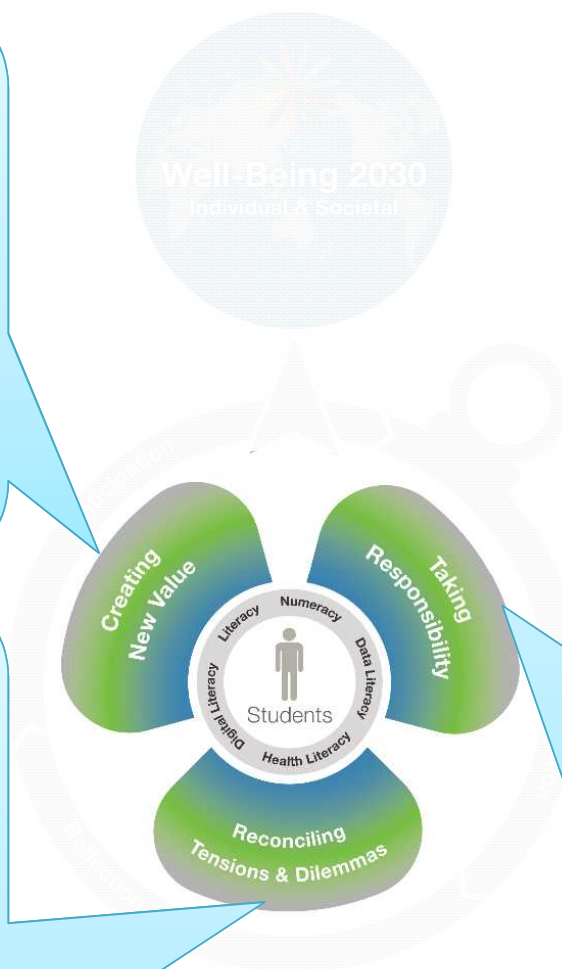
Dealing with novelty, change, diversity and ambiguity assumes that individuals can think for themselves and work with others. This suggests a sense of responsibility, and moral and intellectual maturity, with which a person can reflect upon and evaluate their actions in the light of their experiences 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, …

Well-Being 2030
Individual & Societal

Creating New Value

Taking Responsibility

Reconciling Tensions & Dilemmas

Numeracy
Literacy
Data Literacy
Digital Literacy
Health Literacy
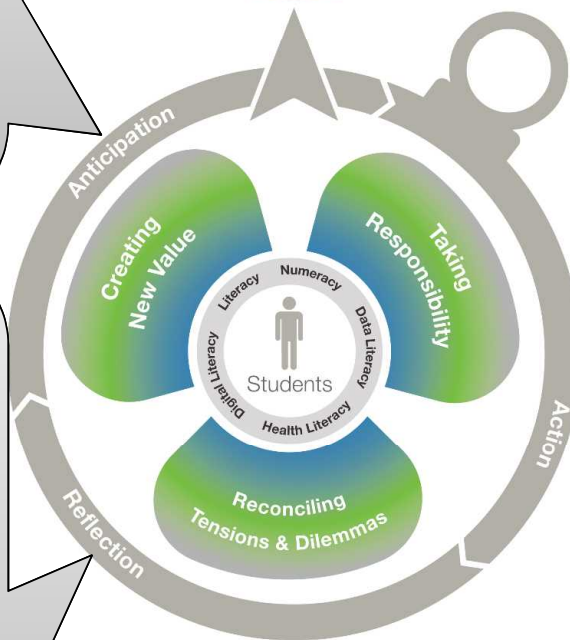Students

V.14 OECD 2030 Learning Compass

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

Implications for pedagogy

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

Well-Being 2030
Individual & Societal

Anticipation

Creating New Value

Taking Responsibility

Numeracy
Literacy
Data Literacy
Digital Literacy
Students
Health Literacy

Reconciling Tensions & Dilemmas

Reflection

Action

Peers

V14 | OECD 2030 Learning Compass

Current curricula and 2030 aspirations
Preliminary findings of curriculum content mapping (lower secondary; Japan)
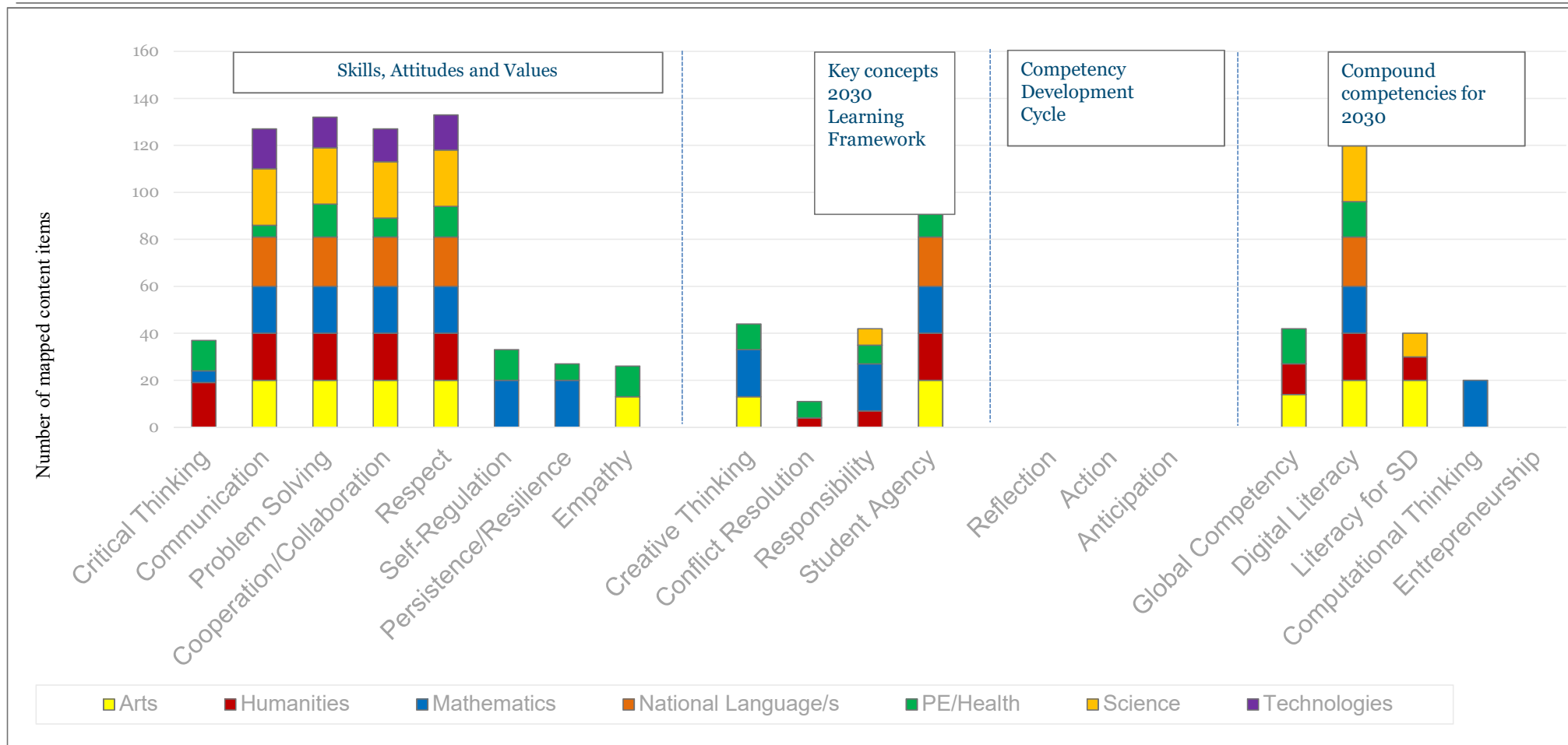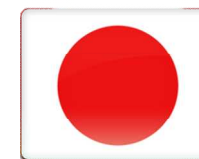
Life satisfaction and student performance can go together

Scatter plot of Average life satisfaction (on 10-point scale, y-axis ranging 5.5 to 9.0) versus Mean science score (x-axis ranging 300 to 600). Countries plotted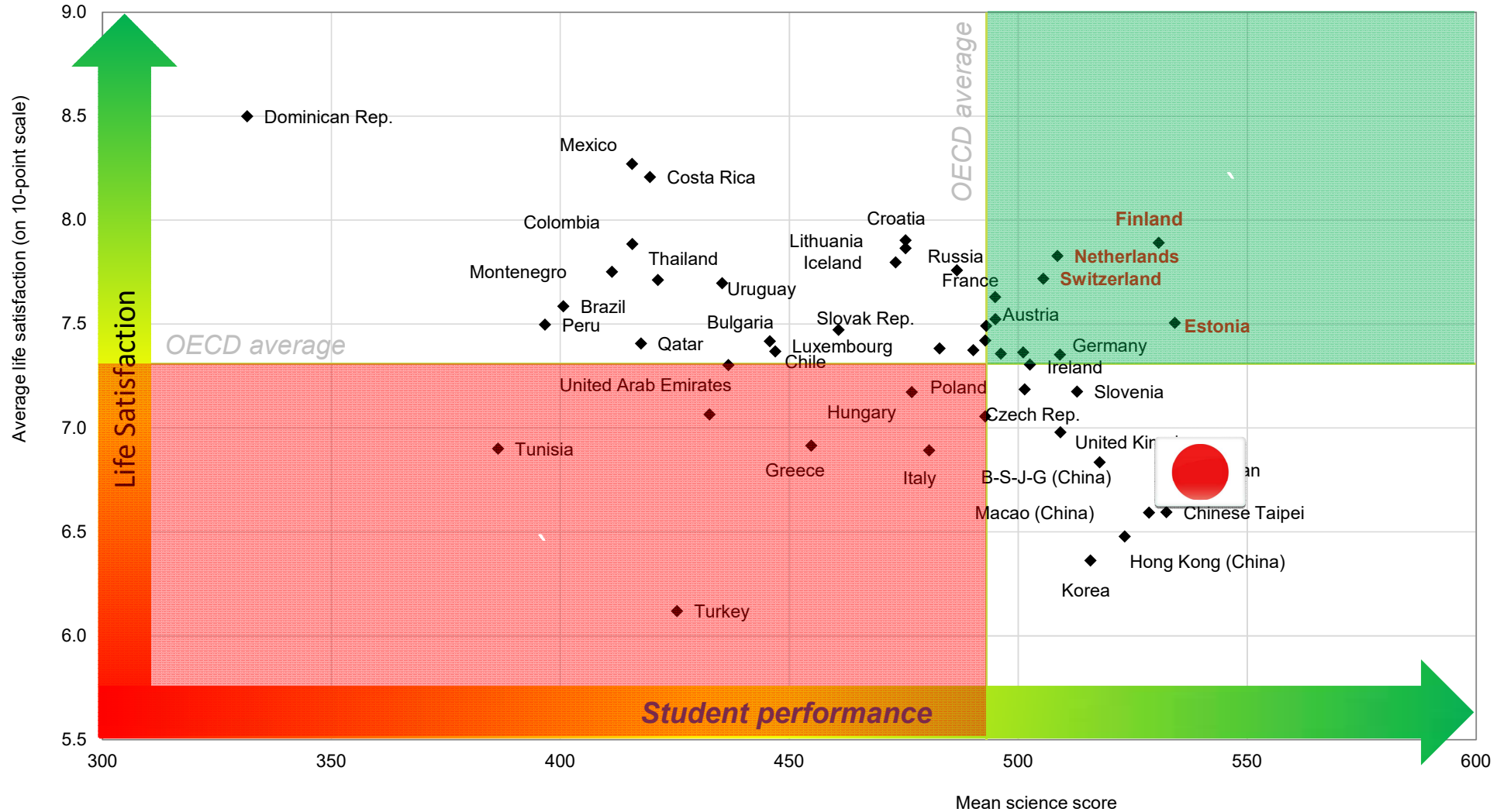 include: Dominican Rep., Mexico, Costa Rica, Colombia, Croatia, Finland, Thailand, Lithuania, Russia, Netherlands, Montenegro, Iceland, France, Switzerland, Uruguay, Brazil, Slovak Rep., Austria, Peru, Bulgaria, Germany, Estonia, Qatar, Luxembourg, Ireland, Chile, United Arab Emirates, Poland, Slovenia, Hungary, Czech Rep., United Kingdom, Tunisia, Greece, Italy, B-S-J-G (China), Japan, Macao (China), Chinese Taipei, Hong Kong (China), Korea, Turkey. OECD average reference lines are shown for both axes.

At the hight of its strength, Japan can prepare for the future
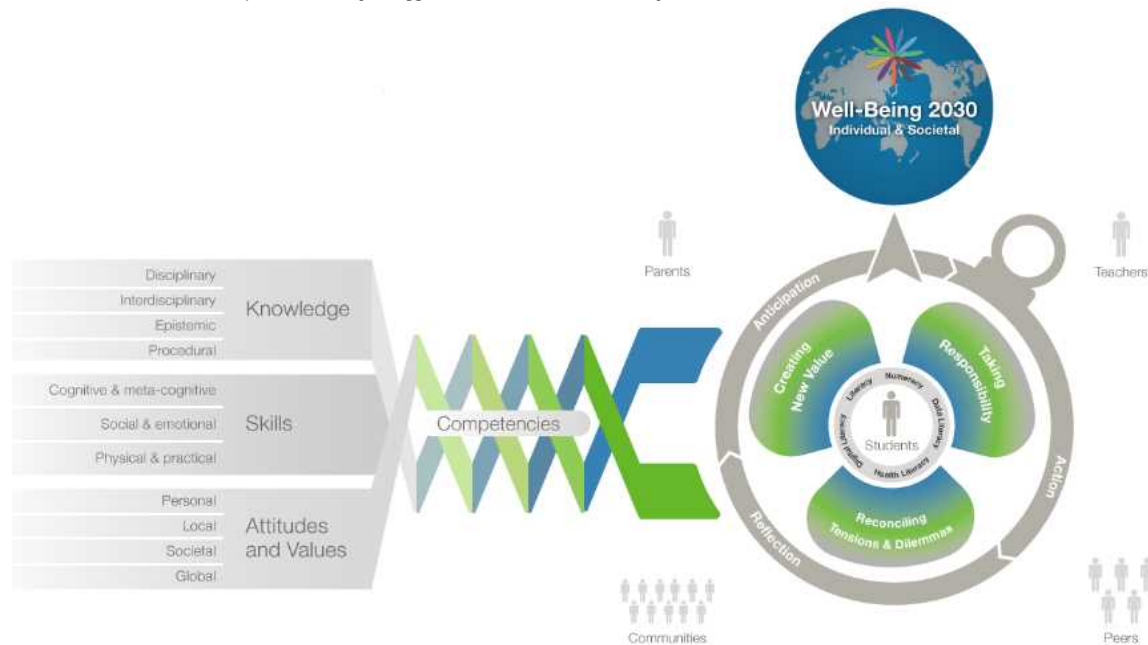
Strengths

1. Education is a priority: shared commitment to education, high private investment and high enrollments. Government has prioritized education.

2. A recognised need to go beyond traditional concepts to develop skills for the 21st century as drivers of the future.

3. Partnership that works in delivering holistic education for children: conscientious teachers, engaged students, supportive parents and community.

4. Existence of lifelong learning high performing institutions and recognition of the need to develop lifelong learning.

Potential challenges

1. Current education funding can lead to inequities.

2. Curricular reform may not be as simple as it may seem from the ministry.

3. Holistic education may be at risk in future. Need to preserve this unique model.

4. Lifelong learning is not responding to labour market needs, leaving some behind.

Bold reforms underway

- A new National Curriculum Reform to enhance active learning and focus on fostering student competencies related to the three pillars of the reform:

  1. motivation to learn and apply learning to life;
  2. acquisition of knowledge and technical skills;
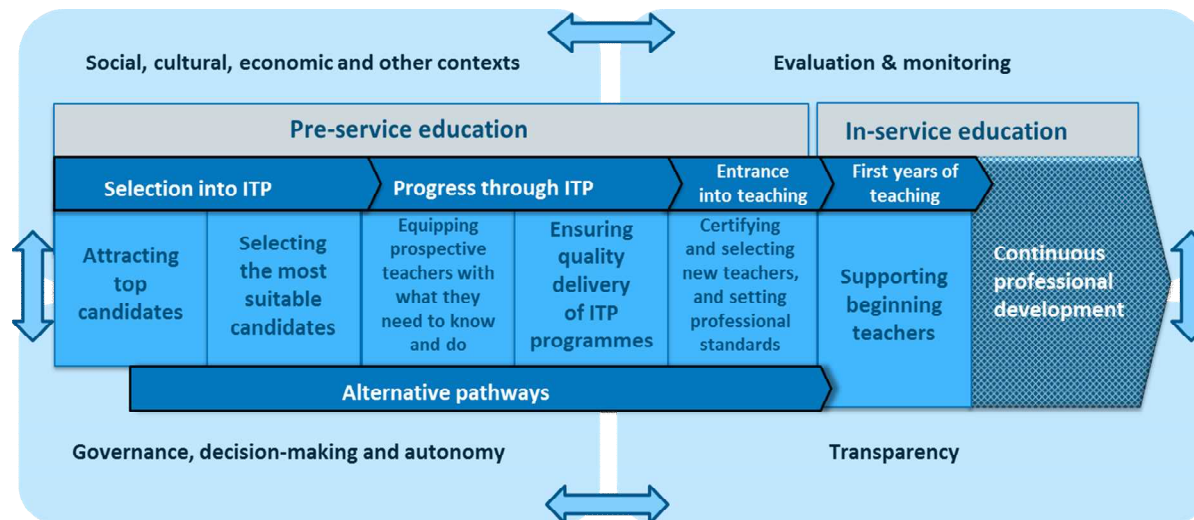 3. skills to think, make judgements and express oneself.

Bold reforms underway

- A new National Curriculum Reform to enhance active learning and focus on fostering student competencies related to the three pillars of the reform:

  1. motivation to learn and apply learning to life;

  2. acquisition of knowledge and technical skills;

  3. skills to think, make judgements and express oneself.

- Reforming the teaching career to improve teaching skills, including a revised selection process, comprehensive career training and reorganisation of teachers' schedules to allow time for training.

Bold reforms underway

- A new National Curriculum Reform to enhance active learning and focus on fostering student competencies related to the three pillars of the reform:

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    2. acquisition of knowledge and technical skills;

    3. skills to think, make judgements and express oneself.

- Reforming the teaching career to improve teaching skills, including a revised selection process, comprehensive career training and reorganisation of teachers' schedules to allow time for training.

- Strengthening school-community partnerships by involving communities in children's education and reforming school management (the *Team Gakkou* [school as a team] programme).

- Ensuring financial support for those in need, including a reduction of the financial burden on low-income families for education in non-mandatory levels (early childhood education and care and tertiary education).

- Improving access to tertiary education and adult learning through the promotion of new programmes to foster lifelong learning in an ageing society.
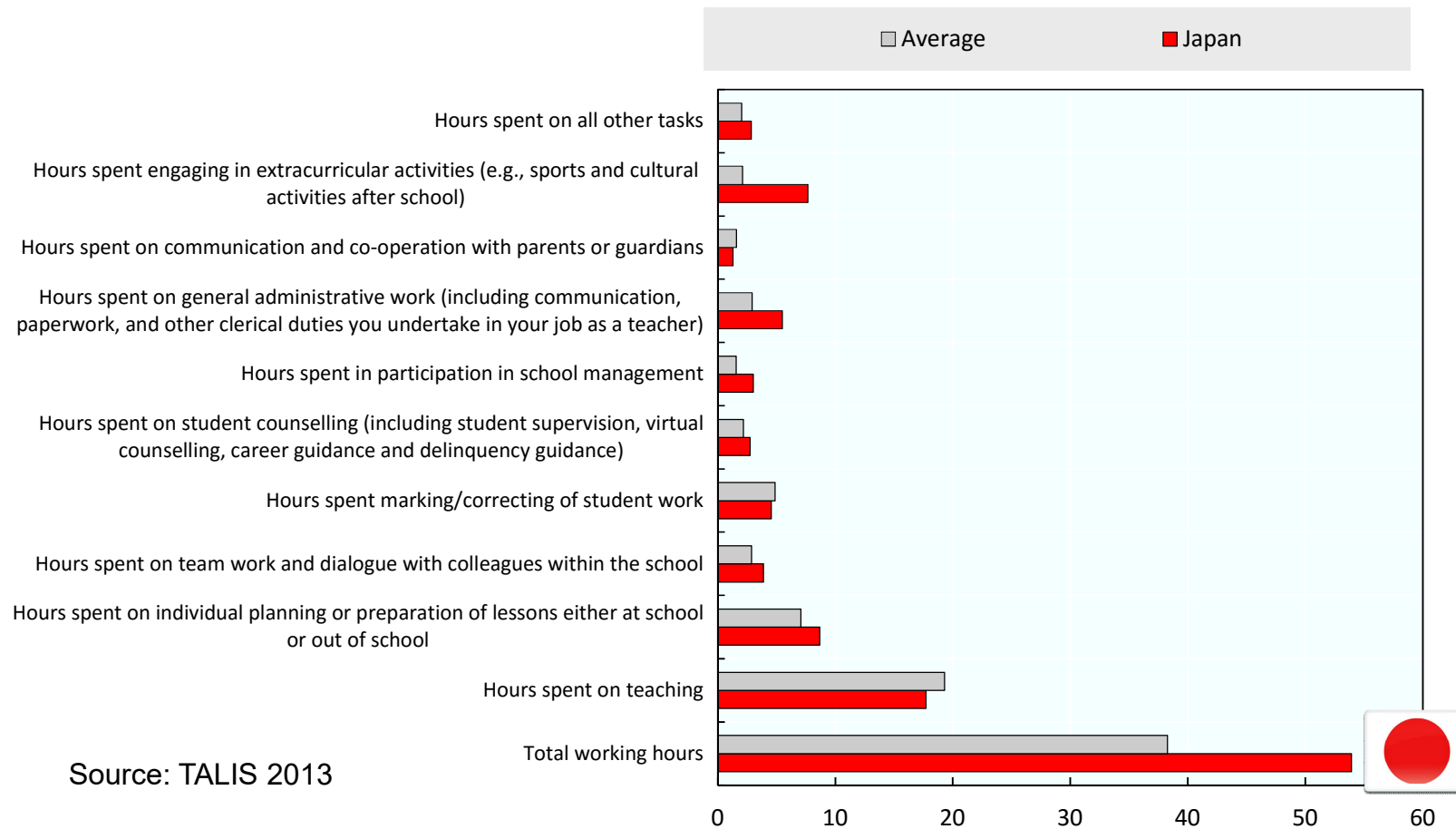
Implementing the new curriculum

And preserving the holistic approach to education

Busy teachers

Teachers' working hours

Legend: □ Average ■ Japan

Categories (top to bottom):
- Hours spent on all other tasks
- Hours spent engaging in extracurricular activities (e.g., sports and cultural activities after school)
- Hours spent on communication and co-operation with parents or guardians
- Hours spent on general administrative work (including communication, paperwork, and other clerical duties you undertake in your job as a teacher)
- Hours spent in participation in school management
- Hours spent on student counselling (including student supervision, virtual counselling, career guidance and delinquency guidance)
- Hours spent marking/correcting of student work
- Hours spent on team work and dialogue with colleagues within the school
- Hours spent on individual planning or preparation of lessons either at school or out of school
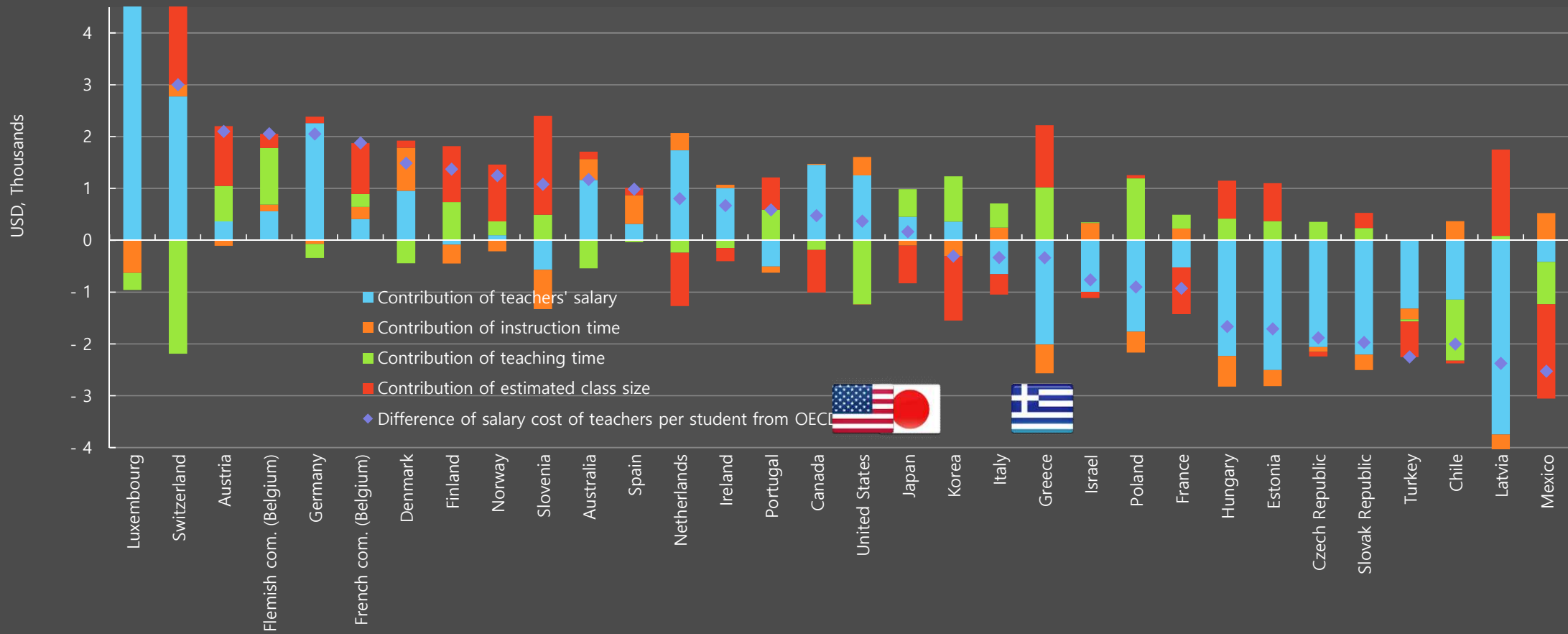- Hours spent on teaching
- Total working hours

Source: TALIS 2013

31

Different cost drivers

Figure B7.3

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

USD, Thousands

- Contribution of teachers' salary
- Contribution of instruction time
- Contribution of teaching time
- Contribution of estimated class size
- Difference of salary cost of teachers per student from OECD

Luxembourg, Switzerland, Austria, Flemish com. (Belgium), Germany, French com. (Belgium), Denmark, Finland, Norway, Slovenia, Australia, Spain, Netherlands, Ireland, Portugal, Canada, United States, Japan, Korea, Italy, Greece, Israel, Poland, France, Hungary, Estonia, Czech Republic, Slovak Republic, Turkey, Chile, Latvia, Mexico

Figure B7.2. Change in the salary cost of teachers per student, teachers' salaries and estimated class size in primary and lower secondary education (2010 and 2015)

Percentage change between 2010 and 2015, public institutions

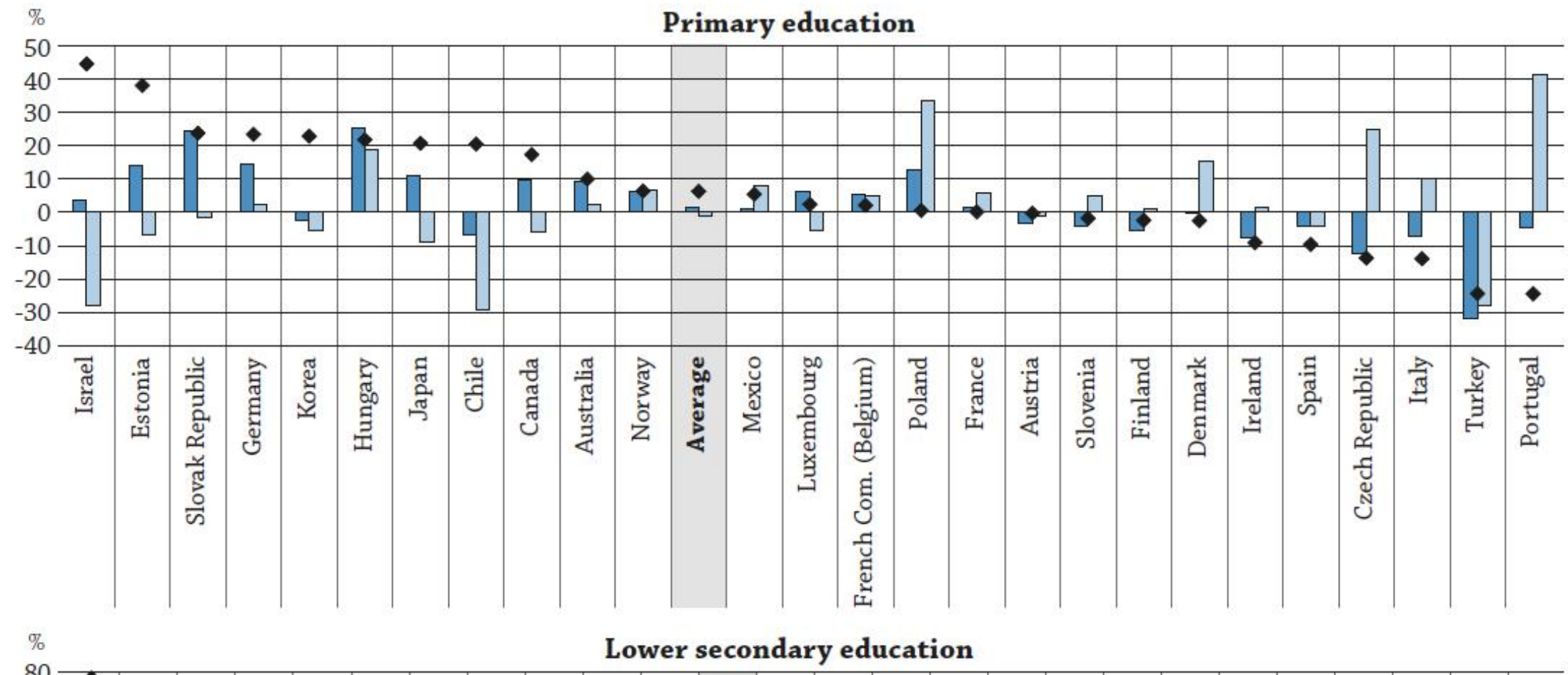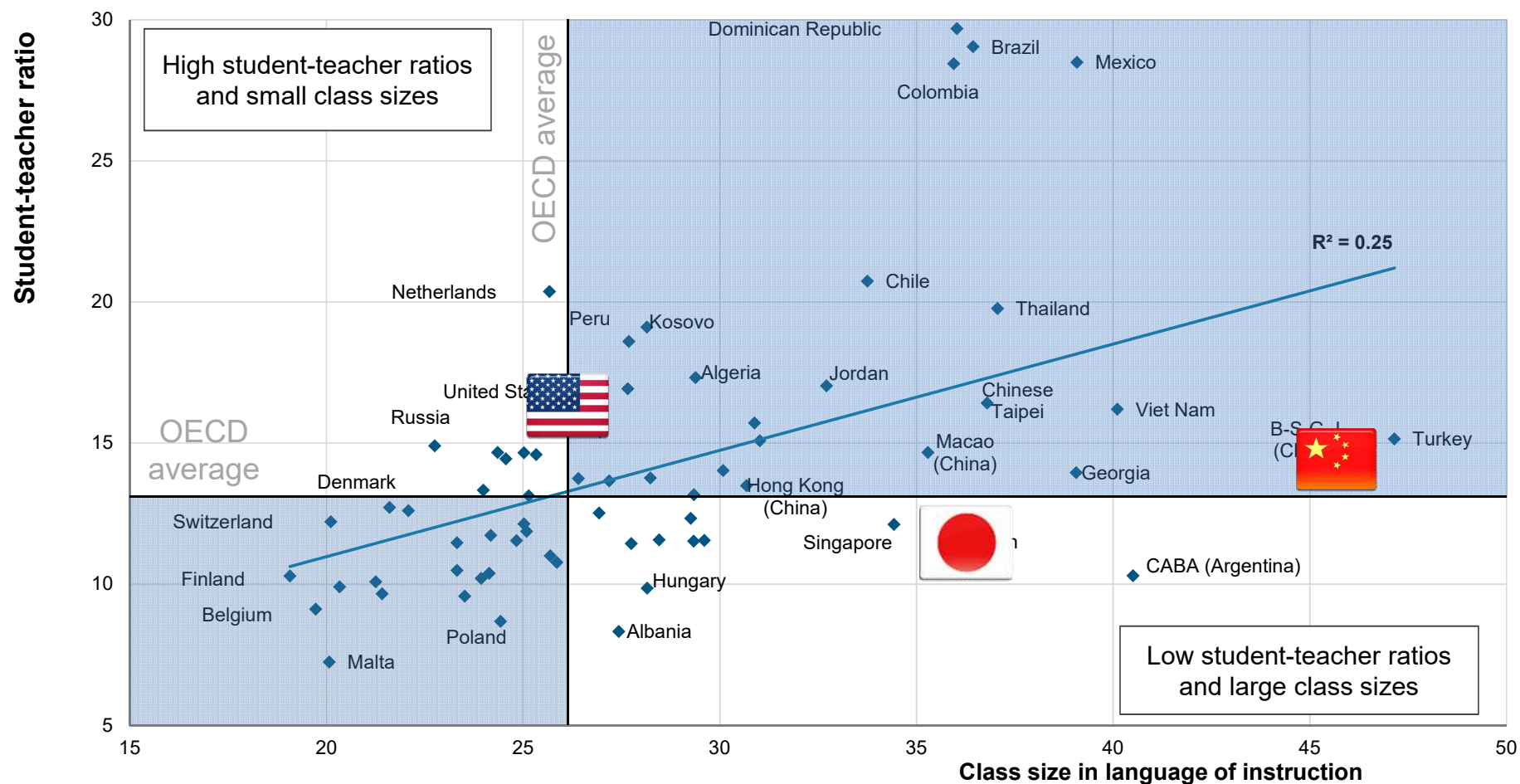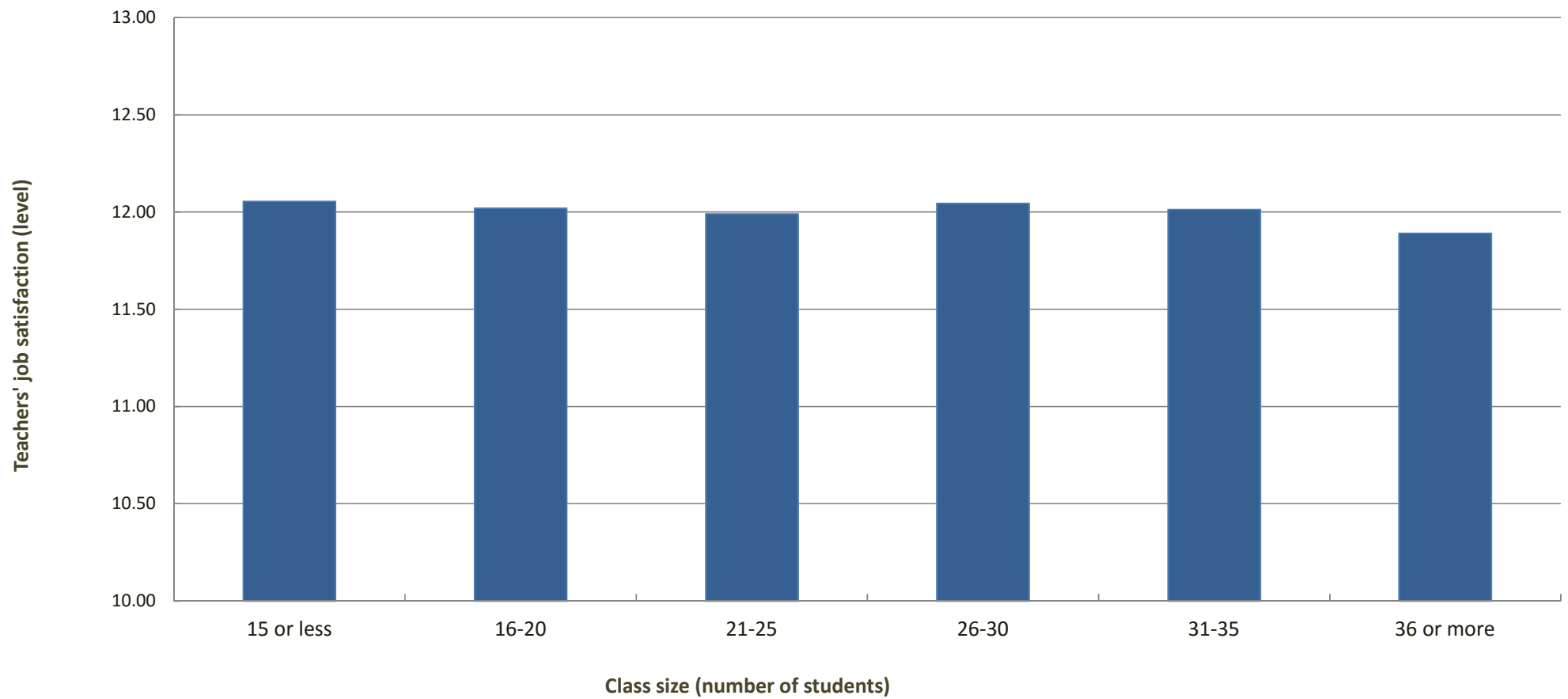Legend: ■ Change in teachers' salary ☐ Change in estimated class size ◆ Change in teachers' salary cost per student

Primary education

Lower secondary education

Figure II.6.14

Student-teacher ratios and class size

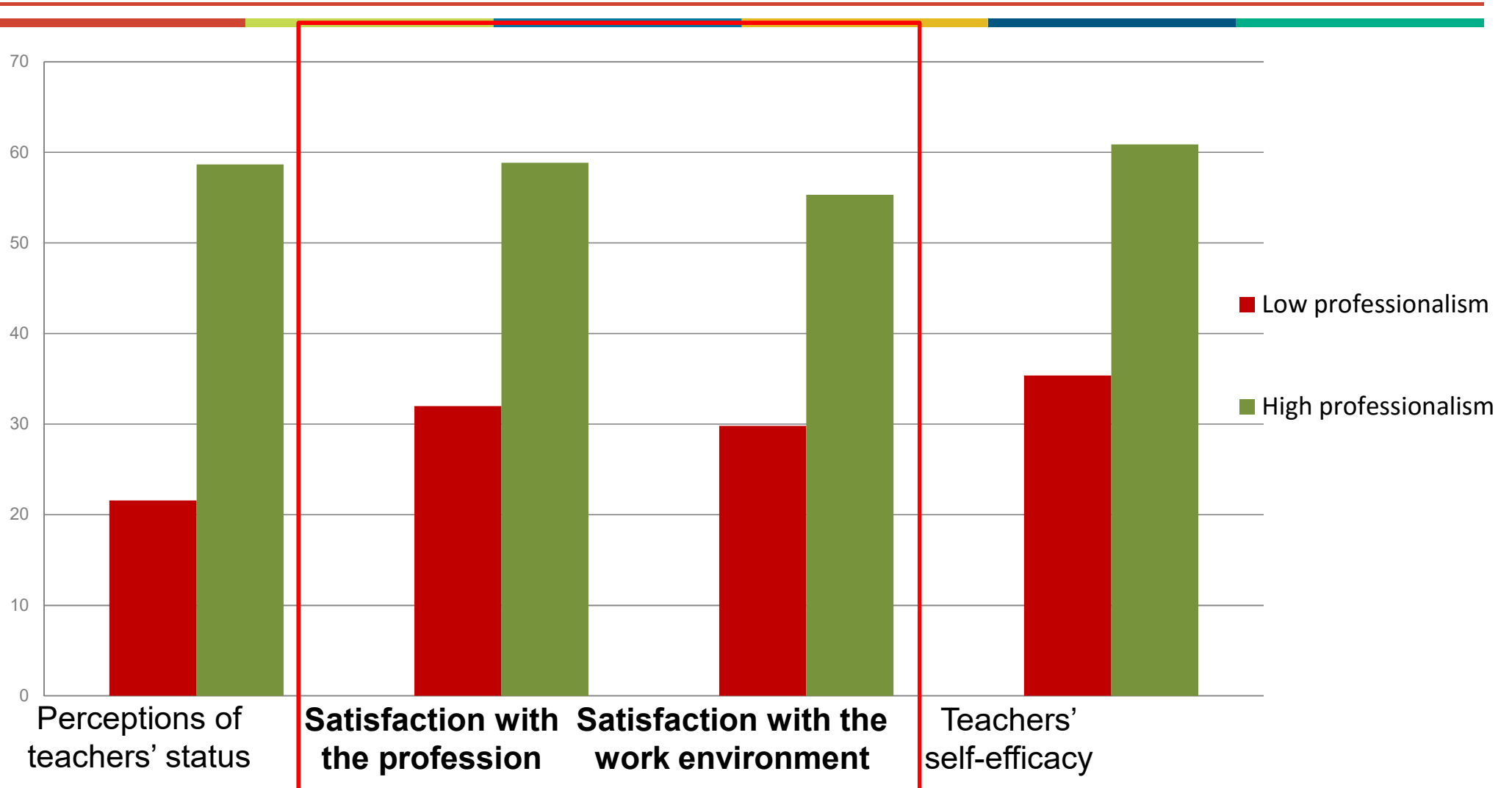Student-teacher ratio (y-axis, 5 to 30)

Class size in language of instruction (x-axis, 15 to 50)

High student-teacher ratios and small class sizes

OECD average

R² = 0.25

OECD average

Low student-teacher ratios and large class sizes

Dominican Republic, Brazil, Mexico, Colombia, Netherlands, Chile, Thailand, Peru, Kosovo, Algeria, Jordan, Chinese Taipei, Viet Nam, United States, Russia, Macao (China), B-S-J-G (China), Turkey, Denmark, Georgia, Hong Kong (China), Switzerland, Singapore, CABA (Argentina), Finland, Hungary, Belgium, Poland, Albania, Malta

Teachers' job satisfaction and class size

Teacher job satisfaction and professionalism

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

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)
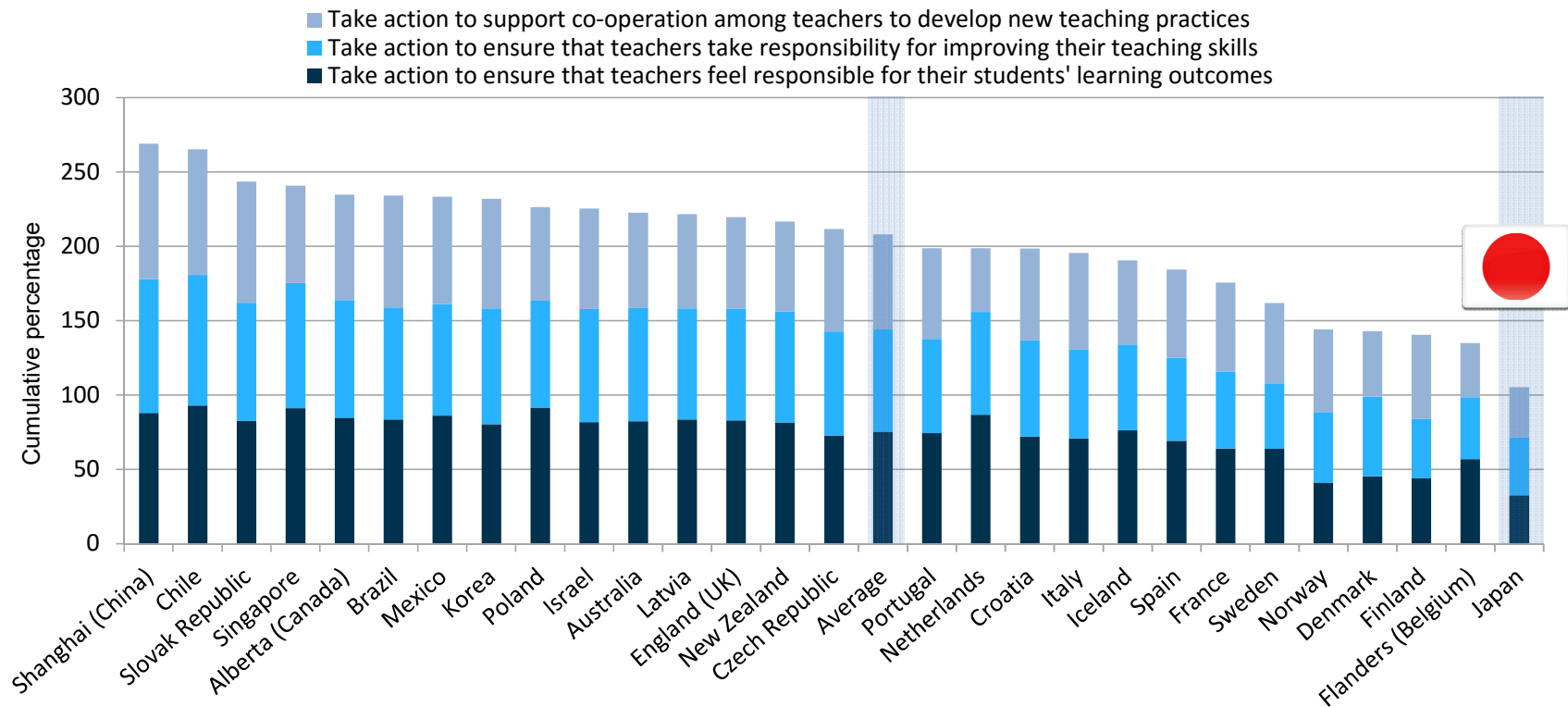
Teachers' self-efficacy and professional collaboration
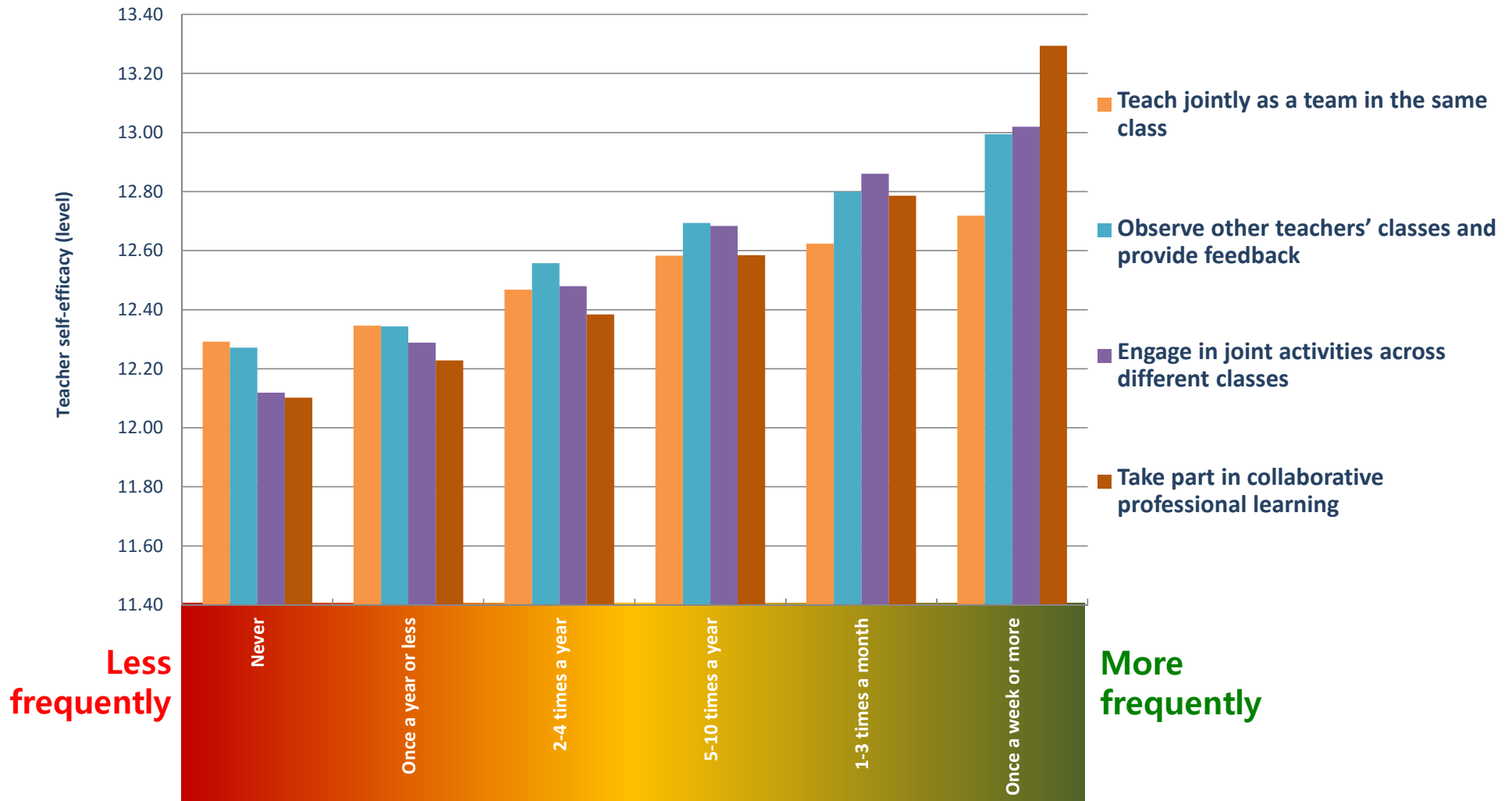
Low levels of pedagogical leadership

Engagement in instructional leadership in lower secondary education

Percentage of lower secondary education principals who report having engaged "often" or "very often" in the following instructional leadership activities during the 12 months prior to the study:

- Take action to support co-operation among teachers to develop new teaching practices
- Take action to ensure that teachers take responsibility for improving their teaching skills
- Take action to ensure that teachers feel responsible for their students' learning outcomes
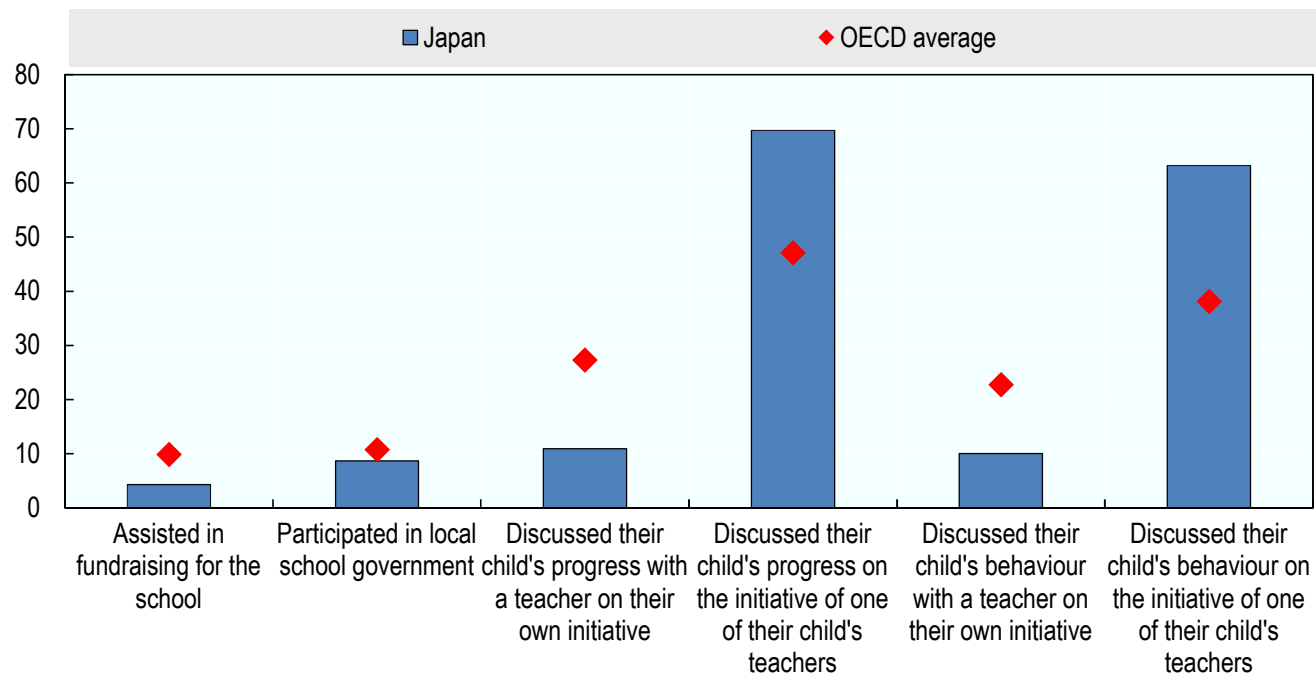

Source: School Leadership for Learning, 2016

Involved parents

Parental involvement
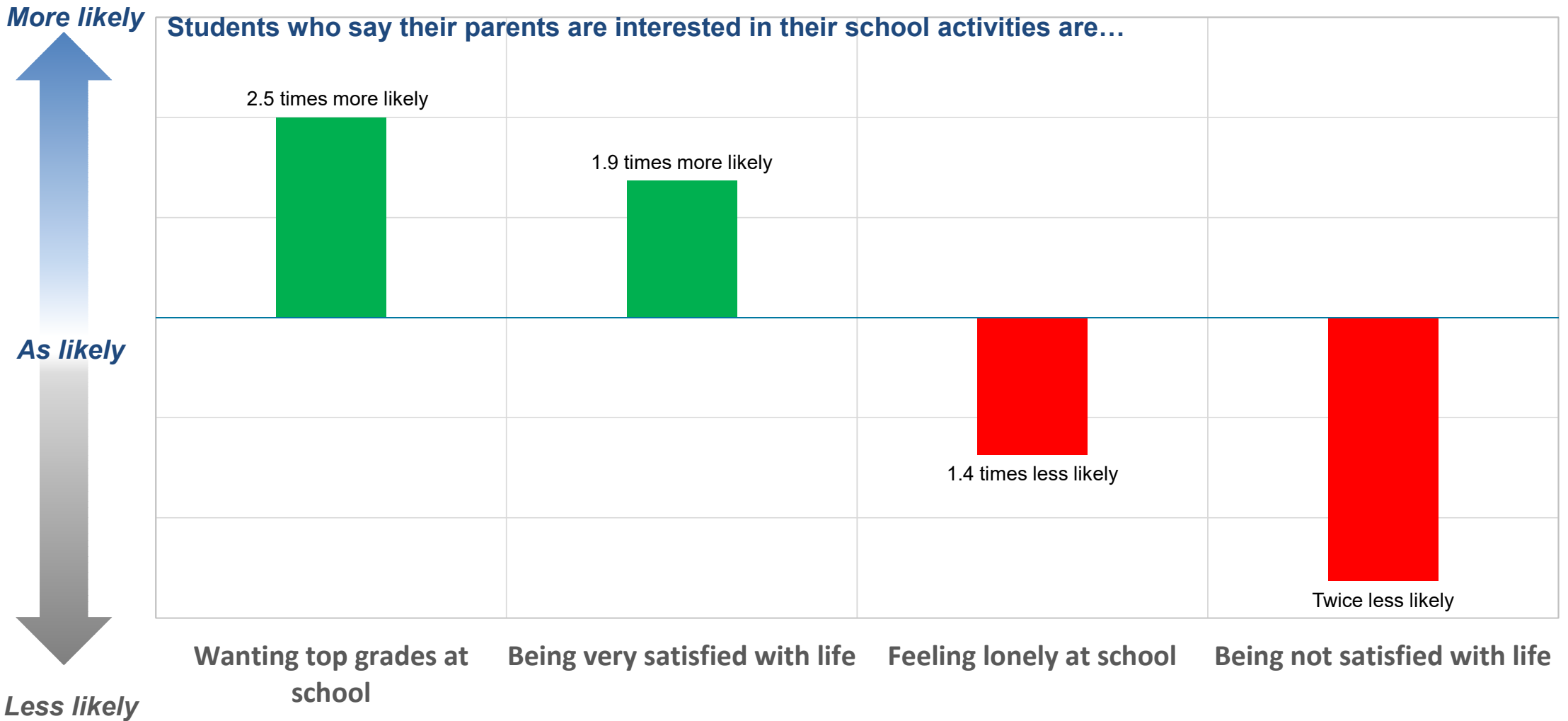*Based on school principals' reports*

Percentage of students' parents who participated in the following school-related activities during the previous academic year:

Source: PISA 2012

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

More likely

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

2.5 times more likely

1.9 times more likely

As likely

1.4 times less likely

Twice less likely

Less likely

| Wanting top grades at school | Being very satisfied with life | Feeling lonely at school | Being not satisfied with life |

Creating meaningful ways for community relationships

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

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

Schools at the centre of their communities are often the most successful schools.

Communities

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

Service learning

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.

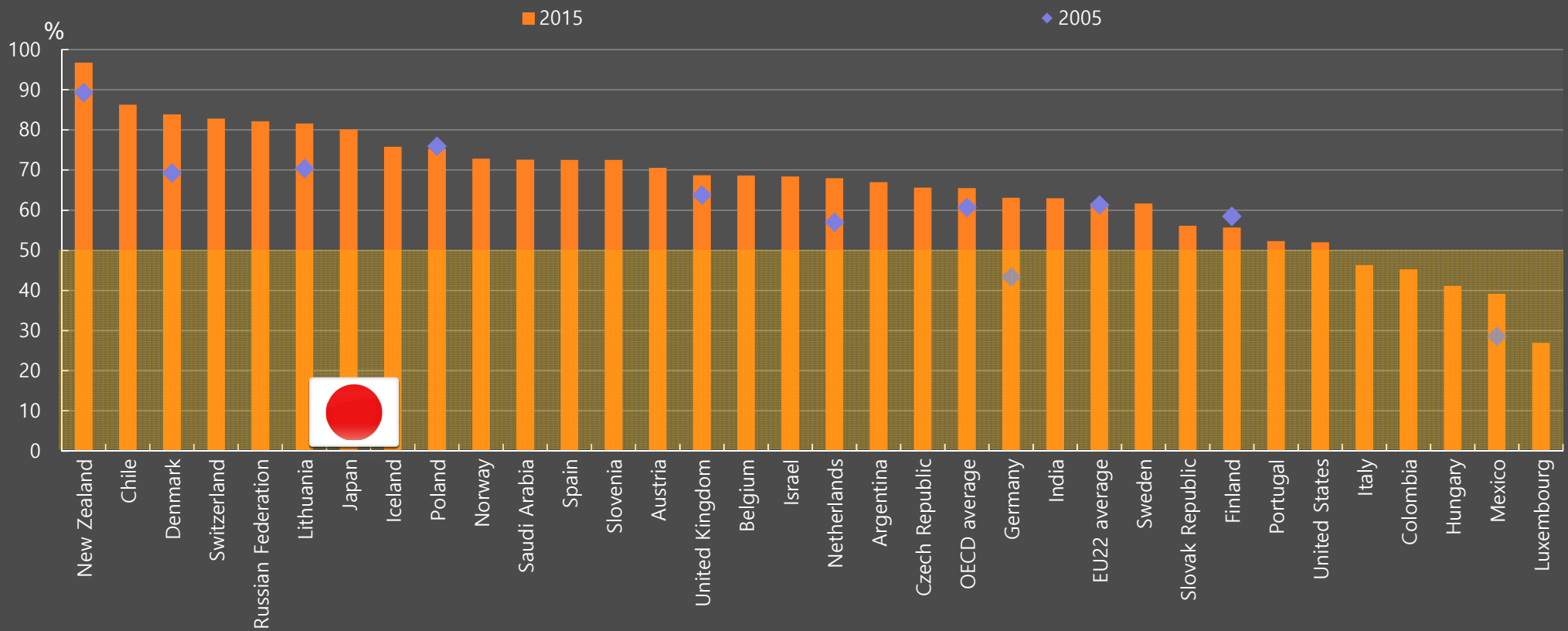# Making lifelong learning a reality

# 65% of adults are expected to enter tertiary education for the first time in 2015

First-time tertiary entry rates (2005, 2015)

■ 2015   ◆ 2005

%

100
90
80
70
60
50
40
30
20
10
0

New Zealand, Chile, Denmark, Switzerland, Russian Federation, Lithuania, Japan, Iceland, Poland, Norway, Saudi Arabia, Spain, Slovenia, Austria, United Kingdom, Belgium, Israel, Netherlands, Argentina, Czech Republic, OECD average, Germany, India, EU22 average, Sweden, Slovak Republic, Finland, Portugal, United States, Italy, Colombia, Hungary, Mexico, Luxembourg

Share of private expenditure on tertiary institutions

Distribution of public and private expenditure on educational institutions (2014)

■ Public expenditure on educational institutions   ■ Household expenditure   ■ Expenditure of other private entities   ■ All private sources
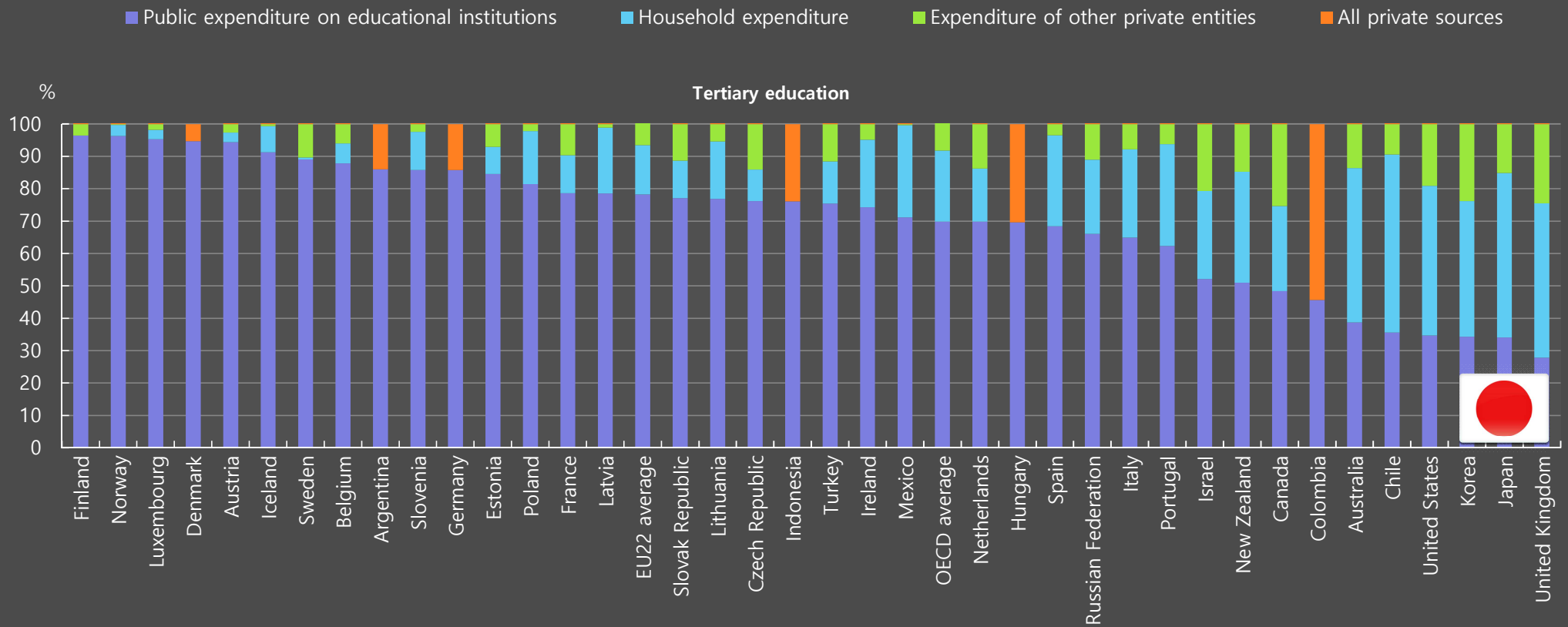
Private expenditure on tertiary education increased

Figure B3.3

Change in private expenditure on tertiary educational institutions, 2010 = 100 (2005 and 2014)
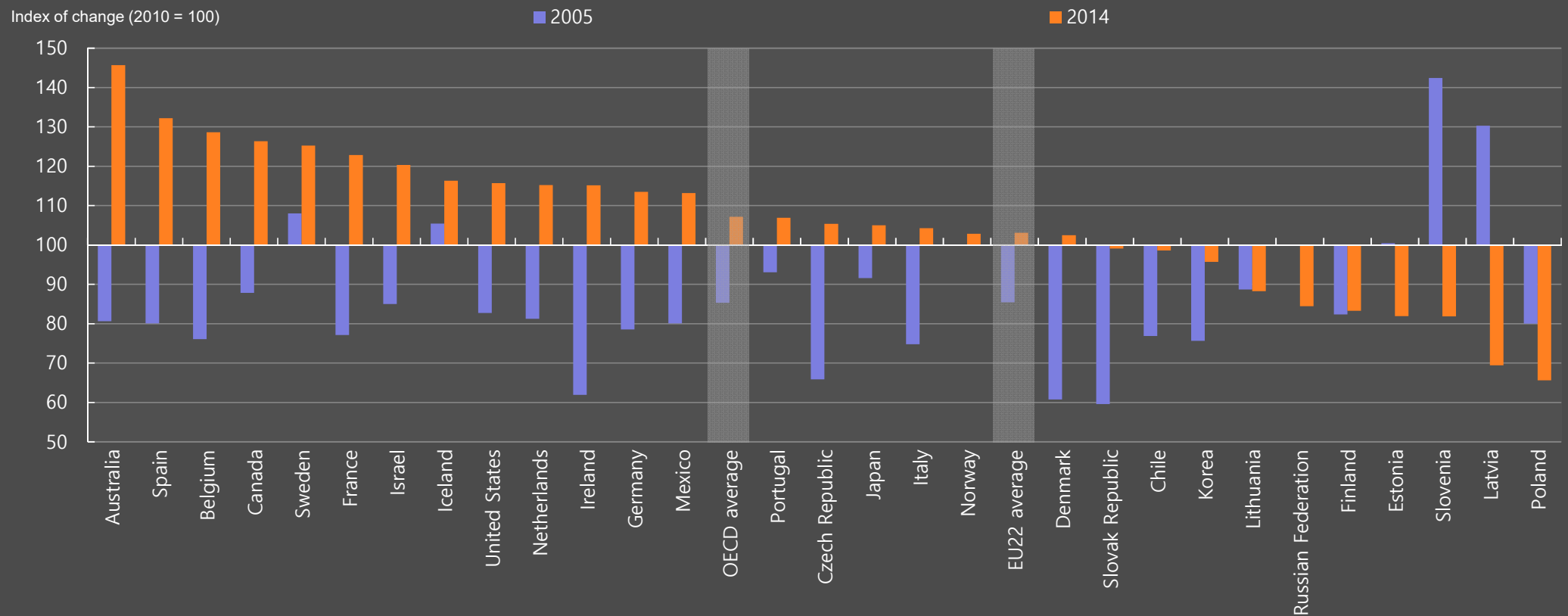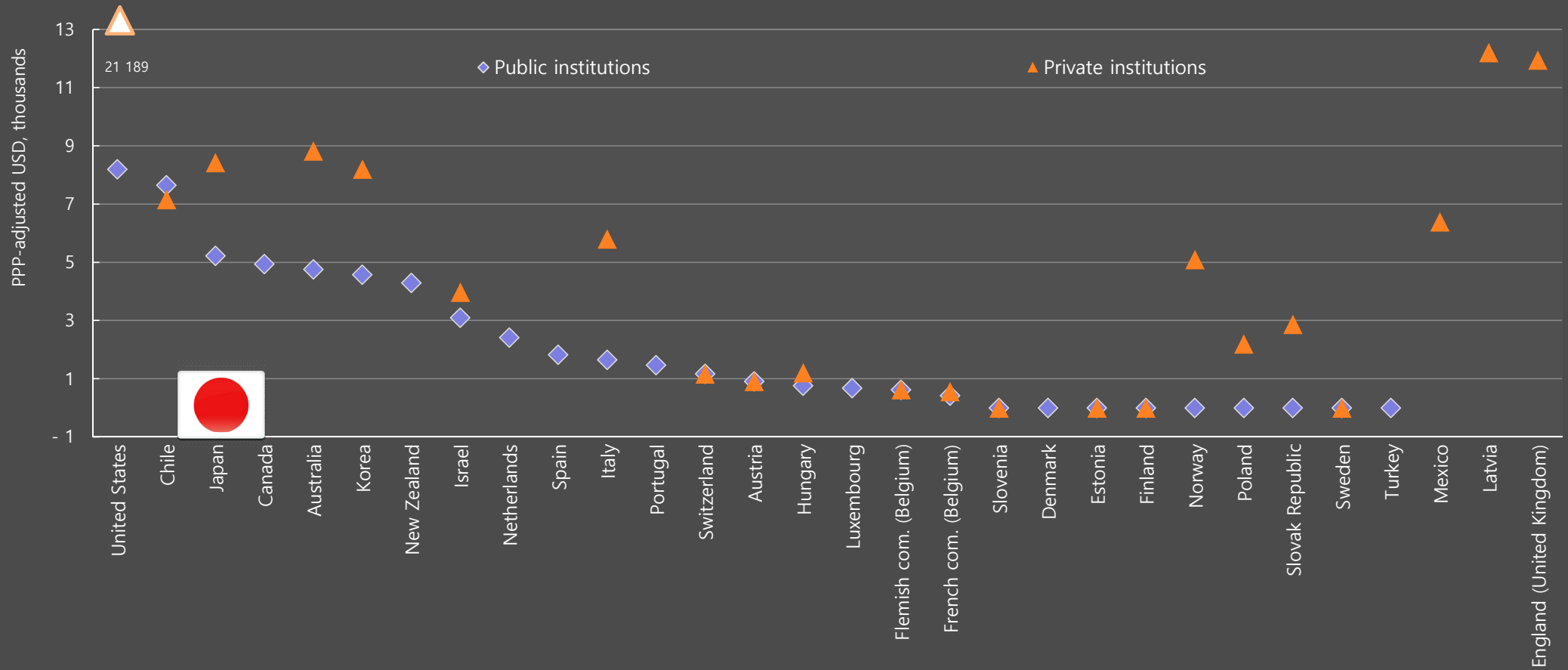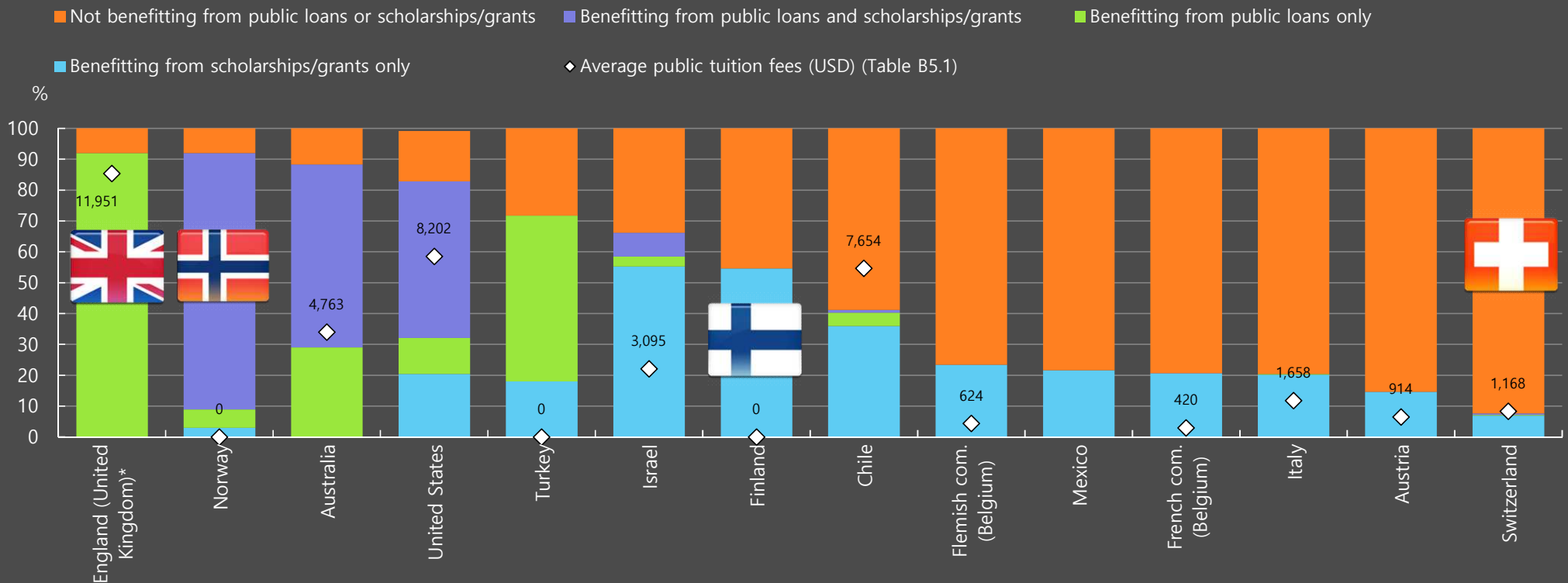
High tuition fees

Tuition fees charged by public and private institutions at bachelor's or equivalent level (2015/16)

Flexible funding mechanisms help students

Figure B5.3

Distribution of financial support to students at bachelor's or equivalent level (2015/16)

- ■ Not benefitting from public loans or scholarships/grants
- ■ Benefitting from public loans and scholarships/grants
- ■ Benefitting from public loans only
- ■ Benefitting from scholarships/grants only
- ◆ Average public tuition fees (USD) (Table B5.1)

%

England (United Kingdom)*: 11,951
Norway: 0
Australia: 4,763
United States: 8,202
Turkey: 0
Israel: 3,095
Finland: 0
Chile: 7,654
Flemish com. (Belgium): 624
Mexico
French com. (Belgium): 420
Italy: 1,658
Austria: 914
Switzerland: 1,168

*All tertiary institutions are government-dependent private institutions in England (United Kingdom).
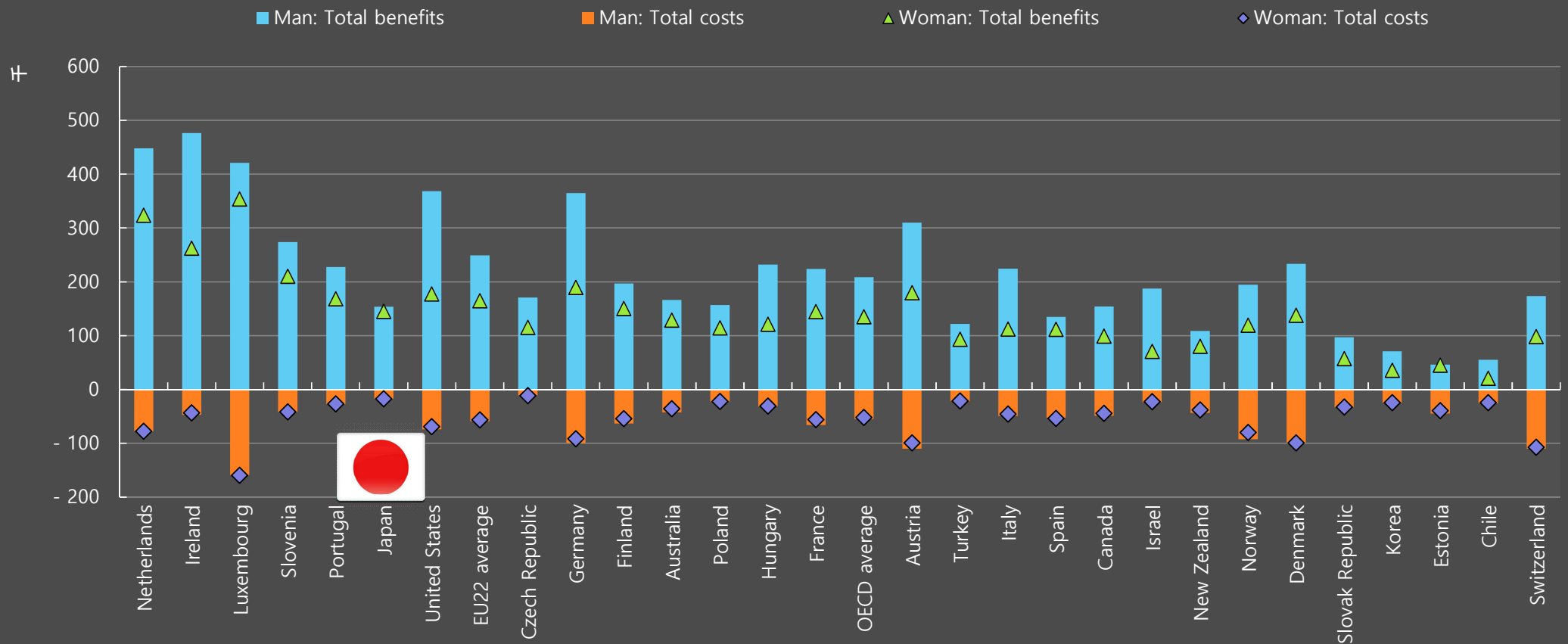
The returns are still worth it for individuals

Private costs and benefits of education for a man or a woman attaining tertiary education (2013)

■ Man: Total benefits ■ Man: Total costs ▲ Woman: Total benefits ◆ Woman: Total costs
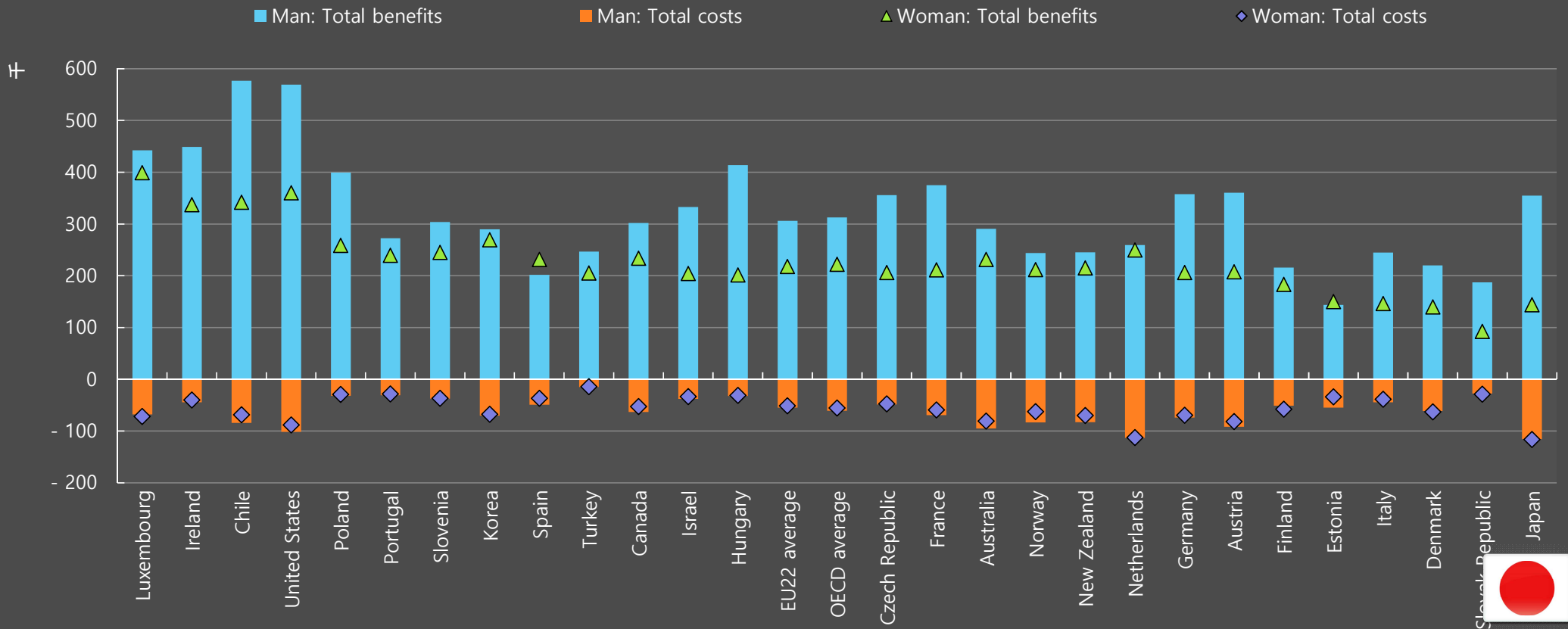
...and also for taxpayers

Figure A7.3

Private costs and benefits of education for a man or a woman attaining tertiary education (2013)

Making lifelong learning a reality

Adults' participation in formal and/or non-formal education, by type (2012 or 2015)

■ Participation in non-formal education only   ■ Participation in formal education only

■ Participation in both formal and non-formal education   ■ No participation in adult education
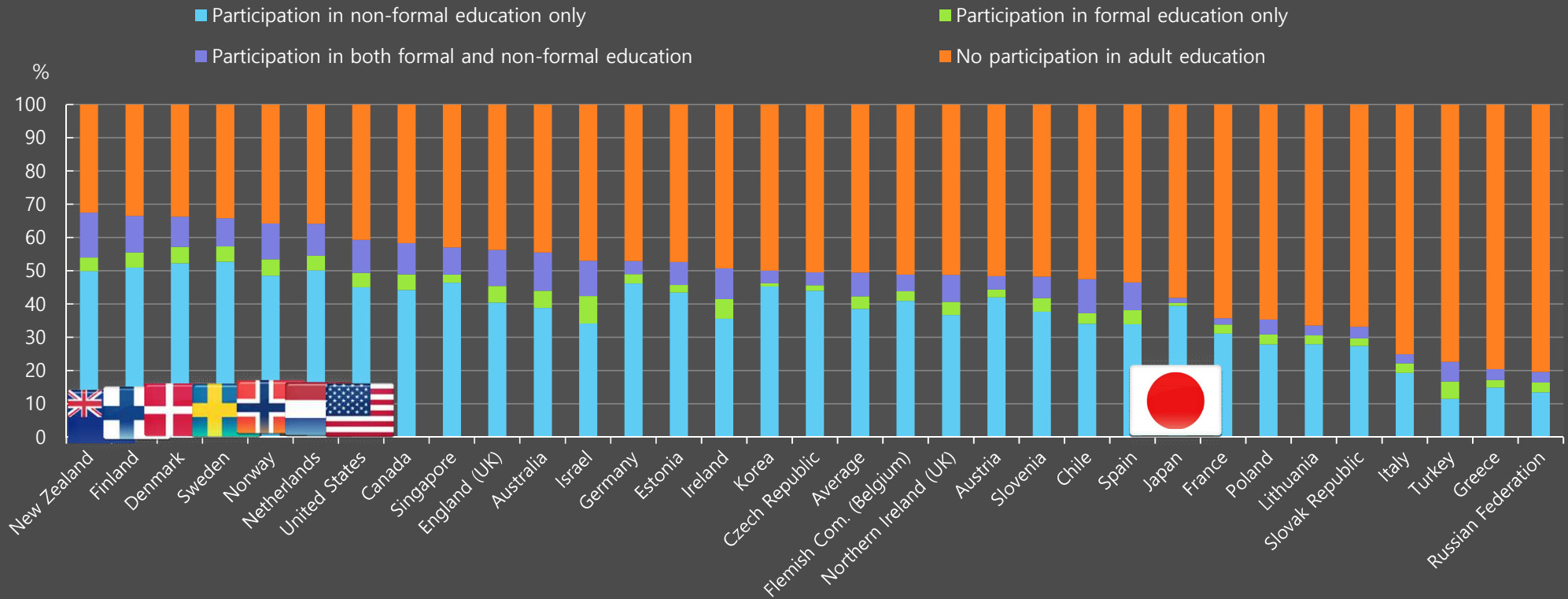
In conclusion

OECD policy options	Japan's goals for education policy according to the Third Basic Plan
Prioritise implementation of the curriculum reform	• Promotion of learning to improve the lives of people and continually develop society. • Preparation of foundation for utilisation of ICT. • Preparation of sustainable school teaching system for education in the new era.
Preserve the provision of well-rounded holistic education by enhancing school organisation and school-community partnerships	• Enhancing educational abilities in home, community, promoting collaboration, cooperation with schools. • Consideration of household's financial situation and geographical conditions. • Preparation of sustainable school teaching system for education in the new era.
Strengthen lifelong learning and financial arrangements for non-mandatory education to support equity	• Promotion of lifelong learning in anticipation of age of "100-year-life". • Promotion of recurrent education for adults in order to acquire necessary skills and knowledge for work throughout life. • Promotion of lifelong learning for persons with disabilities. • Consideration of household's financial situation and geographical conditions. • Providing educational opportunities responding to various needs.

Prioritise the implementation of the curriculum reform

- **Ensure curriculum reform also encompasses new priorities (foreign language, ICT, global competencies).**

- **Align both formative and summative assessments to the new curriculum.**

- **Ensure that professional development for teachers and resources for teaching and learning are an integral part of the implementation strategy.**

Preserve the provision of well-rounded holistic education

- **Reform management practices to alleviate teachers' workload and invest in leadership.**

- **Focus partnerships with local communities on supporting the introduction of the new curriculum.**

- **Consider establishing specific structures and sparing resources to mitigate the risk of increased inequalities that could result from school-community partnerships.**

Strengthen lifelong learning

- **Foster relevance with:**
  - Dialogue between employer groups, workers and LLL providers – facilitated by government
  - Innovative approaches – for instance, shifting from full qualifications to micro-credentials.

- **Manage cost with:**
  - Mechanisms that allocate costs between employees, employers and the government to create incentives that will boost the use of LLL to improve the performance of the economy
  - Innovative approaches – for instance, shifting from full qualifications to micro-credentials.

- **Address time constraints by:**
  - Innovative approaches – for instance, shifting from full qualifications to micro-credentials
  - …. With flexible scheduling.

ありがとうございます

Arigato Gozaimasu