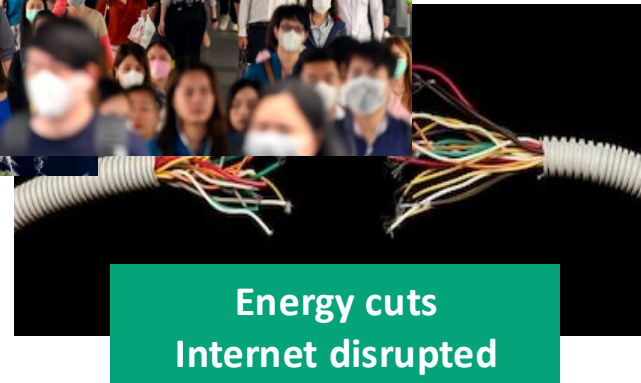GELYDA

PISA – measuring social and emotional outcomes

Andreas Schleicher
OECD Directorate for Education and Skills

The future will always surprise us
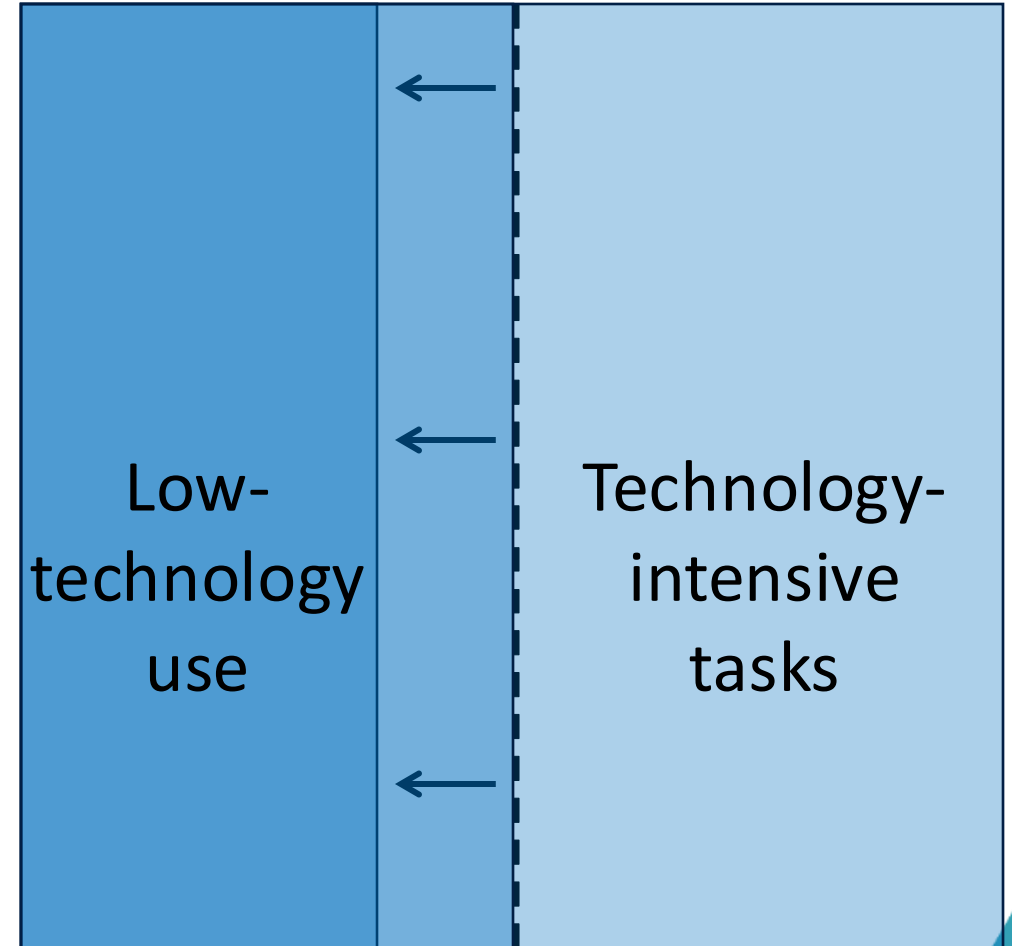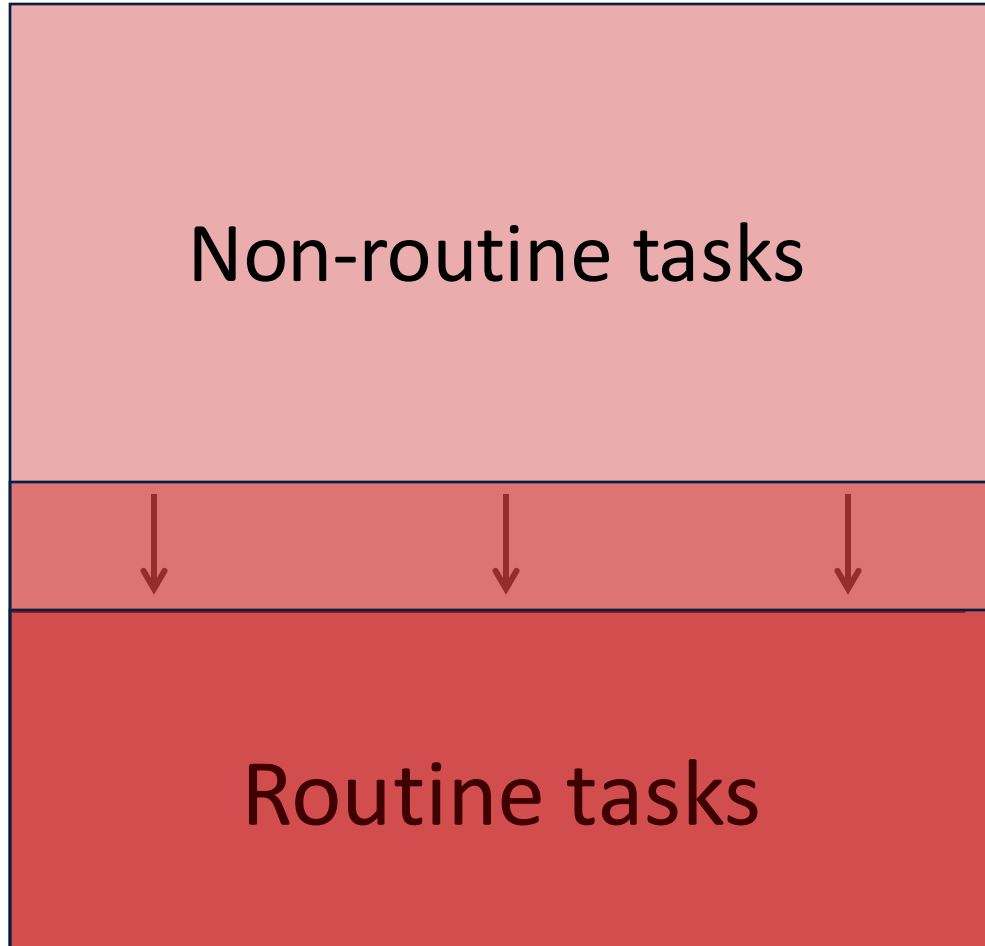
The kinds of things that are easy to teach...
... have now become easy to digitise and automate

Non-routine tasks

Technology-
intensive tasks

Routine
tasks

Low-technology
use
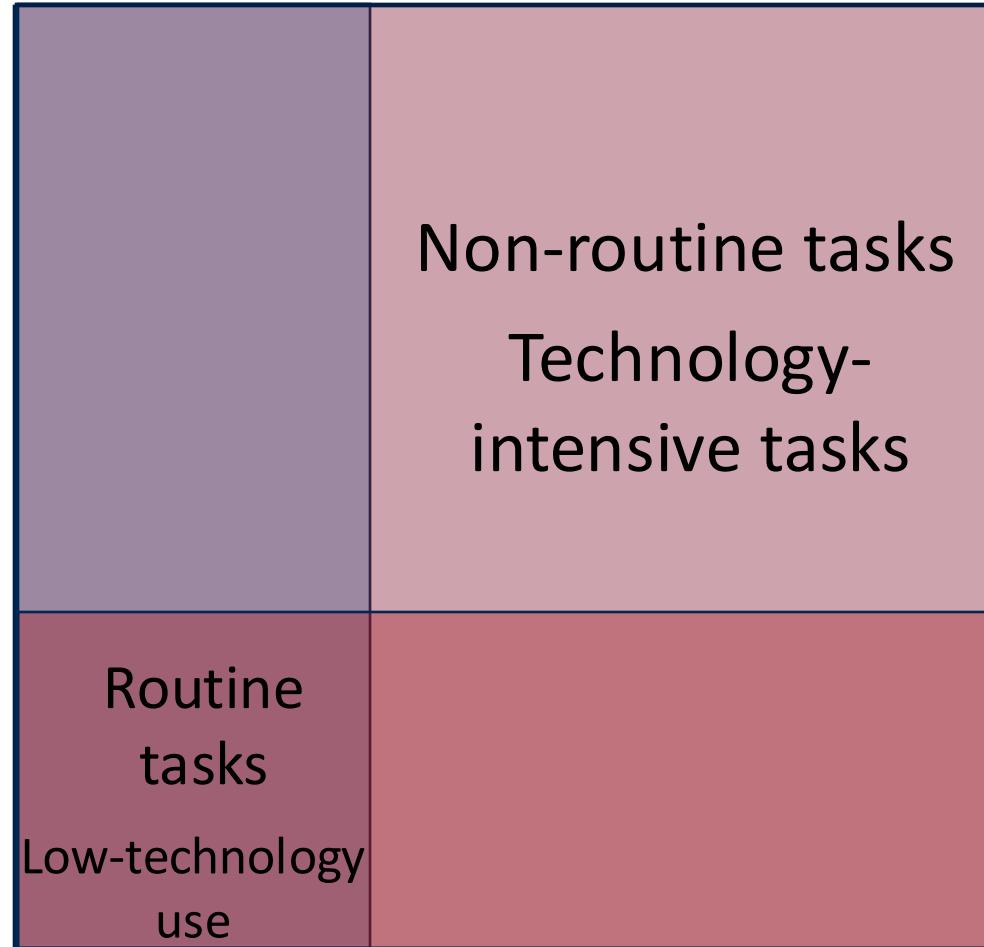
Putting AI to the test: chatGPT and student performance on PISA

Share of questions correctly answered by...

Reading — 15-year-olds: 57, Chat GPT: 78, GPT 4: 90, GPT 4V: 91

Math — 15-year-olds: 51, Chat GPT: 28, GPT 4: 46, GPT 4V: 60

Legend:
- 15-year-olds
- GPT-3.5 (Nov'22)
- GPT-4 (Mar'23)
- GPT-4V (Sep'23)
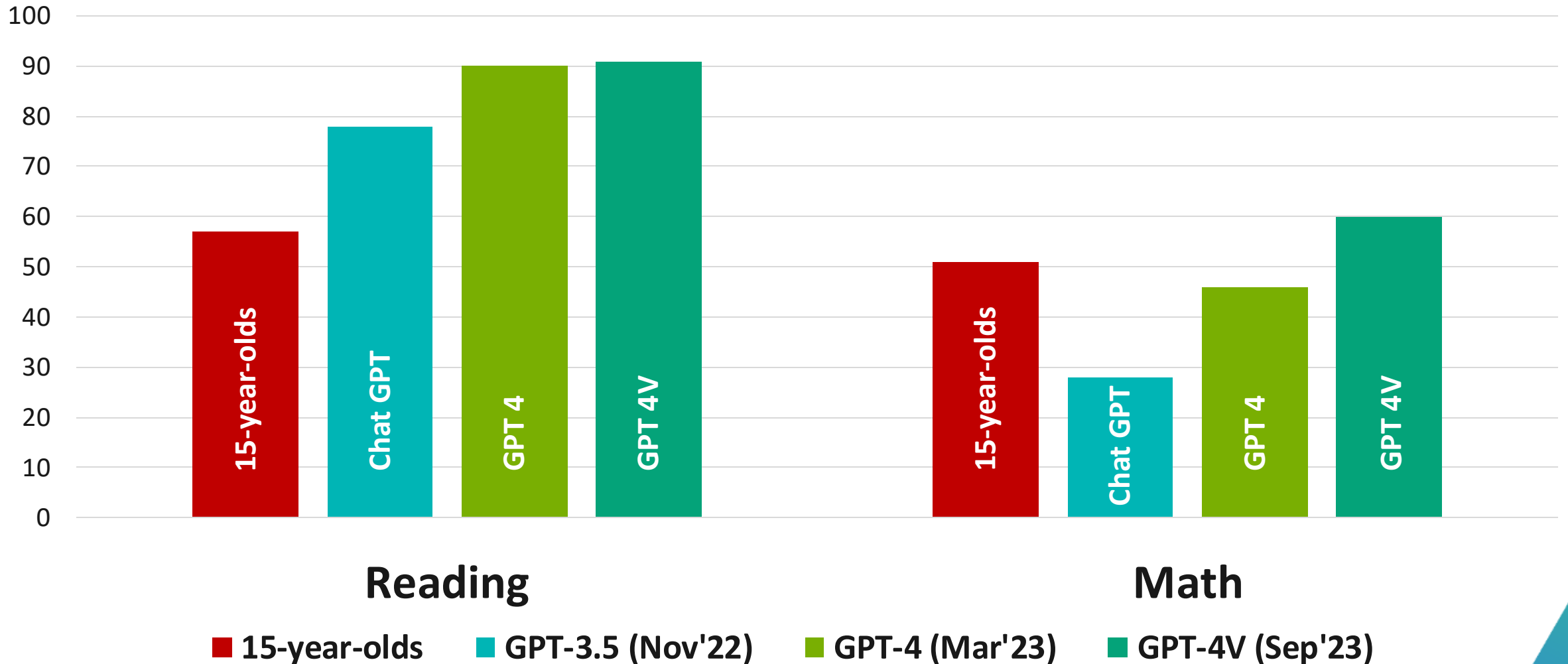
PISA 2022 outcomes

Academic performance refers to the knowledge and cognitive skills students have acquired throughout their education and the extent to which they can use what they have learnt to solve real-life problems.

- Academic performance
- Psychological well-being
- Agency and engagement
- Resilience
- Engagement with school
- Quality of relationship & community vitality
- School-leisure balance
- Material and cultural well-being
- Openness to diversity

PISA 2022 outcomes

Psychological wellbeing refers to the extent to which students experience positive emotions, are satisfied with their life and believe their life has meaning and purpose.

- Academic performance
- Psychological well-being
- Agency and engagement
- Resilience
- Engagement with school
- Quality of relationship & community vitality
- School-leisure balance
- Material and cultural well-being
- Openness to diversity

PISA 2022 outcomes

The agency and engagement dimension looks at whether students have the a**bility and willingness to positively influence their own lives and the world around them, by setting goals, reflecting on their roles and responsibilities and acting responsibly to improve themselves and bring about positive change.**

Academic performance

Psychological well-being

Agency and engagement

Resilience

Engagement with school

Quality of relationship & community vitality

School-leisure balance

Material and cultural well-being

Openness to diversity

PISA 2022 outcomes

The resilience dimension considers students' beliefs in their ability to withstand stressful and difficult situations, their confidence in themselves and their autonomy as learners

- Academic performance
- Psychological well-being
- Agency and engagement
- Resilience
- Engagement with school
- Quality of relationship & community vitality
- School-leisure balance
- Material and cultural well-being
- Openness to diversity

PISA 2022 outcomes

Engagement with school refers to the extent to which students assign value to their time at school, put effort in their studies so to achieve good results, and help their teachers create a productive learning environment.

Academic performance

Psychological well-being

Agency and engagement

Resilience

Engagement with school

Quality of relationship & community vitality

School-leisure balance

Material and cultural well-being

Openness to diversity

PISA 2022 outcomes

The quality of relationships and community vitality dimension captures both the quantity and the quality of students' social networks. It reflects the extent to which students feel accepted and appreciated by their peers, and whether they perceive support and care from their parents and their teachers.

Academic performance

Psychological well-being

Agency and engagement

Resilience

Engagement with school

Quality of relationship & community vitality

School-leisure balance

Material and cultural well-being

Openness to diversity

PISA 2022 outcomes

Study-life balance means putting enough time into academic work while also taking time to enjoy the other parts of one's life, including social, sporting and cultural opportunities.

Academic performance

Psychological well-being

Agency and engagement

Resilience

Engagement with school

Quality of relationship & community vitality

School-leisure balance

Material and cultural well-being

Openness to diversity

PISA 2022 outcomes

Openness to diversity refers to students' capacity to establish deep and respectful connections with people from different cultural backgrounds, being aware and open to different perspectives and willing to learn other people's language, habits and conventions.

- Academic performance
- Psychological well-being
- Agency and engagement
- Resilience
- Engagement with school
- Quality of relationship & community vitality
- School-leisure balance
- Material and cultural well-being
- Openness to diversity

PISA 2022: Singapore

What are Singapore's strengths and areas for improvement

| Index | OECD average |

	0	1	2	3	4	5	6	7	8	9	10
Academic performance											
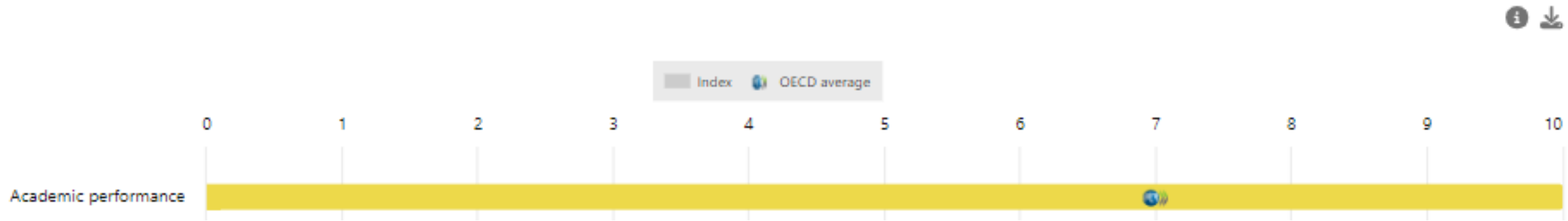
PISA 2022: Viet Nam

What are Viet Nam's strengths and areas for improvement

Index | OECD average

	0	1	2	3	4	5	6	7	8	9	10

Academic performance
Psychological well-being
Agency and engagement
Resilience
Engagement with school
Social relationships
School-leisure balance
Material and cultural well-being
Openness to diversity

Source: OECD, PISA 2018 Database and PISA 2022 Database

PISA 2022: United States

What are United States's strengths and areas for improvement

Legend: Index | OECD average

Category	Index (bar)	OECD average
Academic performance	8	~7
Psychological well-being	3.5	~4.4
Agency and engagement	9	~5.6
Resilience	4.6	~5.1
Engagement with school	7.8	~5.6
Social relationships	5.6	~6.1
School-leisure balance	4.3	~4.8
Material and cultural well-being	5.6	~6.5
Openness to diversity	—	~4.6

PISA 2022: Denmark

What are Denmark's strengths and areas for improvement

Index   OECD average

Category	
Academic performance	
Psychological well-being	
Agency and engagement	
Resilience	
Engagement with school	
Social relationships	
School-leisure balance	
Material and cultural well-being	
Openness to diversity	

Source: OECD. PISA 2018 Database and PISA 2022 Database.
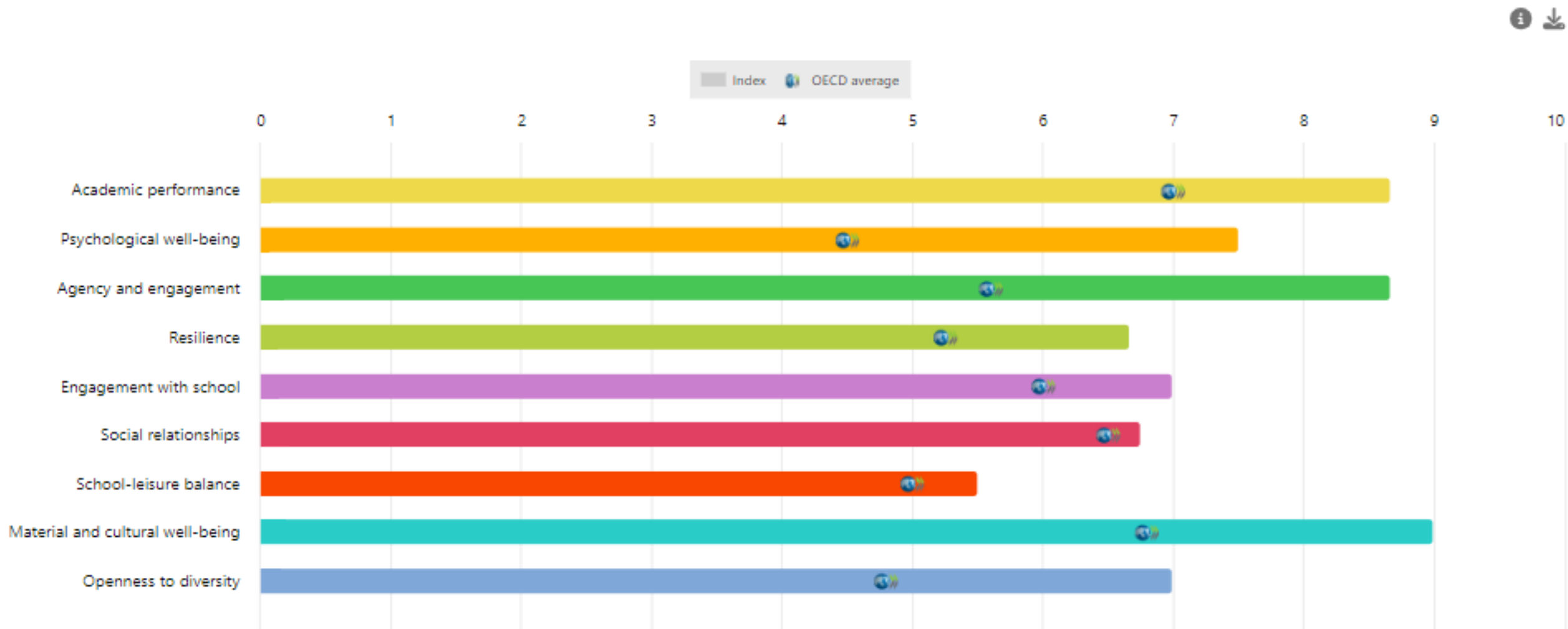
Students with greater social and emotional skills achieve better grades in maths, reading and arts

Standardised regression coefficients of skills on maths grades, 15-year-olds, average across sites and Helsinki (Finland)
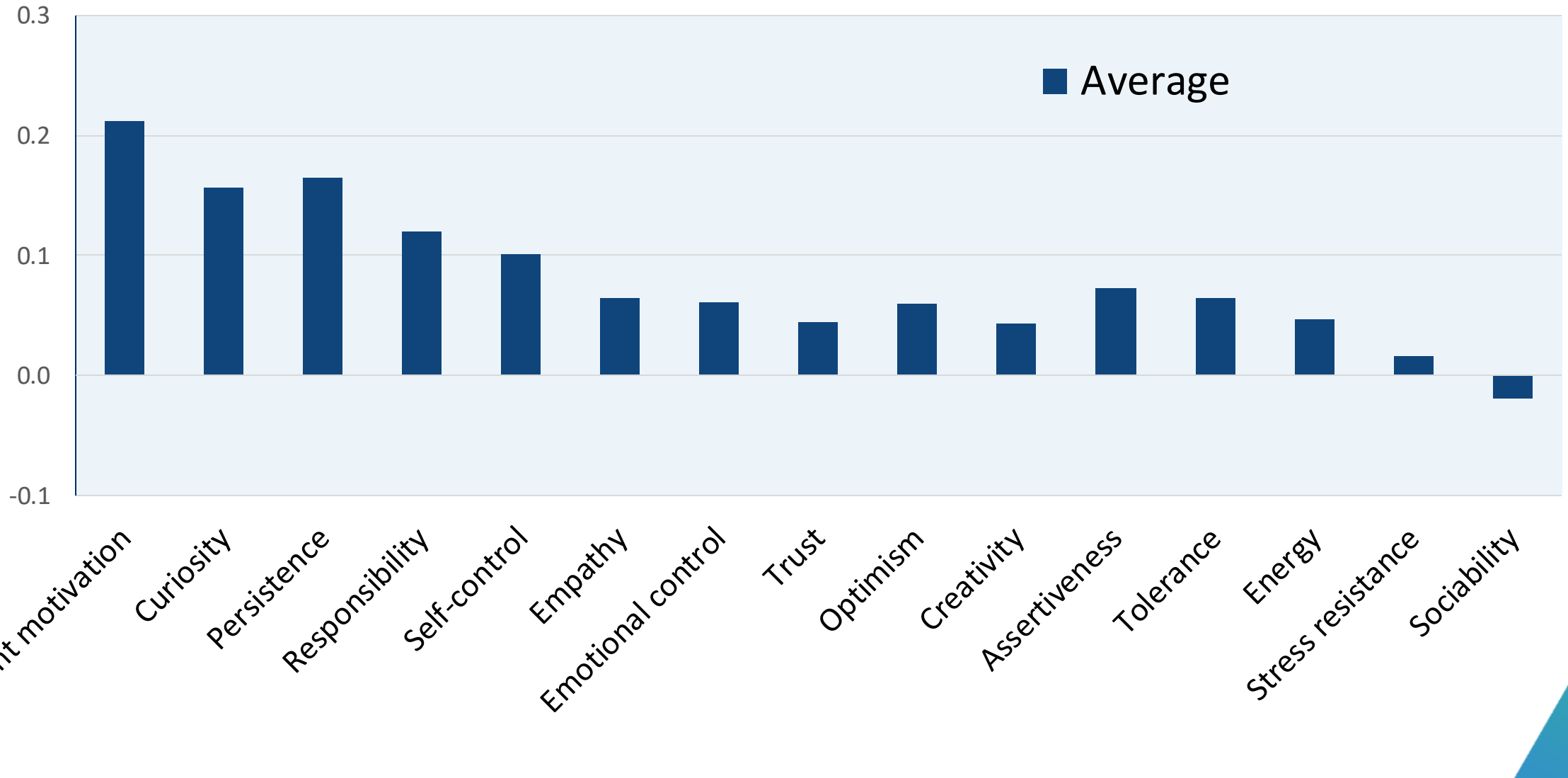
Growth mindset and mathematics performance

Table I.B1.2.1 &
Table I.B1.2.16

Higher score — Mean score in mathematics

- Singapore
- Macao (China)
- Chinese Taipei
- Hong Kong (China)*
- Japan
- Korea
- Canada*
- Switzerland
- Latvia*
- Denmark*
- Sweden
- Poland
- Belgium
- Spain
- United Kingdom*
- Germany
- Slovenia
- Netherlands*
- Czech Republic
- Hungary
- France
- Italy
- Finland
- Australia*
- Malta
- Portugal
- Lithuania
- Brunei Darussalam
- Croatia
- Slovak Republic
- Norway
- Iceland
- Türkiye
- Serbia
- New Zealand*
- Romania
- United Arab Emirates
- Ukrainian regions (18 of 27)
- United States*
- Greece
- Mongolia
- Kazakhstan
- Moldova
- Qatar
- Montenegro
- Bulgaria
- Malaysia
- Uruguay
- Mexico
- Baku (Azerbaijan)
- Chile
- North Macedonia
- Costa Rica
- Saudi Arabia
- Peru
- Georgia
- Indonesia
- Colombia
- Thailand
- Argentina
- Albania
- Brazil
- Palestinian Authority
- Uzbekistan
- Kosovo
- Panama*
- Jordan
- Philippines
- Morocco
- El Salvador
- Dominican Republic

OECD average: 472 points

OECD average: 58%

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

More students holding a growth mindset

Students' sense of belonging at school, across all countries and economies

Table II.B1.1.1

Based on students' reports

Mean index

Brunei Darussalam, Cambodia, Hong Kong (China)*, Philippines, Thailand, Jamaica*, Poland, Macao (China), Türkiye, New Zealand*, Morocco, Viet Nam, Czech Republic, Malaysia, El Salvador, United States*, Latvia*, Paraguay, Malta, Dominican Republic, Australia*, Singapore, Chile, Jordan, United Kingdom*, Brazil, Peru, Slovak Republic, United Arab Emirates, Argentina, Panama*, Bulgaria, Mexico, Guatemala, Palestinian Authority, Baku (Azerbaijan), Canada*, Col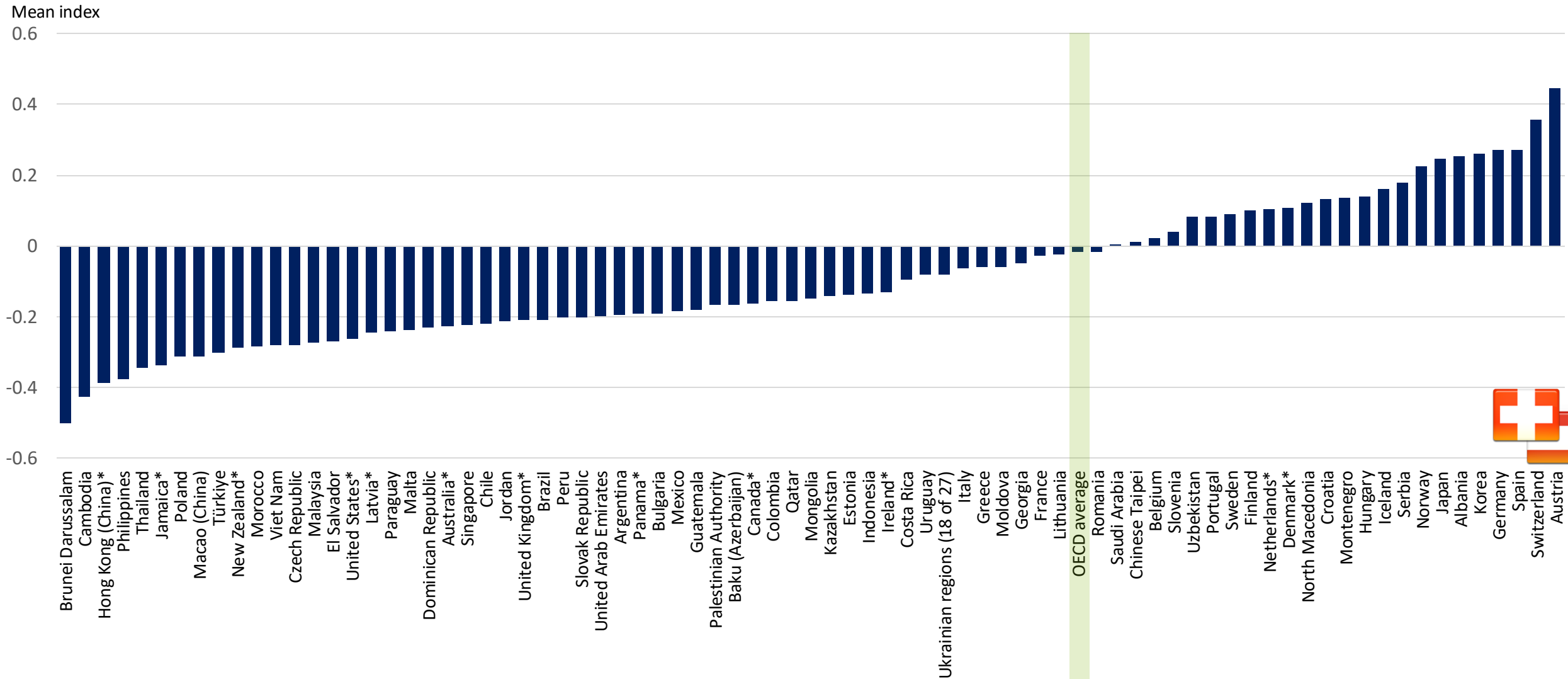ombia, Qatar, Mongolia, Kazakhstan, Estonia, Indonesia, Ireland*, Costa Rica, Uruguay, Ukrainian regions (18 of 27), Italy, Greece, Moldova, Georgia, France, Lithuania, OECD average, Romania, Saudi Arabia, Chinese Taipei, Belgium, Slovenia, Uzbekistan, Portugal, Sweden, Finland, Netherlands*, Denmark*, North Macedonia, Croatia, Montenegro, Hungary, Iceland, Serbia, Norway, Japan, Albania, Korea, Germany, Spain, Switzerland, Austria
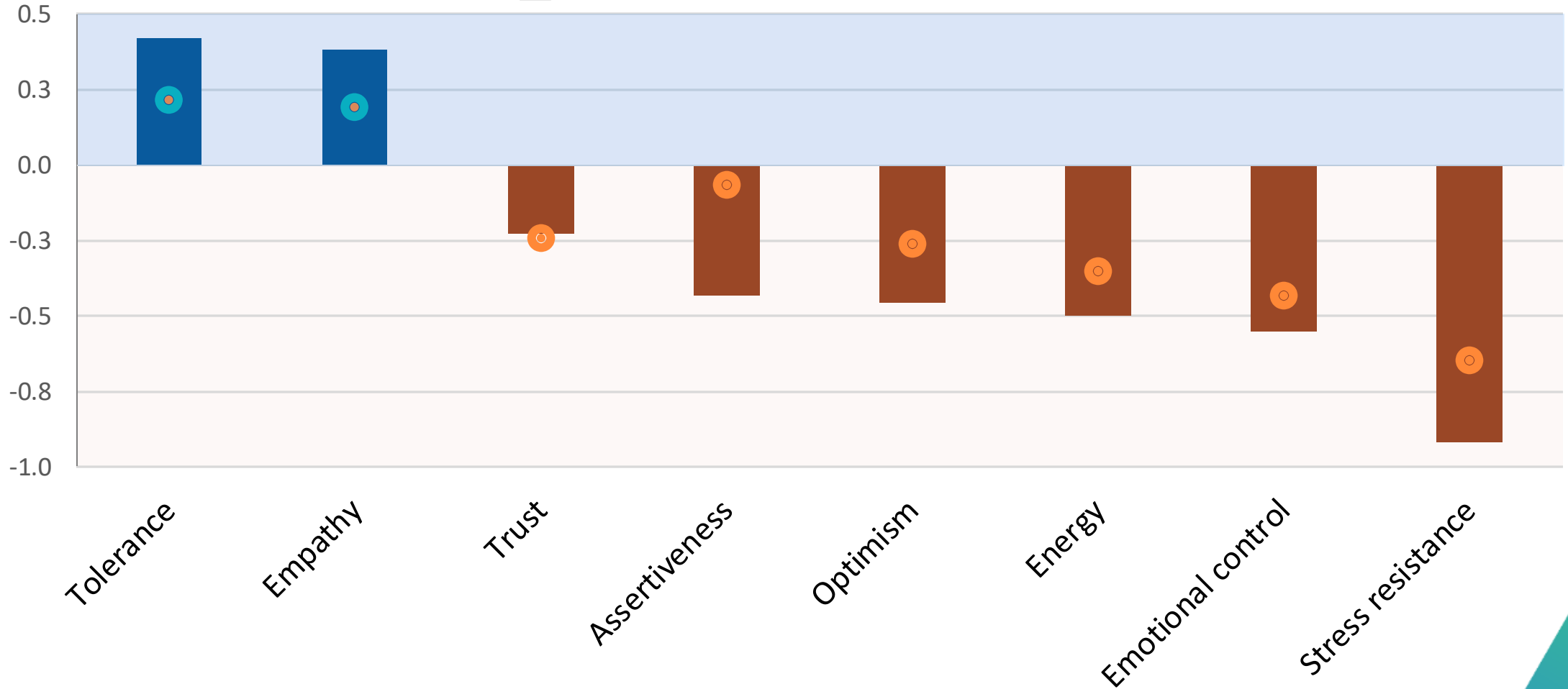
Girls and boys evaluate their skills differently...

Helsinki 2023 (Finland)   ⊙ Average

Boys report
lower levels

Girls report
lower levels

0.5

0.3

0.0

-0.3

-0.5

-0.8

-1.0

Tolerance Empathy Trust Assertiveness Optimism Energy Emotional control Stress resistance
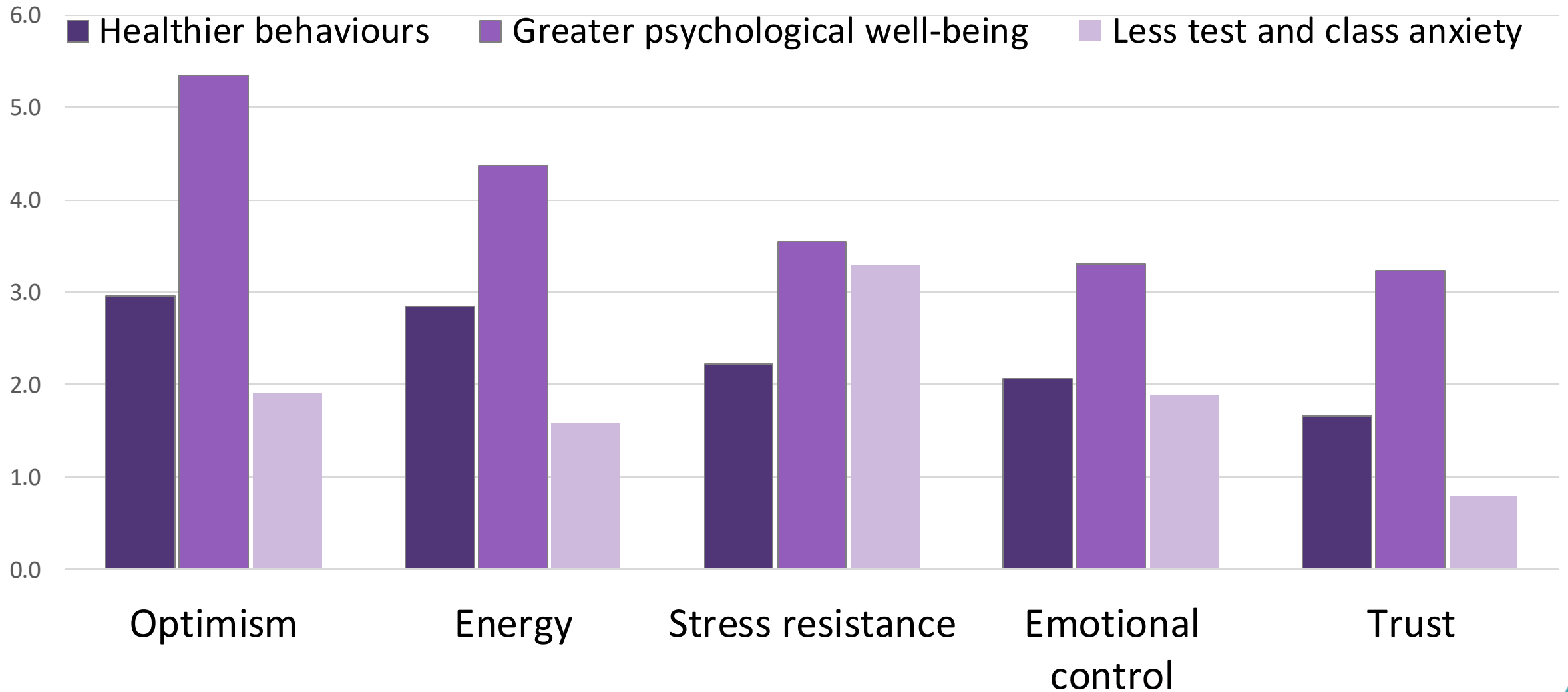
Standardised differences between boys and girls, 10- and 15-year-olds, average across sites

Students with greater emotional regulation skills, energy and trust are happier and healthier…

Legend: ■ Healthier behaviours ■ Greater psychological well-being □ Less test and class anxiety

Categories: Optimism, Energy, Stress resistance, Emotional control, Trust

Standardised regression coefficients of individual skills on students' health and well-being outcomes, 15-year-olds, average across sites

... and so are students with greater task performance and open-mindedness skills
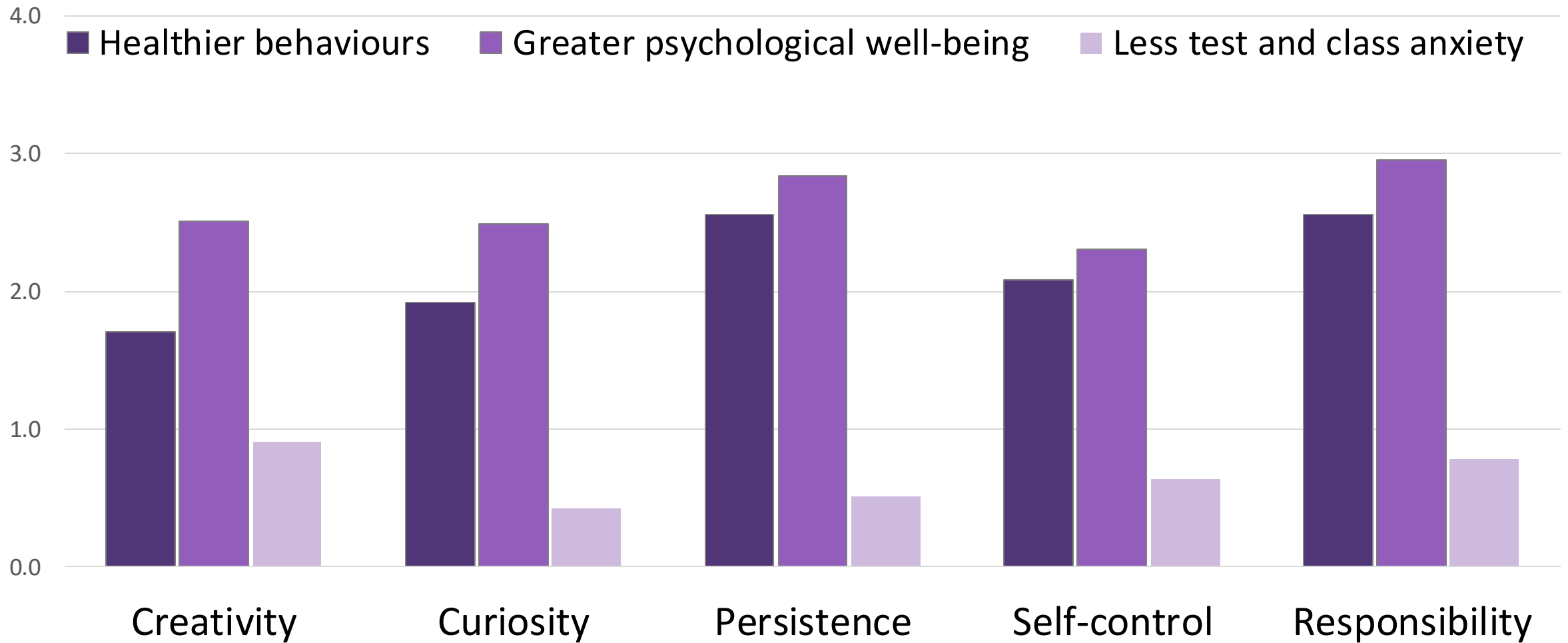
Standardised regression coefficients of individual skills on students' health and well-being outcomes, 15-year-olds, average across sites

Older students report **lower levels** of most social and emotional skills, particularly trust, energy and optimism, than younger students
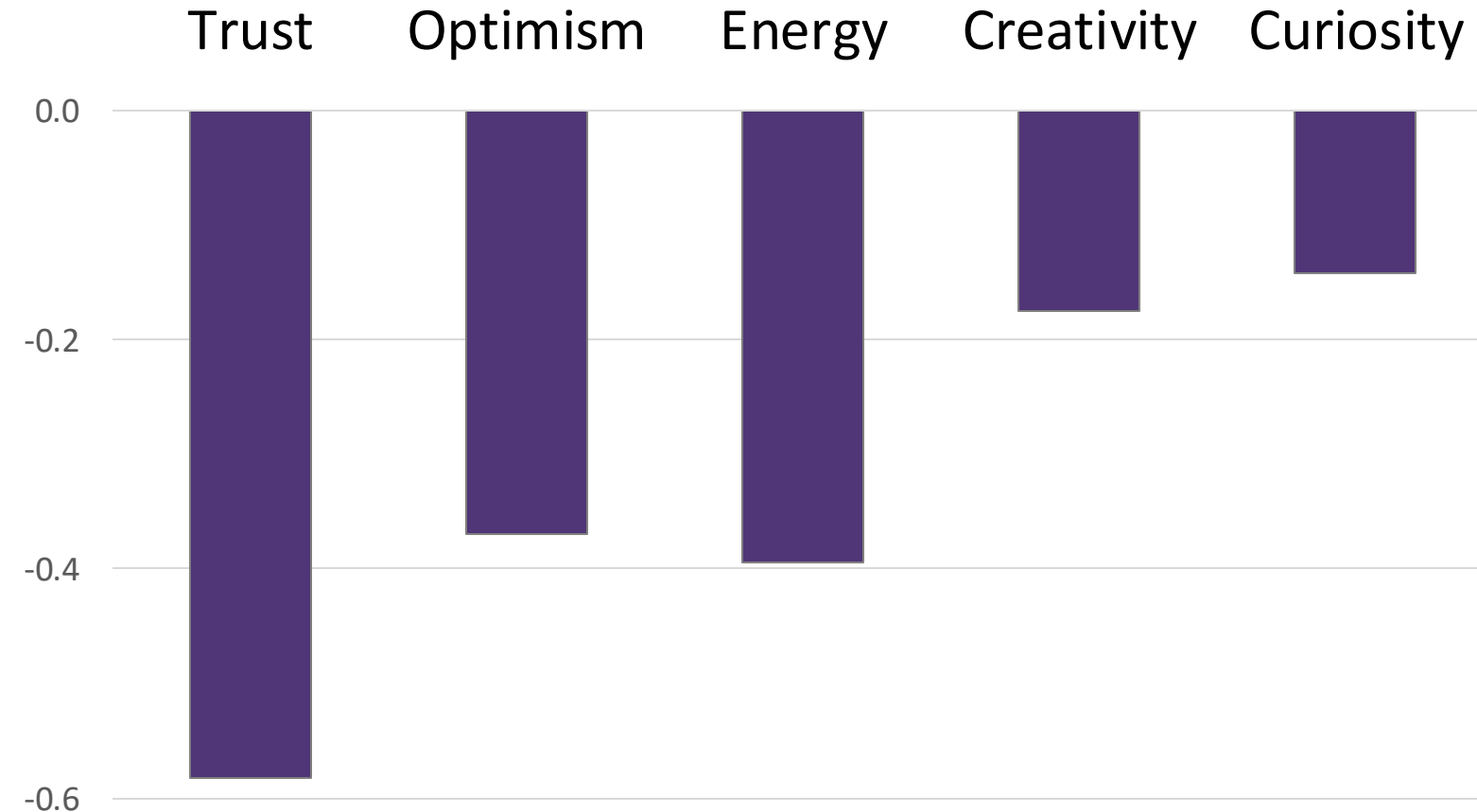
Standardised differences between 10- and 15-year-olds, average across sites

- Trust, optimism and energy are most strongly related to students' well-being outcomes

- Older students also report lower levels of creativity and curiosity, on average across sites

Students with healthier behaviours have better well-being outcomes
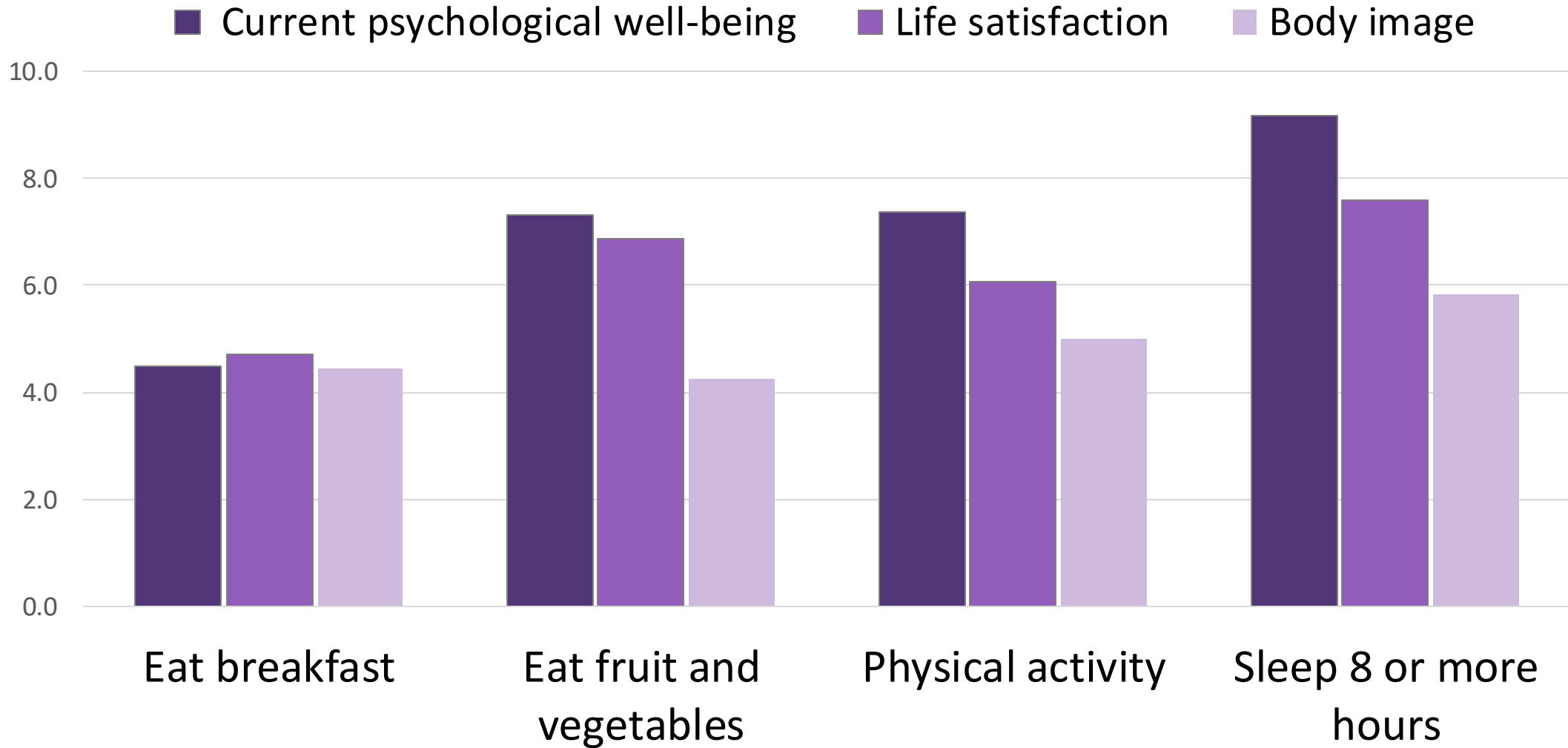
Regression coefficients of doing behaviour every day versus never on health and well-being outcomes, 15-year-olds, average across sites

Reasons for long-term absenteeism

Figure II.3.13

Percentage of students who reported the following reasons for having missed school for more than three consecutive months

Legend: ▲ Bottom country/economy   ■ OECD average   ▲ Top country/economy

Categories (x-axis):
- I could not pay school fees
- I was pregnant
- I had to get work to bring money home
- I was suspended for something
- I had to help with work at home, the family business or on the family land
- I could not reach school because of transportation problems
- I had to take care of a family member
- School was closed because of a natural disaster
- I was bored
- I did not feel safe at school
- I was sick

Learning time ≠ learning outcomes

Figure II.5.11

Based on students' reports

Hours

Score points in mathematics per hour of total learning time

Hours learning out of school

Hours learning in school

Morocco, Argentina, Colombia, Costa Rica, Uzbekistan, Mongolia, Peru, Albania, Cambodia, United Arab Emirates, Kosovo, Paraguay, Chile, Italy, Jordan, Malta, Palestinian Authority, Thailand, Kazakhstan, North Macedonia, Israel, Brazil, Uruguay*, Malaysia, Georgia, El Salvador, Panama*, Viet Nam, Guatemala, Dominican Republic, Baku (Azerbaijan), Jamaica*, Philippines, Moldova, Saudi Arabia, Singapore, Spain, Indonesia, Bulgaria, Greece, Brunei Darussalam, Portugal, Lithuania, Germany, Belgium, Mexico, United Kingdom*, Poland, Ireland*, France, OECD average, Serbia, Latvia*, Croatia, Qatar, Ukrainian regions (18 of 27), Chinese Taipei, Türkiye, Iceland, Hungary, Austria, Hong Kong (China)*, Montenegro, Macao (China), Romania, Japan, Estonia, Australia*, Slovenia, Sweden, Norway, Denmark*, Korea, Netherlands*, Canada*, Slovak Republic, New Zealand*, Finland, Czech Republic, United States*, Switzerland

Figure II.5.11 — Learning time ≠ learning outcomes
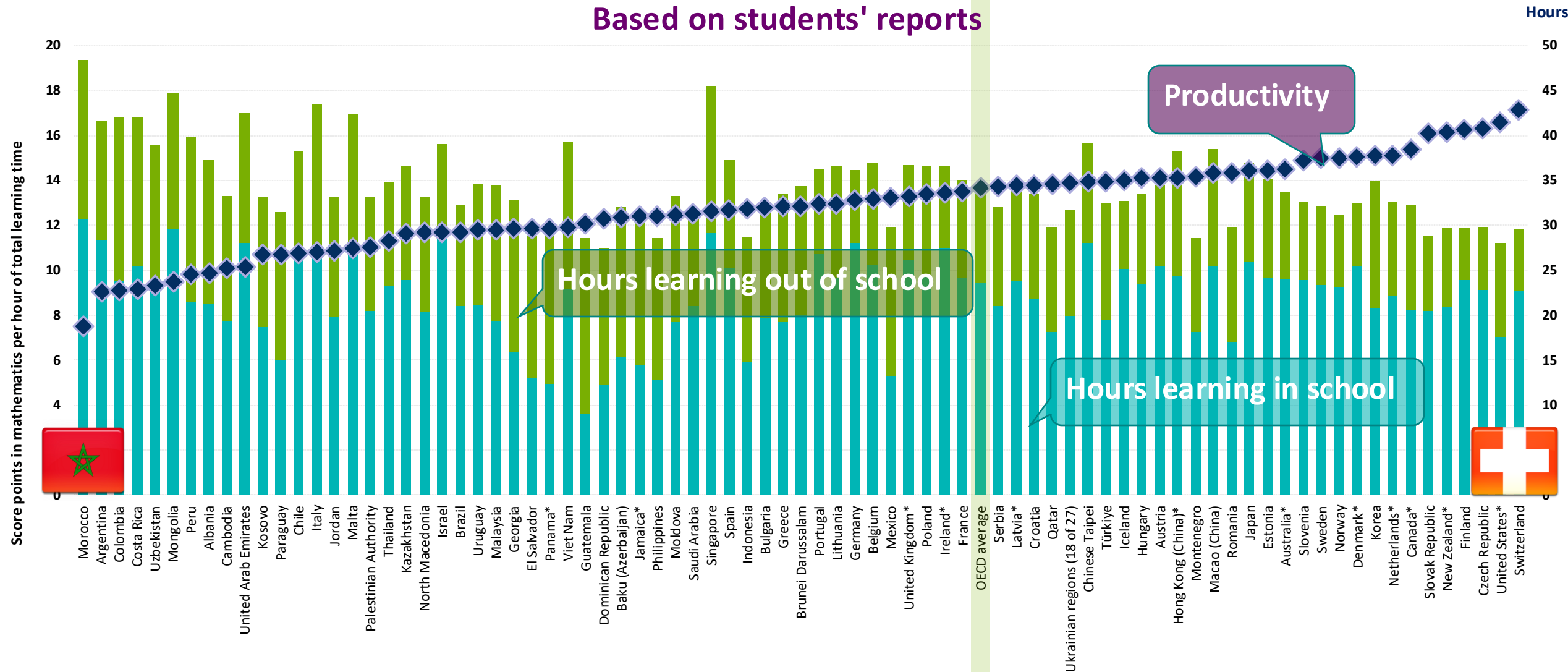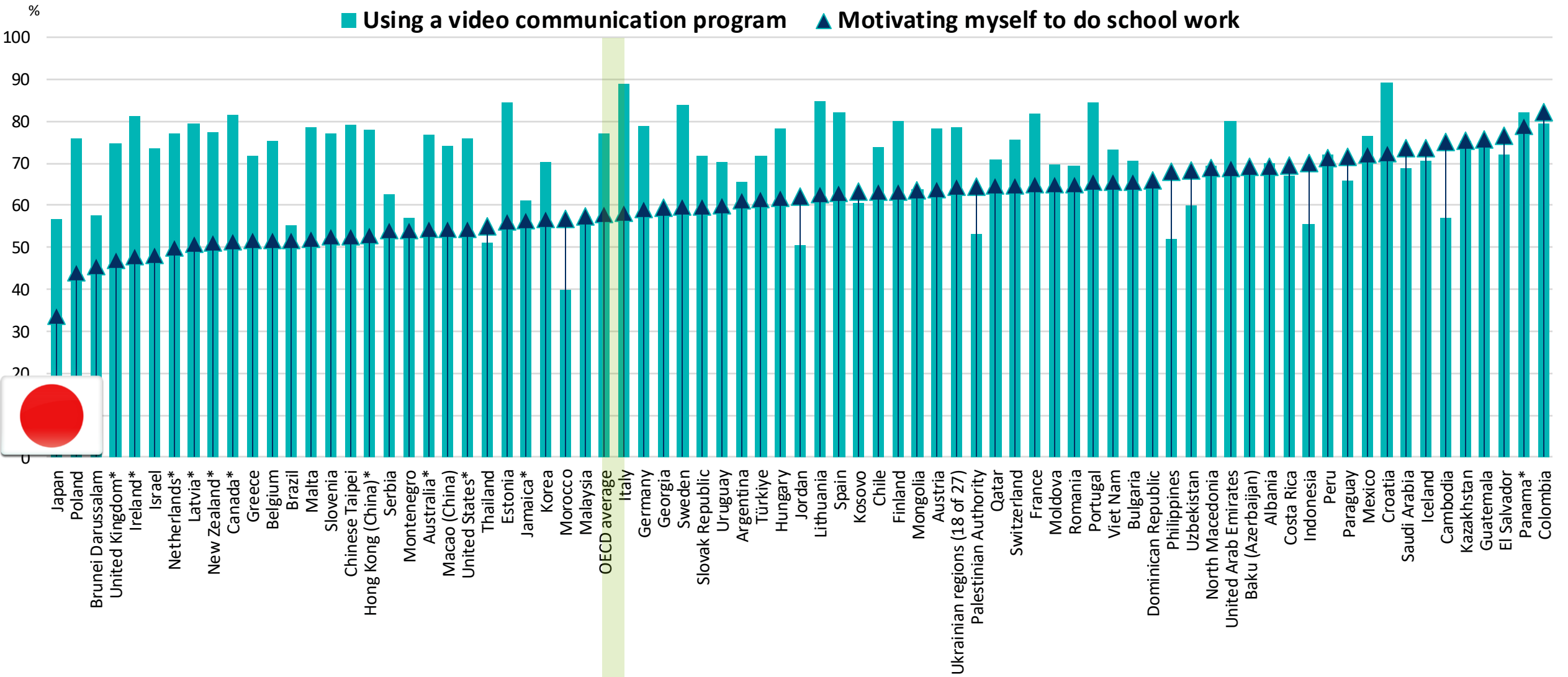
Based on students' reports

Students' confidence in self-directed learning

Figure II.2.5

Percentage of students who reported feeling confident/very confident in taking the following actions if their school building closes again in the future

Legend: ■ Using a video communication program   ▲ Motivating myself to do school work

Countries/economies (x-axis, left to right): Japan, Poland, Brunei Darussalam, United Kingdom*, Ireland*, Israel, Netherlands*, Latvia*, New Zealand*, Canada*, Greece, Belgium, Brazil, Malta, Slovenia, Chinese Taipei, Hong Kong (China)*, Serbia, Montenegro, Australia*, Macao (China), United States*, Thailand, Estonia, Jamaica*, Korea, Morocco, Malaysia, OECD average, Italy, Germany, Georgia, Sweden, Slovak Republic, Uruguay, Argentina, Türkiye, Hungary, Jordan, Lithuania, Spain, Kosovo, Chile, Finland, Mongolia, Austria, Ukrainian regions (18 of 27), Palestinian Authority, Qatar, Switzerland, France, Moldova, Romania, Portugal, Viet Nam, Bulgaria, Dominican Republic, Philippines, Uzbekistan, North Macedonia, United Arab Emirates, Baku (Azerbaijan), Albania, Costa Rica, Indonesia, Peru, Paraguay, Mexico, Croatia, Saudi Arabia, Iceland, Cambodia, Kazakhstan, Guatemala, El Salvador, Panama*, Colombia
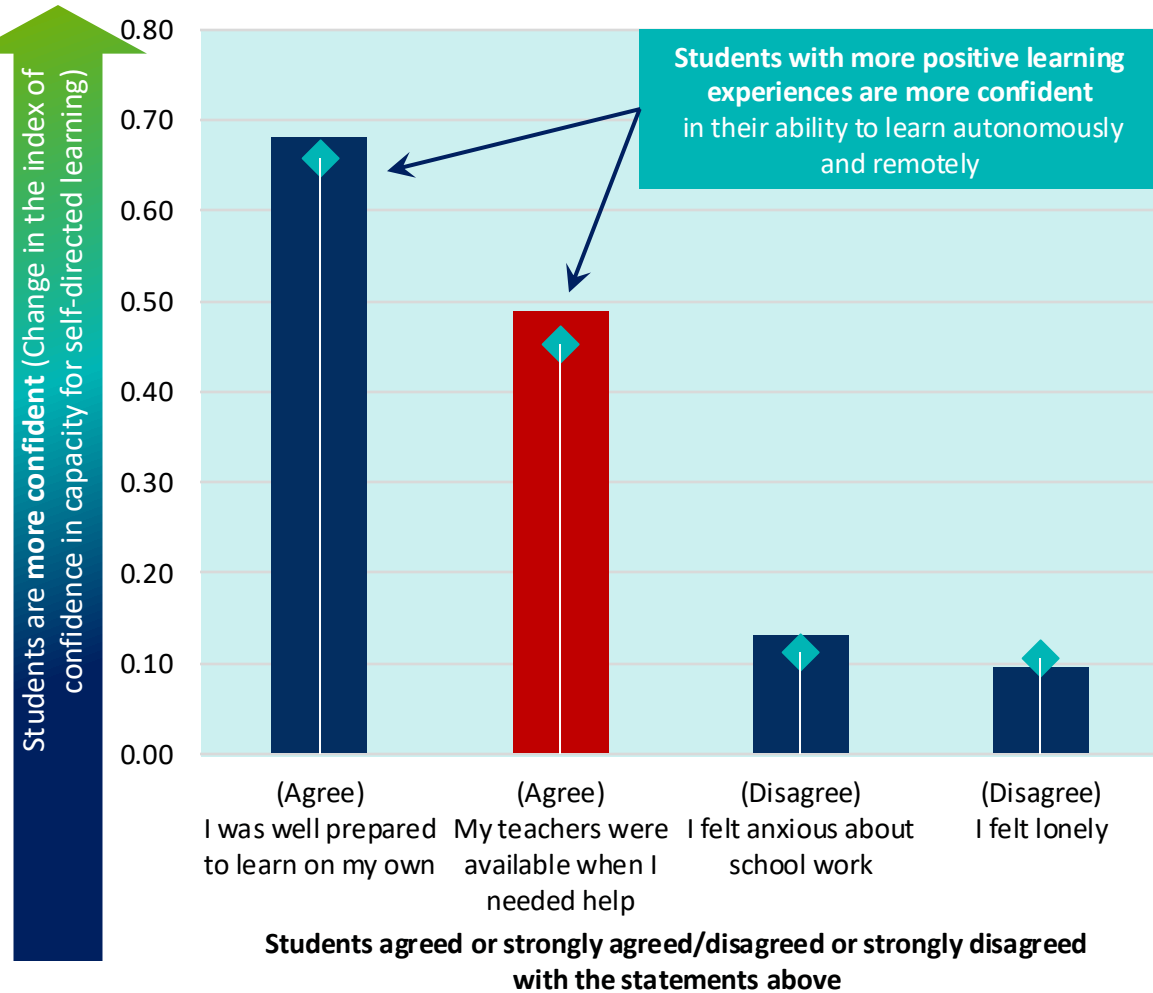
Students learn best from teachers they love
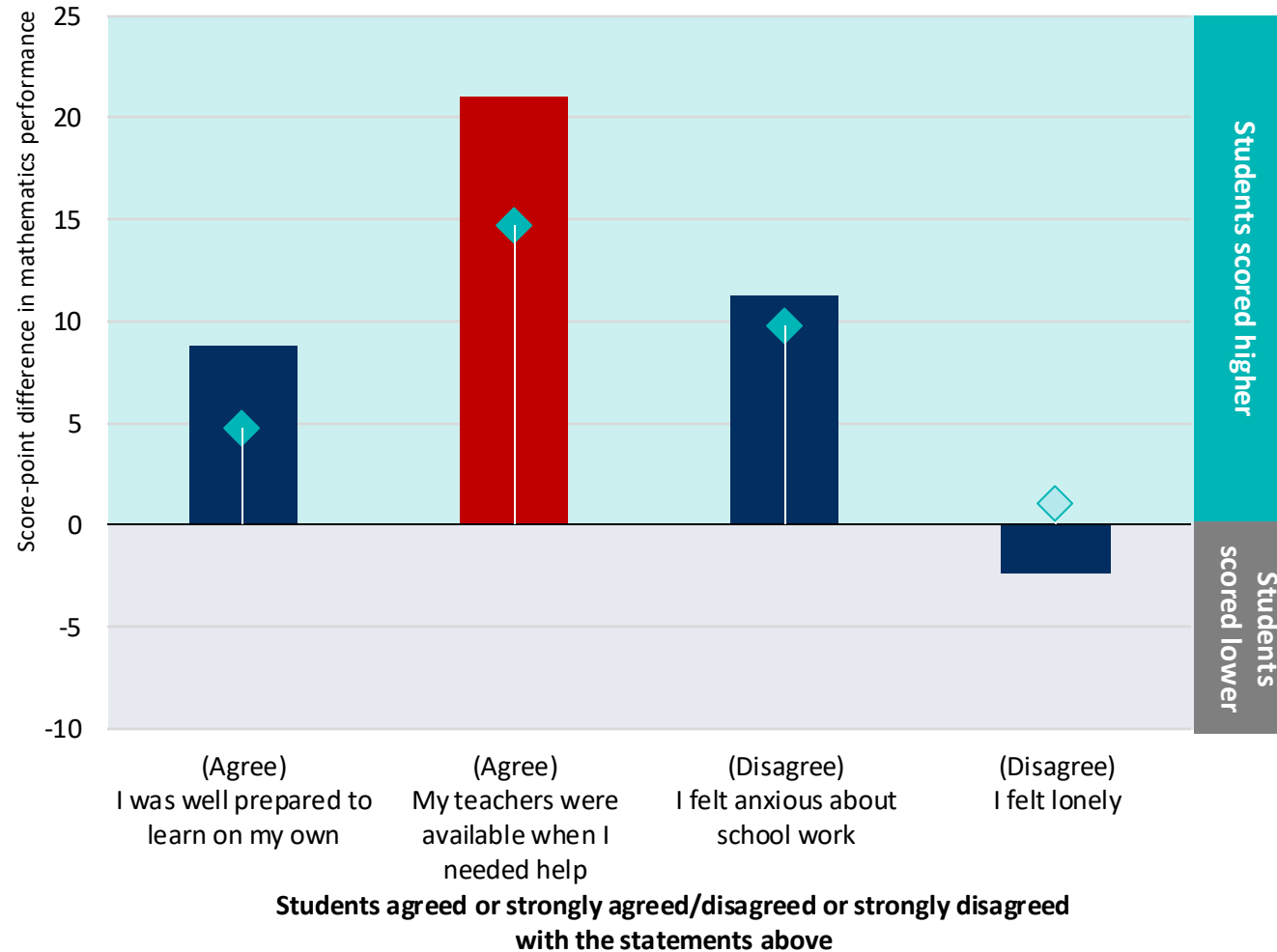## Remote learning, mathematics performance and confidence in self-directed learning

Figure II.2.12

Change in the index of confidence in students' capacity for self-directed learning/in mathematics performance, when students agreed or disagreed with the following statements about the time when their school building was closed because of COVID-19; OECD average

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

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

Students are **more confident** (Change in the index of confidence in capacity for self-directed learning)

Students with more positive learning experiences are more confident in their ability to learn autonomously and remotely

Score-point difference in mathematics performance

Students scored higher

Students scored lower

(Agree) I was well prepared to learn on my own

(Agree) My teachers were available when I needed help

(Disagree) I felt anxious about school work

(Disagree) I felt lonely

Students agreed or strongly agreed/disagreed or strongly disagreed with the statements above

Thank you!