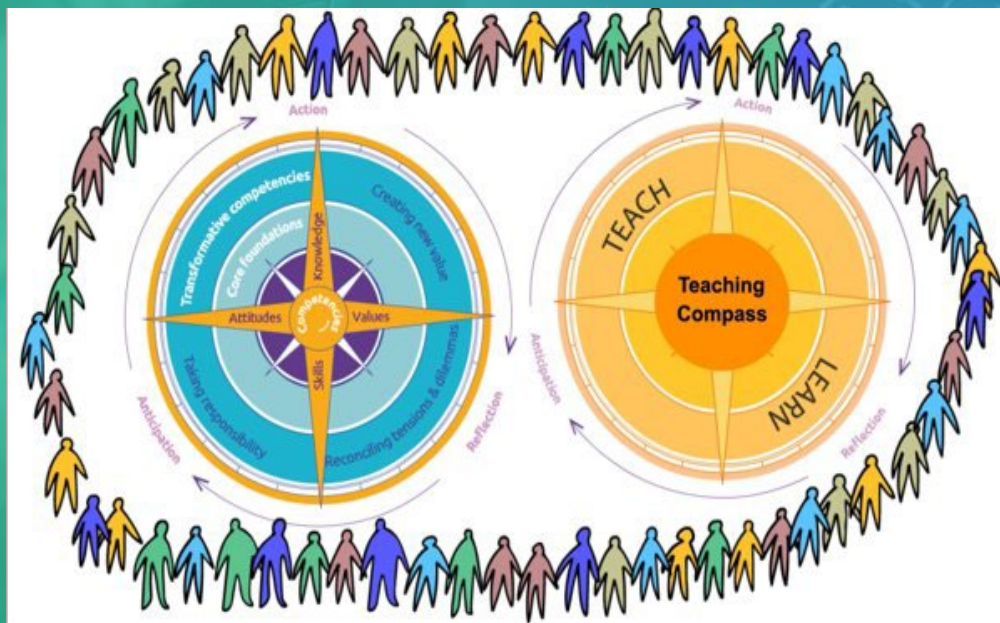


# 23rd OECD/Japan Seminar

## Future of Education and Skills 2030/2040: From OECD Learning Compass to Teaching Compass





## Many disconnects

**Infinite growth imperative**

**Finite resources of planet**

**Financial economy**

**Real economy**

**The wealthy**

**The poor**

**Gross domestic product**

**Well-being of people**

**Technology**

**Social needs**

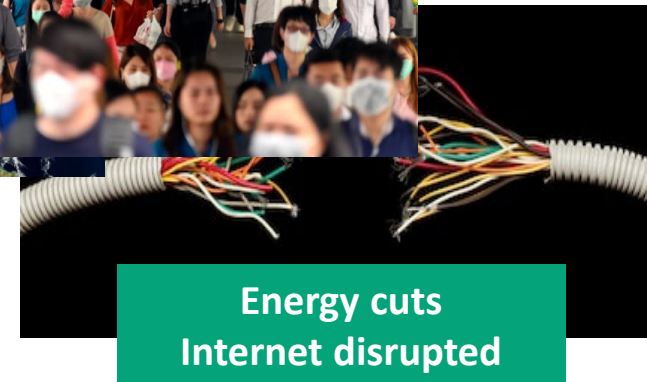
**Governance**

**Voicelessness of people**



# The future will always surprise us

Impact



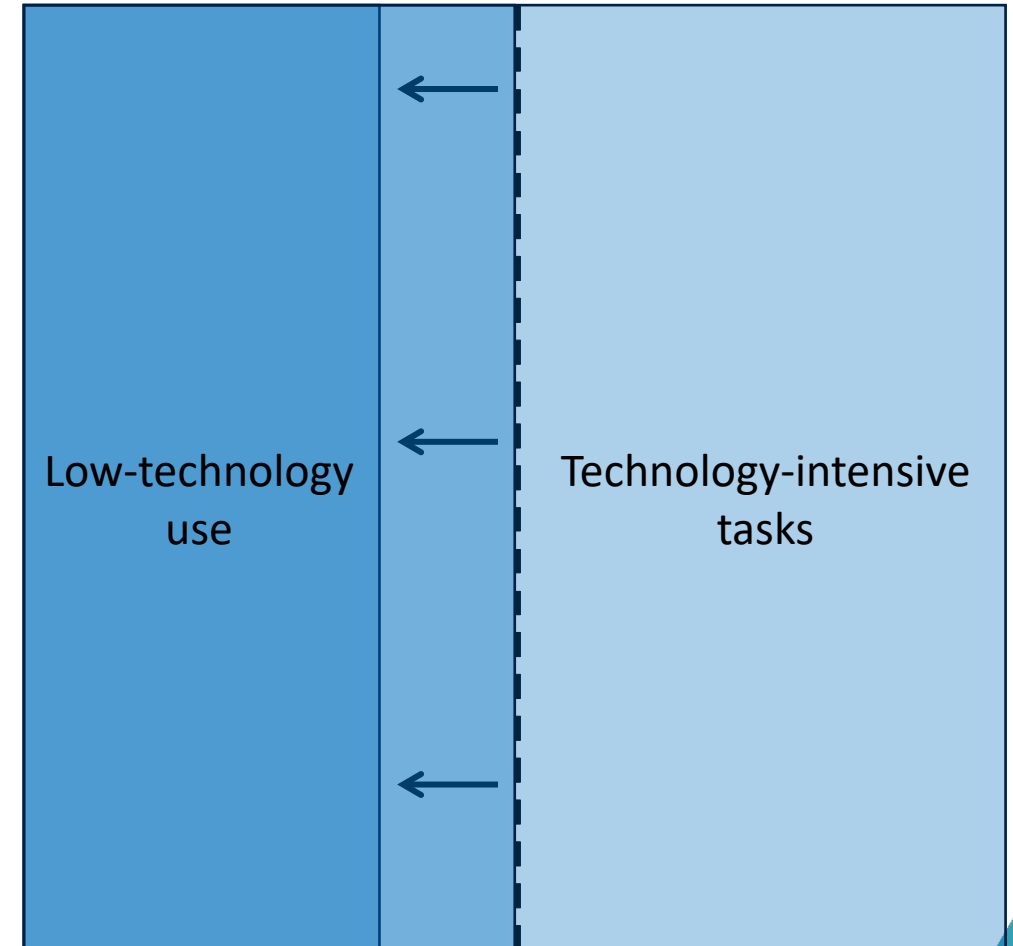
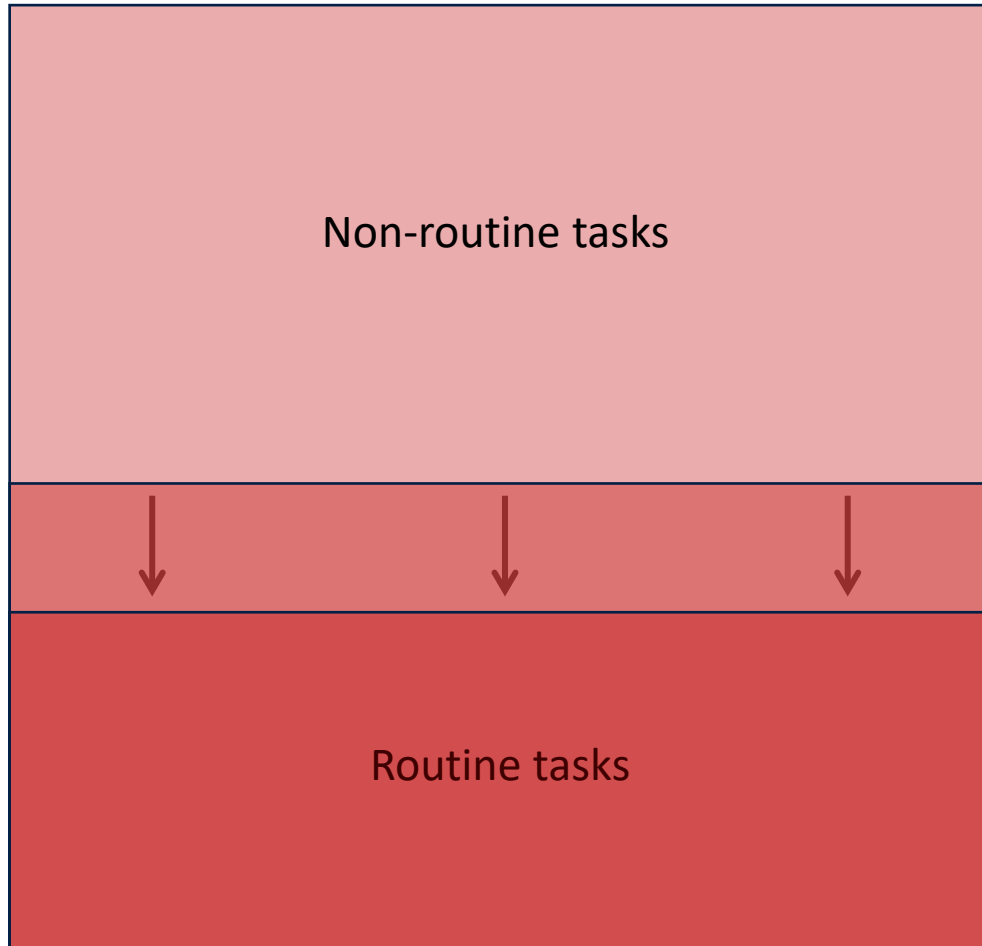
Uncertainty

Restricted Use - À usage restreint



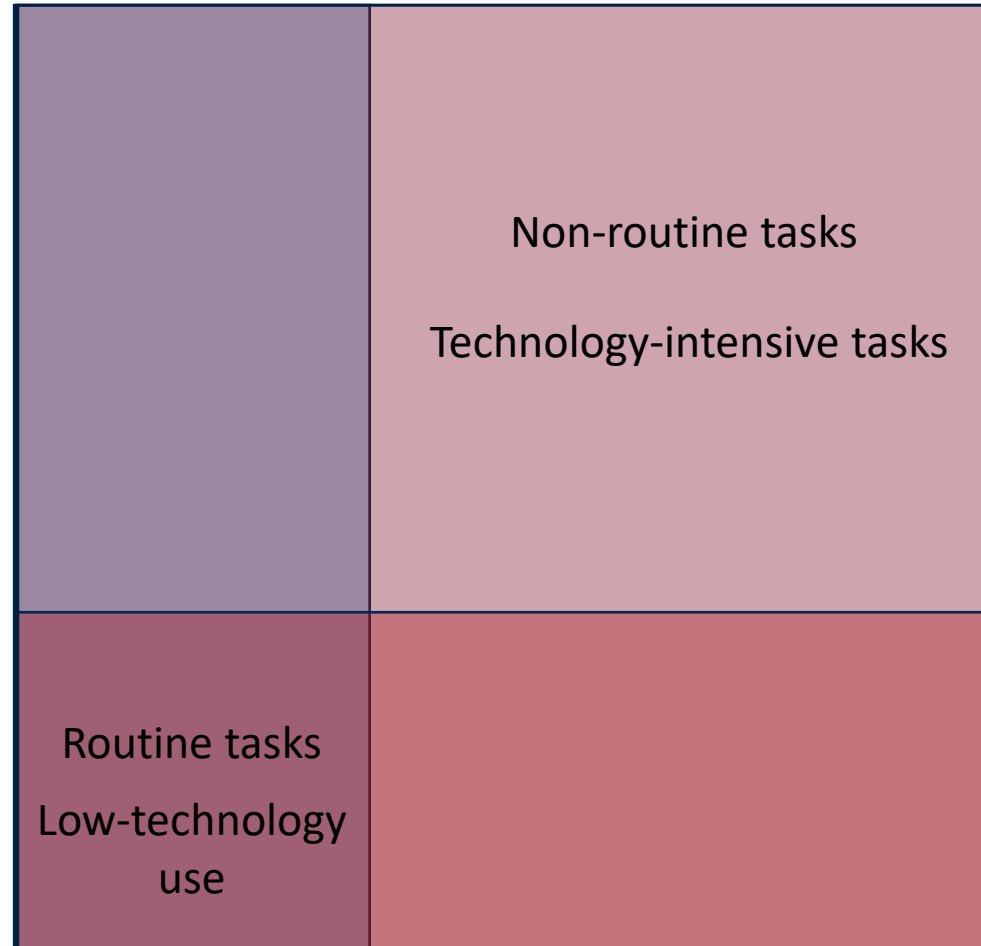
# The kinds of things that are easy to teach...

... have now become easy to digitise and automate





The kinds of things that are easy to teach...  
... have now become easy to digitise and automate







# AI still has many limitations, but will improve

## Near-term

### Tracability

- Trace and identify sources,
- Improve citations

### Accuracy

- Incorporate fact-checking

Mid-term

Interpretation

• Understanding semantics of queries

• More natural writing style



# AI still has many limitations, but will improve

## Mid-term

### Interpretation

- Understanding semantic of queries
- More natural writing style

#### Long-term

##### Reduced bias

→ Avoid that bias in training data is mirrored

##### Increased originality

→ Get beyond the synthesis of training data



## AI still has many limitations, but will improve

### Long-term

#### Reduced bias

- Avoid that bias in training data is inherited

#### Increased originality

- Go beyond the synthesis of training data





## A balancing act





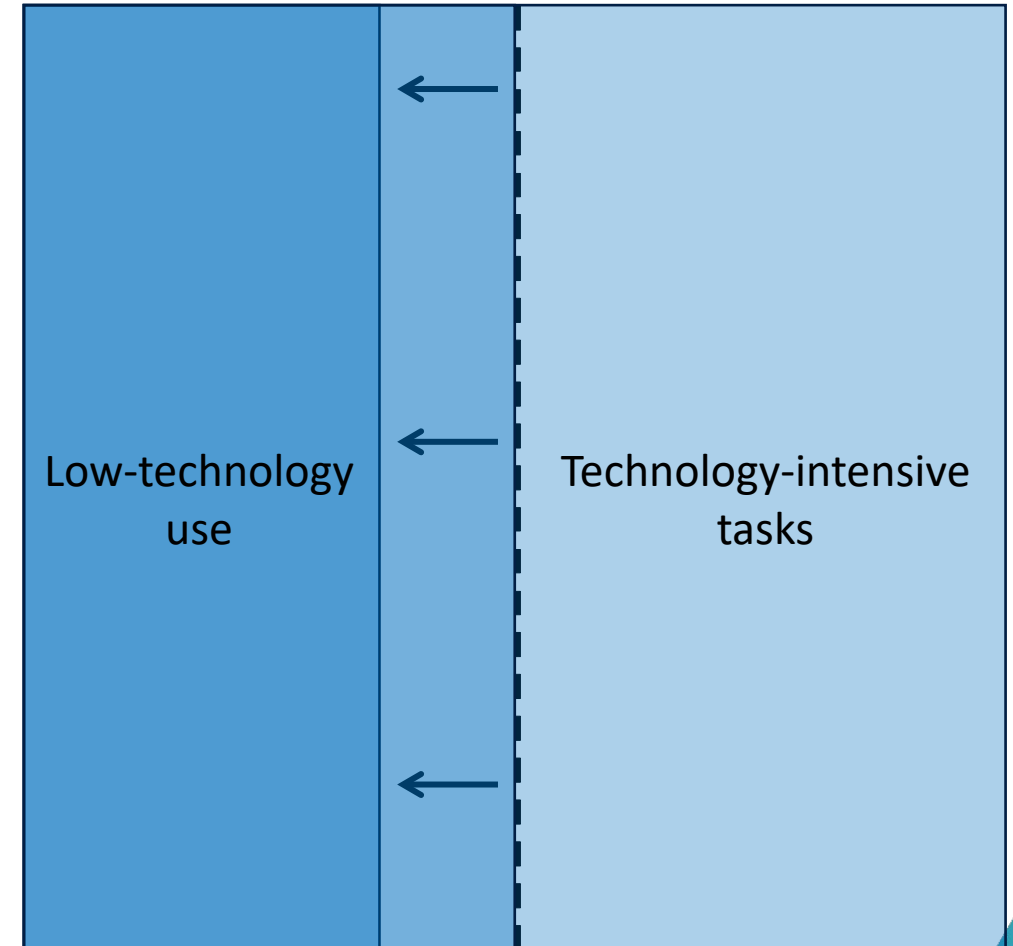
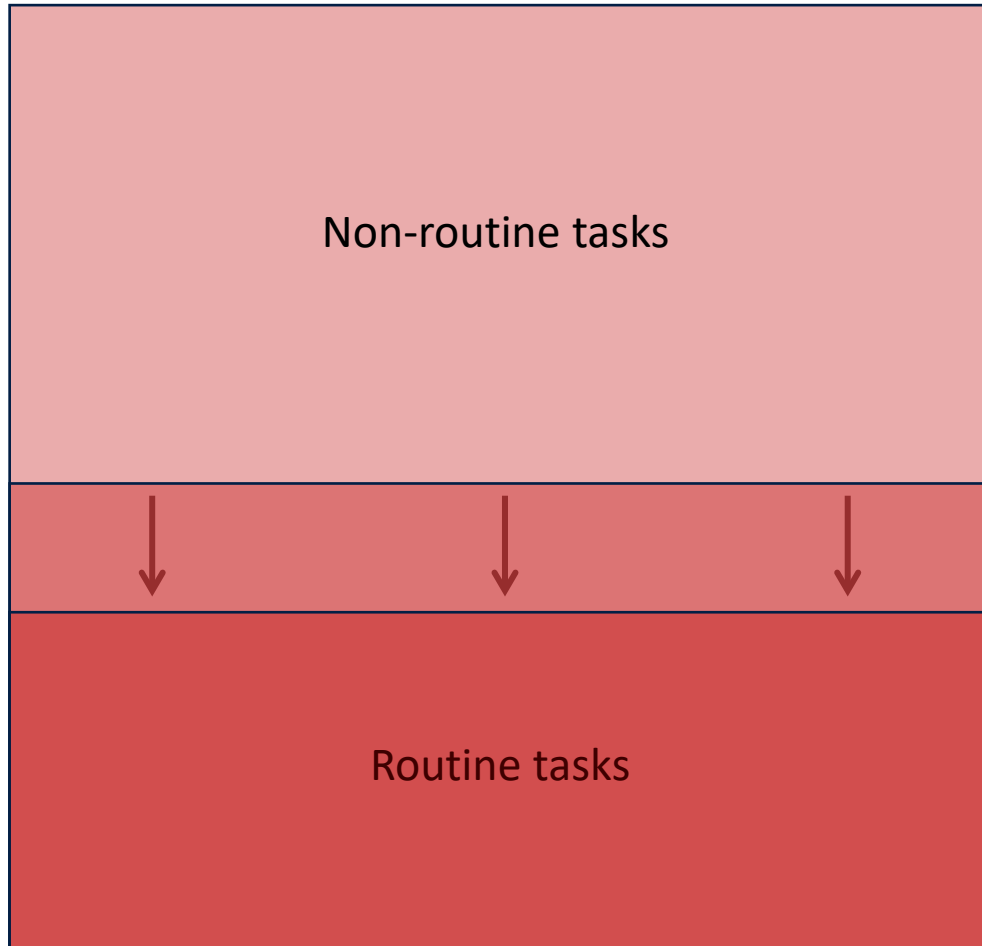
# The future will always surprise us





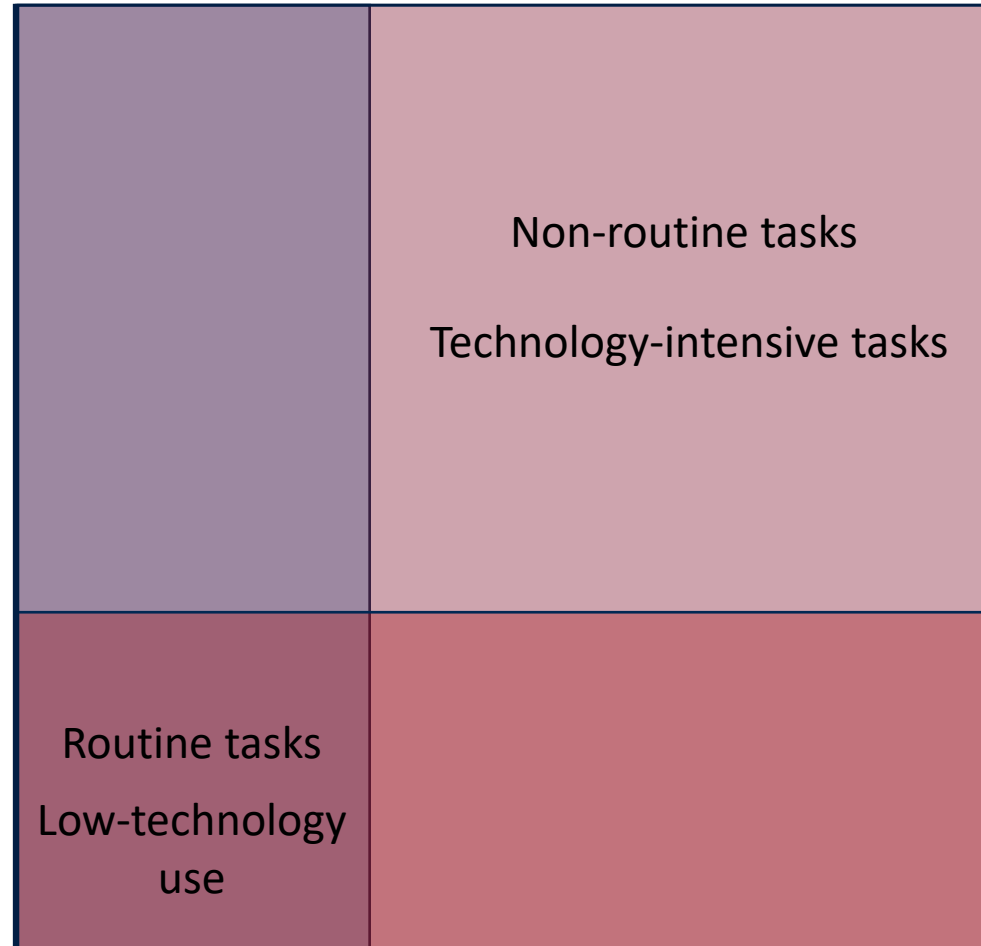
# The kinds of things that are easy to teach...

... have now become easy to digitise and automate





The kinds of things that are easy to teach...  
... have now become easy to digitise and automate





# Education in an AI world





## 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 **ability 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

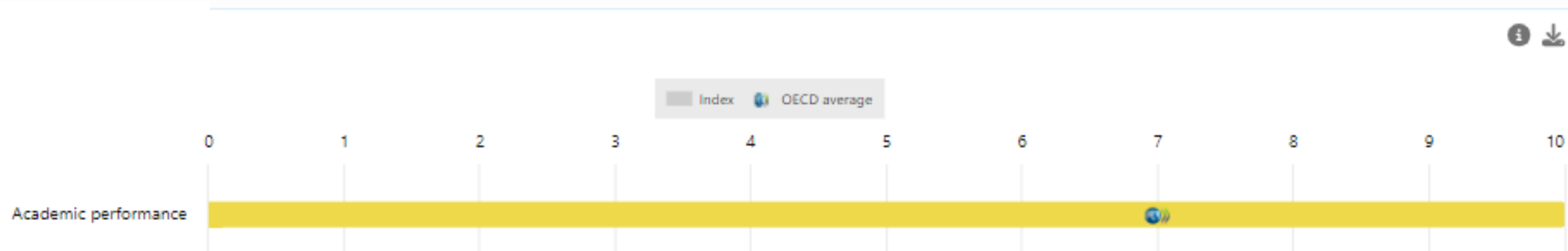
Openness to diversity



# PISA 2022: Singapore



## » What are Singapore's strengths and areas for improvement

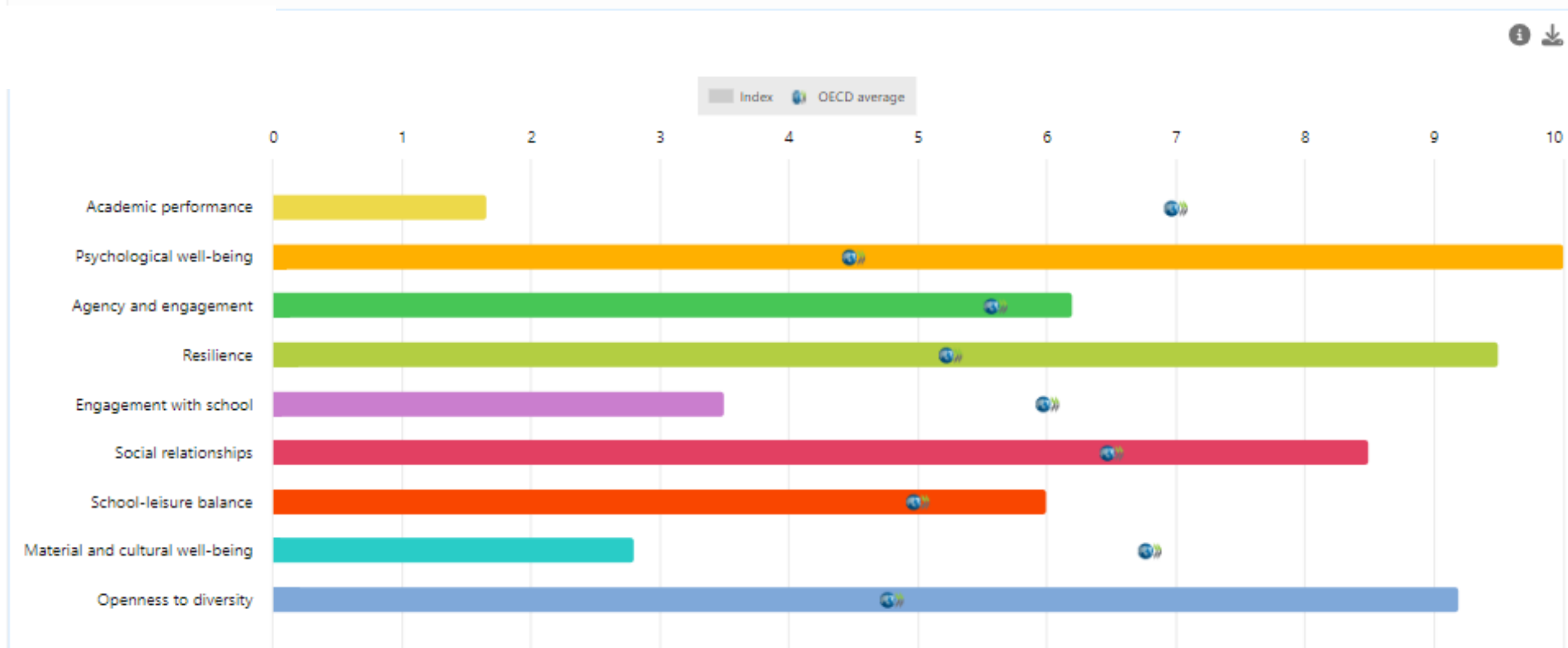




# PISA 2022: Albania



## What are Albania's strengths and areas for improvement

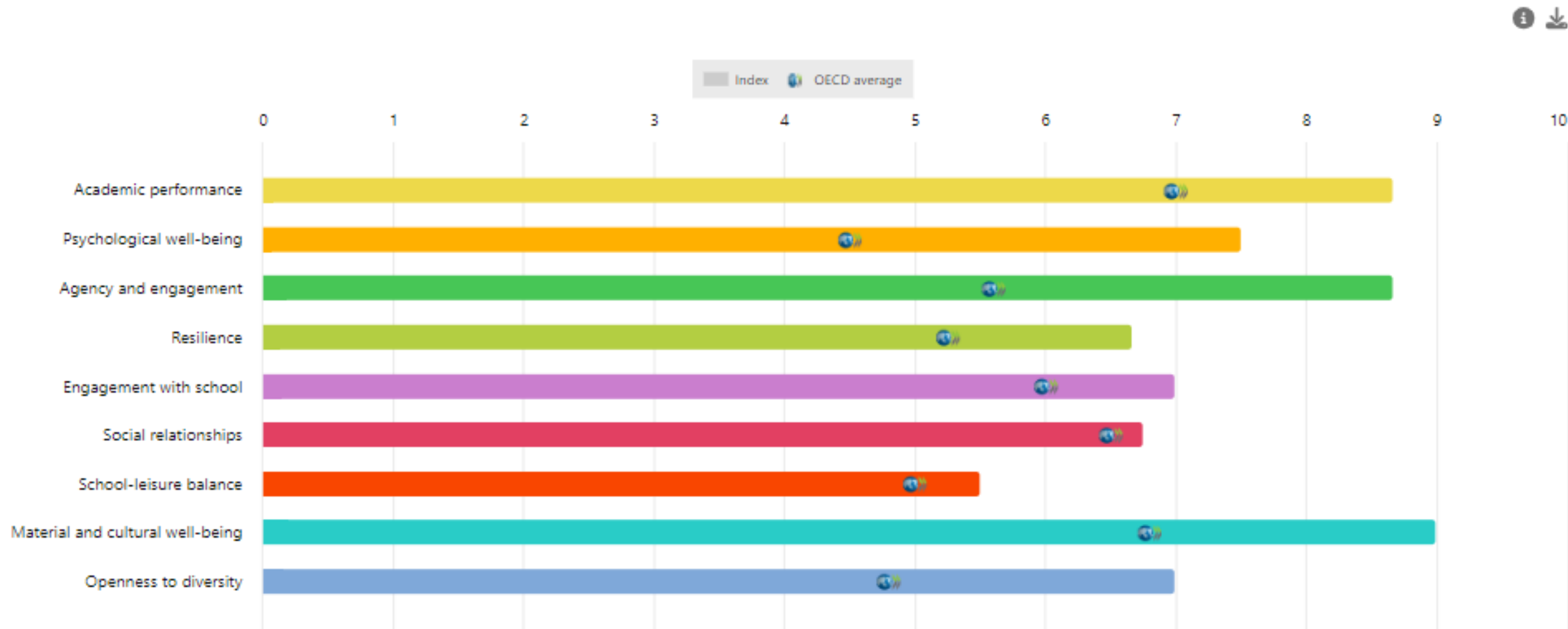




# PISA 2022: Denmark



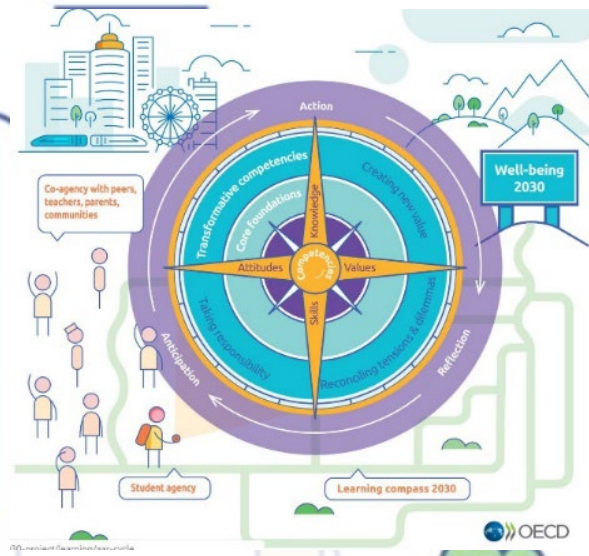
## » What are Denmark's strengths and areas for improvement



# What does it mean for education?

## OECD Learning Compass

# OECD Learning Compass, centred around student agency



→ sense of purpose, sense-making/meaning-making, hope, self-worth (self-efficacy, sense of belonging, sense of being and well-being, growth-mindset), curiosity, self-directed learning, etc.

→ Students learn and develop their **agency** in interactions with others e.g. peers and friends, teachers, parents, siblings, others from any communities they belong to etc. (**co-agency**), and also in dynamics of a group (**collective agency**).



For students to thrive in a world of uncertainty and complexity, and shape a better future, they need....

## Transformative Competencies

Creating new value

Taking responsibility

Reconciling  
Tensions, dilemmas,  
trade-offs, contractions,  
ambiguities

# OECD Teaching Compass

## Teacher Agency, Co-agency, Collective Agency



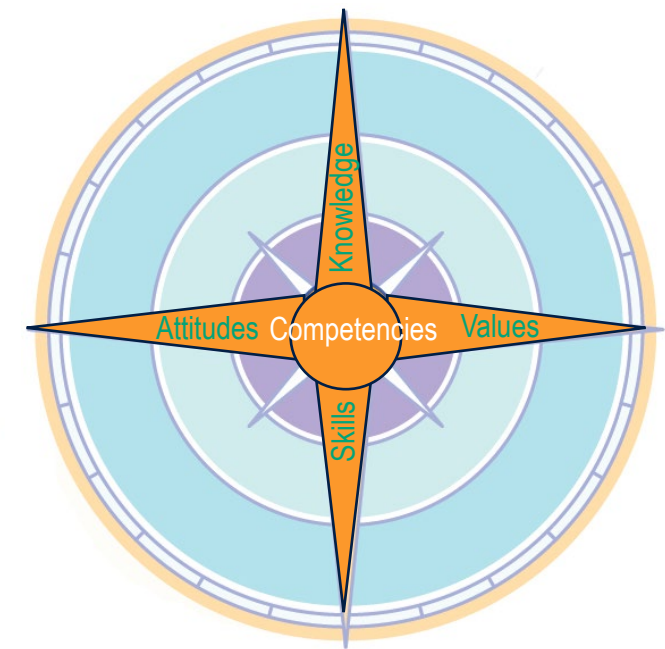


# Teacher agency

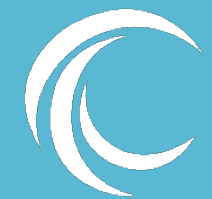
Teachers find a sense of purpose, meaning and professional identity in as well as compassion for the teaching profession. They feel empowered by taking part in decision-making and find a sense of ownership of and professional responsibility for their own decisions.

**Co-Agency**  
with peers, teachers,  
parents, communities

**Teacher Agency**



Well-being  
2030



# Teachers joined the profession to make a difference to society and children...



Percentage of teachers who report that the following elements were of "moderate" or "high" importance in becoming a teacher

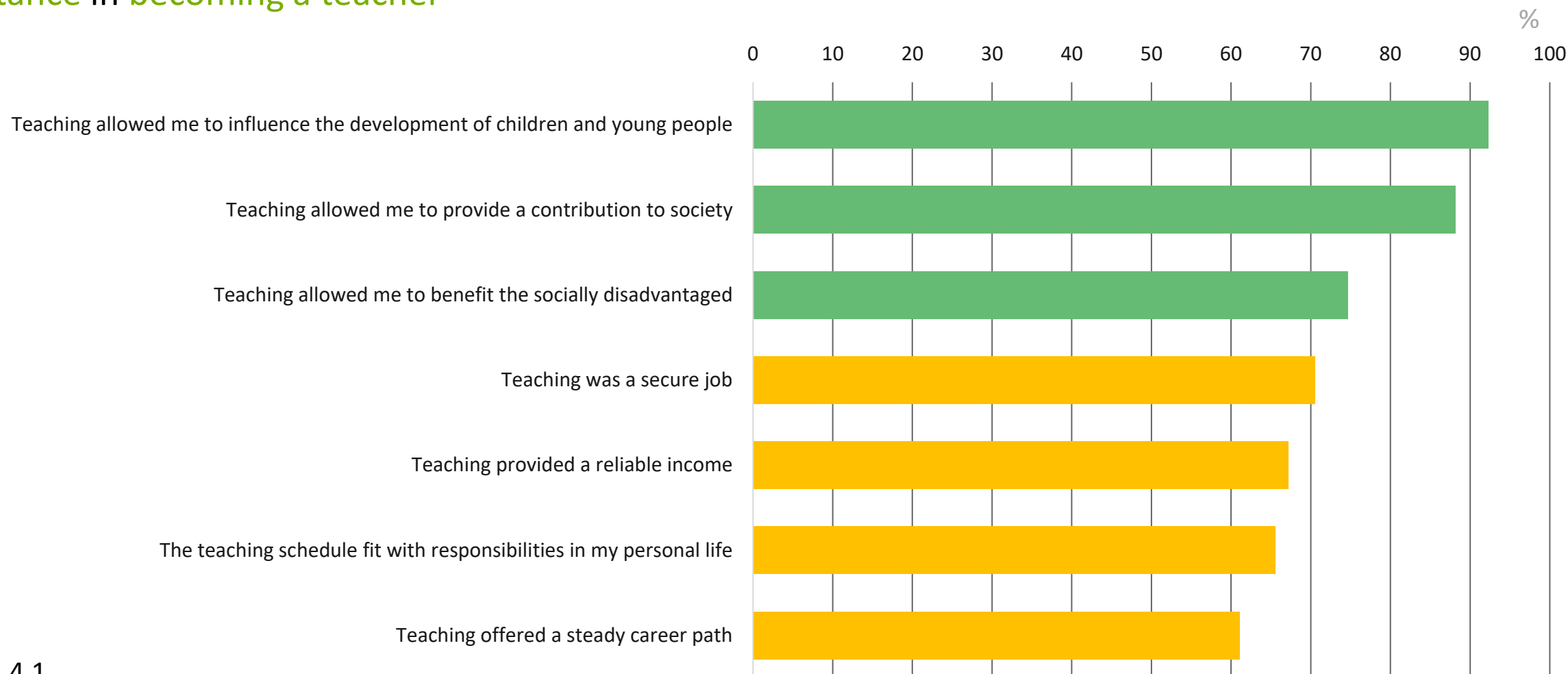
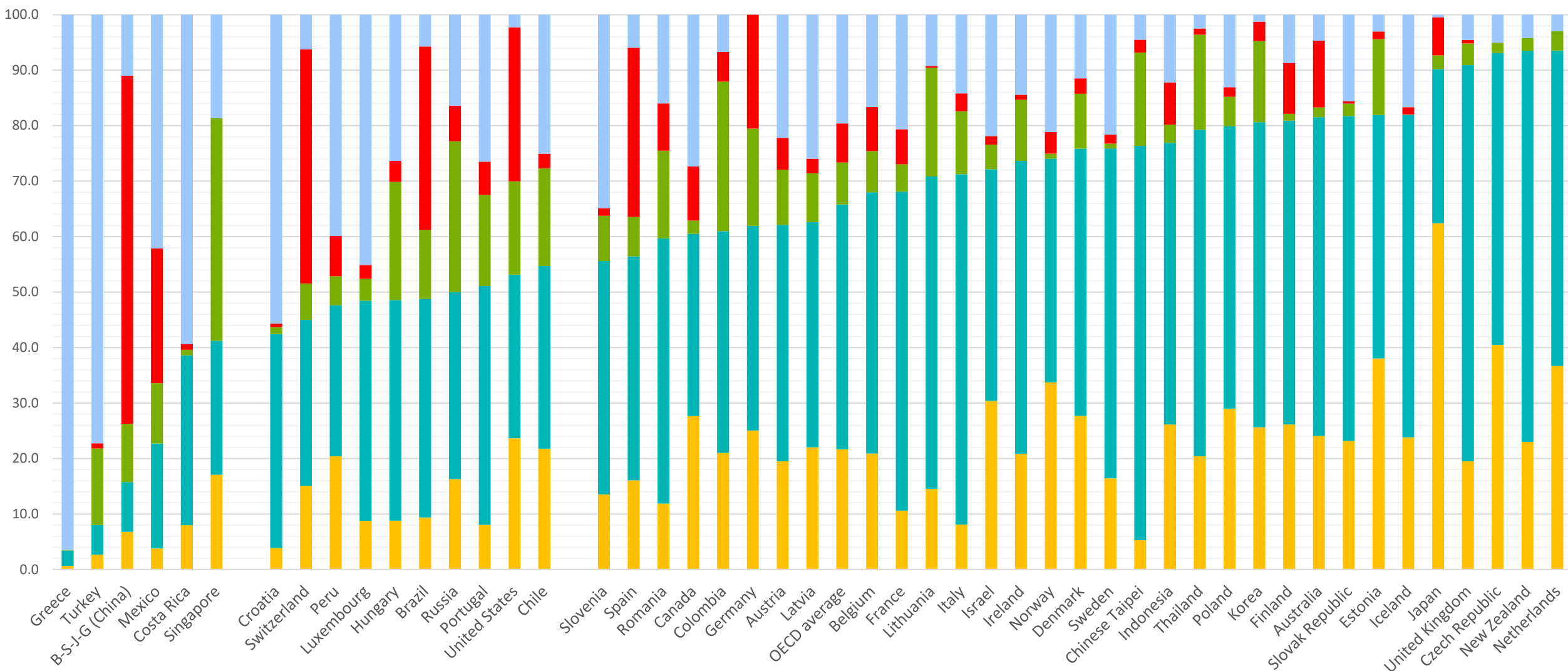


Fig I.4.1



# Distribution of responsibility for curriculum decisions

Principal Teachers School board Local/Regional authority National authority



Source: OECD, PISA 2015 Database, Table II.4.2. Statlink: <http://dx.doi.org/10.1787/888933435826>.

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# Teacher co-agency

Teachers work with and learn through the interactions in multi-directions: e.g.

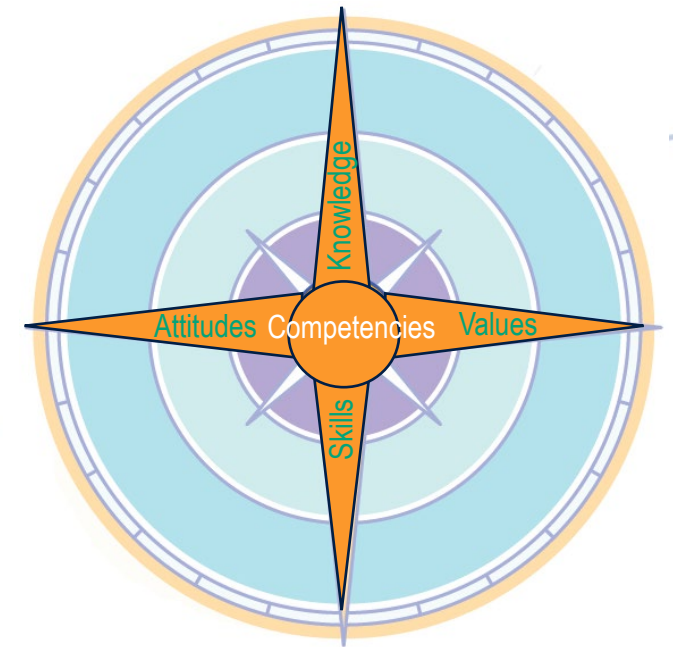
- teacher-student
- teacher-teacher
- teacher-school leader,
- teacher-parent,
- teacher-community,
- teacher-technology,
- teacher-x, etc. etc.

**Co-Agency  
with peers, teachers,  
parents,  
communities**

Collective Agency

Teacher Agency

Well-being  
2030







# Students learn best from teachers they love

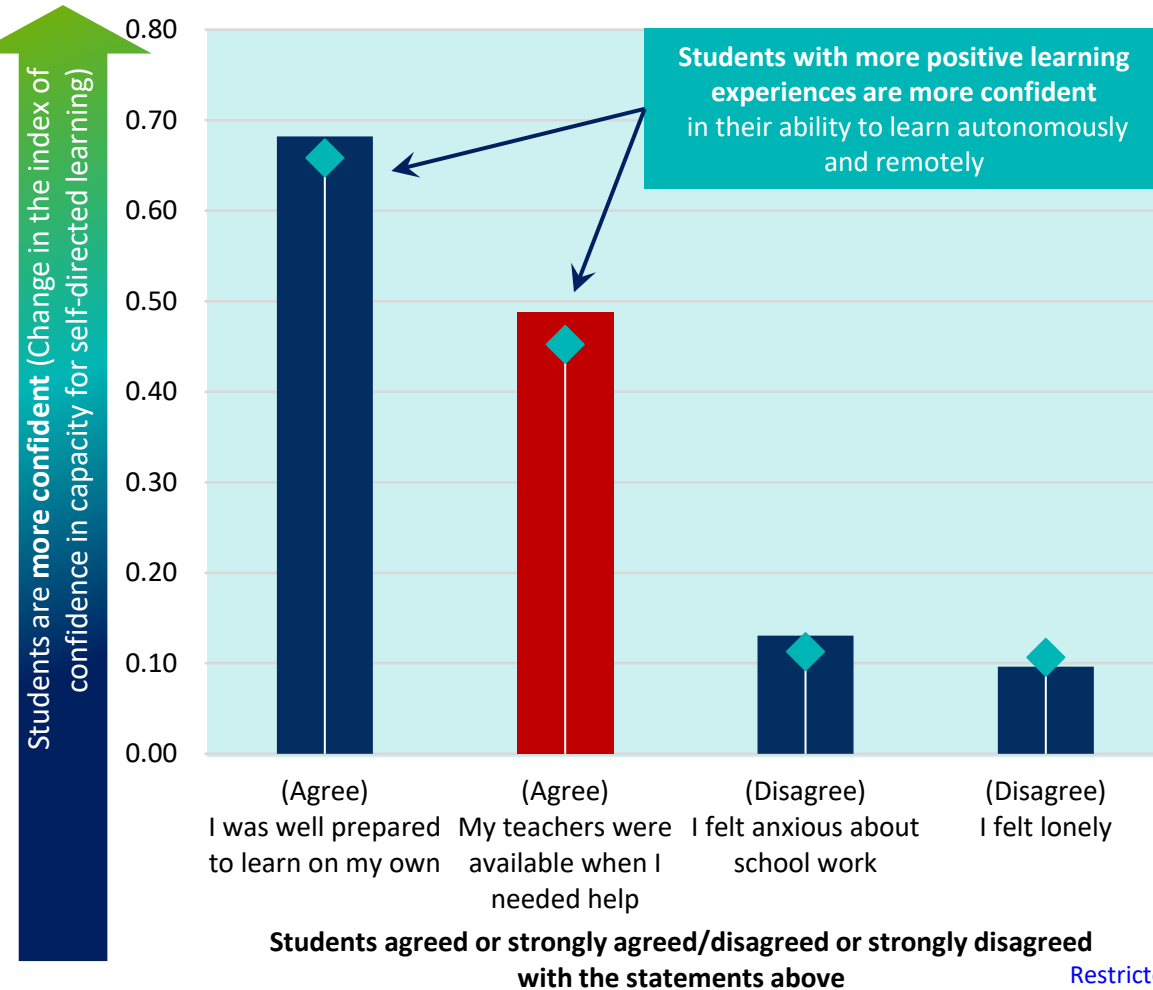
Remote learning, mathematics performance and confidence in self-directed learning

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

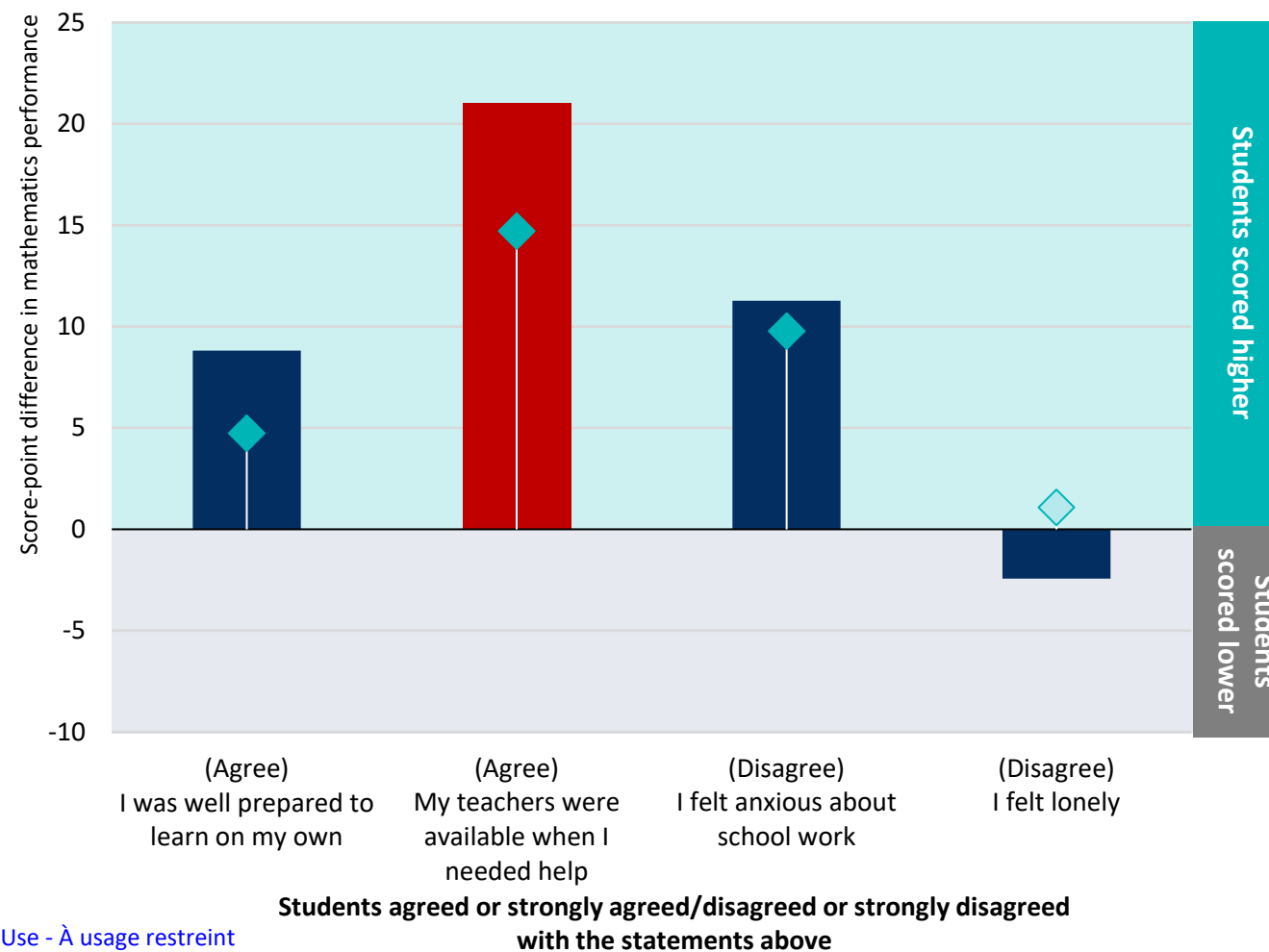
■ Before accounting

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



■ Before accounting

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

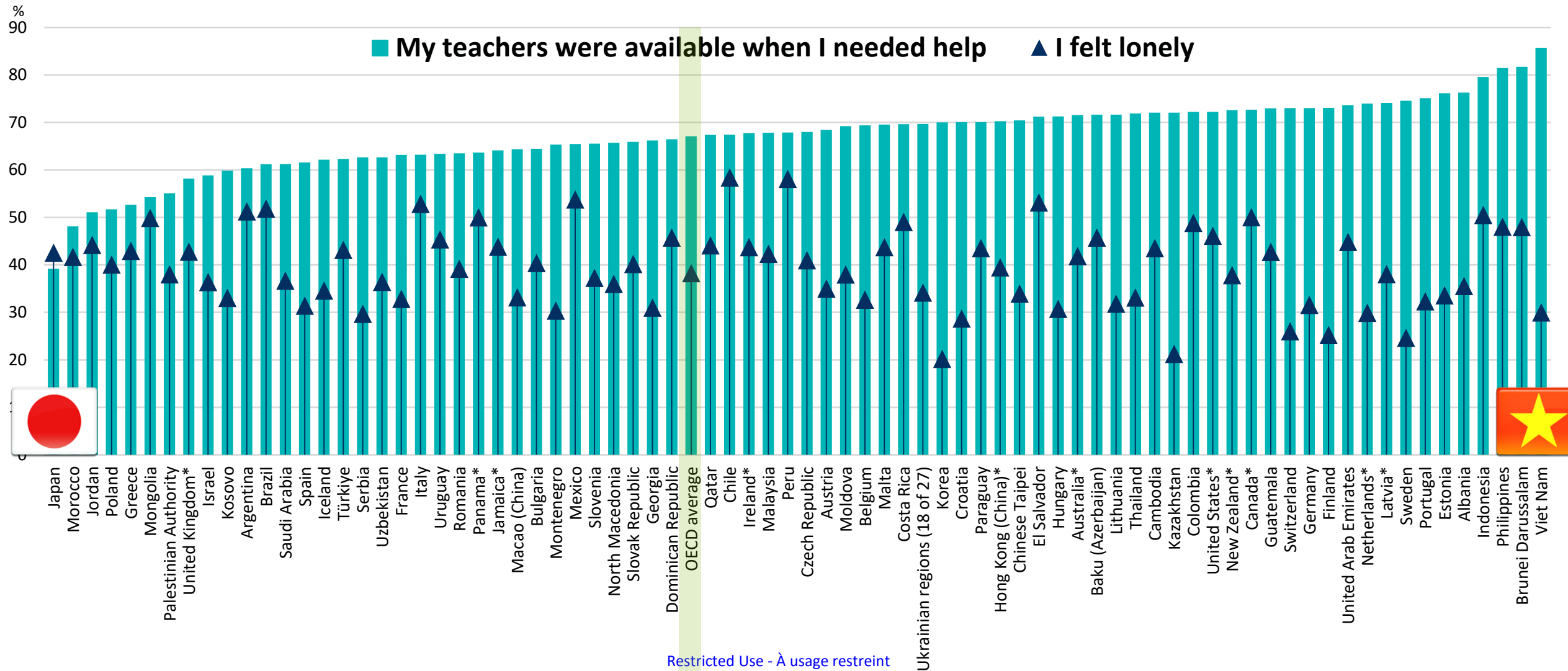




# Teacher support

Figure II.2.10

Percentage of students who agreed or strongly agreed with the following statements about the time when their school building was closed because of COVID-19; based on students' reports

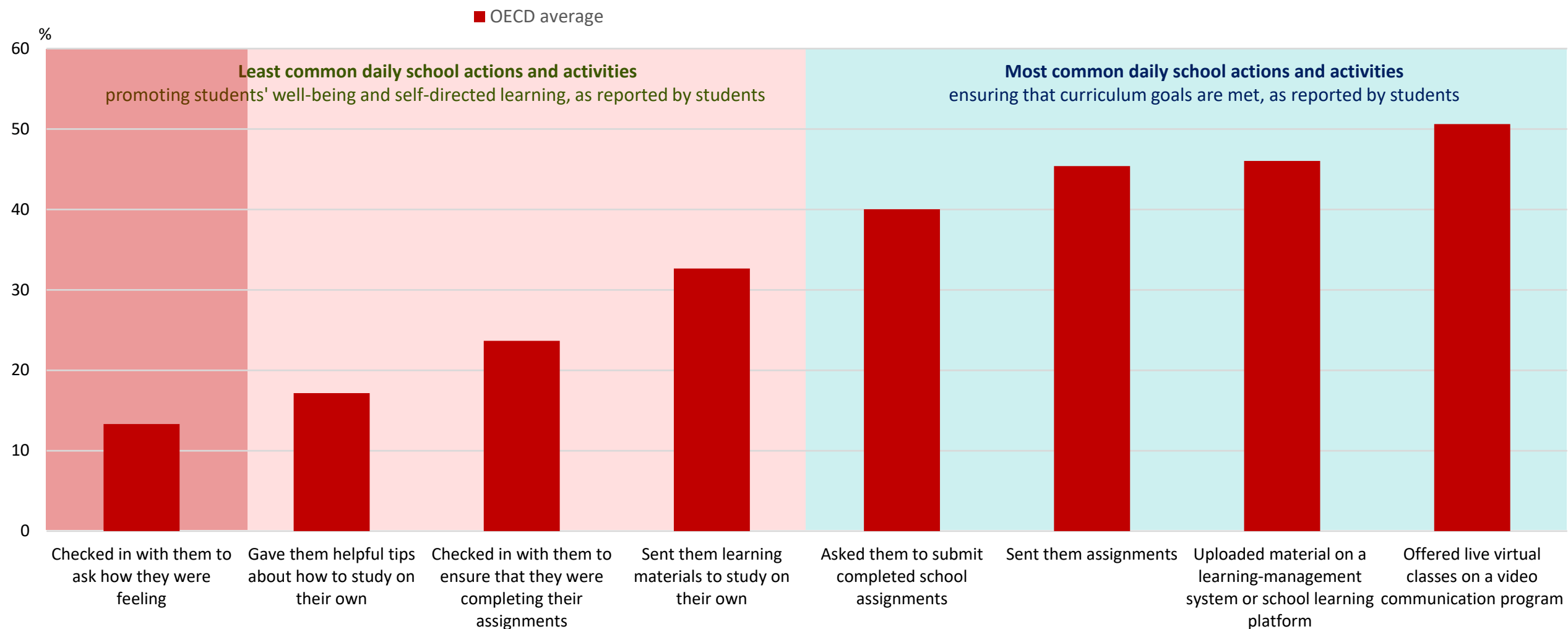




# School actions and activities to maintain learning and well-being

Figure II.2.16

Percentage of students who reported that someone from their school did the following actions every day daily when their school building was closed because of COVID-19; OECD average



Students reported that someone from their school did the above actions every day or almost every day

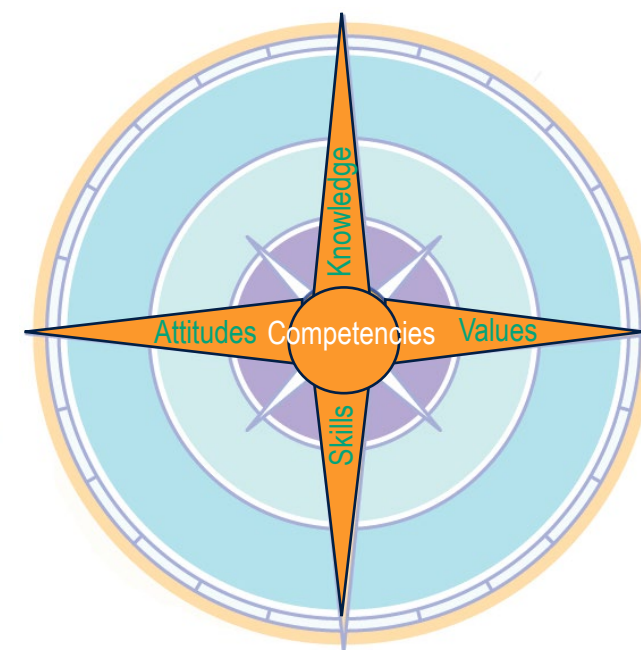
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# Teacher collective agency

Teachers can feel a sense of self-efficacy both individually and collectively.

They play a critical role in cultivating school ethos, and participate in and contribute to decision-making e.g. consensus building/ rule-making about school rules & curriculum etc.



# **OECD Teaching Compass**

## **Teacher well-being**

### **Teacher shortage, stress, etc.**





# 18 of the 21 countries with available data were facing a shortage of fully qualified secondary school teachers at the start of 2022/23 school year



Reading, writing and literature



Mathematics



Natural sciences (including science, physics, etc.)



Social studies (including history, geography, etc.)



Second and other languages



Physical education and health



Arts (including history of arts, music, etc.)



Other subjects

## Shortages for all subjects

Costa Rica



Denmark<sup>1,2</sup>



Estonia<sup>3</sup>



Germany ISCED 2



Germany ISCED 3



Iceland<sup>1</sup>



Latvia



Lithuania<sup>2</sup>



Slovenia



United States<sup>2</sup>



## Shortages in some subjects

Austria



France<sup>2</sup>



Hungary



Japan ISCED 2<sup>2</sup>



Japan ISCED 3<sup>2</sup>



Netherlands



New Zealand



Slovak Republic



Flemish Comm. (Belgium)



Romania



## No Shortages

Greece


No

Korea


No

Türkiye

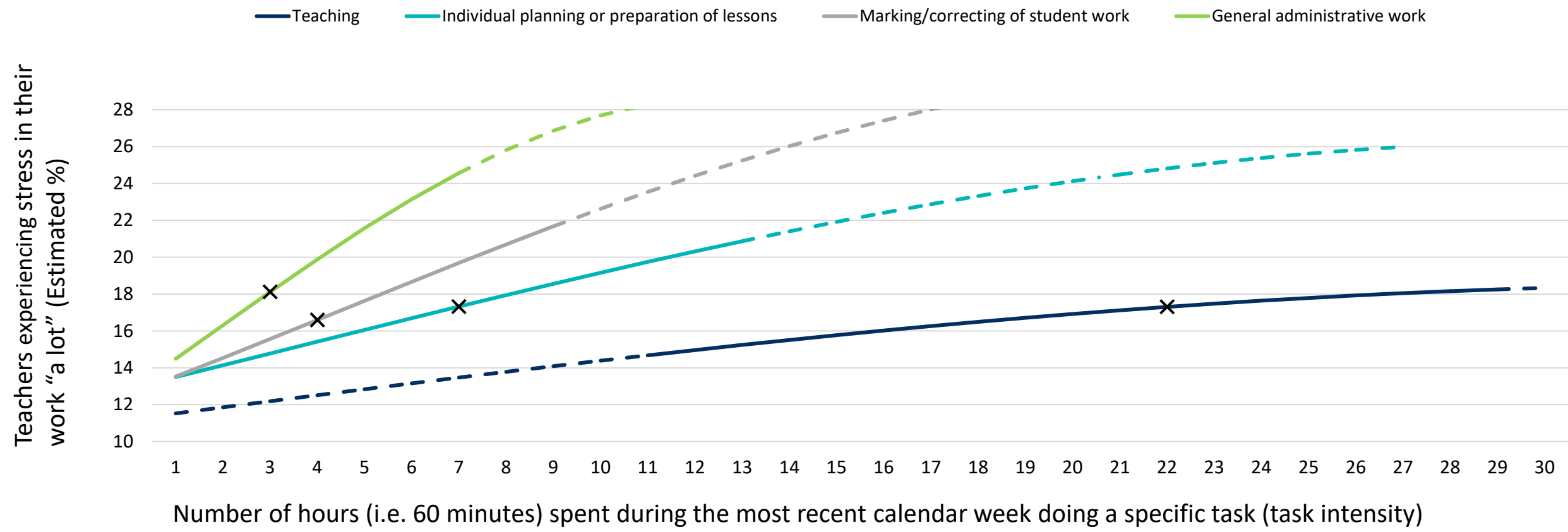
No



# Helping teachers focus on the core of their work is likely to be the most effective to mitigate the impact of the crisis on their well-being



**Relationship between teachers' experience of stress at work and task intensity**  
Estimated percentage of teachers experiencing stress in their work "a lot", by task intensity (OECD average-31)

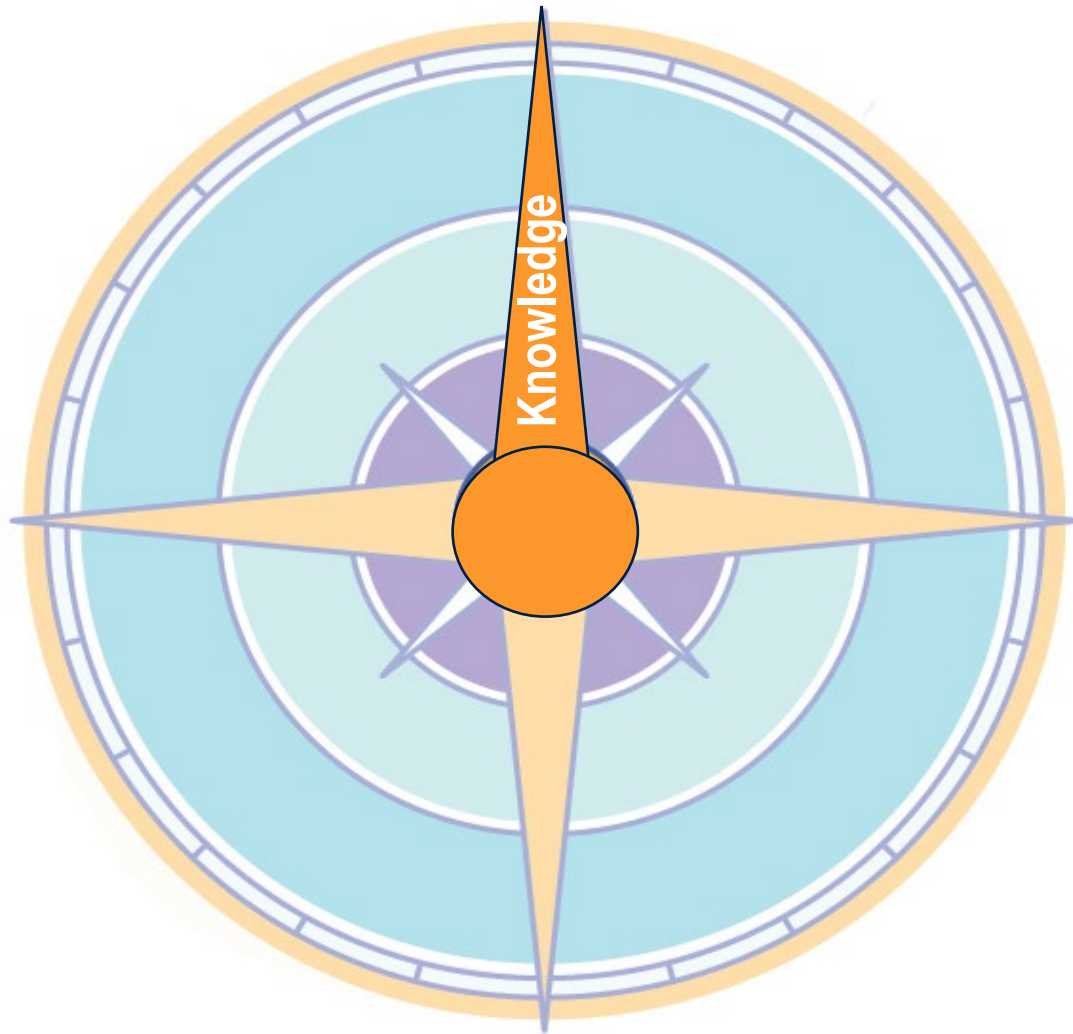


# OECD Teaching Compass

Teacher knowledge, skills, attitudes and values



# (Human) Teacher Knowledge



## Not only

- **Disciplinary knowledge** (Content knowledge & expertise with passion for the subject)

## But also

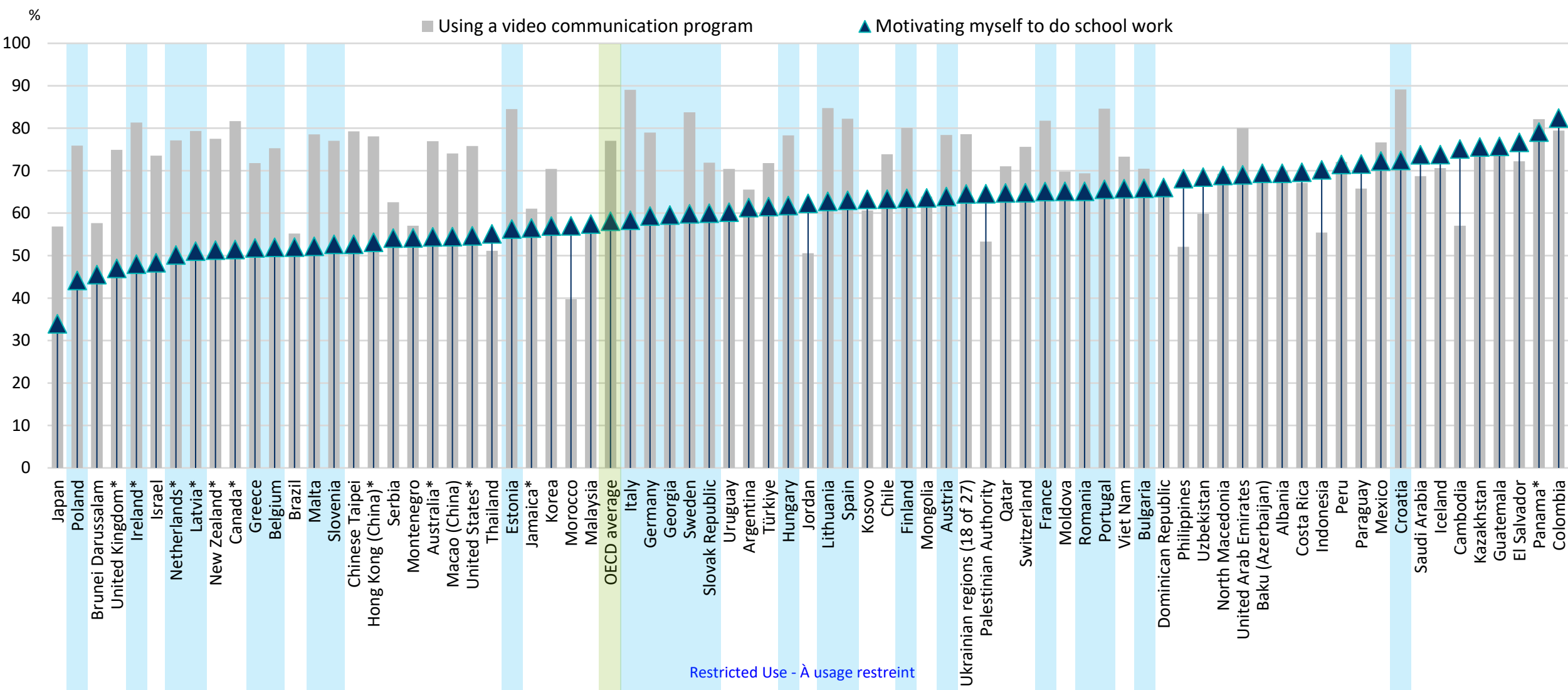
- **Knowledge about individual students** - focusing on: a) the students at the centre, b) what students bring as assets, c) recognizing student diverse needs
- **Pedagogical knowledge** (e.g. formative assessment, project-based learning, inquiry-based learning)
- **Epistemic knowledge** (How to teach students to think like mathematicians, scientists, etc. and help them to connect subjects with real world)
- **Knowledge about research, data & technology** (data literacy, digital literacy, AI literacy)
- **Interdisciplinary knowledge** (how to teach interdisciplinary knowledge, connecting dots across different disciplines)

Etc.

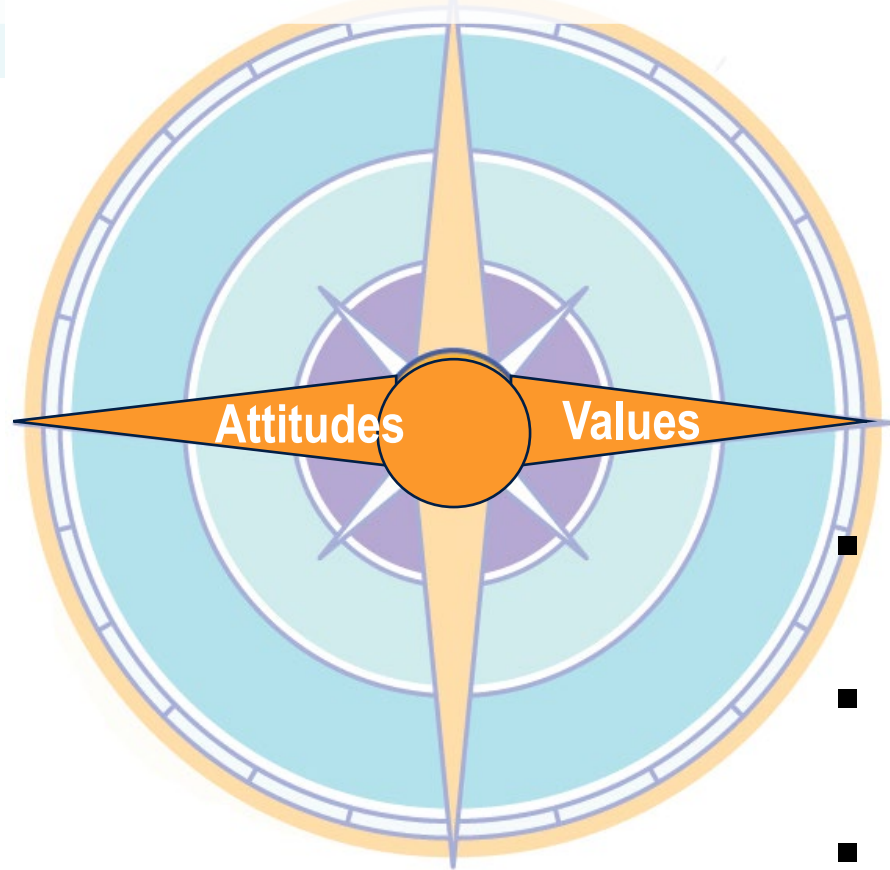
# Prepare students for autonomous learning

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



# Teacher Attitudes & Values



- Personal
- Local
- Social
- Human (globally common, universal )

- Examples -

- *Belief that all pupils can achieve*
- *Passion for subject knowledge*
- *Sense of purpose*
- *Professional identify*
- *Trust*
- *Etc.*
- *Self-efficacy*
- *Self-care*
- *Safe to be creative and explore new or different pedagogies & assessments in their classrooms (both students and teachers)*
- *Etc.*



Find out more about our work at [www.oecd.org/pisa](http://www.oecd.org/pisa)



### PISA main reports

Email: [Andreas.Schleicher@OECD.org](mailto:Andreas.Schleicher@OECD.org)

X : SchleicherEDU

WeChat : AndreasSchleicher

Take the test: [bit.ly/PISA-Test](http://bit.ly/PISA-Test)

PISA FAQs: [www.oecd.org/pisa/pisafaq](http://www.oecd.org/pisa/pisafaq)

PISA Data Explorer: [www.oecd.org/pisa/data](http://www.oecd.org/pisa/data)



### PISA Country notes

