PISA in Focus

How socio-economics plays into students learning on their own: clues to COVID-19 learning losses

Programme for International Student Assessment

OECD
BETTER POLICIES FOR BETTER LIVES

How socio-economics plays into students learning on their own: clues to COVID-19 learning losses

- An average of 84% of students in OECD countries reported in 2018 that they can usually navigate through a difficult situation; 81% reported their goals are to learn as much as possible; 77% reported they find satisfaction in working as hard as they can.

- Socio-economically advantaged students reported more self-efficacy in getting through a difficult situation than disadvantaged students in all countries and economies that participated in PISA 2018 except Italy and the Netherlands.

- Socio-economically advantaged students have more mastery-approach goals when learning than disadvantaged students in almost all countries and economies.

- Socio-economically advantaged students show more motivation to master tasks than disadvantaged students in almost all countries and economies.

- In almost all countries and economies participating in PISA 2018, students who perceive more parental support have more self-efficacy, mastery-approach goals and motivation compared to students and schools with similar socio-economic profiles.

Most students have the beliefs and dispositions to help them cope and learn in challenging situations

The current pandemic has been ongoing since early 2020. This has affected ways in which teaching and learning are organised. Schools have had to provide education in different ways from the past. A special survey conducted as a collaborative effort between the OECD, UNESCO, UNICEF and the World Bank showed that upper-secondary schools were fully closed for over 65 days in 2020 on average across OECD countries with available data. But the extent of closure varies across countries. The special survey also showed that where school closures were needed many countries made major efforts to mitigate their impact on students, focusing especially on vulnerable students by providing remedial measures to reduce students' learning gaps. Despite these efforts, recently released studies[1] have shown that learning loss during the pandemic was most pronounced among socio-economically disadvantaged students and schools.

Learning loss is a product of many aspects, including whether education systems have provided relevant opportunities, resources and support and whether students were ready for new challenges and could adjust to new ways of learning. This policy brief focuses on the extent to which students were ready to learn in challenging situations, looking at data collected before the Covid-19 pandemic.

PISA 2018 data provides opportunities to analyse students' sense of efficacy in difficult circumstances and their approach to learning, i.e. mastery-approach goals and motivation to master tasks.

In 2018, PISA asked students about their general sense of efficacy; that is, the extent to which students believe in their own ability to engage in certain activities and perform specific tasks – especially in adverse circumstances. An average of 84% of students in OECD countries agreed or strongly agreed with the statement "When I'm in a difficult situation, I can usually find my way out of it" while 72% agreed or strongly agreed with the statement "My belief in myself gets me through hard times".

When it comes to learning, in general, optimal learners set mastery-approach goals, i.e., striving to improve one's learning and having the dispositional desire to work hard to master tasks. Studies show that students who adopt mastery-approach goals

engage in deep learning, persist in spite of failure and show high levels of intrinsic motivation[2]. Adopting mastery-approach goals and motivation is even more important in a pandemic situation where teaching and learning have had to be adjusted and students expected to take control of their learning more than before. On average across OECD countries, 81% of students responded that the statement "My goal is to learn as much as possible" is "moderately true of me", "very true of me" or "extremely true of me" and 77% responded similarly to the statement "My goal is to completely master the material presented in my classes". Regarding motivation to master tasks, 77% of students agreed or strongly agreed with the statement "I find satisfaction in working as hard as I can" and 71% reported so with the statement "Once I start a task, I persist until it is finished".

Student self-efficacy, learning goals and motivation

Percentage of students who reported to agree/strongly agree or who reported the following statements are moderately/very/extremely true of them; OECD average
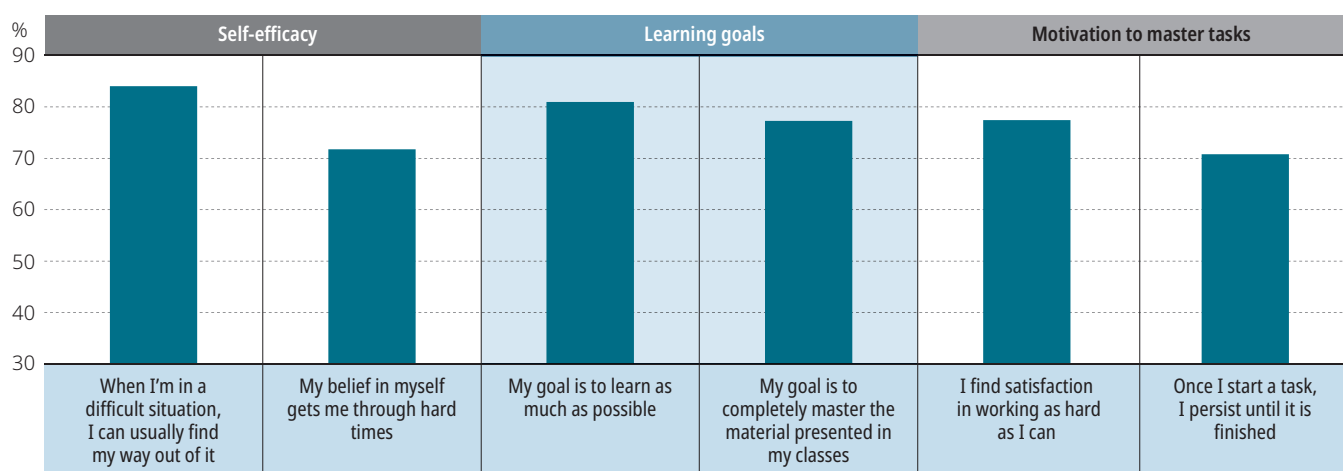
Notes: Students reported to "agree" or "strongly agree" with the statements related to self-efficacy and motivation to master tasks. Students reported the statements related to learning goals are "moderately true of me", "very true of me" or "extremely true of me".
Source: OECD, PISA 2018 Database, https://webfs.oecd.org/pisa2018/PiF_114_Tables.xlsx
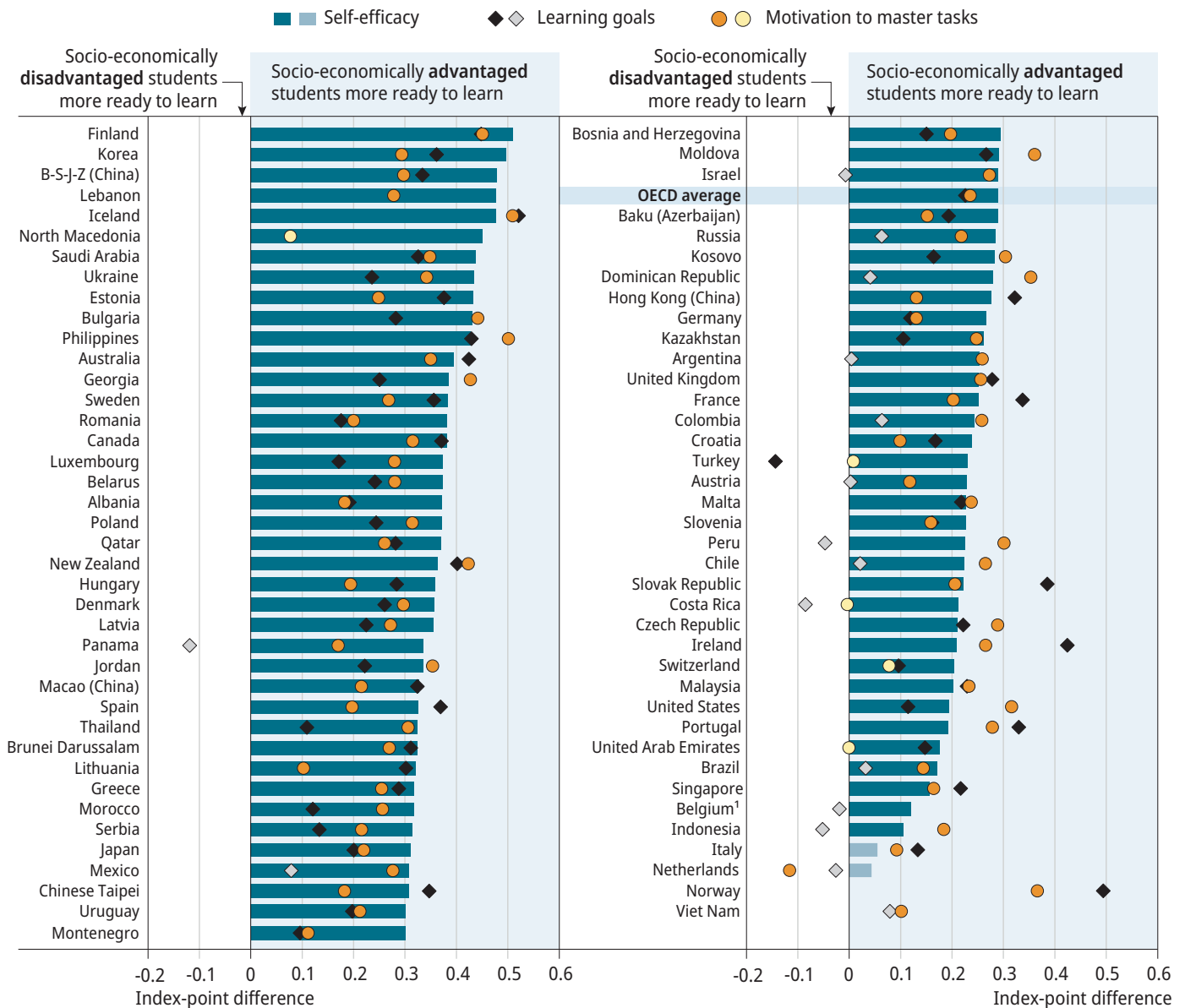
However, student readiness varies according to socio-economic backgrounds

While most students responded that they have efficacy in getting through difficult situations, set mastery-approach learning goals and are motivated to master tasks, some socio-economic disparities were observed with these indicators. Several questions were summarised to measure each of these three aspects (see Box 1 for detailed descriptions).

In all countries and economies participating in PISA 2018 except Italy and the Netherlands, socio-economically advantaged students reported that they have more self-efficacy to get through a difficult situation than disadvantaged students. In almost 80% of countries and economies, socio-economically advantaged students reported that they are more likely to have mastery-approach goals when learning than disadvantaged students. Only in Turkey was the opposite observed with more socio-economically disadvantaged students tending to adopt such goals than advantaged students. In almost all countries and economies, socio-economically advantaged students are more motivated to master tasks than disadvantaged students. Only in the Netherlands do socio-economically disadvantaged students show more motivation than advantaged students.

Socio-economic differences in readiness to learn

Legend: ■ ■ Self-efficacy ◆ ◇ Learning goals ● ○ Motivation to master tasks

Socio-economically **disadvantaged** students more ready to learn ↓ | Socio-economically **advantaged** students more ready to learn

Finland	Bosnia and Herzegovina
Korea	Moldova
B-S-J-Z (China)	Israel
Lebanon	OECD average
Iceland	Baku (Azerbaijan)
North Macedonia	Russia
Saudi Arabia	Kosovo
Ukraine	Dominican Republic
Estonia	Hong Kong (China)
Bulgaria	Germany
Philippines	Kazakhstan
Australia	Argentina
Georgia	United Kingdom
Sweden	France
Romania	Colombia
Canada	Croatia
Luxembourg	Turkey
Belarus	Austria
Albania	Malta
Poland	Slovenia
Qatar	Peru
New Zealand	Chile
Hungary	Slovak Republic
Denmark	Costa Rica
Latvia	Czech Republic
Panama	Ireland
Jordan	Switzerland
Macao (China)	Malaysia
Spain	United States
Thailand	Portugal
Brunei Darussalam	United Arab Emirates
Lithuania	Brazil
Greece	Singapore
Morocco	Belgium[1]
Serbia	Indonesia
Japan	Italy
Mexico	Netherlands
Chinese Taipei	Norway
Uruguay	Viet Nam
Montenegro	

Index-point difference (−0.2 −0.1 0 0.1 0.2 0.3 0.4 0.5 0.6)

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1. Only the Flemish Community distributed the question on self-efficacy.
Note: Statistically significant values are shown in darker tones.
Countries and economies are ranked in descending order of the difference between advantaged and disadvantaged students in the index of self-efficacy.
Source: OECD, PISA 2018 Database, https://webfs.oecd.org/pisa2018/PiF_114_Tables.xlsx

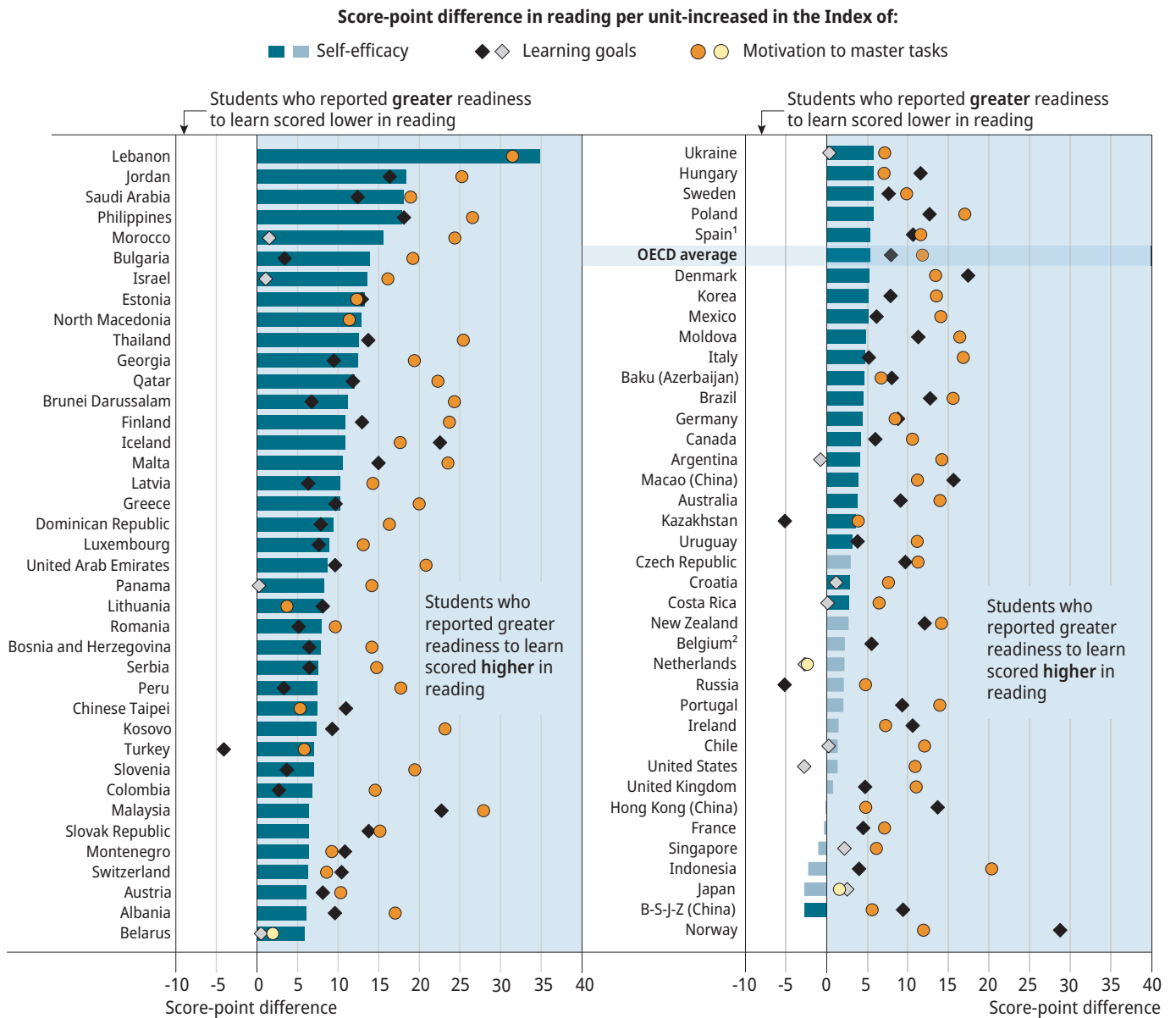## Students who are ready for learning perform better

Students who have mastery-approach goals, the motivation to master tasks and efficacy in difficult situations obtained higher scores in the PISA 2018 reading test. These performance differences are not a mere reflection of socio-economic differences in student beliefs and dispositions. These findings on performance differences held even when students with similar socio-economic backgrounds were compared in at least 80% of countries and economies that participated in PISA 2018.

While there is no data yet on the relationship between these beliefs and dispositions, and student performance after the pandemic hit, they are expected to have played a crucial role in how students continued their own learning during challenging school closures.

Readiness to learn and reading performance

After accounting for students' PISA index of economic, social and cultural status

Score-point difference in reading per unit-increased in the Index of:

■ Self-efficacy   ◆ Learning goals   ● Motivation to master tasks

Students who reported **greater** readiness to learn scored lower in reading

Students who reported **greater** readiness to learn scored lower in reading

Students who reported greater readiness to learn scored **higher** in reading

1. For the comparability of Spain's data see PISA 2018 Results (Volume I): What Students Know and Can Do, Annex A9.
2. Only the Flemish Community distributed the question on self-efficacy.
Notes: Statistically significant values are shown in darker tones.
Results based on linear regression analysis after accounting for students' PISA index of economic, social and cultural status.
Countries and economies are ranked in descending order of the association between the index of self-efficacy and reading performance.
Source: OECD, PISA 2018 Database, https://webfs.oecd.org/pisa2018/PiF_114_Tables.xlsx

Parents can play a crucial role

Student belief and dispositions are the result of a lifetime of socialisation from parents, teachers, and one's cultural surroundings. PISA results suggest that parents especially play a crucial role in students developing mastery-approach goals, motivation for learning and the efficacy required to get through difficult situations. In almost all countries and economies that participated in PISA 2018, students who felt they had more parental support tended to have self-efficacy, mastery-approach goals and motivation even after accounting for student and school socio-economic profile. These students reported that their parents support their educational efforts and achievements when they are facing difficulties at school, and encourage them to be confident.

Parents' emotional support perceived by students and readiness to learn

After accounting for schools' and students' PISA index of economic, social and cultural status

Index-point increase in the following indices per unit-increase in the index of parents' emotional support perceived by students:

- ■ Self-efficacy
- ◆ Learning goals
- ● Motivation to master tasks
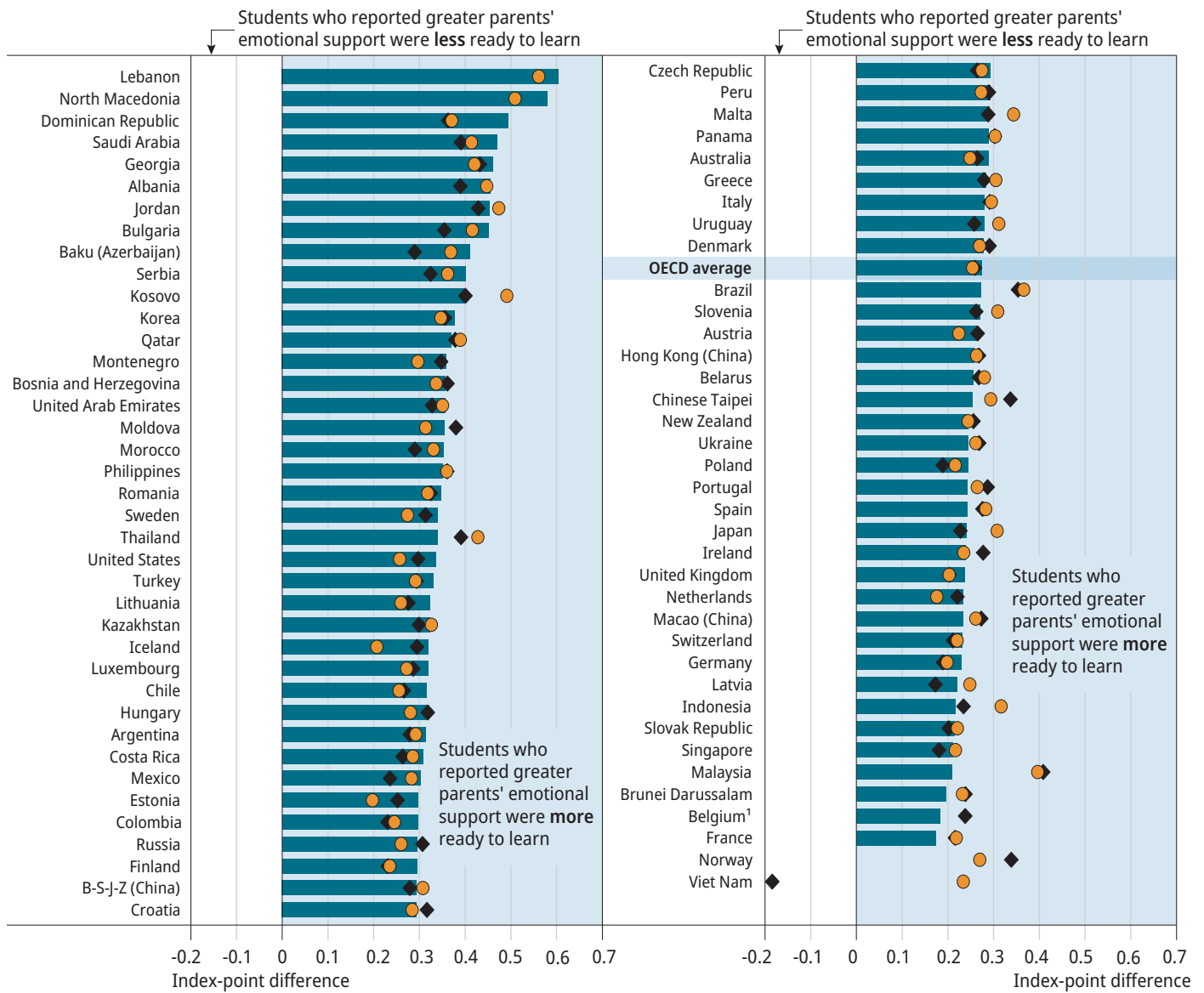
1. Only the Flemish Community distributed the question on self-efficacy.
Notes: All values are statistically significant.
Results based on linear regression analysis after accounting for schools' and students' PISA index of economic, social and cultural status.
Countries and economies are ranked in descending order of the association between the indices of parents' emotional support and self-efficacy.
Source: OECD, PISA 2018 Database, https://webfs.oecd.org/pisa2018/PiF_114_Tables.xlsx

Box 1. How PISA measured self-efficacy, learning goals, motivation to master tasks and parental support

The index of self-efficacy summarises students' responses (strongly disagree, disagree, agree and strongly agree) to the following questions:

- I usually manage one way or another.
- I feel proud that I have accomplished things.
- I feel that I can handle many things at a time.
- My belief in myself gets me through hard times.
- When I'm in a difficult situation, I can usually find my way out of it.

The index of learning goals summarises students' responses (not at all true of me, slightly true of me, moderately true of me, very true of me, extremely true of me) to the following questions:

- My goal is to learn as much as possible.
- My goal is to completely master the material presented in my classes.
- My goal is to understand the content of my classes as thoroughly as possible.

The index of motivation to master tasks summarises students' responses (strongly disagree, disagree, agree and strongly agree) to the following questions:

- I find satisfaction in working as hard as I can.
- Once I start a task, I persist until it is finished.
- Part of the enjoyment I get from doing things is when I improve on my past performance.

The index of parents' emotional support perceived by students summarises students' responses (strongly disagree, disagree, agree and strongly agree) to the following questions:

- My parents support my educational efforts and achievements.
- My parents support me when I am facing difficulties at school.
- My parents encourage me to be confident.

All these indices were standardised to have an OECD mean of 0 and a standard deviation of 1.

The bottom line

When asked about this in 2018, most students responded that they believe in their ability to get through a difficult situation and are motivated to learn as much as possible. But socio-economically disadvantaged students exhibit less of these beliefs and dispositions. There is no data yet on the relationship between these beliefs and dispositions, and student performance after the pandemic hit. The implication, however, is that the socio-economic gap in student performance may have widened during the pandemic when students – more than ever before – must learn, set goals and motivate themselves in complex and ambiguous circumstances. For students to be prepared for uncertainties and have the resilience to navigate through unforeseen challenges, teachers, communities and especially parents and carers should help them develop confidence, self-efficacy, and mastery-approach goals that will see them through.

Notes

1. Some examples include those in England (Renaissance Learning, Education Policy, 2021), the Flemish community in Belgium (Maldonado and DeWitte, 2020), and in the Netherlands (Engzell, Frey and Verhagen, 2021).

2. See more details in Chapter 7 of the PISA 2018 Assessment and Analytical framework (OECD, 2019).

For more information

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