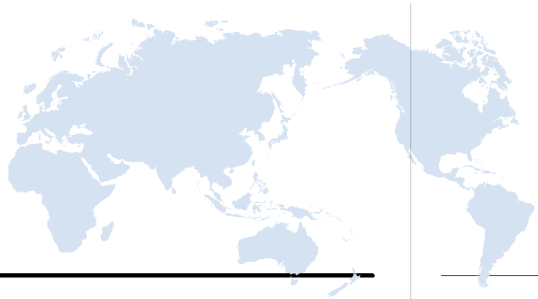
COUNTRY NOTE



OECD

PROGRAMME FOR INTERNATIONAL STUDENT ASSESSMENT (PISA) RESULTS FROM PISA 2018

The Programme for International Student Assessment (PISA) is a triennial survey of 15-year-old students that assesses the extent to which they have acquired the key knowledge and skills essential for full participation in society. The assessment focuses on proficiency in reading, mathematics, science and an innovative domain (in 2018, the innovative domain was global competence), and on students' well-being.

Spain

Deferral of the reading results for Spain

The OECD has decided to defer the publication of the PISA 2018 reading results, both national and sub-regional, for Spain. Spain's data met PISA 2018 Technical Standards. However, some data show implausible student-response behaviour. Consequently, at the time of publication of this report, comparability of Spain's results in reading cannot be assured (see Annex A9). PISA 2018 reading results for Spain are therefore not published in this report**.** Results in the mathematics and science domains appear less affected by this anomalous response behaviour. Further review will confirm this.

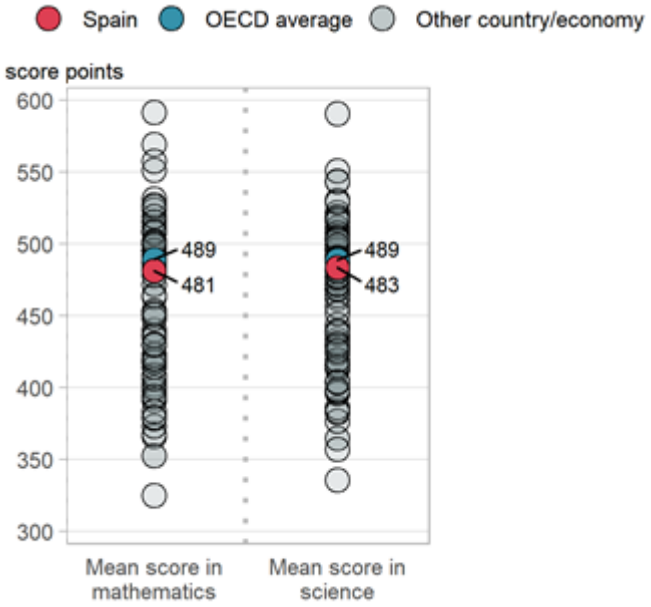
Key findings

- Students in Spain scored below the OECD average in mathematics (481 points) and science (483), and their scores were most similar to those of students in Hungary and Lithuania. Despite the recent decline in science performance, over a longer period, and when taking into account results from all years, no significant improving or declining trend could be determined, in any subject.
- As in previous cycles, there were comparatively few top performers in Spain, and the level of low performers was similar to the OECD average. In mathematics, 75% of students attained Level 2 or higher, and 7% of students scored at Level 5 or higher, compared to 76% and 11%, respectively, on average across OECD countries. In science, 79% of students attained Level 2 or higher, and 4% of students scored at Level 5 or higher, compared to 78% and 7%, respectively, on average across OECD countries.
- In Spain, the socio-economic status of students explained 12% of the variation in mathematics performance and 10% of the variation in science performance compared to 14% and 13% of the variations, respectively, on average across OECD countries.
- Amongst high-performing students in mathematics or science, about one in three boys in Spain expects to work as an engineer or science professional at the age of 30, while only about one in five girls expects to do so. About three in ten high-performing girls expect to work in health-related professions, while only two in ten high-performing boys expect so. About 10% of boys, but only 1% of girls in Spain expect to work in ICT-related professions.

- Compared to the average student across OECD countries, students in Spain reported being bullied less frequently, were more satisfied with their lives, expressed more positive and fewer negative feelings, and their sense of belonging at school was the strongest across all PISA-participating school systems. Yet, according to students' reports, the disciplinary climate in language-of-instruction lessons was far from ideal, and the share of students who had skipped school or lessons in the two weeks prior to the PISA test was clearly larger than the OECD average. A similar picture emerged in Costa Rica and Portugal.
- As in most countries/economies that distributed the well-being questionnaire, how satisfied students were with the way they look, their relationship with parents or guardians, and their life at school was positively related to their positive feelings.

What 15-year-old students in Spain know and can do

Figure 1. Snapshot of performance in mathematics and science



Note: Only countries and economies with available data are shown.
Source: OECD, PISA 2018 Database, Table I.1.

What students know and can do in mathematics

- Some 75% of students in Spain attained Level 2 or higher in mathematics (OECD average: 76%). At a minimum, these students can interpret and recognise, without direct instructions, how a (simple) situation can be represented mathematically (e.g. comparing the total distance across two alternative routes, or converting prices into a different currency). The share of 15-year-old students who attained minimum levels of proficiency in mathematics (Level 2 or higher) varied widely – from 98% in Beijing, Shanghai, Jiangsu and Zhejiang (China) to 2% in Zambia, which participated in the PISA for Development assessment in 2017. On average across OECD countries, 76% of students attained at least Level 2 proficiency in mathematics.
- In Spain, 7% of students scored at Level 5 or higher in mathematics (OECD average: 11%). Six Asian countries and economies had the largest shares of students who did so: Beijing, Shanghai, Jiangsu and Zhejiang (China) (44%), Singapore (37%), Hong Kong (China) (29%), Macao (China) (28%), Chinese Taipei (23%) and Korea (21%). These students can model complex situations mathematically, and can select, compare and evaluate appropriate problem-solving strategies for dealing with them.

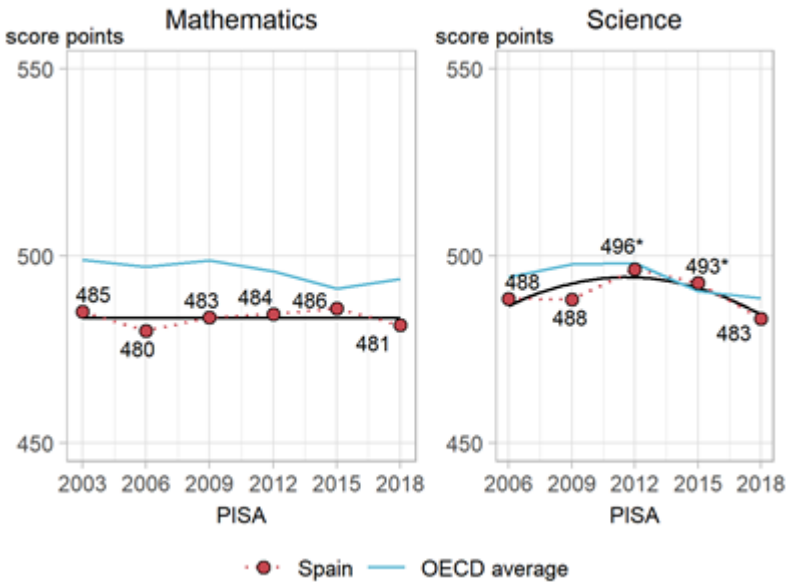
What students know and can do in science

- Some 79% of students in Spain attained Level 2 or higher in science (OECD average: 78%). At a minimum, these students can recognise the correct explanation for familiar scientific phenomena and can use such knowledge to identify, in simple cases, whether a conclusion is valid based on the data provided.
- In Spain, 4% of students were top performers in science, meaning that they were proficient at Level 5 or 6 (OECD average: 7%). These students can creatively and autonomously apply their knowledge of and about science to a wide variety of situations, including unfamiliar ones.

Performance trends

- Mean mathematics performance remained stable, around a flat trend line, throughout the country's participation in PISA (including PISA 2018). Mean performance in science declined between 2015 and 2018 by 9.5 score points. Despite the recent decline in science performance, over a longer period, and when taking into account results from all years, no significant improving or declining trend could be determined, in any subject.

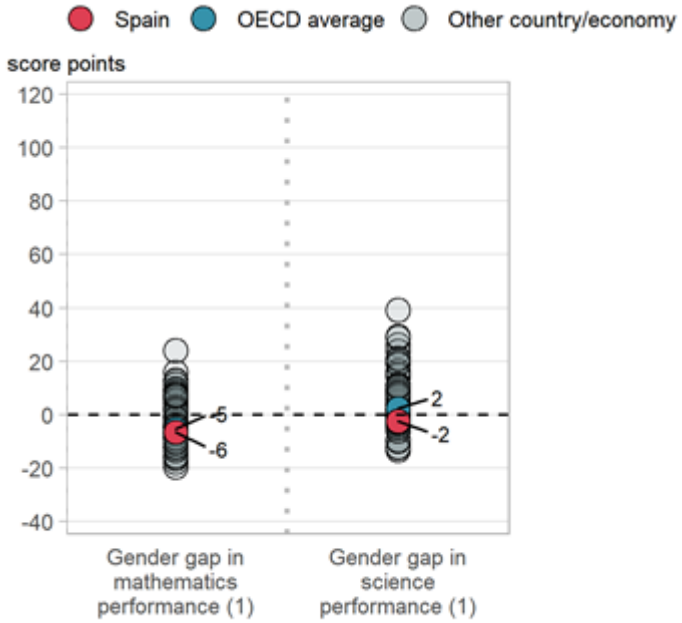
Figure 2. Trends in performance in mathematics and science



Notes: * indicates mean-performance estimates that are statistically significantly above or below PISA 2018 estimates for Spain.
The blue line indicates the average mean performance across OECD countries with valid data in all PISA assessments. The red dotted line indicates mean performance in Spain. The black line represents a trend line for Spain (line of best fit).
Source: OECD, PISA 2018 Database, Tables I. B1.11 and I. B1.12.

Where All Students Can Succeed

Figure 3. Differences in performance related to personal characteristics

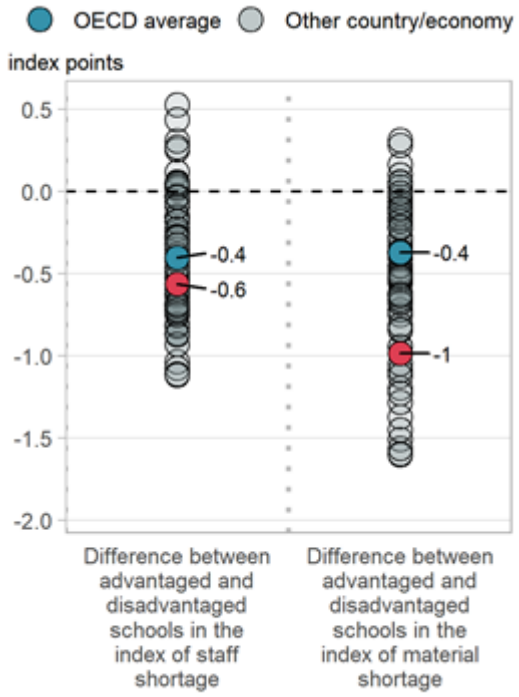


Notes: Only countries and economies with available data are shown. (1) Girls' minus boys' performance.
Source: OECD, PISA 2018 Database, II.B1.7.3 and II.B1.7.5.

Equity related to socio-economic status

- Socio-economic status was a strong predictor of performance in mathematics and science in all PISA participating countries. It explained 12% of the variation in mathematics performance in PISA 2018 in Spain (compared to 14% on average across OECD countries), and 10% of the variation in science performance (compared to the OECD average of 13% of the variation).
- School principals in Spain reported more staff shortage and more material shortage than the OECD average; and school principals of disadvantaged schools more often reported staff shortage than principals of advantaged schools. In Spain, 49% of students enrolled in a disadvantaged school and 31% of students enrolled in an advantaged school attend a school whose principal reported that the capacity of the school to provide instruction is hindered at least to some extent by a lack of teaching staff. On average across OECD countries, 34% of students in disadvantaged schools and 18% of students in advantaged schools attend such a school.
- According to school principals in Spain, 94% of teachers in advantaged schools and 98% of teachers in disadvantaged schools are "fully certified". The proportions of teachers with at least a master's degree are similar in advantaged and disadvantaged schools. In Spain, 18% of teachers in disadvantaged schools while 17% in advantaged schools have less than five years of professional experience (the difference is not statistically significant).

Figure 4. Gap in material and staff shortage between advantaged and disadvantaged schools



Notes: Only countries and economies with available data are shown.
Source: OECD, PISA 2018 Database, Tables II.B1.5.13 and II.B1.5.14.

Equity related to gender

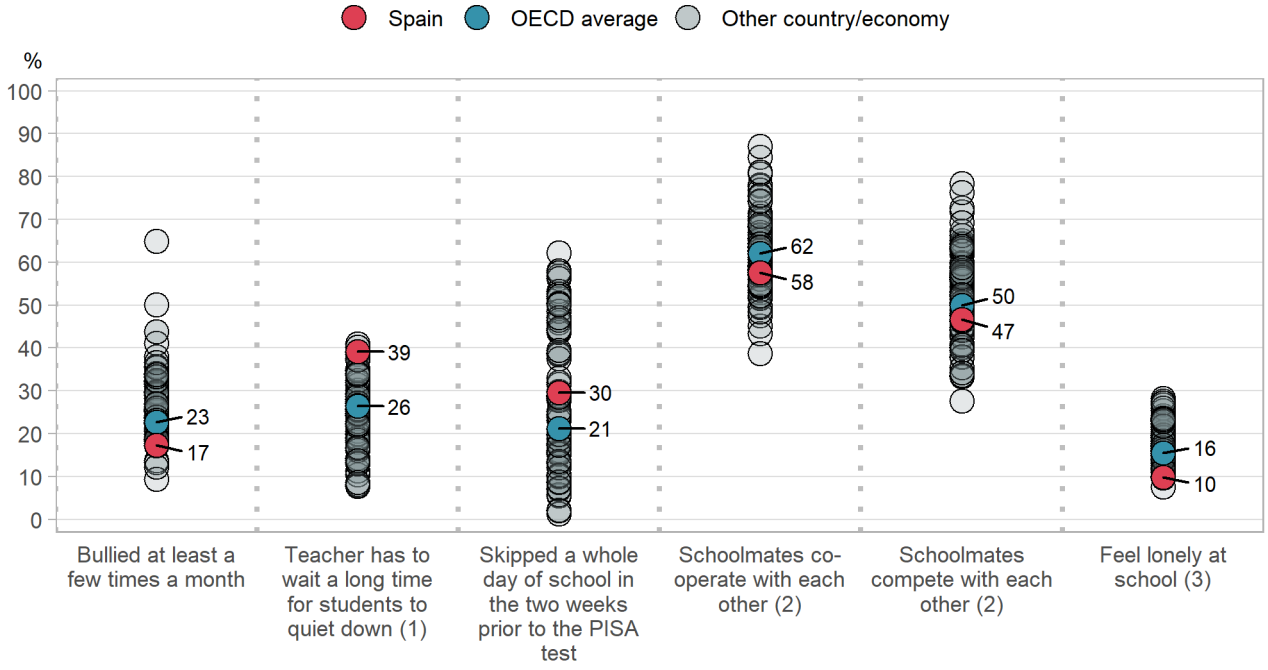
- In Spain, boys outperformed girls in mathematics by 6 score points, which was wider than the average gender gap in mathematics across OECD countries (5 score points). While girls slightly outperformed boys in science (by two score points) on average across OECD countries in PISA 2018, in Spain girls and boys performed similarly in science.
- Amongst high-performing students in mathematics or science, about one in three boys in Spain expect to work as an engineer or science professional at the age of 30, while about one in five girls expects to do so. About three in ten high-performing girls expect to work in health-related professions, while one in eight high-performing boys expects to do so. Some 10% of boys and 1% of girls in Spain expect to work in ICT-related professions.

What School Life Means for Students' Lives

How is the school climate in Spain?

- In Spain, 17% of students reported being bullied at least a few times a month, compared to 23% on average across OECD countries. At the same time, 92% of students in Spain (and 88% of students on average across OECD countries) agreed or strongly agreed that it is a good thing to help students who cannot defend themselves.
- Some 39% of students in Spain (OECD average: 26%) reported that, in every or most language-of-instruction lessons, their teacher has to wait a long time for students to quiet down.
- On average across OECD countries, 21% of students had skipped a day of school and 48% of students had arrived late for school in the two weeks prior to the PISA test. In Spain, 30% of students had skipped a day of school and 44% of students had arrived late for school during that period. In most countries and economies, frequently bullied students were more likely to have skipped school, whereas students who valued school, enjoyed a better disciplinary climate and received greater emotional support from parents were less likely to have skipped school.

Figure 5. School climate



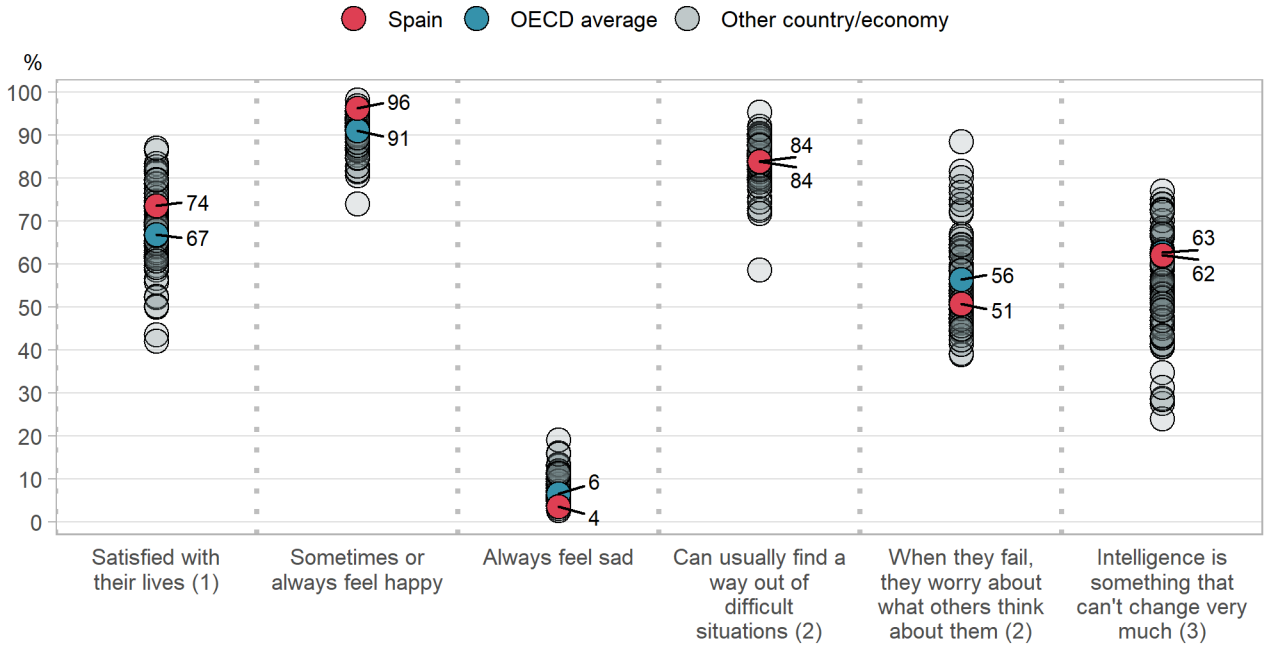
Notes: Only countries and economies with available data are shown. (1) In every or most language-of-instruction lessons; (2) Very or extremely true; (3) Agreed or strongly agreed.
Source: OECD, PISA 2018 Database, Tables III.B1.2.1, III.B1.3.1, III.B1.4.1, III.B1.8.1, III.B1.8.2 and III.B1.9.1

- Some 72% of students in Spain (OECD average: 74%) agreed or strongly agreed that their teacher shows enjoyment in teaching. In most countries and economies, students scored higher in reading when they perceived their teacher as more enthusiastic, especially when students said their teachers are interested in the subject.
- In Spain, 58% of students reported that their schoolmates co-operate with each other (OECD average: 62%) and 47% reported that they compete with each other (OECD average: 50%).
- Some 10% of students in Spain (OECD average: 16%) agreed or strongly agreed that they feel lonely at school.

How do students in Spain feel about their lives and learning?

- In Spain, 74% of students (OECD average: 67%) reported that they are satisfied with their lives (students who reported between 7 and 10 on the 10-point life-satisfaction scale).
- Some 96% of students in Spain reported sometimes or always feeling happy and about 4% of students reported always feeling sad. In most countries and economies, students were more likely to report positive feelings when they reported a stronger sense of belonging at school and greater student co-operation, and were more likely to express sadness when they were bullied more frequently.
- In Spain, 84% of students agreed or strongly agreed that they can usually find a way out of difficult situations (OECD average: 84%), and 51% agreed or strongly agreed that, when they fail, they worry about what others think of them (OECD average: 56% of students). In almost every education system, including Spain, girls expressed greater fear of failure than boys, and this gender gap was considerably wider amongst top-performing students.
- A majority of students across OECD countries holds a growth mindset (they disagreed or strongly disagreed with the statement "Your intelligence is something about you that you can't change very much"). In Spain, 62% of students hold a growth mindset (63% on average across OECD countries).

Figure 6. Student well-being and growth mindset



Notes: Only countries and economies with available data are shown. (1) Between 7 and 10 on the life-satisfaction scale; (2) Agreed or strongly agreed; (3) Disagreed or strongly disagreed.
Source: OECD, PISA 2018 Database, Tables III.B1.11.1, III.B1.12.1, III.B1.12.2, III.B1.13.1, III.B1.13.2 and III.B1.14.1

Key features of PISA 2018

The content

- The PISA 2018 survey focused on reading, with mathematics, science and global competence as minor areas of assessment. PISA 2018 also included an assessment of young people's financial literacy, which was optional for countries and economies. Results for reading, mathematics and science are released on 3 December 2019 and results for global competence and financial literacy in 2020.

The students

- Some 600 000 students completed the assessment in 2018, representing about 32 million 15-year-olds in the schools of the 79 participating countries and economies. In Spain, 35 943 students, in 1 102 schools, completed the assessment, representing 416 703 15-year-old students (92% of the total population of 15-year-olds).

The assessment

- Computer-based tests were used in most countries, with assessments lasting a total of two hours. In reading, a multi-stage adaptive approach was applied in computer-based tests whereby students were assigned a block of test items based on their performance in preceding blocks.
- Test items were a mixture of multiple-choice questions and questions requiring students to construct their own responses. The items were organised into groups based on a passage of text describing a real-life situation. More than 15 hours of test items for reading, mathematics, science and global competence were covered, with different students taking different combinations of test items.
- Students also answered a background questionnaire, which took about 35 minutes to complete. The questionnaire sought information about the students themselves, their attitudes, dispositions and beliefs, their homes, and their school and learning experiences. School principals completed a questionnaire that covered school management and organisation, and the learning environment.
- Some countries/economies also distributed additional questionnaires to elicit more information. These included: in 19 countries/economies, a questionnaire for teachers asking about themselves and their teaching practices; and in 17 countries/economies, a questionnaire for parents asking them to provide information about their perceptions of and involvement in their child's school and learning.
- Countries/economies could also chose to distribute three other optional questionnaires for students: 52 countries/economies distributed a questionnaire about students' familiarity with computers; 32 countries/economies distributed a questionnaire about students' expectations for further education; and 9 countries/economies distributed a questionnaire, developed for PISA 2018, about students' well-being.

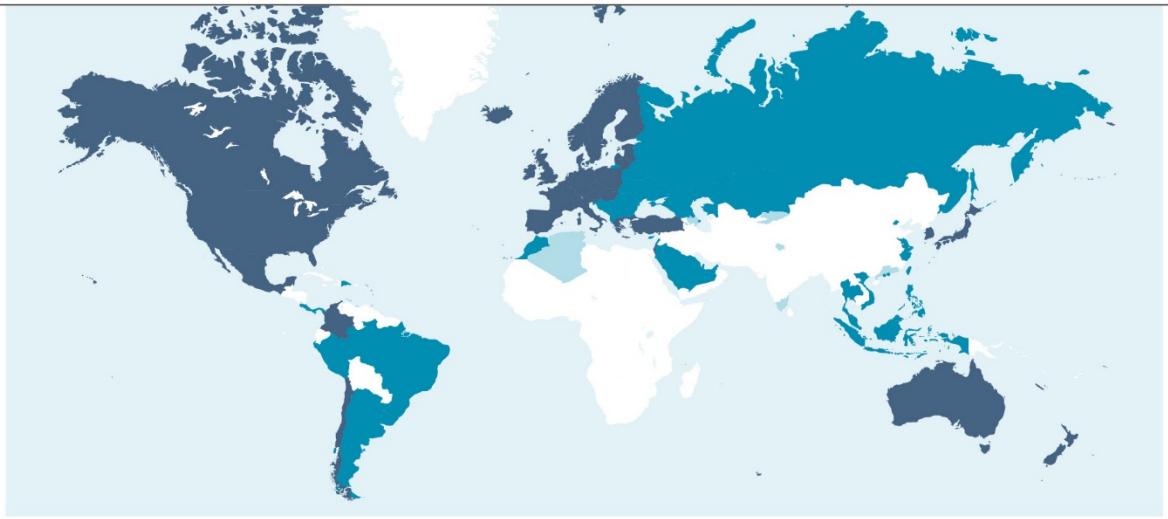
References

OECD (2019), *PISA 2018 Results (Volume I): What Students Know and Can Do*, PISA, OECD Publishing, Paris, https://doi.org/10.1787/5f07c754-en

OECD (2019), *PISA 2018 Results (Volume II): Where All Students Can Succeed*, PISA, OECD Publishing, Paris, https://doi.org/10.1787/b5fd1b8f-en

OECD (2019), *PISA 2018 Results (Volume III): What School Life Means for Students' Lives*, PISA, OECD Publishing, Paris, https://doi.org/10.1787/acd78851-en

Map of PISA countries and economies



OECD member countries

Australia, Austria, Belgium, Canada, Chile, Colombia, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Israel, Italy, Japan, Korea, Latvia, Lithuania, Luxembourg, Mexico, Netherlands, New Zealand, Norway, Poland, Portugal, Slovak Republic, Slovenia, Spain, Sweden, Switzerland, Turkey, United Kingdom, United States*

Partner countries and economies in PISA 2018

Albania, Argentina, Baku (Azerbaijan), Belarus, Bosnia and Herzegovina, Brazil, Brunei Darussalam, B-S-J-Z (China)**, Bulgaria, Costa Rica, Croatia, Cyprus, Dominican Republic, Georgia, Hong Kong (China), Indonesia, Jordan, Kazakhstan, Kosovo, Lebanon, Macao (China), Malaysia, Malta, Republic of Moldova, Montenegro, Morocco, Republic of North Macedonia, Panama, Peru, Philippines, Qatar, Romania, Russian Federation, Saudi Arabia, Serbia, Singapore, Chinese Taipei, Thailand, Ukraine, United Arab Emirates, Uruguay, Viet Nam

Partner countries and economies in previous cycles

Algeria, Azerbaijan, Guangdong (China), Himachal Pradesh (India), Kyrgyzstan, Liechtenstein, Mauritius, Miranda (Venezuela), Tamil Nadu (India), Trinidad and Tobago, Tunisia

* Puerto Rico participated in the PISA 2015 assessment (as an unincorporated territory of the United States).

** B-S-J-Z (China) refers to four PISA 2018 participating Chinese provinces/municipalities: Beijing, Shanghai, Jiangsu and Zhejiang. In PISA 2015, the four PISA participating Chinese provinces/municipalities were: Beijing, Shanghai, Jiangsu and Guangdong.

For more information about PISA 2018 visit http://www.oecd.org/pisa/

Data can also be found on line by following the StatLinks under the tables and charts in the publication.

Explore, compare and visualise more data and analysis using: http://gpseducation.oecd.org/.

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