



## 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 around the world that assesses the extent to which they have acquired the key knowledge and skills essential for full participation in society. The assessment focuses on reading, mathematics and science. Students' proficiency in an innovative domain is also assessed; in 2018, this domain was global competence.

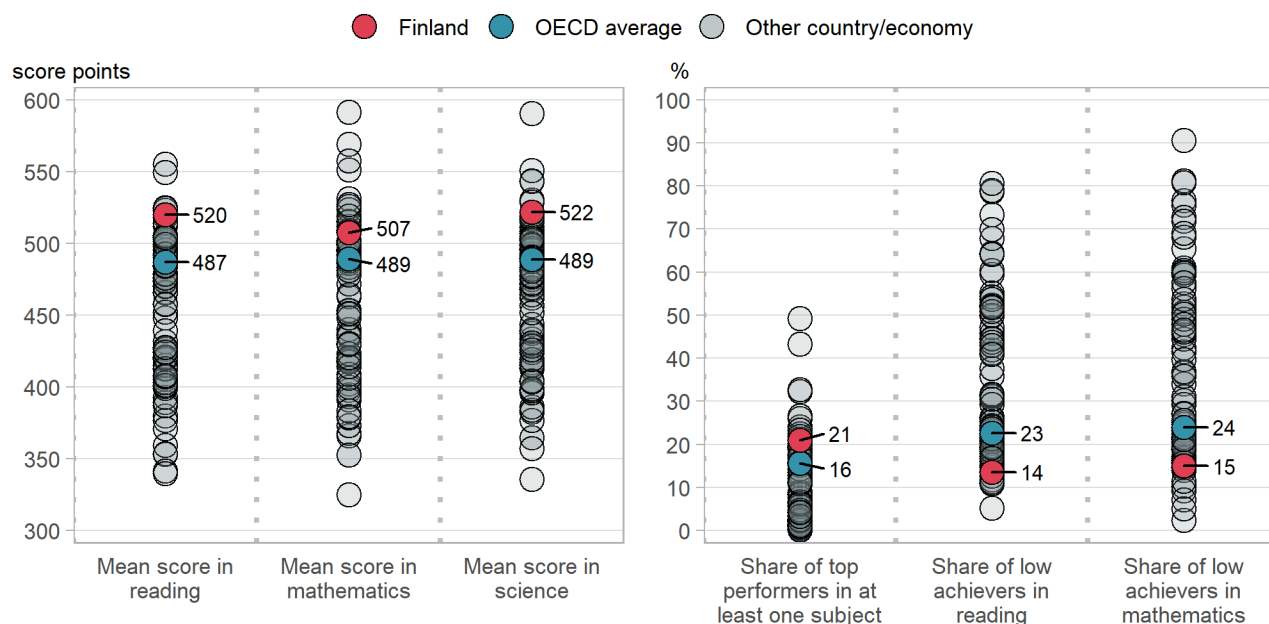
### Finland

#### Key findings

- Students in Finland scored higher than the OECD average in reading (520 score points), mathematics (507) and science (522). In reading, the four participating Chinese provinces/municipalities (Beijing, Shanghai, Jiangsu and Zhejiang) outperformed Finland, while Canada, Estonia, Hong Kong (China), Ireland, Korea and Macao (China) scored around the same level as Finland. In mathematics, 11 countries/economies outperformed Finland, while Belgium, Canada, Denmark, Slovenia, Sweden and the United Kingdom scored around the same level as Finland. In science, the four participating Chinese provinces/municipalities, Estonia, Japan, Macao (China) and Singapore outperformed Finland, while Canada, Hong Kong (China), Korea and Chinese Taipei scored around the same level as Finland.
- Mean reading, mathematics and science performance continued to decline in Finland. In all three subjects, the decline began after 2006. Although PISA 2018 results were significantly lower than PISA 2015 results only in science, the negative trend line shows no sign of a reversal of performance in any subject. In mathematics, declines were similarly rapid at all levels of the performance distribution; in reading and science, in contrast, the declining trend was particularly noticeable amongst the lowest-achieving students.
- The gender gap in reading in Finland (52 score points) was one of the widest across all PISA 2018-participating countries/economies. The gap was similar to that observed in 2009 (55 score points), as both girls' and boys' performance declined over the period.
- In Finland, the gap in performance related to students' socio-economic status (79 score points) is smaller than the average difference between advantaged and disadvantaged students (89 score points) across OECD countries. However, in Finland, this gap widened since PISA 2009 (61 score points) while it remained the same on average across OECD countries.
- Some 67% of students in Finland hold a growth mindset – they disagreed or strongly disagreed with the statement "Your intelligence is something about you that you can't change very much" (OECD average: 63%). Boys were less likely than girls, and disadvantaged students (60%) were less likely than advantaged students (76%) to hold a growth mindset. This latter gap (16 percentage points) is wider than the average across OECD countries (12 percentage points).

## What 15-year-old students in Finland know and can do

Figure 1. Snapshot of performance in reading, mathematics and science



Note: Only countries and economies with available data are shown.

Source: OECD, PISA 2018 Database, Tables I.1 and I.10.1.

- Students in Finland scored higher than the OECD average in reading, mathematics and science.
- Compared to the OECD average, a larger proportion of students in Finland performed at the highest levels of proficiency (Level 5 or 6) in at least one subject; at the same time a larger proportion of students achieved a minimum level of proficiency (Level 2 or higher) in at least one subject.

### What students know and can do in reading

- In Finland, 86% of students attained at least Level 2 proficiency in reading, significantly more than on average across OECD countries (77%). At a minimum, these students can identify the main idea in a text of moderate length, find information based on explicit, though sometimes complex criteria, and can reflect on the purpose and form of texts when explicitly directed to do so. Over 85% of students in Beijing-Shanghai-Jiangsu-Zhejiang (China), Canada, Estonia, Finland, Hong Kong (China), Ireland, Macao (China), Poland and Singapore performed at this level or above.
- Some 14% of students in Finland were top performers in reading, meaning that they attained Level 5 or 6 in the PISA reading test (OECD average: 9%). At these levels, students can comprehend lengthy texts, deal with concepts that are abstract or counterintuitive, and establish distinctions between fact and opinion, based on implicit cues pertaining to the content or source of the information. In 20 education systems, including those of 15 OECD countries, more than 10% of 15-year-old students were top performers.

### What students know and can do in mathematics

- Some 85% of students in Finland 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.

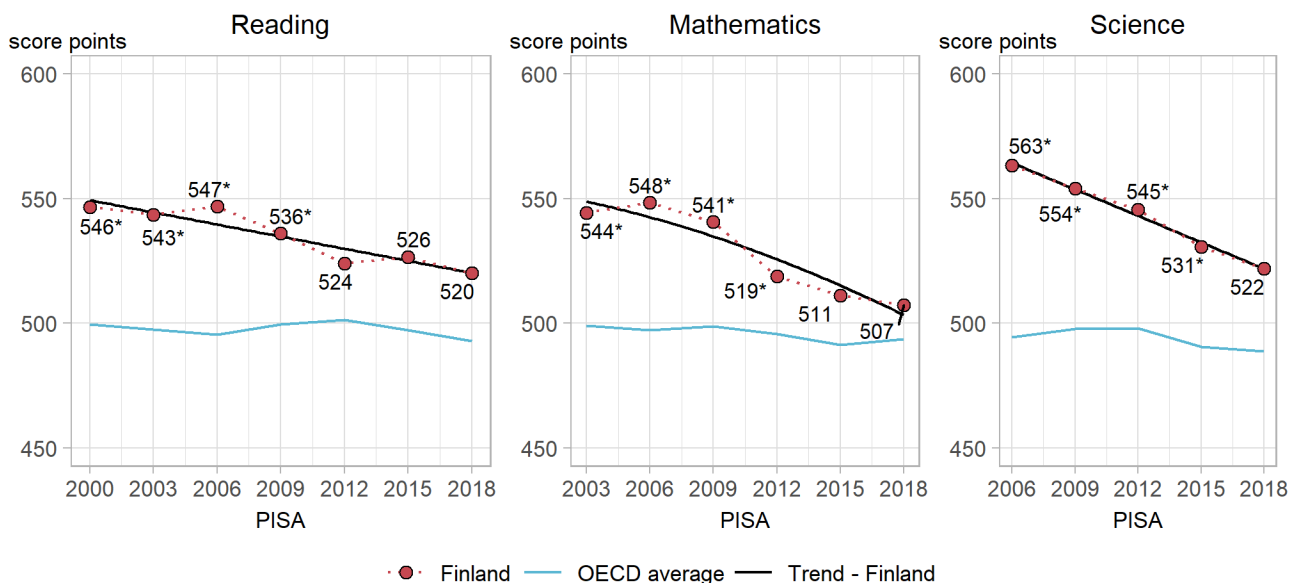
- In Finland, some 11% of students scored at Level 5 or higher in mathematics (OECD average: 11%). Six Asian countries and economies had the largest shares of students who did so: Beijing, Shanghai, Jiangsu and Zhejiang (China) (44%), Singapore (37%), Hong Kong (China) (29%), Macao (China) (28%), Chinese 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 87% of students in Finland 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. More than 90% of students in Beijing-Shanghai-Jiangsu-Zhejiang (China) (nearly 98%), Macao (China) (94%), Estonia (just over 91%) and Singapore (91%) met this benchmark.
- In Finland, 12% 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

Figure 2. Trends in performance in reading, mathematics and science



Notes:\*indicates mean-performance estimates that are statistically significantly above or below PISA 2018 estimates for Finland.

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 Finland. The black line represents a trend line for Finland (line of best fit).

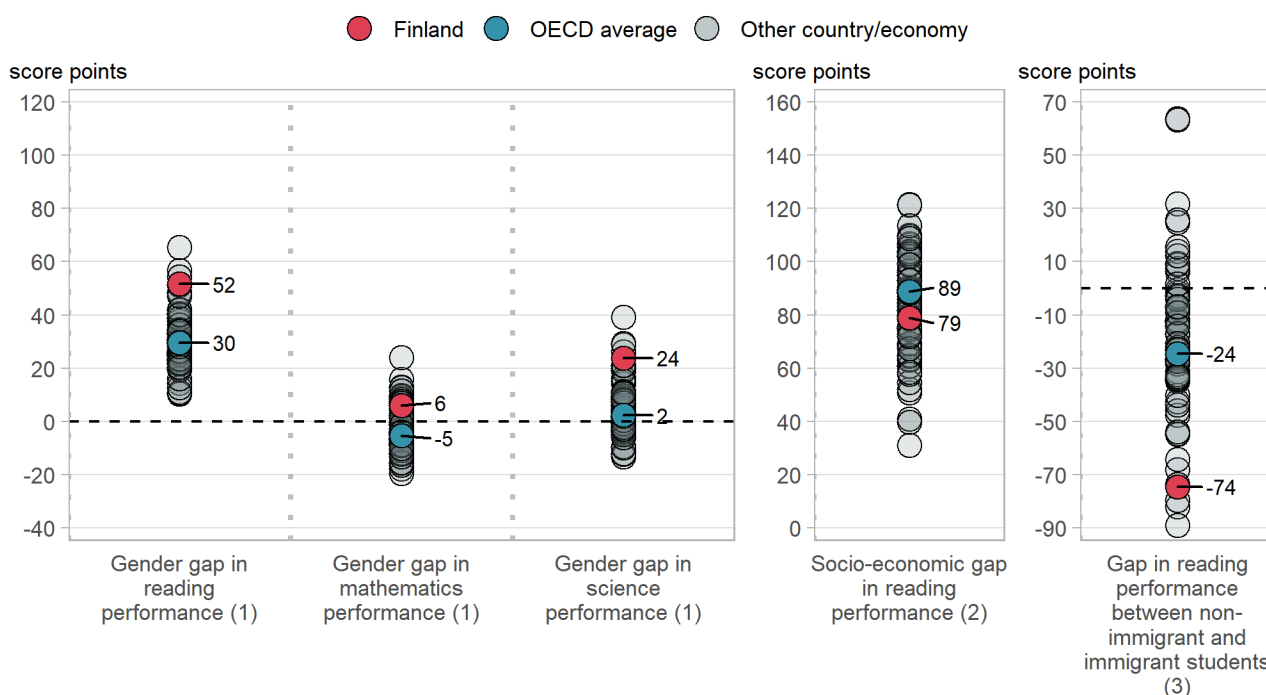
Source: OECD, PISA 2018 Database, Tables I. B1.10, I. B1.11 and I. B1.12.

- Mean reading, mathematics and science performance continued to decline in Finland. In all three subjects the decline began after 2006. Although PISA 2018 results were significantly lower than PISA

2015 results only in science, the negative trend line shows no sign of a reversal of performance in any subject. In mathematics, declines were similarly rapid at all levels of the performance distribution; by contrast, in reading and science, the declining trend was particularly noticeable amongst the lowest-achieving students. The proportion of top-performing students in mathematics shrank by 4 percentage points between 2012 and 2018, while the proportion of top-performing students in science decreased by 9 percentage points between 2006 and 2018. Meanwhile, the proportion of low-achieving students in reading grew by 5 percentage points between 2009 and 2018; the proportion of low-achieving students in mathematics grew by 3 percentage points between 2012 and 2018; and the share of low performers in science increased by 9 percentage points between 2006 and 2018.

## Where All Students Can Succeed

Figure 3. Differences in performance and expectations related to personal characteristics



Notes: Only countries and economies with available data are shown. (1) Girls' minus boys' performance; (2) Advantaged minus disadvantaged students' performance; (3) Immigrants' minus non-immigrants' performance in reading; After accounting for students' and schools' socio-economic profile.

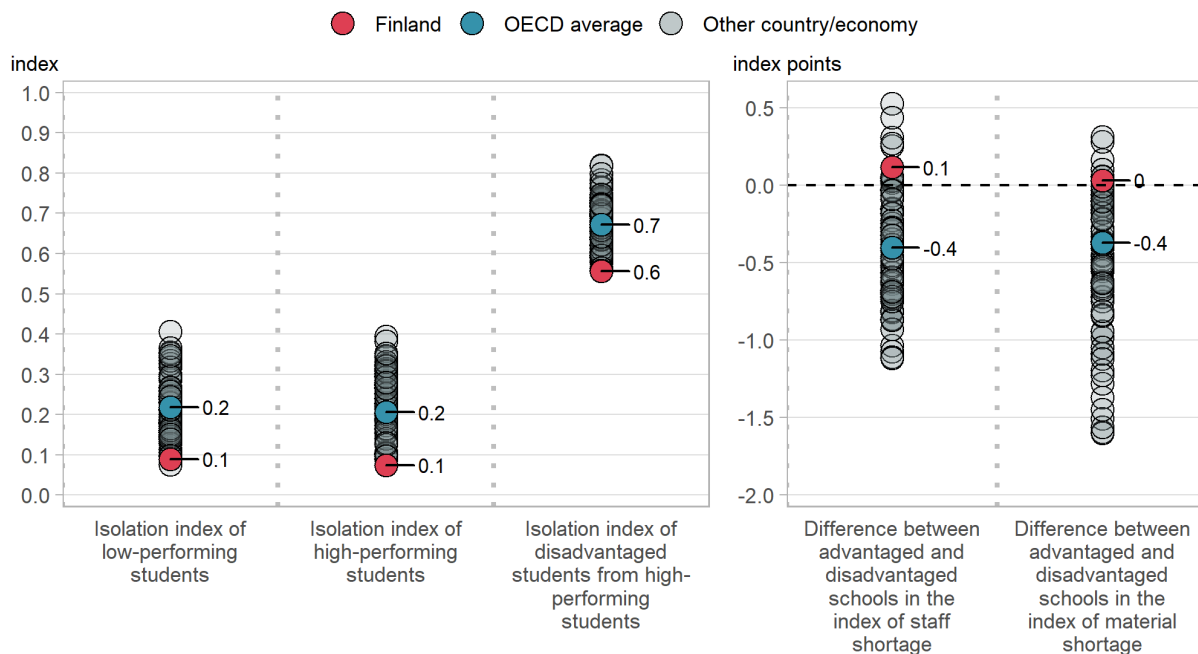
Source: OECD, PISA 2018 Database, Tables II.B1.2.3, II.B1.7.1 and II.B1.9.3.

### Equity related to socio-economic status

- In Finland, socio-economically advantaged students outperformed disadvantaged students in reading by 79 score points in PISA 2018. This is smaller than the average difference between the two groups (89 score points) across OECD countries. In PISA 2009, the performance gap related to socio-economic status was 61 score points in Finland (and 87 score points on average across OECD countries).
- Some 26% of advantaged students in Finland, but only 6% of disadvantaged students, were top performers in reading in PISA 2018. On average across OECD countries, 17% of advantaged students, and 3% of disadvantaged students, were top performers in reading.

- Socio-economic status was also 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 Finland (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).
- Some 13% of disadvantaged students in Finland were able to score in the top quarter of reading performance, indicating that disadvantage is not destiny. On average across OECD countries, 11% of disadvantaged students scored amongst the highest performers in reading in their countries.
- In Finland, low- and high-performing students are clustered in certain schools less often as the OECD average.
- School principals in Finland reported a similar level of staff and a higher level of material shortage, compared to the OECD average; but there was no significant difference in staff shortages between advantaged and disadvantaged schools. In Finland, 4% of students enrolled in a disadvantaged school and 9% of students enrolled in an advantaged school attend a school whose principals 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 Finland 94% of teachers in advantaged schools and 91% in disadvantaged schools are “fully certified”. The proportion of teachers with at least a master’s degree is similar in advantaged and disadvantaged schools.
- Many students, especially disadvantaged students, hold lower ambitions than would be expected given their academic achievement. In Finland, about three in seven high-achieving disadvantaged students – but one in eight high-achieving advantaged students – do not expect to complete tertiary education.

**Figure 4. School segregation and gap in material and staff shortage between advantaged and disadvantaged schools**



Notes: Only countries and economies with available data are shown. The isolation indices ranging from 0 (no segregation) to 1 (full segregation) measure whether low-/high-performing students or disadvantaged students are more or less concentrated in some schools. See detailed description of the indices in Volume II Chapter 4.

Source: OECD, PISA 2018 Database, Tables II.B1.4.1, II.B1.4.8, II.B1.5.13 and II.B1.5.14.

### ***Equity related to gender***

- In all countries and economies that participated in PISA 2018, girls significantly outperformed boys in reading— by 30 score points on average across OECD countries. In Finland, the gender gap in reading (52 score points) was higher than the average gap. The gap was similar to that observed in 2009 (55 score points), although boys performance declined over the period.
- While in most OECD countries boys outperformed girls in mathematics, in Finland girls outperformed boys in this domain. While girls slightly outperformed boys in science (by two score points) on average across OECD countries in PISA 2018, in Finland girls outperformed boys in science by 24 score points.
- Amongst high-performing students in mathematics or science, one in eight boys in Finland expects to work as an engineer or science professional at the age of 30, while only about one in ten girls expect to do so. About three in eight high-performing girls expects to work in health-related professions, while only about one in seven high-performing boys expects so. Only 4% of boys, and almost no girl in Finland expect to work in ICT-related professions.

### ***Equity related to immigrant background***

- In 2018, some 6% of students in Finland had an immigrant background, up from 3% in 2009. Amongst these immigrant students, about four in nine were socio-economically disadvantaged.
- The average difference in reading performance between immigrant and non-immigrant students in Finland was 92 score points in favour of non-immigrant students. After accounting for students' and schools' socio-economic profile the difference shrank to 74 score points.
- In Finland, 8% of immigrant students scored in the top quarter of reading performance. Across OECD countries, 17% of immigrant students performed at that level.

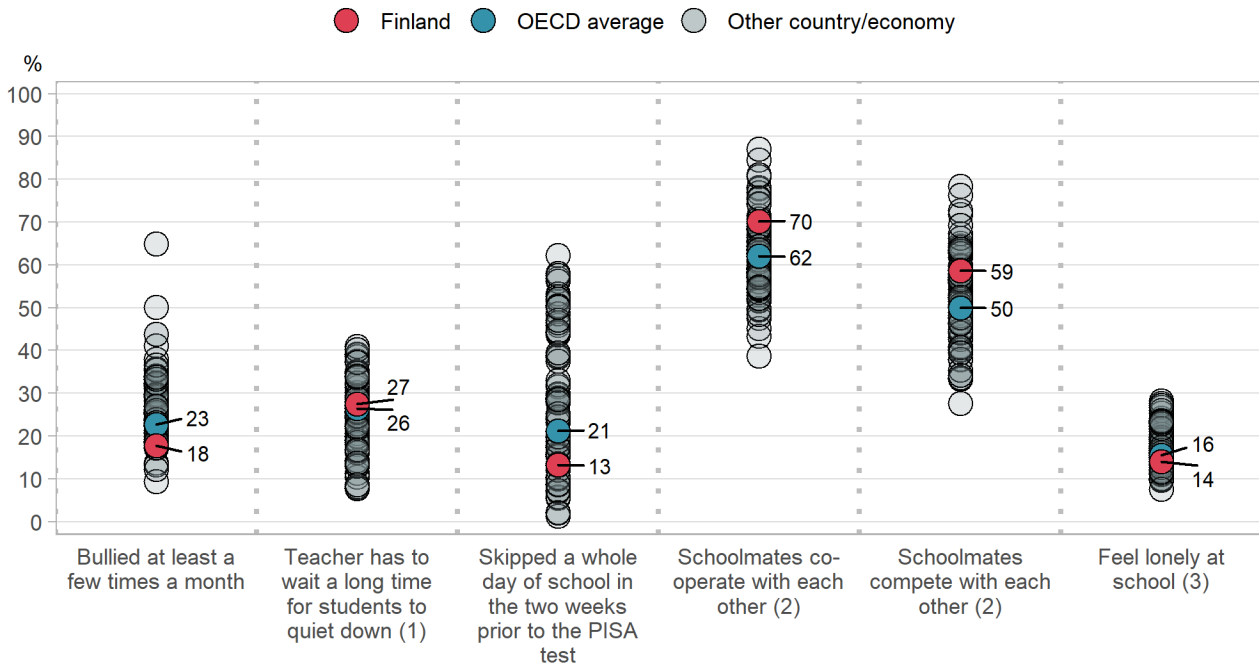
## **What School Life Means for Students' Lives**

### ***How is the school climate in Finland?***

- In Finland, 18% of students reported being bullied at least a few times a month, compared to 23% on average across OECD countries. Yet, 91% of students in Finland (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 27% of students in Finland (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. In Finland, students who reported that, in every or most lessons, the teacher has to wait a long time for students to quiet down scored 15 score points lower in reading than students who reported that this never happens or happens only in some lessons, after accounting for socio-economic status.
- 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 Finland, 13% of students had skipped a day of school and 45% 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 value school enjoyed a better disciplinary climate, scored higher in the reading assessment and received greater emotional support from parents were less likely to have skipped school.
- Some 69% of students in Finland (OECD average: 74%) agreed or strongly agreed that their teacher shows enjoyment in teaching. In most countries and economies, including in Finland, 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 Finland, 70% of students reported that their schoolmates co-operate with each other (OECD average: 62%) and 59% reported that they compete with each other (OECD average: 50%).

- Some 14% of students in Finland (OECD average: 16%) agreed or strongly agreed that they feel lonely at school.

Figure 5. School climate



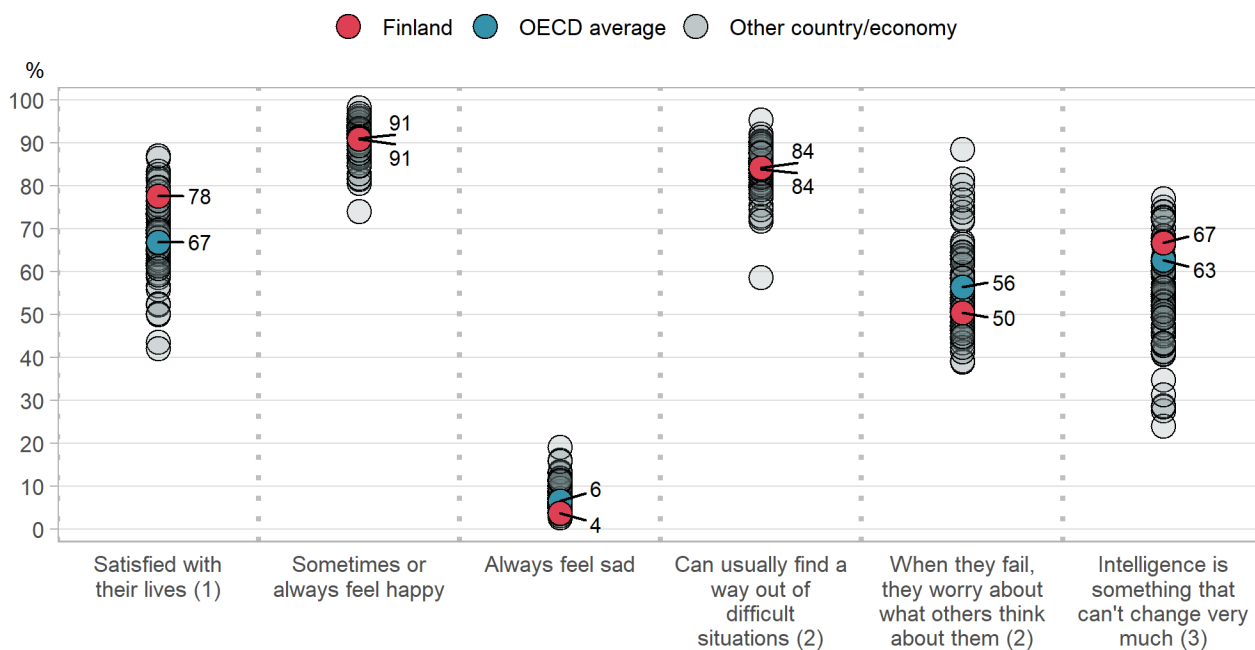
Notes: Only countries and economies with available data are shown. (1) In every or most language-of-instruction lessons; (2) Very or extremely true; (3) Agreed or strongly agreed.

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

### How do students in Finland feel about their lives and learning?

- In Finland, 78% 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 91% of students in Finland 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. Students were more likely to express sadness when they were bullied more frequently.
- In Finland, 84% of students agreed or strongly agreed that they can usually find a way out of difficult situations (OECD average: 84%), and 50% 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 in Finland, 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 hold 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 Finland, 67% of students hold a growth mindset.

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 assessed reading, with mathematics, science and global competence, with reading as main focus, PISA 2018 also included an assessment of young people's financial literacy, which was optional for countries and economies. Finland did not participate in the assessment of global competence, but participated in the assessment of financial literacy. 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 Finland, 5 649 students, in 214 schools, completed the assessment, representing 56 172 of the 15-year-old students (96% 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.

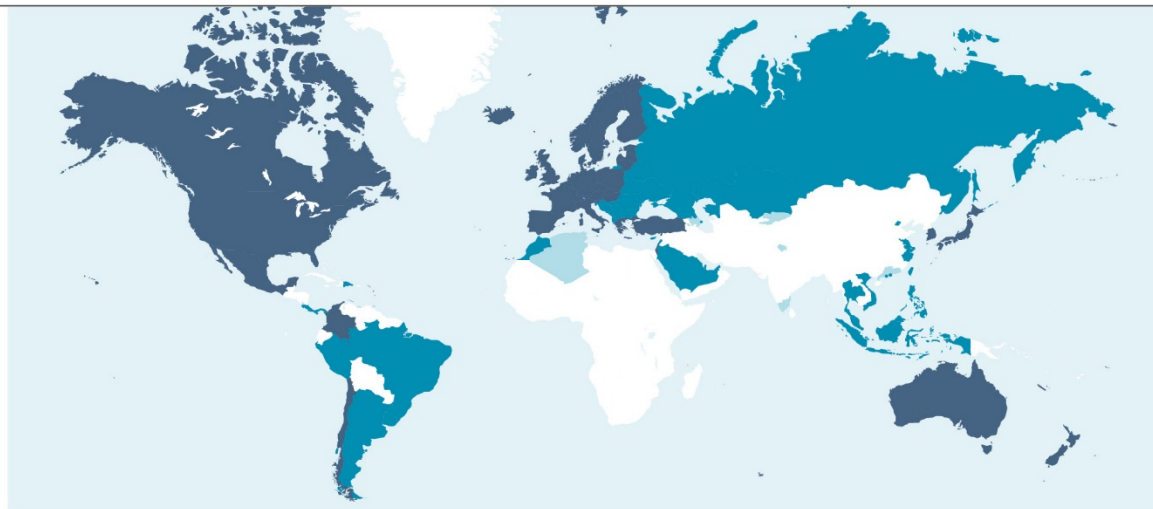
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OECD (2019), *PISA 2018 Results (Volume III): What School Life Means for Students' Lives*, PISA, OECD Publishing, Paris, <https://doi.org/10.1787/acd78851-en>

## 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.

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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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