



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

### 21<sup>st</sup>-century readers: Developing literacy skills in a digital world

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 societies. The assessment in 2018 focuses on reading, mathematics, science and the innovative domain of global competence. Reading was the main subject assessed in PISA 2018, and the reading framework was devised to include essential reading skills in a digital world.

The thematic report **21<sup>st</sup>-century readers: Developing literacy skills in a digital world** provides important insights into how 15-year-old students are developing reading skills that help them navigate through information in a technology-rich 21st century. This report focuses on policies and practices that can harness digitalisation to create better learning opportunities. It also looks at ways to counter digitalisation's disruptive effects in and for education.

## Romania

### Summary of key findings

- Compared to students who rarely or never read books, print-book readers in Romania scored 38 points more in reading after accounting for students' and schools' socio-economic profile, and students' gender. Digital-book readers also scored higher in reading than students who rarely or never read books (25 points).
- Students in Romania scored well below the OECD average in the index of reading strategies for assessing the credibility of sources (- 0.14 points, OECD average: - 0.1), similar to students in Belarus, Hong Kong (China), Macao (China) and Viet Nam, and disadvantaged students score significantly lower than advantaged students (0.40 points of difference).
- In Romania, about one third of the gender differences in reading performance can be accounted for by the difference between boys' and girls' knowledge of effective reading strategies (i.e. understanding and memorising a text, summarising information, and assessing the credibility of sources).
- In Romania, the index of enjoyment of reading has remained unchanged between 2009 and 2018, (0.10). However, the gender gap in this index is one of the ten largest among all participating countries and economies in PISA 2018 (0.73, OECD average: 0.60). Differences between advantaged and disadvantaged students in the index of enjoyment of reading in Romania are also significant (0.37 points).

## Digital divide

- In Romania, 87% of students (OECD-31 average: 89%) had both a connection to the Internet at home and a computer they could use for schoolwork in PISA 2018. This was 56 percentage points more than in PISA 2006 and significantly above the OECD average (15 percentage points).
- In Romania, some 72% (OECD average: 79%) of students attending disadvantaged schools<sup>1</sup> compared to 97% (OECD average: 94%) of students attending advantaged schools reported having access to the Internet and a computer they can use for schoolwork at home. In Denmark, Iceland and Poland, over 95% of students attending disadvantaged schools report that they had a computer linked to the Internet for doing schoolwork at home. In contrast, this percentage is lower than 20% in Indonesia, Mexico, Morocco, Panama, Peru, the Philippines, and Viet Nam.

## Opportunity to learn

- In Romania, 44% of students reported being trained at school on how to recognise whether information is biased (OECD average: 54%). More than 75% of students had access to this school training in Albania, Singapore and the United States. However, less than 40% of students did so in Argentina, Brunei Darussalam, Costa Rica, Latvia, Morocco and Viet Nam.
- The percentage difference between students from advantaged<sup>2</sup> and disadvantaged backgrounds who were taught how to detect biased information on the Internet across OECD countries was 8 percentage points in favour of advantaged students. In Romania, there is no difference between both groups of students.

## Strategies to tackle inequality and gender gaps

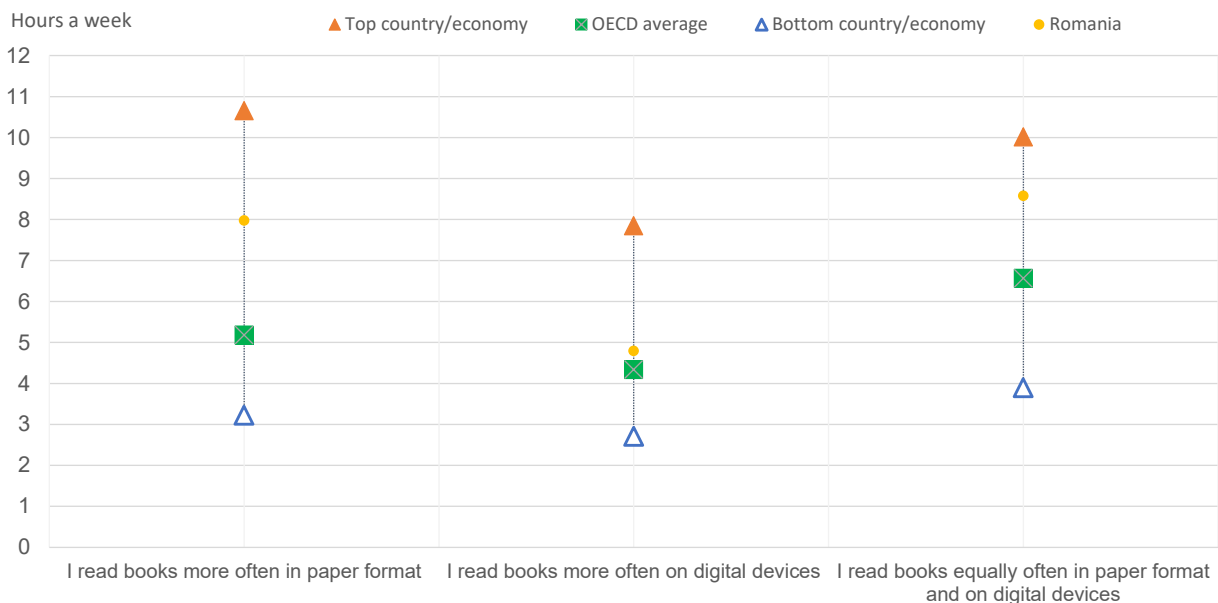
- In Romania, students scored below the OECD average in reading (428, OECD average: 487) and reported a higher than average perception of difficulty of the PISA reading assessment (0.26), comparable to those in Kosovo and Uruguay. As in 69 other countries/economies, disadvantaged students in Romania perceived the PISA reading assessment as more difficult than advantaged students, even after accounting for students' reading scores. This perception-of-difficulty gap between advantaged and disadvantaged students was the largest in B-S-J-Z (China), Luxembourg, and Singapore – close to a half standard deviation after accounting for reading performance (approximately -0.50). This gap in Romania was -0.34 (OECD average: -0.22).
- On average across OECD countries, more boys reported that they felt the PISA reading test was easier than girls did even though boys scored 25 points lower than girls did in reading after accounting for students' socio-economic backgrounds. In Romania, boys scored 31 points lower than girls did in reading after accounting for students' socio-economic backgrounds but they actually reported they felt the PISA reading test was more difficult than girls did.
- About 29% of the association between socio-economic background and reading performance can be accounted for by the difference between socio-economically advantaged and disadvantaged students' reported self-perception of reading competence in Romania (OECD average: 29%).
- Compared to almost two-thirds on average across OECD countries, about one third of gender differences in reading performance in Romania can be accounted for by the difference between boys' and girls' knowledge of effective reading strategies - understanding and memorising a text; summarising information; and assessing the credibility of sources.
- Students in Romania scored below the OECD average in the index of knowledge of reading strategies for assessing the credibility of sources (-0.14 points, OECD average: -0.01), similar to students in Belarus, Hong Kong (China), Macao (China), Saudi Arabia and Viet Nam. Students in Romania reported a large socio-economic gap (0.40 points) in this index, comparable with the gaps in Malta and Slovenia.

## Print reading in a digital world

- Compared to students who rarely or never read books, print-book readers in Romania scored 38 points more in reading; and those who balance print and digital reading scored 35 points more after accounting for students' and schools' socio-economic profile, and students' gender. Digital-book readers scored 15 points more than those who rarely or never read books on average across OECD countries, in Romania they scored 25 points higher.
- Compared to students who rarely or never read books, digital-book readers in Romania read about 3 hours more a week (OECD average: 3 hours); print-book readers about 5 hours more a week (OECD average: 4 hours); and those who balance both formats about 6 hours or more a week after accounting for students' and schools' socio-economic profile, and students' gender (OECD average: 5 hours).
- The index of enjoyment of reading decreased between 2009 and 2018 on average across OECD countries and economies, and in one-third of countries and economies with available data on this index. In Romania, the index remained the same and positive between the two years – 0.10 points.
- Girls and students from a higher socio-economic background typically report higher levels of enjoyment of reading. The gap between boys and girls was large in Romania –0.73 points, and similar to that in Spain and Portugal. Differences in the index of enjoyment of reading between disadvantaged and advantaged students is significant (0.37 points) in Romania, but still lower than on the average of OECD countries (OECD average: 0.45 points).
- Computer-based tests were used in most countries, in Romania, however, students used a pen-and-paper test. On average across OECD countries, almost one in five students reported feeling lost in the PISA test when navigating through different pages. In Romania, about one third of students reported these difficulties while using a pen-and-paper test.

**Figure 1. Average time of reading for enjoyment by the format of reading**

Difference between students who read books in the following way and those who "rarely or never read books", after accounting for students' and schools' socio-economic profile, and students' gender



## Teachers' practices

- Disadvantaged students and boys – who typically have a lower reading performance - perceived less stimulation from their teachers in reading activities in 49 countries/economies participating in PISA 2018. This is the case in Romania, where disadvantaged students and boys had a lower perception of teachers' stimulation of reading engagement than advantage students and girls, by 0.28 and 0.26 points, respectively. In Romania, girls scored 34 points more than boys in reading performance (OECD average: 30 points), and advantaged students 109 points more than disadvantaged (OECD average: 89).
- The association between teachers' stimulation of reading engagement and students' enjoyment of reading is positive in all participating countries and economies in PISA 2018. It is positive, as well, with reading performance in 61 countries and economies after accounting for students' and schools' socio-economic profile. In Romania, the association with reading performance is positive as there is a six point change in performance associated with a one-unit increase in the index of teacher's stimulation of reading engagement (OECD average: 7 points).
- Reading fiction texts and reading long texts for school more frequently was positively associated with reading performance in most countries/economies, after accounting for students' and schools' socio-economic profile. In Romania, students who reported reading fiction books two or more times during the last month scored 11 points more in reading than students who did not, after accounting for students' and schools' socio-economic profile (OECD average: 9 points). Students who had to read longer pieces of texts for school (101 pages or more) achieved 54 points more in reading than those who reported reading smaller pieces of text (10 pages or less), after accounting for students' and schools' socio-economic profile and students' gender (OECD average: 31).

Figure 2. Indicators of reading in a digital world



## 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.

### 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.

### The assessment

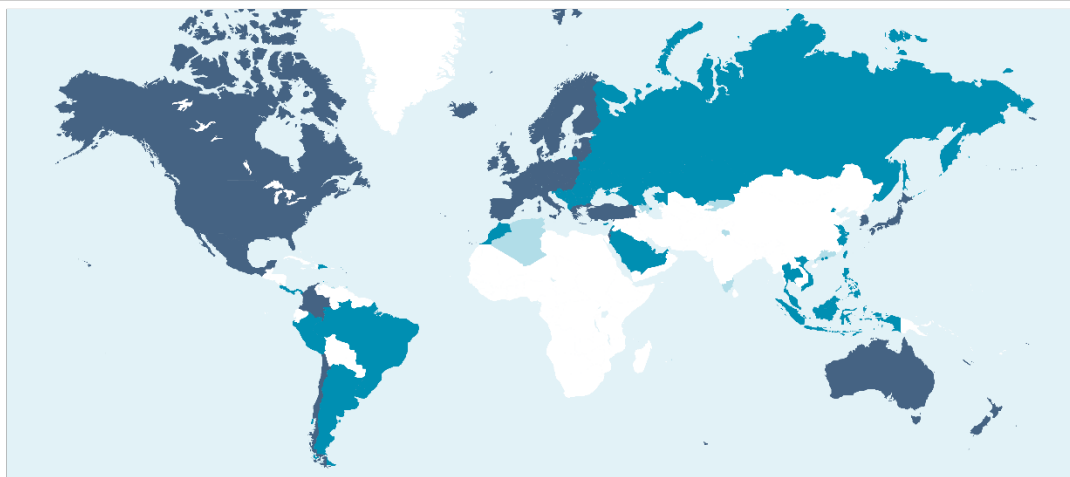
- Computer-based tests were used in most countries (Romania, however, used a pen-and-paper test), with assessments lasting a total of two hours. In reading, a multi-stage adaptive approach was applied in computer-based tests whereby students were assigned a block of test items based on their performance 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. About 930 minutes 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 choose 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.

## What is unique about PISA?

PISA is unique because of its:

- policy orientation, which links data on student learning outcomes with data on students' backgrounds and attitudes towards learning, and with key factors that shape their learning in and outside of school; by doing so, PISA can highlight differences in performance and identify the characteristics of students, schools and education systems that perform well.
- innovative concept of "literacy", which refers to students' capacity to apply their knowledge and skills in key areas, and to analyse, reason and communicate effectively as they identify, interpret and solve problems in a variety of situations.
- relevance to lifelong learning as PISA asks students to report on their motivation to learn, their beliefs about themselves, and their learning strategies.
- regularity, which enables countries to monitor their progress in meeting key learning objectives.
- breadth of coverage, which, in PISA 2018, encompassed all 37 OECD countries and 42 partner countries and economies.

## Map of PISA countries and economies



OECD member countries	Partner countries and economies in PISA 2018	Partner countries and economies in previous cycles
Australia	Albania	Algeria
Austria	Argentina	Azerbaijan
Belgium	Baku (Azerbaijan)	Guangdong (China)
Canada	Belarus	Himachal Pradesh (India)
Chile	Bosnia and Herzegovina	Kyrgyzstan
Colombia	Brazil	Liechtenstein
Czech Republic	Brunei Darussalam	Mauritius
Denmark	B-S-J-Z (China)**	Miranda (Venezuela)
Estonia	Bulgaria	Tamil Nadu (India)
Finland	Costa Rica	Trinidad and Tobago
France	Croatia	Tunisia
Germany	Cyprus <sup>1</sup>	
Greece	Dominican Republic	
Hungary	Georgia	
Iceland	Hong Kong (China)	
Ireland	Indonesia	
Israel	Jordan	
Italy	Kazakhstan	
Japan	Kosovo	
Korea	Lebanon	
Latvia	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	

\* 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: Beijing, Shanghai, Jiangsu and Zhejiang. In PISA 2015, the four PISA participating Chinese provinces were: Beijing, Shanghai, Jiangsu and Guangdong.

1. Note by Turkey: The information in this document with reference to "Cyprus" relates to the southern part of the Island. There is no single authority representing both Turkish and Greek Cypriot people on the Island. Turkey recognises the Turkish Republic of Northern Cyprus (TRNC). Until a lasting and equitable solution is found within the context of the United Nations, Turkey shall preserve its position concerning the "Cyprus issue".

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#### References

OECD (2021), *21st-century readers: Developing literacy skills in a digital world*, PISA, OECD Publishing, Paris,

<https://doi.org/10.1787/a83d84cb-en>

For more information on 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.

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<sup>1</sup> The socio-economic profile is measured by the PISA index of economic, social and cultural status (ESCS). A socio-economically disadvantaged (advantaged) school is a school in the bottom (top) quarter of the ESCS in the relevant country/economy.

<sup>2</sup> The socio-economic profile is measured by the PISA index of economic, social and cultural status (ESCS). A socio-economically disadvantaged (advantaged) student is a student in the bottom (top) quarter of the ESCS in the relevant country/economy.