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EU PISA 2025: First results

European Education Policy Brief



European Education Policy Briefs series

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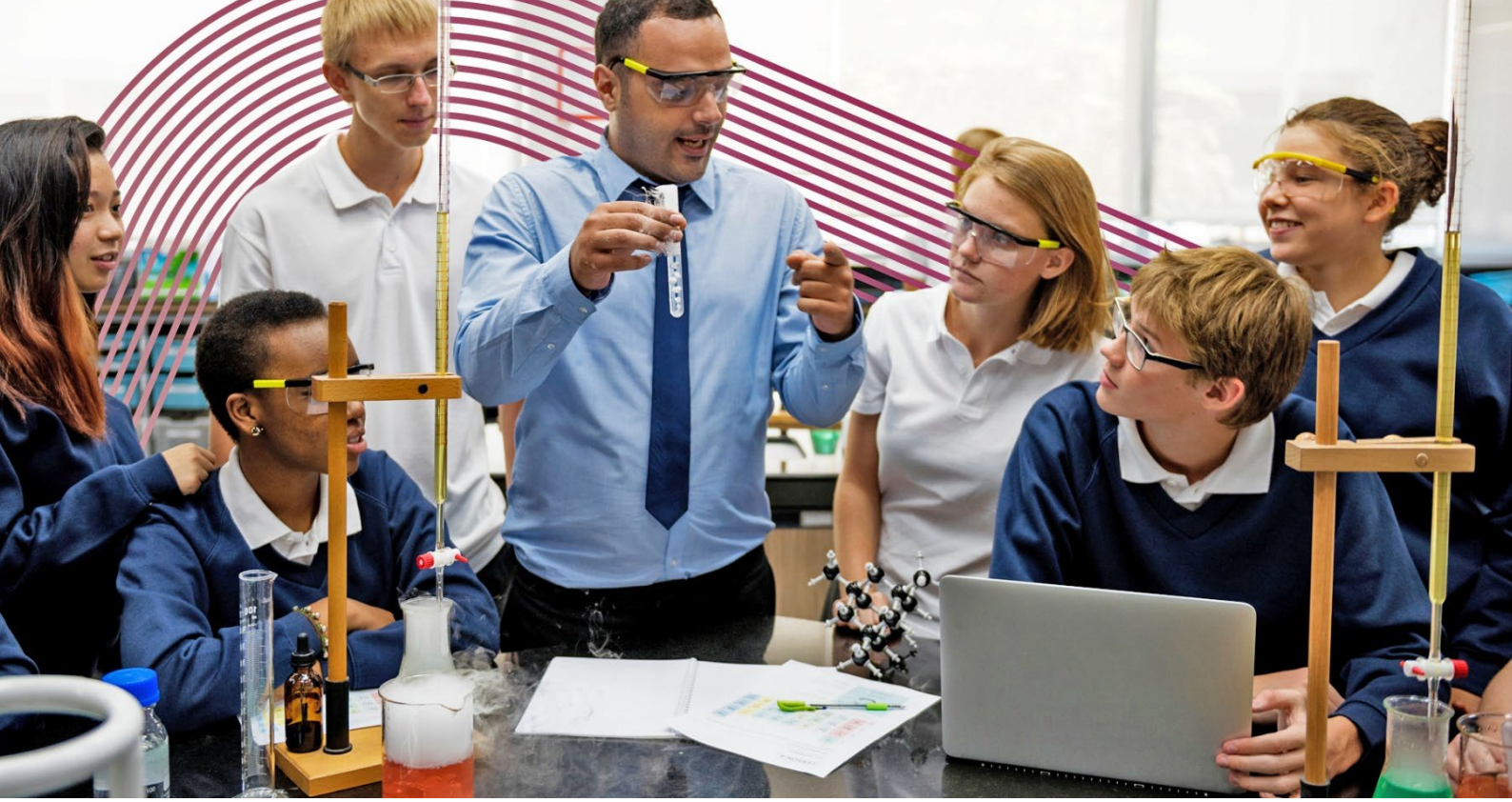
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Executive Summary

This *European Education Policy Brief* provides a first analysis of PISA 2025 results from an EU perspective. It will contribute to the evidence base supporting the European Commission's forthcoming Education Package, which aims to support the efforts of EU countries to reverse the negative trend in basic skills proficiency through support for schools and teachers, and by mainstreaming AI literacy.

The EU is already helping Member States in their efforts to improve basic skills. The Action Plan on Basic Skills, as part of the Union of Skills, sets out concrete short- to medium-term measures for the EU and its Member States to strengthen basic skills and promote excellence, from early childhood through all stages of school education. This includes the European Literacy Coalition, launched in September 2026. The STEM Education Strategic Plan, under the Union of Skills, aims to address critical challenges in science, technology, engineering, and mathematics (STEM) education. The 2026 EU-OECD AI Literacy Framework for Primary and Secondary Education supports education systems in helping learners understand, critically assess and use AI responsibly and ethically. The first Council Recommendation on Human Capital urges Member States to address the basic skills decline in order to boost competitiveness and resilience. Finally, the next Multiannual Financial Framework presents a clear opportunity to provide the investments that are needed to tackle the basic skills challenge.

The OECD Programme for International Student Assessment (PISA) measures the basic skills (science, reading and mathematics) competency of 15-year-olds across the world. The results of the PISA 2025 study were published on 8 September 2026, three years after its last edition. While covering also reading and mathematics, PISA 2025 assesses students' proficiency in science more in depth. 91 countries and economies around the world, including all 27 EU countries —as well as all candidate countries and potential candidates (except for Bosnia and Herzegovina)— participated in PISA 2025.

Underachievement is on the rise, with roughly one third of students underachieving in reading or mathematics and one quarter in science. The EU set a target on the underachievement rate of 15-year-olds (i.e. the share of students who are not able to reach a minimum competence benchmark, called PISA Level 2) in reading, mathematics and science: *it should be less than 15%*, by 2030. In 2025, 33.9% of students underachieve in mathematics, 31.3% in reading and 25.9% in science at EU level. Since 2015, the underachievement rate has risen by 11.6 percentage points in mathematics, 11.3 percentage points in reading and 4.8 percentage points in science. Compared to the previous PISA cycle (2022), the increase reached 4.4, 5.1 and 1.7 percentage points,

respectively. Only Estonia reaches the 2030 EU-level target in science, while no EU country reaches it in reading or mathematics.

Top performance is falling, with only roughly 1 student in 20 achieving excellence in reading and 1 in 15 achieving excellence in mathematics or science. The EU set a target on the top performance rate of 15-year-olds (i.e. the share of students who reach an excellent level of competence, corresponding to PISA Level 5 or higher) in reading, mathematics and science: *it should be at least 12%*, by 2030. In 2025, top performance rates stand at 4.8% in reading, 6.4% in science and 6.8% in mathematics in the EU as a whole. Since 2015, it declined by 3.9 percentage points in mathematics, 3.8 percentage points in reading and 0.7 percentage points in science. Compared to 2022, the decrease reached 1.1, 1.7 and 0.5 percentage points, respectively. Estonia and the Netherlands reach the 2030 EU-level target in mathematics, while no EU country meets it in science or reading.

The EU's overall performance lags behind that of other advanced economies. Comparing the EU-average results in underachievement and top performance with those of well-performing non-EU advanced countries (Canada, Japan, Singapore, South Korea, the United Kingdom and the US) presents a sobering picture. The EU has the highest underachievement rate in reading and science, and the second highest (after the US) in mathematics. As regards top performance, the EU has the lowest rate in all three subjects. The EU performance is close to the OECD average as regards both underachievement and top performance. Between 2022 and 2025, the EU records no improvement in its relative performance compared with other advanced economies.

The best-performing education systems tend to have the lowest levels of inequality. A positive message has constantly emerged from PISA studies: EU countries with lower levels of underachievement tend to reach higher levels of top performance too. Moreover, the countries with the best overall performance in tackling underachievement (Estonia, Ireland, Finland, Lithuania and Poland) in science are also among those with the smallest socioeconomic gaps. However, disadvantaged students are around four times more likely than advantaged students to underachieve in science.[1] At the same time, advantaged students are about eight times more likely than disadvantaged students to be top performers in science. All these findings highlight the scale of the equity challenge to the EU education systems.

The decline in student performance recorded in PISA assessments reflects a combination of long-term structural weaknesses and more recent pressures on learning. It started in the 2010s, was exacerbated by the Covid-19 pandemic in PISA 2022 and continued between 2022 and 2025. This trend should not be attributed to a single cause, but rather to several interacting developments. Furthermore, the acquisition of basic skills is a cumulative process that develops progressively throughout pre-primary, primary and secondary education: when students experience learning gaps at a young age, these gaps can widen over time.

Given these considerations, and since PISA data cannot establish causality, the decline in EU results in 2025 appears to be associated with several factors that research has linked to performance. They are common to most PISA participants worldwide, except for teacher shortages, which are more specific to the EU.

Digital distraction —both at school and out of school— is a concern for student outcomes, while well-structured use of digital tools for learning and effective governance have a positive effect. PISA 2025 data show that 30.5% of EU students are frequently distracted by digital tools during science lessons, and these students score, on average, 13 points lower in science, even after accounting for socioeconomic factors. The evidence associates unstructured and substitutive use of digital devices with lower performance. Moderate, purposeful use of digital tools for learning at school is not a risk factor. The lesson from the best performers in the EU and worldwide is that effective governance is key: clear and enforced school-level rules on non-instructional use, teachers confident enough to direct how tools are used, AI literacy taught rather than assumed, protected time for sustained reading and writing, and monitoring to identify and implement "what works". In other words, what happens in classrooms depends primarily on education policy. At the same time, extensive use of digital devices

[1] This Brief presents the figures for science because science is the main subject tested in PISA 2025. The figures for the other two subjects are similar.

outside school—particularly to access social media—is associated with poorer learning outcomes and other risks. The sharp decline in reading performance also raises concerns that increasingly rapid, fragmented digital reading habits may weaken students' ability to engage with complex texts.

AI can support learning when used as a tool to stimulate intellectual work, but its use as a shortcut to avoid effort may undermine cognitive development and critical thinking. When generative AI is used to augment human knowledge and students engage constructively with it, this is associated with higher learning outcomes. However, AI tools often shift from their intended role as "cognitive support" to being used to bypass intellectual effort. PISA 2025 data highlight this concern: at EU level, 31.2% of students report frequently using AI to summarise texts they are required to read. These students score, on average, 18 points lower in science than those who do not frequently use AI for this purpose. This negative association is observed across EU countries, with Bulgaria the only exception, although its positive association is not statistically significant.[2]

Family support is an important factor in students' learning success, yet PISA 2025 data suggest that parental engagement is declining across the EU. Students who report that their parents or family members frequently take an interest in what they learn at school score, on average, 11 points higher in science than those who do not, with this positive association observed across all EU countries. At the same time, the share of students reporting frequent family interest fell from 66.0% in 2022 to 57.5% in 2025 at EU level. This decline is observed also in all EU countries, except for Estonia and Slovakia.

Persistent teacher shortages may contribute to learning deficits by reducing the quality and continuity of learning in EU education systems. PISA 2025 data show that 40.2% of EU students were in schools whose principals reported that a lack of teaching staff hindered their capacity to provide instruction, up from 28.3% in 2018. Teacher shortages in the EU are also likely to have worsened after the Covid-19 pandemic, and are particularly challenging for STEM subjects, rural areas and schools serving disadvantaged students, and may place additional pressure on existing teachers. While the intensity of shortages varies considerably across EU countries, the indicator is based on principals' perceptions and should therefore be interpreted with some caution. Moreover, teacher shortages at earlier stages of education may also affect performance at age 15, as learning is cumulative and early gaps can persist and even amplify over time.

Education systems cannot solve this deeply rooted basic skills challenge alone. The combination of structural drivers requires a whole-of-government and a whole-of-society response to halt and reverse the multi-year decline in basic skills proficiency.

[2] Statistical significance in PISA means a result is unlikely to have happened just by random chance alone, and is likely to reflect real differences between two categories of students or between two points in time.



Introduction

The OECD Programme for International Student Assessment (PISA) is a large-scale international study which measures 15-year-olds' competences in science, reading and mathematics. Since its launch in 2000, the study has been carried out every three years.[3] The last study took place in 2022, with its results released in 2023. The data for the current cycle was collected in 2025. The OECD released the first PISA 2025 results on 8 September 2026 (OECD, 2026b).

PISA 2025 focused on students' proficiency in science[4] and involved more than 760,000 students worldwide,[5] representing about 33 million 15-year-olds across 91 countries and economies. All EU countries participated.[6] With the exception of Bosnia and Herzegovina, all candidate countries to EU accession and potential candidates took part in PISA 2025. The primary goal of PISA is to assess how well students can apply their skills and knowledge to real-life problems, think critically across disciplines and demonstrate effective learning strategies rather than to measure their ability to memorise information and reproduce material. PISA also collects data on various contextual factors, including students' attitudes toward learning, their socioeconomic background, and their school learning environment.

PISA has gained significant global attention because it provides a benchmark for informing policy decisions and effective reform. It is a valuable tool for policymakers and educators to compare educational systems and identify good practices. It can be used to create shared points of reference, leverage peer pressure and help countries improve their education policies and outcomes by learning from the experiences of high-performing systems. Nevertheless, PISA only measures competences in science, reading and mathematics, and it

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3 The only exception concerned PISA 2022. Originally planned for 2021, the survey took place one year later because of Covid-19 disruptions to the normal functioning of education systems.

4 Each PISA study assesses one domain more in depth than the other two. PISA 2022 focused on reading, while PISA 2018 on mathematics and PISA 2015 on science.

5 The sample of students who sit the PISA assessment include both those who study in public or private schools, as well as in academic or vocational tracks.

6 The OECD applies the most rigorous scientific standards to make sure that PISA results are fully comparable across countries. However, it recommends caution when interpreting 2025 data for the Netherlands, because not all PISA sampling standards were met (OECD, 2026b, pp. 16-17).

should not be used to assess the quality of the entire education system, which has to equip learners with a wider range of competences.

This *European Education Policy Brief* provides a first analysis of the PISA 2025 results from an EU perspective. It will contribute to the evidence base underpinning the European Commission's forthcoming Education Package, which aims to support the efforts of EU countries to reverse the negative trend in basic skills proficiency through support for schools and teachers, and by mainstreaming AI literacy. While the analysis focuses on EU Member States, the findings of this *Brief* can be useful also to support education reforms in candidate countries and potential candidates.

The *Brief* is composed of two main sections. Section 1 presents the main findings for underachievement, top performance and socioeconomic gaps, including comparisons with other advanced economies. Section 2 provides initial insights into possible drivers of declining performance.[7]

[7] Further to the present Brief, the forthcoming *Education and Training Monitor 2026* will include a more thorough analysis of PISA 2025 EU data and performance drivers.



1. Main results

Why are literacy, mathematics and science skills essential to the EU's economy and society?

Europe's competitiveness and social cohesion depend on strong basic skills. Literacy, mathematics and science skills – together with digital and citizenship skills[8] – are the foundation for lifelong learning, upskilling and reskilling. They are also crucial for innovation and full participation in democratic life. Missing out on these skills is not just an individual loss but a loss for our European societies (Box 1). Both the Draghi and Letta reports highlight the need to improve basic skills to strengthen Europe's competitiveness and our Single Market's capacity to innovate in a changing global context. Building a strong educational foundation for quality jobs and lives by enhancing basic skills is one of the four strands of the Union of Skills, addressed in the Action Plan on Basic Skills and the forthcoming Education Package.

In the context of the European Education Area, the Council of the European Union set an EU-level target on underachievement, as measured by PISA: the share of underachieving 15-year-olds[9] in reading, mathematics and science should be less than 15% by 2030 (Council of the European Union, 2026).

At the same time, the EU also needs a large number of young people with excellent literacy, mathematics and science skills to sustain its future innovation capacity. PISA defines those students as "top performers".[10] The Council of the European Union set a target of 12% for the share of top performance in reading, mathematics and science by 2030.

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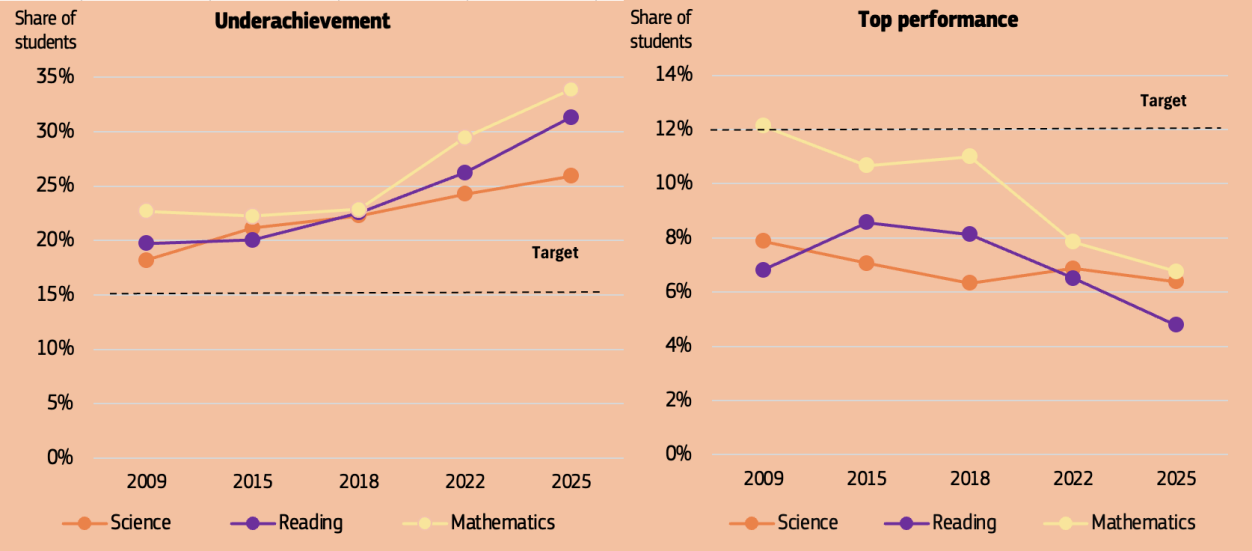
8 Literacy, mathematics, science, digital, and citizenship skills constitute the set of basic skills, as defined in the European Commission's 2025 Action Plan on Basic Skills (European Commission, 2025a).

9 Students are underachievers if they do not reach the PISA competence Level 2, considered as the minimum standard for active participation in society. In practical terms, Level 2 students in science can read evidence, judge simple claims and sources, and make evidence-informed decisions.

10 Students are top performers if they reach the PISA competence Level 5 or 6. Level 6 is the highest competence benchmark in PISA. For example, in science they can critique methods and evidence, handle complex information, and justify decisions in uncertain or unfamiliar contexts.

The EU is moving further away from achieving its 2030 targets on underachievement and top performance. Figure 1 presents the EU-average long-term trends (2009-2025) on underachievement and top performance. The performance decline started before the Covid-19 pandemic for all three subjects, and intensified after it in reading and mathematics. The following subsections will examine trends at the EU and country levels in greater detail.

Figure 1. EU trends in underachievement and top performance (2009-2025)



Source: European Commission services' calculations based on OECD PISA data.

Box 1. The economic impact of literacy, mathematics and science[11]

Research consistently highlights skill formation as a fundamental driver of sustainable competitiveness, economic growth and resilience. By increasing both the stock and quality of human capital, education raises labour productivity and supports the pace of innovation required in a knowledge-based economy (Valero, 2021; European Commission, 2024). This, in turn, strengthens long-term competitiveness and economic growth (Hanushek and Woessmann, 2015). Research also shows that countries with better-skilled populations recover more quickly from economic shocks and demonstrate greater economic resilience (Algan et al., 2021).

Young people with stronger skills have better employment prospects, while those with lower skills face a greater risk of leaving education with poor qualifications, resulting in weaker job prospects and lower participation in lifelong learning. Conversely, recent OECD work shows that declining basic skill levels among young people could reduce long-term multifactor productivity[12] growth by around 3% across OECD countries if no effective policy intervention is implemented (Andrews et al., 2024). Also, the economic cost of failing to invest in education is substantial. According to some estimates, by 2030, European countries could lose between 8% and 10% of their annual GDP due to people having poor basic skills.[13]

11 This box is based on European Commission (2025c).

12 Multifactor productivity (MFP) measures how efficiently labour and capital are used together to produce goods and services. MFP growth is calculated as the portion of GDP growth that cannot be explained by increases in labour and/or capital inputs.

13 UNESCO defines this as 'the social cost' of low basic skills (UNESCO et al., 2024).

Underachievement is on the rise

The underachievement rate in science stands at 25.9% in the EU in 2025.[14] Only Estonia (9.9%) would meet the 2030 EU-level target. The spread between the best and worst performing countries is wide – the underachievement rate exceeds 40% in Cyprus, Bulgaria, Romania and Greece. Underachievement in science at EU level increased by 4.8 percentage points between 2015 and 2025, and by 1.7 percentage points between 2022 and 2025 —the smallest trend changes among the three PISA subjects. At country level, the increase in underachievement between 2022 and 2025 was statistically significant[15] only in 5 cases. Slovakia even experienced a statistically significant decline in underachievement over the same period (Figure 2).

Figure 2. Underachievement rate in science



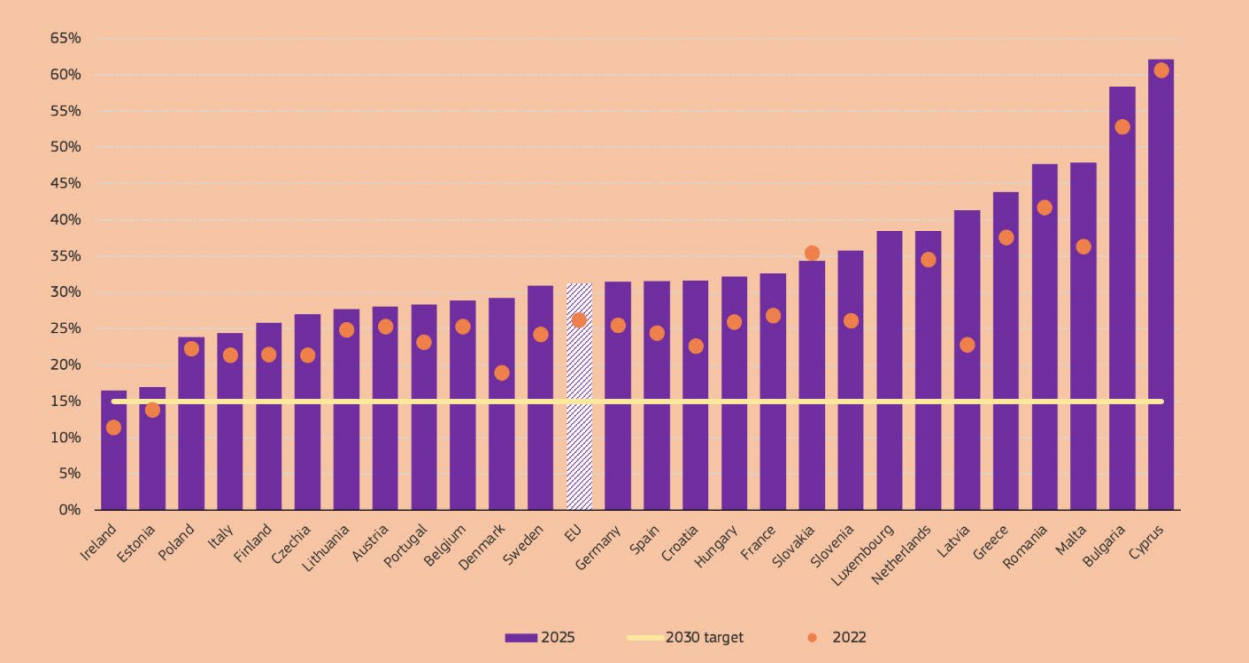
Notes: Changes between 2022 and 2025 are statistically significant for Denmark, Latvia, Malta, Slovakia, Slovenia, Spain. Caution is required when interpreting 2025 data for the Netherlands and 2022 data for Denmark, Ireland, Latvia, the Netherlands because one or more PISA sampling standards were not met (see OECD, 2026b, pp. 16-18; OECD, 2023, pp. 16-20). 2022 data is not available for Luxembourg.
Source: European Commission services' calculations based on OECD PISA data.

The EU-average underachievement rate in reading reaches 31.3% in 2025. No country would meet the 2030 EU-level target. The rate is below 20% only in Estonia and Ireland, while it exceeds 40% in Cyprus, Bulgaria, Malta, Romania, Greece and Latvia. A clear decline in performance is visible over the last decade: the underachievement rate rose by 11.3 percentage points at EU level. However, almost half of that increase (5.1 percentage points) took place between 2022 and 2025. All countries (except for Poland, Austria, Cyprus, Slovakia and the Netherlands) experienced a statistically significant increase in underachievement between 2022 and 2025 (Figure 3).

[14] All EU averages are weighted by the total population of 15-year-olds in each EU country (see OECD, 2026b, Annex A2, Table I.A2.1).

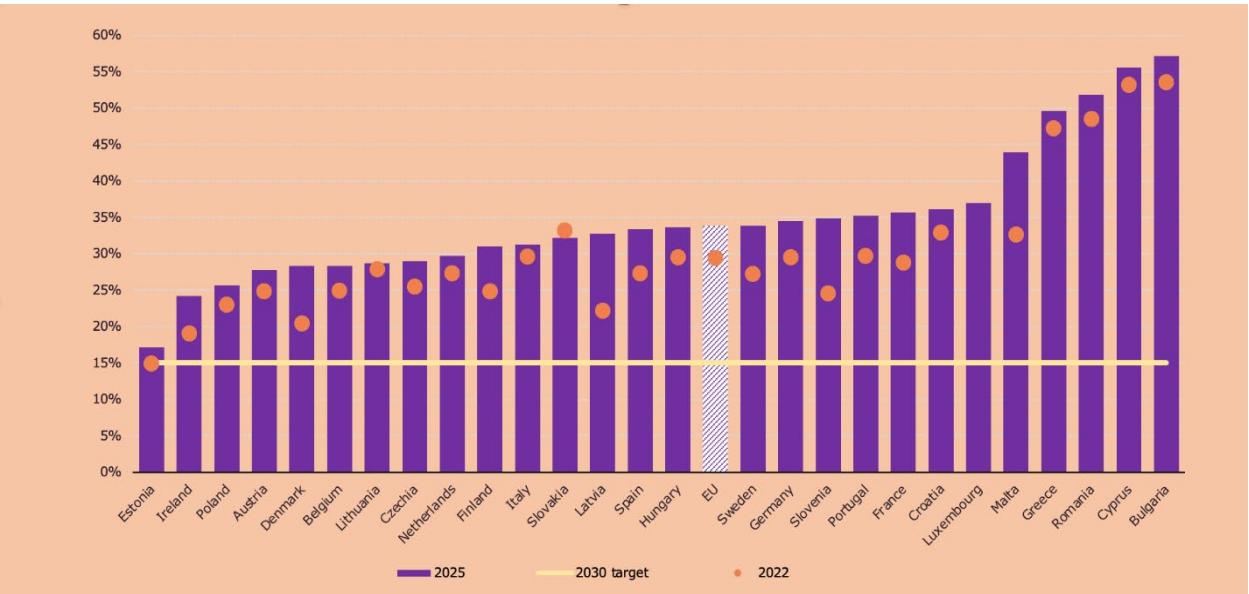
[15] The OECD PISA 2025 report (OECD, 2026b) explains the concept of statistical significance as follows: '*The statistics in this report represent estimates based on samples of students, rather than values that could be calculated if every student in every country had answered every question. Consequently, it is important to measure the degree of uncertainty of the estimates. In PISA, each estimate has an associated degree of uncertainty […] In the tables and figures used in this report, differences are labelled as statistically significant when a difference of that size or larger, in either direction, would be observed less than 5% of the time in samples, if there were actually no difference in corresponding population values*' (p. 326). In other words, statistical significance in PISA means a result is unlikely to have happened just by random chance alone, and is likely to reflect real differences between two categories of students or between two points in time.

Figure 3. Underachievement rate in reading



Notes: Changes between 2022 and 2025 are statistically significant for all countries, except for Austria, Cyprus, the Netherlands, Poland, Slovakia. Caution is required when interpreting 2025 data for the Netherlands, and 2022 data for Denmark, Ireland, Latvia, the Netherlands, because one or more PISA sampling standards were not met (see OECD, 2026b, pp. 16-18; OECD, 2023, pp. 16-20). 2022 data is not available for Luxembourg.
Source: European Commission services' calculations based on OECD PISA data;

Figure 4. Underachievement rate in mathematics

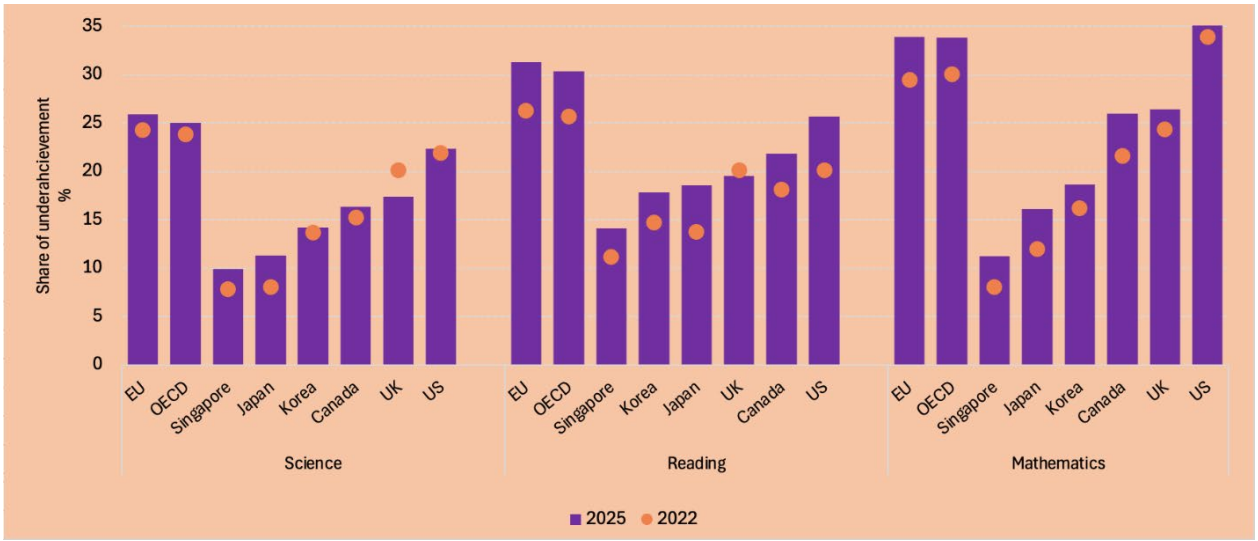


Notes: Changes between 2022 and 2025 are statistically significant for all countries, except for Austria, Bulgaria, Estonia, Greece, Italy, Lithuania, the Netherlands, Poland, Romania, Slovakia. Caution is required when interpreting 2025 data for the Netherlands, and 2022 data for Denmark, Ireland, Latvia, the Netherlands, because one or more PISA sampling standards were not met (see OECD, 2026b, pp. 16-18; OECD, 2023, pp. 16-20). 2022 data is not available for Luxembourg.
Source: European Commission services' calculations based on OECD PISA data.

The underachievement rate in mathematics stands at 33.9% in the EU in 2025. No country would reach the 2030 EU-level target. It is below 25% only in Estonia and Ireland, and it exceeds 40% in Bulgaria, Cyprus, Romania, Greece and Malta (Figure 4). Underachievement in mathematics in the EU increased considerably over the past decade, i.e. by 11.6 percentage points since 2015. As with reading, the increase between 2022 and 2025 was sizeable (4.4 percentage points). A similar pattern is evident in most Member States: the rise in underachievement was statistically significant in 26 countries between 2015 and 2025, and in 16 countries between 2022 and 2025.

The comparison of EU-average results in underachievement with those of well-performing non-EU advanced economies is rather unfavourable. When compared with Canada, Japan, Singapore, South Korea, the UK and the US, the EU has the highest underachievement rate in reading and science, and the second highest (after the US) in mathematics (Figure 5). The EU performance is close to the OECD average[16] in all three subjects. At the same time, the EU average reflects a wide range of national education systems and therefore masks substantial differences in country performance. The results of the best EU performer (Estonia for science and mathematics, Ireland and Estonia for reading) are similar to those of high-performing non-EU countries, such as Japan. Between 2022 and 2025, EU trends have been quite similar to those of Japan and Canada, but overall, more negative than those of the US (except for reading), the United Kingdom, South Korea and Singapore (except for science). In other words, the EU has not improved its relative performance compared with other advanced economies.[17]

Figure 5. Underachievement rates in the EU and selected non-EU advanced economies



Notes: Caution is required when interpreting 2025 data for Canada and the US, and 2022 data for Canada, the US and the UK because one or more PISA sampling standards were not met (see OECD, 2026b, pp. 16-18; OECD, 2023, pp. 16-20).
Source: European Commission services' calculations based on OECD PISA data.

Top performance is falling

Although the trend change was smaller than in reading and maths, the top performance rate in science has still declined over the past decade (-0.7 percentage points) and between 2022 and 2025 (-0.5 percentage points), reaching 6.4% in 2025. At present, no country would reach the 2030 EU-level target, with Estonia (11.3%) and Finland (11%) being close to it. The change between 2022 and 2025 was not statistically significant in any EU countries bar Denmark, Czechia and Latvia (Figure 6).

16 Measured as the simple average of OECD countries (OECD, 2026b).

17 As regards China, only four provinces/municipalities (Beijing, Shanghai, Jiangsu and Zhejiang) participated in PISA 2025, and none in PISA 2022. Although they are the best performers worldwide in all PISA subjects in 2025 (their underachievement rate is 2.5% in science, 7.3% in reading and 3.6% in mathematics), they only account for a small share of China's student population. Consequently, their results are not representative of the whole country and are not presented in Figure 5.

Figure 6. Top performance rate in science



Notes: Changes between 2022 and 2025 are statistically significant for Czechia, Denmark, Latvia. Caution is required when interpreting 2025 data for the Netherlands, and 2022 data for Denmark, Ireland, Latvia, the Netherlands, because one or more PISA sampling standards were not met (see OECD, 2026b, pp. 16-18; OECD, 2023, pp. 16-20). 2022 data is not available for Luxembourg.
Source: European Commission services' calculations based on OECD PISA data.

The EU-average top performance rate in reading is the lowest among the three PISA subjects, at 4.8% in 2025. No country would meet the 2030 EU-level target, with even the best-performing system (Estonia) being far from it, at 8.7%, and some countries (Greece, Romania, Bulgaria, Cyprus) at around 1%. The top performance rate declined steadily at EU level over the past decade (-3.8 percentage points) with a particularly pronounced decrease between 2022 and 2025 (-1.7 percentage points). No EU country improved its situation between 2022 and 2025, and 18 suffered a statistically significant decline (Figure 7).

Figure 7. Top performance rate in reading



Notes: Changes between 2022 and 2025 are statistically significant for all countries, except for Bulgaria, Cyprus, Germany, Italy, Lithuania, Poland, Romania, Slovakia. Caution is required when interpreting 2025 data for the Netherlands, and 2022 data for Denmark, Ireland, Latvia, the Netherlands, because one or more PISA sampling standards were not met (see OECD, 2026b, pp. 16-18; OECD, 2023, pp. 16-20). 2022 data is not available for Luxembourg.
Source: European Commission services' calculations based on OECD PISA data.

As with reading, the top performance in mathematics in the EU decreased over the past decade, reaching 6.8% in 2025. However, most of that decline took place between 2015 and 2022 (-2.8 percentage points), while the drop between 2022 and 2025 was somewhat smaller (-1.1 percentage points). Estonia (13.3%) and the Netherlands (12.8%) would reach the 2030 EU-level target. Between 2022 and 2025, Slovakia was the only country to show a statistically significant improvement in performance, while 12 countries recorded a statistically significant decline (Figure 8).

Comparing EU-average results in top performance with those of well-performing non-EU advanced countries (such as Canada, Japan, Singapore, South Korea, the United Kingdom and the US) reveals a pattern similar to that observed for underachievement. The EU has the lowest top performance rate in all three subjects, and no EU country is among the best performers worldwide (Figure 9). The EU performance is close to the OECD average in all three subjects. Overall, the EU has not improved its relative performance compared with other large, advanced economies between 2022 and 2025. The rate of top performance of some non-EU advanced countries is more than three times as high as that of the EU in science (Korea, Singapore) and mathematics (Japan, Korea, Singapore), and more than double in reading (Japan, Korea, Singapore, US). This last result is particularly concerning considering the importance of reading as a basis for most learning processes.[18]

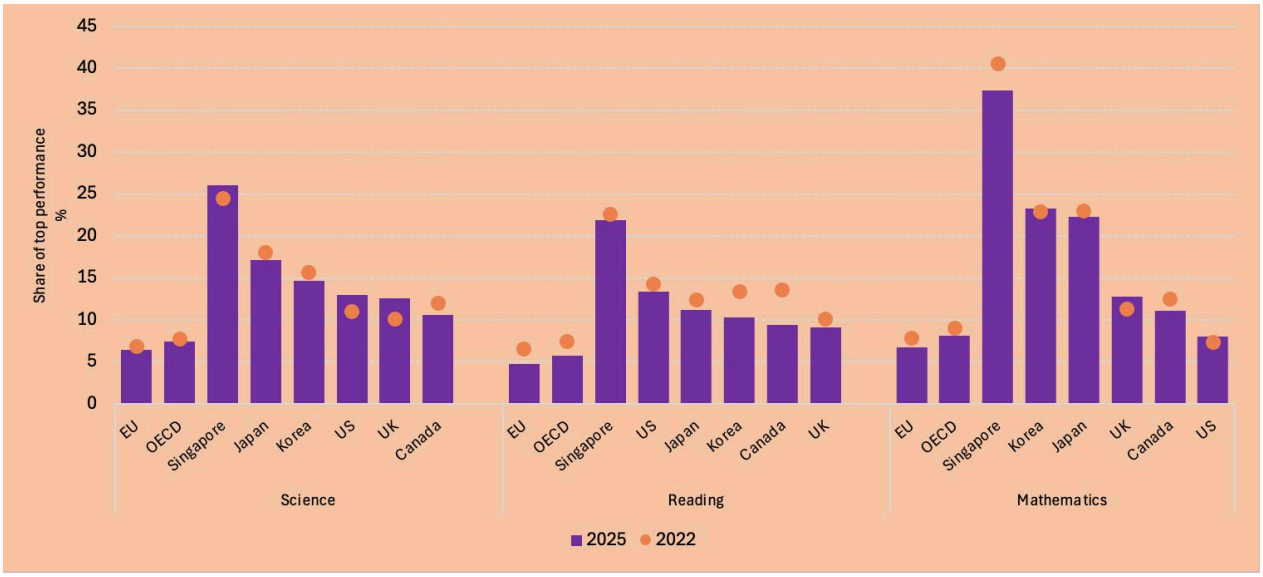
[18] The four provinces/municipalities of China participated in PISA 2025 —for which the results are not representative of the whole country and are not presented in Figure 9— have the highest top performance rate worldwide in science and mathematics (35.6% in science and 54.2% in mathematics) and one of the highest in reading (10.3%).

Figure 8. Top performance rate in mathematics



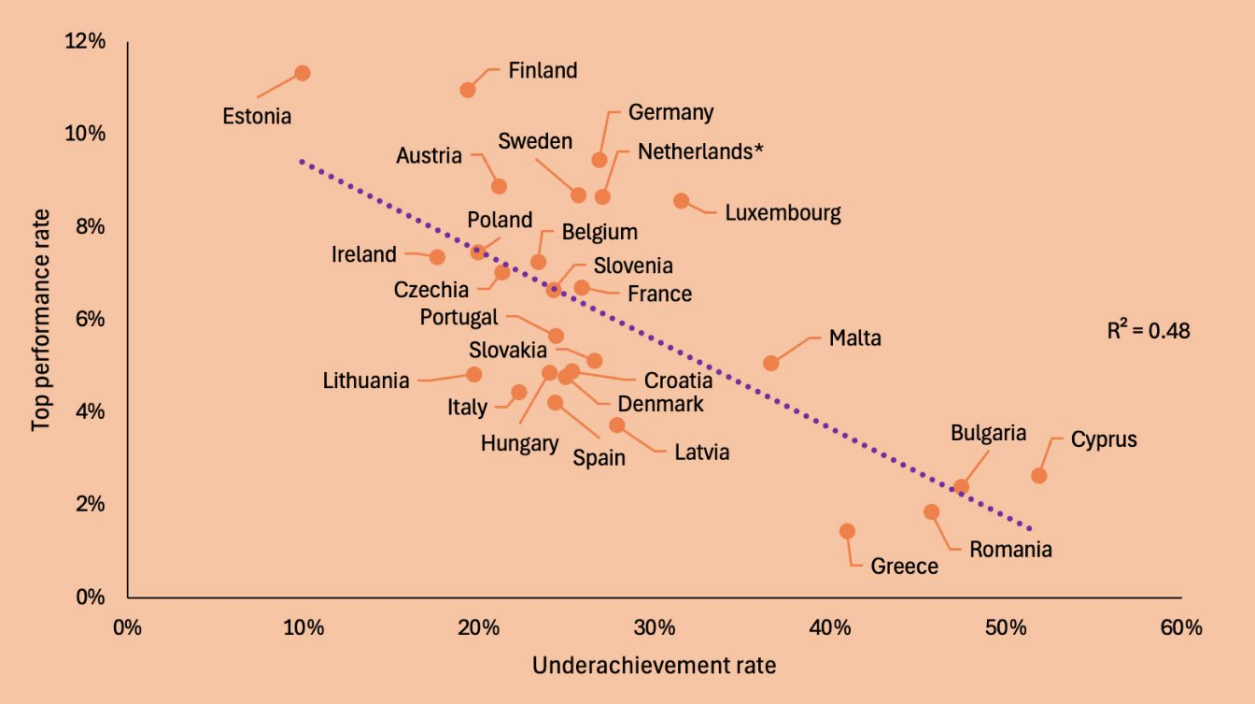
Notes: Changes between 2022 and 2025 are statistically significant for Austria, Belgium, Denmark, Finland, France, Hungary, Latvia, Malta, the Netherlands, Slovakia, Slovenia, Spain, Sweden. Caution is required when interpreting 2025 data for the Netherlands, and 2022 data for Denmark, Ireland, Latvia, the Netherlands, because one or more PISA sampling standards were not met (see OECD, 2026b, pp. 16-18; OECD, 2023, pp. 16-20). 2022 data is not available for Luxembourg.
Source: European Commission services' calculations based on OECD PISA data.

Figure 9. Top performance rates in the EU and selected non-EU advanced economies



Notes: Caution is required when interpreting 2025 data for Canada and the US, and 2022 data for Canada, the US and the UK because one or more PISA sampling standards were not met (see OECD, 2026b, pp. 16-18; OECD, 2023, pp. 16-20).
Source: European Commission services' calculations based on OECD PISA data.

Figure 10. Underachievement vs top performance in science (2025)



Notes: Caution is required when interpreting data for the Netherlands because not all PISA sampling standards were met (see OECD, 2026b, pp. 16-18). Pearson correlation coefficient (r=-0.69) statistically significant at 1% level.
Source: European Commission services' calculations based on OECD PISA data.

One positive message is that lower levels of underachievement tend to go hand in hand with higher levels of top performance. This finding was constantly observable also in previous PISA studies (European Commission, 2024, 2019). Hence, countries with a lower underachievement rate in science (such as Estonia and Finland) tend to have a higher top performance rate too (Figure 10). This association is rather strong. It is not a deterministic relationship, but a similar set of underlying factors are likely to contribute to both trends occurring consistently together.

Reducing inequalities is key

Socioeconomic background remains a strong predictor of student competences.[19] PISA measures socioeconomic background through the index of economic, social and cultural status (ESCS).[20] At EU level, the gap in science underachievement between disadvantaged and advantaged[21] students has remained high and broadly stable between 2022 and 2025, at around 30 percentage points (Figure 11a). Disadvantaged students are around four times more likely to underachieve in science than advantaged students.[22] At the same time, advantaged

19 In 2026, the Council of the European Union set the following EU-level target: the share of learners from disadvantaged socioeconomic backgrounds with a good achievement in at least one domain (reading, mathematics or science) should be at least 25 %, by 2030 (Council of the European Union, 2026). PISA 2025 data about this target will be presented and analysed in the Education and Training Monitor 2026.

20 The ESCS is a composite score that combines information from three components: parents' highest level of education; parents' highest occupational status; and home possessions (as a proxy for family wealth). Information about these three components for each student was collected via the PISA student questionnaire. The higher the value of ESCS, the higher the student socioeconomic status. The ESCS scale has a mean of 0 and a standard deviation of 1 across OECD countries. See OECD (2026b, Annex A3) for more details.

21 Disadvantaged students are those belonging to the bottom quarter of the PISA ESCS. Advantaged students are those in top quarter of the PISA ESCS.

22 This note presents the figures for science because science is the main subject tested in PISA 2025. The figures for the other two subjects are similar: disadvantaged pupils are around three times as likely as advantaged pupils to underachieve in reading and around three-and-a-half times in mathematics.

students are about eight times more likely to be top performers in science than disadvantaged students (Figure 11b).[23] All these findings highlight the scale of the equity challenge to the EU education systems.

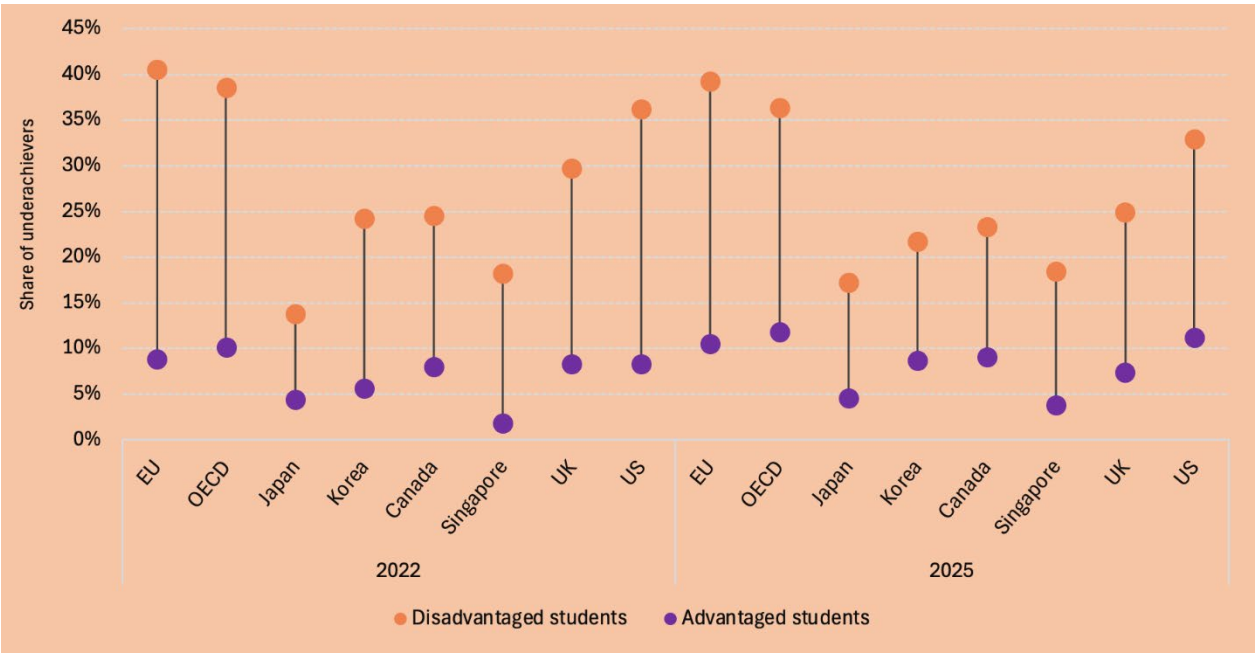
When compared with well-performing non-EU countries, the EU displays a larger socioeconomic gap in underachievement in science (Figure 11a)**.** By contrast, the socioeconomic gap in top performance in science is comparable to Canada and is much smaller than in Japan, Korea, Singapore, the United Kingdom and the US. However, this is mostly due to a lower top performance rate among advantaged students: in 2025, only 14.2% of advantaged students are top performers in the EU as a whole, compared with 38.4% in Singapore, 27.6% in the US, 27.5% in Japan, 24.4% in the United Kingdom and 22.3% in South Korea (Figure 11b).

At country level, the socioeconomic gap in underachievement in science ranged from 12 percentage points in Estonia to 52 percentage points in Romania in 2025. In 22 EU countries, advantaged students already meet the 2030 EU-level target on underachievement, while disadvantaged students do not meet the target in any country. Their underachievement rate varies widely, from 15.9% in Estonia to 69.8% in Romania, with an EU average of 39.3%. The countries with the best overall performance in underachievement (Estonia, Ireland, Finland, Lithuania and Poland) are also among those with the smallest socioeconomic gaps (Figure 12a).

Large socioeconomic gaps exist in top performance too. In all countries, less than 5% of disadvantaged students are top performers in science, with an EU average of 1.7%. In Romania, Greece, Bulgaria, Cyprus, and Hungary, the top performance rate for disadvantaged students is below 1%. In 14 countries, advantaged students would meet the 2030 EU-level target. Their top performance rate ranges from 3.0% in Greece to 24.6% in Germany, with an EU average of 14.2% (Figure 12b).

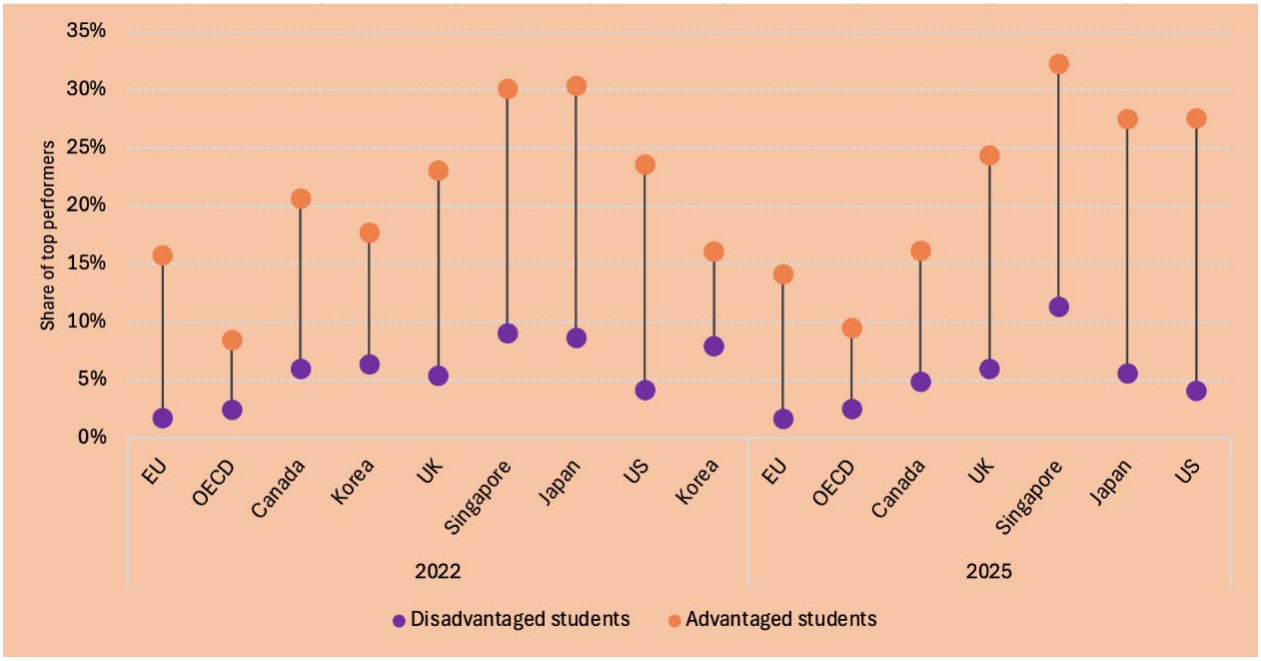
Figure 11. Underachievement and top performance in science, by socioeconomic background: EU vs selected non-EU advanced economies

a) Underachievement gap



[23] The picture is similar for the other two subjects: advantaged students are about seven times as likely as disadvantaged students to be top performers in reading and about eight times in mathematics.

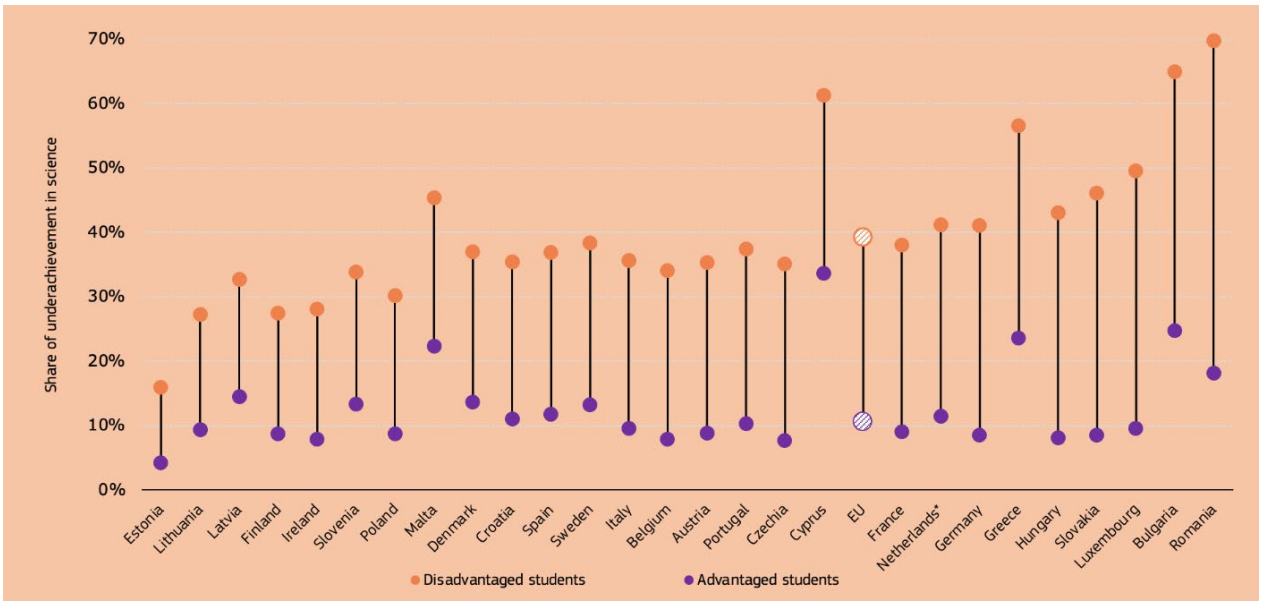
b) Top performance gap



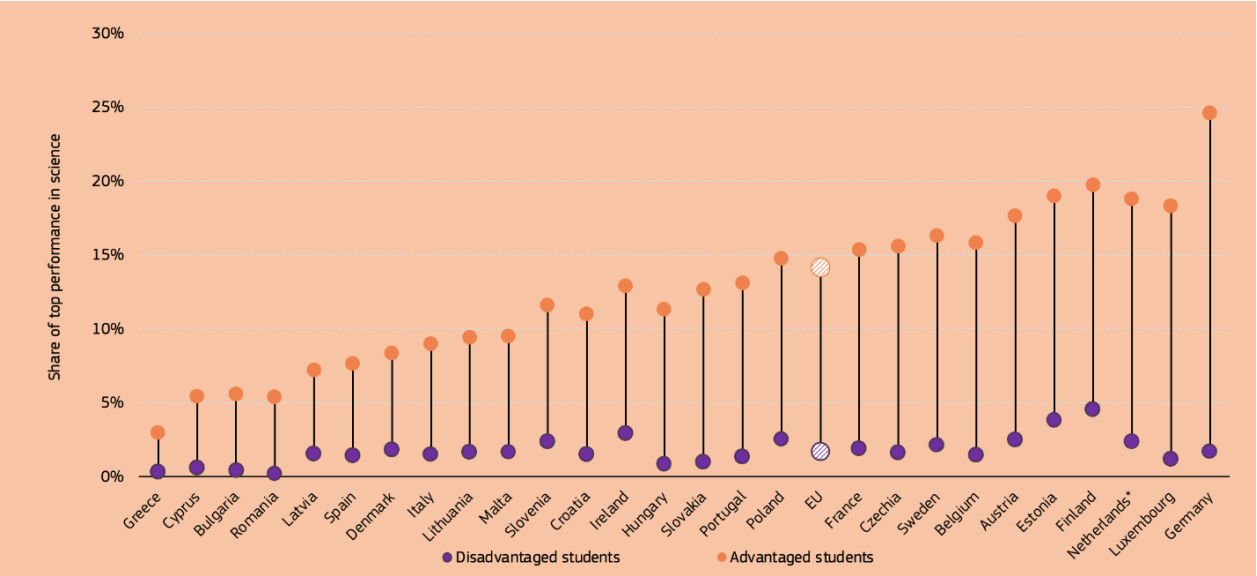
Notes: Caution is required when interpreting 2025 data for Canada and the US, and 2022 data for Canada, the US and the UK because one or more PISA sampling standards were not met (see OECD, 2026b, pp. 16-18; OECD, 2023, pp. 16-20).
Source: European Commission services' calculations based on OECD PISA data.

Figure 12. Underachievement and top performance in science, by socioeconomic background (2025)

a) Underachievement gap



b) Top performance gap



Notes: Countries are shown in ascending order according to the size of the socioeconomic gap. Caution is required when interpreting data for the Netherlands because not all PISA sampling standards were met (see OECD, 2026b, pp. 16-18).
Source: European Commission services' calculations based on OECD PISA data.



2. Possible drivers of the decline in basic skills: first insights

This section provides first insights on the possible drivers of the observed decline in young people's basic skills in the EU. A more thorough analysis will be provided in the forthcoming *Education and Training Monitor 2026*.

The decline in student performance at global level recorded in OECD PISA assessments started in the 2010s, was exacerbated by the Covid-19 pandemic in PISA 2022 (European Commission, 2024) **and continued between 2022 and 2025.** This decline likely reflects a combination of long-term structural weaknesses and more recent pressures on learning. The pattern is not uniform across countries or subjects. For instance, reading and mathematics performance experienced a sharper fall than science. This suggests that the deterioration should not be attributed to a single cause, but rather to several interacting developments.

Acquiring skills is a cumulative process that develops throughout pre-primary, primary and secondary education (OECD, 2021). New knowledge and more complex competences build on foundations acquired at earlier stages, starting from early childhood education and care.[24] In reading, students first learn to decode words and develop fluency before they can efficiently focus on vocabulary, comprehension and the interpretation of complex texts. Similarly, mathematical learning progresses from basic number sense and arithmetic to algebra, geometry, problem-solving and abstract reasoning. Mastery of earlier skills therefore supports the acquisition of subsequent ones. Skills are also intertwined: for instance, reading skills are necessary to understand and interpret the instructions and information needed to solve mathematics problems and apply science concepts.

When students experience learning gaps at a young age, these gaps can widen over time. Students who lack essential foundational knowledge may struggle to understand new material, making it increasingly difficult to keep pace with the curriculum. At the same time, recurring difficulties can reduce confidence, motivation and engagement with learning, further limiting opportunities to practise and consolidate skills. Because schooling continues to introduce more advanced content, students with weaker foundations may fall progressively further

[24] However, not all EU countries guarantee a right to affordable early childhood education and care of good quality for every child (European Commission / EACEA / Eurydice (2025b).

behind their peers. By the age of 15, small gaps in early learning can grow into larger disparities in performance in science, reading, and mathematics if they are not addressed through effective action.[25]

Given these considerations, and since PISA data cannot establish causality, the decline in EU results in 2025 appears to be associated with several factors that research has linked to performance. They are common to most PISA participants worldwide (OECD, 2026b), except for teacher shortages, which are more specific to the EU. Concerning the performance of non-EU countries, large differences in educational structures, curricula, socioeconomic contexts, cultural expectations, and participation patterns are likely to affect PISA results. While PISA measures student achievement under a common framework, the OECD recognises that performance is shaped by the broader social, cultural and institutional contexts in which students learn, which cannot be fully reflected in a single set of internationally comparable indicators (OECD, 2023).

Digital distraction

Previous PISA 2022 data and analyses already identified digital distraction[26] at school as one important factor associated with declining basic skills performance (OECD, 2023; European Commission, 2025b). The findings from a 2024 OECD study suggest that the use of digital devices in schools for non-educational purposes could be a significant factor behind the decline in PISA scores in OECD countries between 2009 and 2022 (Andrews et al., 2024).

PISA 2025 data show that, in science at EU level, 30.5% of students report getting frequently[27] distracted by using digital tools during lessons (Figure 13).[28] On average and after accounting for students' and schools' socio-economic profile, those students score 13 points[29] below students who do not get frequently distracted. This gap may roughly correspond to around two-thirds of a school year's learning.[30] This negative association between digital distraction at school and science performance holds at country level too, except for Sweden (where there is a statistically significant positive association),[31] Latvia, Denmark and Poland (although in these three countries the positive association is not statistically significant). Some countries present a more complex pattern. For instance, Malta reports one of the lowest shares of digital distraction, but its negative association with performance is the strongest among EU countries. Conversely, Poland, Denmark and Latvia report comparatively high shares of digital distraction but no significant association with performance suggesting that in these countries

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25 Recent Eurydice evidence shows that European education systems have strengthened measures to identify and address learning gaps at an earlier stage: since 2020/2021, more than one third of systems have introduced or revised diagnostic assessment in primary education, while more than two thirds have introduced measures to reinforce learning support (European Commission / EACEA / Eurydice, 2025a).

26 PISA data do not distinguish whether digital distraction is related to smartphones or other digital devices used for leisure, or to devices used for learning purposes.

27 In 'most' or 'every' school science lesson.

28 Among well-performing non-EU advanced countries, the share of students experiencing frequent digital distraction is particularly low in Japan (6.6%) and Korea (6.7%). See OECD (2026b).

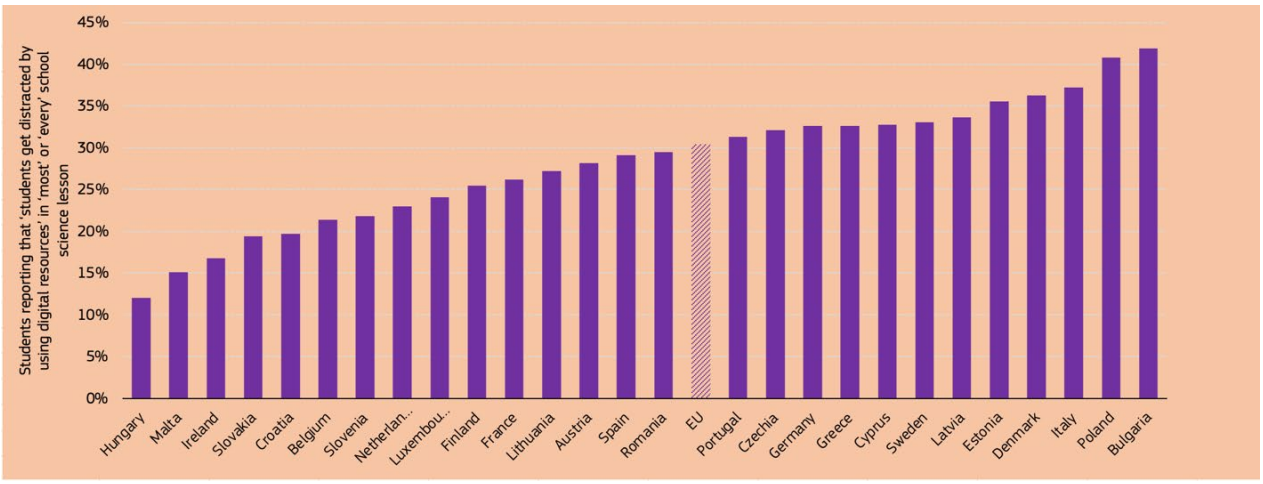
29 All figures in this section are reported after being adjusted by accounting for students' and schools' socio-economic profile, i.e. they show the statistical association that remains when students/schools with different socio-economic profiles are compared as if they had similar profiles. The values before accounting for students' and schools' socio-economic profile, i.e. the directly observed differences, are provided in footnote. In this case, the unadjusted value is 19 points.

30 OECD work (Avvisati and Givord, 2021, 2023) suggests that on average, students' PISA scores increase by around 20 points over a school year, but with large differences across countries. The OECD PISA 2025 report (OECD, 2026b) includes this important caveat: '*Readers should avoid using a single estimate to convert any difference in terms of years-of-schooling equivalents (or months-of-schooling equivalents). First, because there are significant differences in the pace of learning at a given age across countries […]. This reflects differences in how schooling is organised, the resources invested in education, and the quality of education itself. And second, because there is no reason to expect the pace of learning to remain constant over time: the average pace of learning measured at a single point in time, around age 15, may give only a limited indication of the test-score gains that can be expected in a particular country over two or three years*' (p. 90).

31 According to OECD (2026b), '*This pattern may arise in classrooms in which digital tools are more frequently used for instructional purposes, creating both greater opportunities for learning and greater potential for off-task behaviour. It might also reflect learning environments where academically stronger or more confident students engage more often with devices, either for class-related tasks or for multi-tasking*' (p. 232).

the effect of digital distraction may be outweighed by other factors. These contrasting patterns warrant further investigation.

Figure 13. Digital distraction at school (2025)



Notes: Caution is required when interpreting data for the Netherlands because not all PISA sampling standards were met (see OECD, 2026b, pp. 16-18).
Source: European Commission services' calculations based on OECD PISA data.

The evidence associates unstructured and substitutive use of digital devices with lower performance. Moderate, purposeful use of digital tools for learning at school is not a risk factor (European Commission, 2024). The lesson from the best performers in the EU and worldwide is that effective governance is key: clear and enforced school-level rules on non-instructional use, teachers confident enough to direct how tools are used, AI literacy taught rather than assumed, protected time for sustained reading and writing, and monitoring that identifies and implements "what works". Sequencing matters too. For instance, Estonia built infrastructure and teacher capability in the 1990s, well before the deployment of current tools (see also Box 2 below), while education systems that deployed devices without a pedagogical model are now reversing course. In other words, what happens in classrooms depends primarily on education policy.

Excessive out-of-school usage of digital devices remains an issue for learning. Data from PISA 2025 covering 16 EU countries[32] shows that 38.1% of students spend more than three hours per day just browsing social networks on a typical weekday. Recent causal evidence has shown that an earlier access to social media – typically via smartphones – tends to worsen student performance in reading and mathematics (Gui et al., 2026). Furthermore, increased time spent online is associated with an increased risk of being cyber-bullied and lower sense of belonging at school (OECD, 2026b). Time spent online can come at the expense of other important and beneficial activities, such as sports and social interactions.

The sharp decline in reading performance, especially between 2022 and 2025, suggests that the growing shift towards digital reading – including such habits as skimming social media feeds and rapidly processing information – **may affect students' willingness and ability to engage with complex texts** (OECD, 2026b). Put simply, "hasty reading" often results in a more superficial understanding of written information. This is also likely to have negative implications for performance in science and mathematics, where understanding often depends on carefully interpreting complex problem statements and instructions.[33] While recognising the importance of properly equipping schools and students with the digital tools that they need to nurture the learning process of

[32] Data is not available for Czechia, Denmark, France, Croatia, Cyprus, Latvia. Lithuania, Malta, Portugal, Slovakia and Sweden.

[33] Arts programmes and cultural participation help support cognitive development and critical thinking by providing opportunities for students to engage with diverse cultural content and perspectives, interpret and express ideas, and develop creative and analytical skills. For instance, fostering among students sustained engagement with cultural content, including literature, theatre, museums and libraries, offers alternative experiences that can help counter digital distraction and address the sharp decline in reading performance.

children, the issue of digital distraction highlights once more the importance of adequate, targeted, and properly framed use of digital technologies, both in and out of school.[34]

Uncritical use of artificial intelligence (AI) tools

Recent research shows that generative AI tools can enhance learning outcomes, but their widespread use for schoolwork to bypass intellectual effort is a potential risk to cognitive development and critical thinking. The key message from recent research is that the effects AI may have on learning depend on how the technology is used. Experimental studies demonstrate that when generative AI is used to augment human knowledge and students engage constructively with it, this is associated with higher learning outcomes (European Commission, 2026a). However, these tools often shift from their intended role as "cognitive support" to being used as shortcuts to bypass intellectual effort. Students may rely on generative AI to lessen mental effort, for example by using it to complete whole assignments without critical engagement with the material (Crêteur, 2026).

PISA 2025 data show that, in science at EU level, 31.2% students report frequent[35] use of AI "to summarise a text they had to read". Use is highest in Spain (39.9%), while Finland (16.5%) and Ireland (16.6%) are the only two countries with a share below 20% (Figure 14). Those students score on average 18 points[36] below students who do not frequently use AI for that purpose, at EU level. Figure 15 shows that science performance is highest among students who 'never or almost never' use AI to summarise a text they have to read, and lowest among students who use it 'every day or almost every day'. A negative association between uncritical AI use and performance exists also in well-performing non-EU advanced economies, except for South Korea (OECD, 2026b).

Since the arrival of AI for schoolwork only happened after PISA 2022 (Crêteur, 2026)**, its uncritical use may be associated with the performance decline between 2022 and 2025 but does not account for long-term trends that have shaped performance levels**. In other words, uncritical use of AI may help explain – among other factors – why an education system's performance deteriorated between 2022 and 2025, but not why it performs well or poorly in absolute terms. Students who frequently use AI to summarise texts they should read perform worse than students who do not in all EU countries, except for Bulgaria, where, however, the positive relationship is not statistically significant. As OECD (2026b) explains, '*these relationships do not necessarily imply a negative impact of AI use on science performance, but may reflect a complex mix of who adopts AI and how they use it*' (p. 239).[37]

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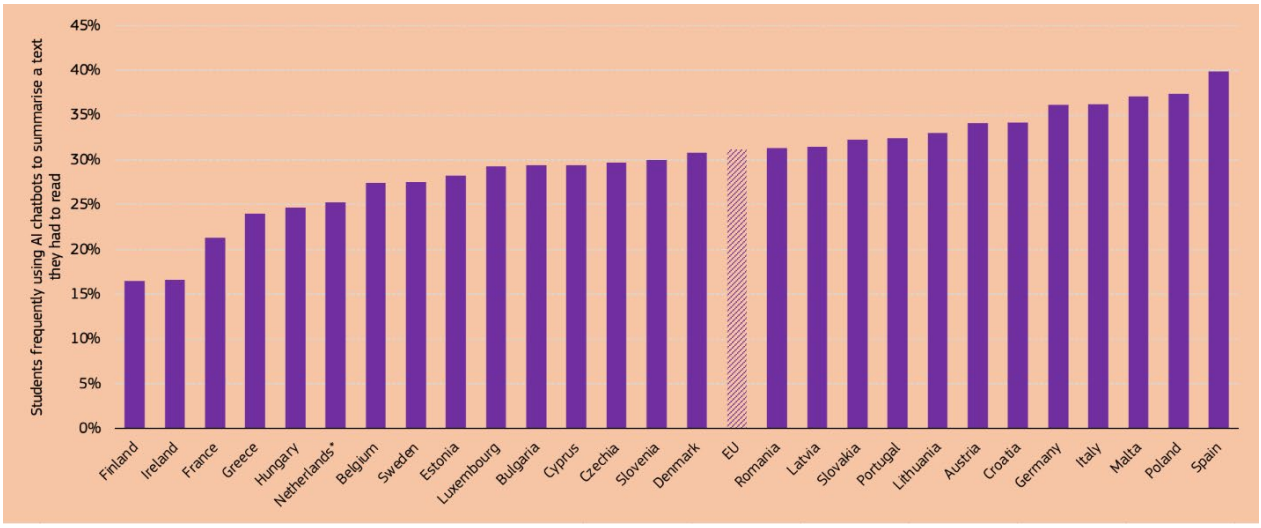
34 This need for a more targeted and appropriately framed use of digital technologies is also reflected in recent system-level policy developments. According to European Commission / EACEA / Eurydice (2026), all EU education systems have top-level requirements or guidance governing the use of digital devices in schools, with the majority of them establishing mandatory requirements, reflecting concerns about student wellbeing, concentration and safe technology use.

35 "About once or twice a week" or "every day or almost every day".

36 After accounting for students' and schools' socio-economic profile. The unadjusted figures are -14 points.

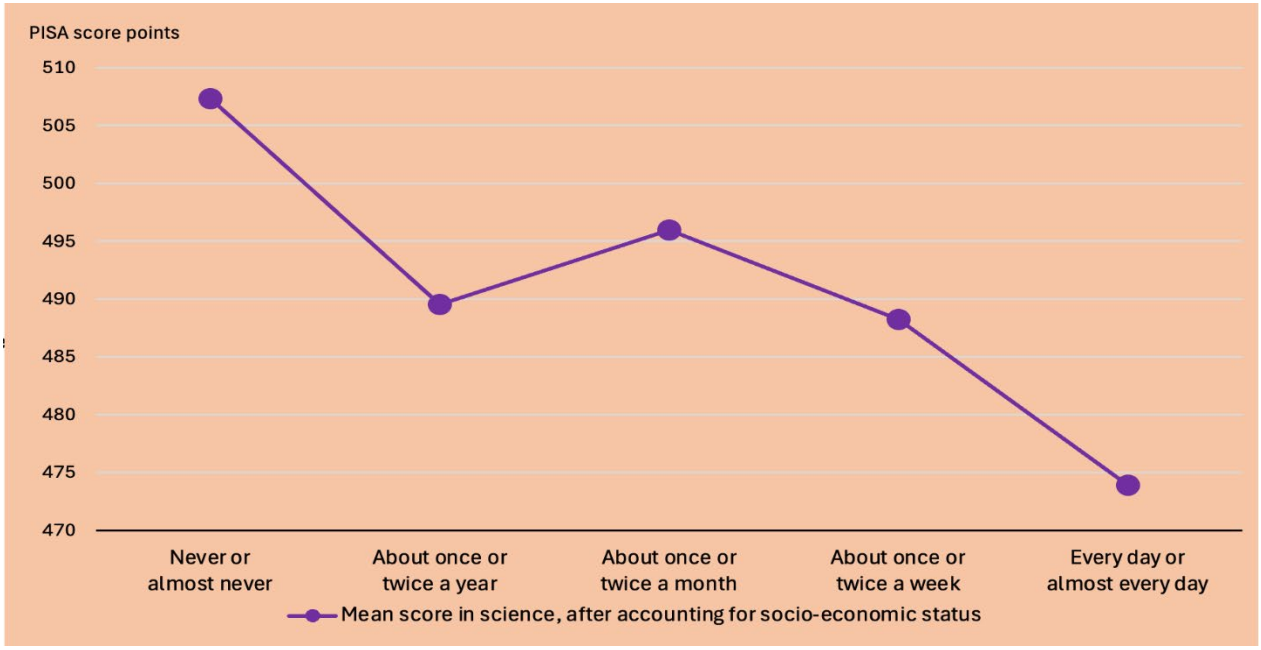
37 Education systems are increasingly developing policy responses to support the effective and responsible use of AI in education. According to European Commission / EACEA / Eurydice (2026), nearly two-thirds of the 38 education systems covered address AI and other emerging technologies in top-level policy documents, although approaches range from broader digital education strategies to guidance, professional support and pilot initiatives.

Figure 14. Use of AI to summarise a text to be read (2025)



Notes: Caution is required when interpreting data for the Netherlands because not all PISA sampling standards were met (see OECD, 2026b, pp. 16-18).
Source: European Commission services' calculations based on OECD PISA data.

Figure 15. Use of AI to summarise a text to be read by frequency and science performance at EU level (2025)



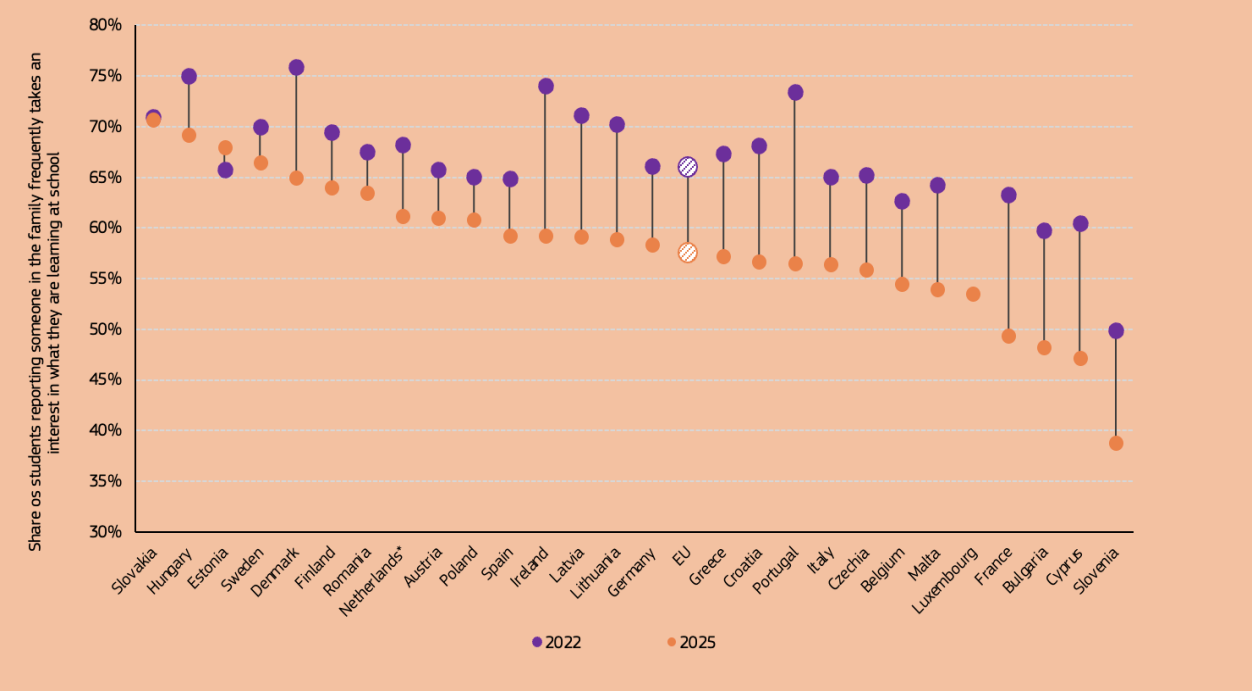
Source: European Commission services' calculations based on OECD PISA data.

Parental disengagement

Family support is crucial for learners' success (OECD, 2026a). Parents play an important role in supporting learning by encouraging regular attendance, establishing routines, monitoring progress and providing opportunities to practise skills at home. When this support is limited, children may receive less encouragement and fewer opportunities to address difficulties at an early stage. Parental disengagement can also weaken communication between families and schools, delaying the identification of learning needs. Over time, unresolved difficulties may accumulate, reducing students' confidence, motivation and engagement. Consequently, limited parental involvement can contribute to persistent gaps in educational outcomes.

PISA 2025 data show a strong association between parental support and student performance. For instance, at EU level, students who report that their parents/family members frequently[38] "take an interest in what they are learning at school" score on average 11 points[39] higher in science than students who do not. This positive association is visible in all EU countries and is statistically significant in 23 of them. In addition, PISA data reveal a sizeable fall in students' perception of family support across the EU between 2022 and 2025 (Figure 16). Looking at the same indicator – students reporting that their parents/family members frequently "take an interest in what they are learning at school" – the percentage of positive answers declined from 66.0% to 57.5% at EU level. It has experienced a statistically significant drop also in all EU countries, except for Slovakia (where it has remained unchanged) and Estonia (where the small increase is not statistically significant). Reflecting the EU trend, family support has largely declined in well-performing non-EU advanced countries, except for Japan (OECD, 2026b).[40]

Figure 16. Family interest in students' learning at school



Notes: Changes in parental engagement between 2022 and 2025 are statistically significant for all countries, except for Estonia and Slovakia. Caution is required when interpreting 2025 data for the Netherlands, and 2022 data for Denmark, Ireland, Latvia, the Netherlands, because one or more PISA sampling standards were met (see OECD, 2026b, pp. 16-18; OECD, 2023, pp. 16-20). 2022 data is not available for Luxembourg.
Source: European Commission services' calculations based on OECD PISA data.

Teacher shortages

Teacher shortages can amplify learning deficits in reading, mathematics and science (Gambi and De Witte, 2023; OECD, 2024). They tend to reduce the quality, continuity and intensity of instruction. Schools facing staffing shortages may rely on larger classes, substitute teachers or staff teaching outside their areas of expertise. This can limit teachers' ability to provide individual support and identify learning difficulties at an early stage. High staff turnover can also disrupt relationships and the continuity of learning. In addition, shortages can place greater pressure on existing teachers, potentially reducing time for lesson preparation, assessment and targeted support

38 "About once or twice a week" or "every day or almost every day".

39 After accounting for students' and schools' socio-economic profile. The unadjusted figure is 25 points.

40 Recent policy developments point to a stronger focus on supporting parents' role in learning. According to European Commission / EACEA / Eurydice (2025a), just over half of European education systems have introduced or revised policies since 2020/2021 to involve parents in efforts to improve basic skills acquisition, including through training, pedagogical resources and home-based support.

(De Witte et al., 2023).[41]. As a result, students may receive less effective instruction and be less likely to close gaps in basic skills.

Teacher shortages persist in many EU countries – with particular challenges for recruiting STEM teachers and in rural areas or areas with high concentrations of disadvantaged learners (European Commission, 2023). Shortages are also likely to have worsened after the Covid-19 pandemic (Di Pietro, 2023). PISA data show that the percentage of students in schools whose principal reported that the school's capacity to provide instruction is hindered "to some extent or a lot" by a lack of teaching staff is still considerably higher than before the pandemic even in 2025 (40.2% in 2025 vs. 28.3% in 2018), suggesting the existence of a structural issue. At country level, the perceived intensity of teacher shortages varies widely in 2025. It ranges from 4.7% in Denmark to 65.0% in Estonia. However, it is higher than in 2018 in all countries, except for Denmark, Germany, Hungary, Luxembourg and Sweden (Figure 17).

Some caveats apply to interpreting PISA data on perceived teacher shortages. The PISA indicator is based on school principals' perceptions and is therefore a subjective measure rather than an objective metric. This might explain the wide differences observed at country level, where perceived teacher shortages are high in some high-performing countries (such as Estonia and Ireland) and low in some low-performing countries (such as Cyprus, Bulgaria and Romania). While PISA data refer to teacher shortages in secondary education, teacher shortages experienced during earlier educational stages may still affect student performance at age 15. As discussed above, learning is a cumulative process, and earlier competence gaps can persist and constrain students' ability to acquire more advanced skill levels later on.

Figure 17. Share of students in schools whose principal reports serious teacher shortages



Notes: Changes between 2018 and 2025 are statistically significant for all countries, except for Belgium, Cyprus, Czechia, Denmark, Finland, Germany, the Netherlands and Romania. Caution is required when interpreting 2025 data for the Netherlands because not all PISA sampling standards were met (see OECD, 2026b, pp. 16-18).
Source: European Commission services' calculations based on OECD PISA data.

In addition to addressing teacher shortages, the quality of teaching is key to achieving good learning outcomes (OECD, 2019; De Witte et al., 2023). High-quality teaching combines strong subject knowledge, effective pedagogy, good classroom management, and responsiveness to students' diverse learning needs. The literature shows that differences in teacher effectiveness explain a substantial share of the variation in student achievement, within a country and even within the same schools (European Commission, 2026b). Estonia's and Ireland's

41 A declining attractiveness of the teaching profession, combined with growing pressures on in-service teachers, could further exacerbate teacher shortages. Evidence from TALIS 2024 suggests that stress related to classroom discipline, student behaviour and administrative workload is associated with lower job satisfaction, poorer well-being and stronger intentions to leave the profession (European Commission, 2026c).

comparatively strong basic skills performance despite reported teacher shortages suggests that teacher availability alone does not determine system-level achievement. Teacher quality as well as strong institutional capacity and curriculum coherence are also fundamental structural factors for good learning outcomes (see also Box 2 below).

Box 2. What contributes to PISA success and resilience in the EU?

While PISA cannot be used to causally evaluate the effectiveness of education systems (De Sousa Lobo Borges De Araujo et al., 2017), some countries consistently stand out as high achievers, and others have better managed to withstand the global decline in performance or even improved their performance.

Estonia consistently performs strongly across PISA cycles, both in terms of performance and equity. Earlier research on long-term Estonia's success (European Commission, 2022) points to multiple coherent structural factors rather than a single policy change. These include the introduction of a **competence-based curriculum and a strong emphasis on equity,** avoiding streaming of pupils into different educational pathways early on. **High levels of school autonomy** are combined with a data-driven monitoring system. Early adoption of digital education and developed solid digital infrastructure, alongside teachers' digital skills. In 2025, Estonia adopted the 'AI Leap' programme, providing upper secondary students in both general education and VET, as well as their teachers, access to educational AI tools and training on how to use them.

Despite the decline in 2025 PISA outcomes, **Ireland** has generally demonstrated more stable patterns of performance and has maintained a high-performing and equitable education system. Ireland has also implemented and regularly updated strategies and programmes to improve literacy, numeracy and digital literacy, modernising curricula at all levels of education and focusing on targeted support to the disadvantaged groups. This includes a range of **parental and family engagement** programmes.

In **Poland**, structural reforms between 1999 and early 2000s extended common general education and **delayed channelling learners into different educational tracks** until the age of 16. These changes were followed by a competence-based core curriculum, new examination and assessment systems as well as increased school autonomy and a **rapid expansion of participation in early childhood education and care**. Research indicates that these reforms contributed to a significant reduction in educational inequalities, in particular among children in rural areas.

For **Slovakia** it should be noted that students report significantly less digital distraction in science lessons (19.4%) than the EU average. Between 2022 and 2025 a growing number of schools introduced cell phone bans or at least subject-specific guidelines on device use for learning. In recent years, Slovakia has **reinforced support for teachers and has invested in digitalisation and the modernisation of school infrastructure**, with the help of EU funds.

Italy's average performance remained broadly stable between 2022 and 2025, against a more negative EU trend. Italy records lower underachievement than the EU average in all three domains, although top performance remains comparatively limited and strong territorial and school-track gaps persist. Possible structural factors include a nationally defined curriculum and assessment framework, the relatively **uniform and inclusive education system**, a strong emphasis on subject knowledge and literacy, and a **dense national monitoring system** together with newer reforms which provide **targeted support to underachieving schools**.

Taken together, these cases do not offer a single recipe, and none of the associations described here can be read as causal. At the same time, the cases of Estonia, Ireland, Poland, Slovakia and Italy suggest that combining structural and school-level policies may contribute to improved student performance and equity. This highlights the importance of long-term consistent reforms and investments which support broad access to high-quality early childhood education and care, delayed tracking, focus on equity, competence-based curricula combined with school autonomy and robust monitoring, and targeted support for disadvantaged schools and low-performing pupils. **The quality of investment is essential.** Where resources are very scarce, low spending goes hand in hand with low performance, but beyond a certain point, the relationship becomes more blurred. Smart investments and well-targeted, coherent policies that are regularly evaluated appear to matter at least as much as the amount of money spent. In the 2026 European Semester country reports, educational outcomes in most Member States are linked not only to how much is spent, but also to how effectively the money is used.



Conclusion

The PISA 2025 results are not a subtle warning sign. They are a direct threat to the EU's future competitiveness, our social cohesion, and the ability of Europe's people to remain resilient in a changing world. Although declining performance trends reflect a broader global phenomenon, it is concerning if the EU merely maintains its position relative to competitors rather than improving its overall performance. And the implications extend far beyond competitiveness: weak foundational skills undermine democratic participation and social cohesion by diminishing individuals' capacity to reason critically, assess information, and contribute meaningfully to society.

More research is needed to explain why trends differ across education systems, but several challenges appear common across many PISA-participating countries. Already in the previous PISA cycle, digital distraction was identified as one factor contributing to declining performance. Since then, the emergence of AI has added a further challenge, as its uncritical use may be linked to the decline in performance observed between 2022 and 2025. Limited parental engagement is a further long-term and growing challenge across the world. In the EU, these existing and new pressures are compounded by persistent teacher shortages and socioeconomic inequalities, which continue to have a strong impact on learning outcomes.

At the same time, evidence from countries such as Estonia, Ireland, Poland, Slovakia and Italy suggests that resilience and improvement are possible. Effective approaches appear to combine system-level and school-level reforms, sustained over time. These include investment in high-quality early childhood education and care, later tracking, a strong focus on equity, competence-based curricula, school autonomy paired with robust monitoring, and targeted support for disadvantaged schools and low-performing students. Crucially, finding convincing answers for meaningful and effective learning in the digital and AI era will be key to improving learning outcomes across the EU.

The EU is already supporting Member States in their efforts to improve basic skills. The Action Plan on Basic Skills, adopted in 2025 as part of the Union of Skills, sets out concrete short- to medium-term measures for the EU and its Member States to strengthen basic skills and promote excellence, from early childhood through all stages of school education. This includes the European Literacy Coalition, launched in September 2026. The STEM Education Strategic Plan, also part of the Union of Skills, aims to address critical challenges in science, technology,

engineering, and mathematics (STEM) education, including skills shortages, unequal access to quality learning opportunities, and persistent gender gaps.

The 2026 EU-OECD AI Literacy Framework for Primary and Secondary Education supports education systems in helping learners understand, critically assess and use AI responsibly. Establishing a common approach for AI literacy in primary and secondary education, the framework contributes to the development of AI literacy in an interdisciplinary manner and provides guidance for educators, school leaders and policymakers on integrating AI literacy across teaching and learning (OECD/European Commission, 2026).

The first Council Recommendation on Human Capital urges Member States to address the basic skills decline in order to boost competitiveness and resilience. The next Multiannual Financial Framework presents a clear opportunity to provide the investments that are needed to tackle this challenge, which is urgent and growing.

Finally, education systems will not solve this deeply rooted basic skills challenge alone. The combination of structural drivers requires a whole-of-government response to halt and reverse the multi-year decline in basic skills proficiency. For instance, the 2026 proposal for an EU KIDS Act, in response to the final report of the special panel on child safety online[42], combines common age rules with safety-by-design obligations for the services that pose the greatest risks to children, including social media, video-sharing platforms, certain online games, and AI chatbots/AI companions. The Act tackles excessive screen time, digital distraction and addictive design features and promotes a safer, age-appropriate and purposeful use of digital technologies, creating better conditions for learning and strengthening basic skills.

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Building on the evidence from PISA 2025 and this *Brief*, the forthcoming Education Package will help EU Member States accelerate the response to the decline in basic skills proficiency and reverse the negative trend. The Package will foster actions inside and outside of the classrooms to stem the basic skills decline, strengthen the teaching profession and mainstream AI literacy, with the sovereign digital education infrastructure needed for Europe's schools to navigate the AI era on their own terms, in accordance with EU values.

42 https://commission.europa.eu/topics/digital-economy-and-society/special-panel_en



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