MESSAGES FROM PISA 2000

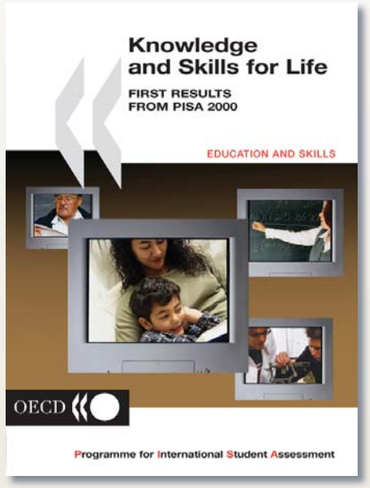
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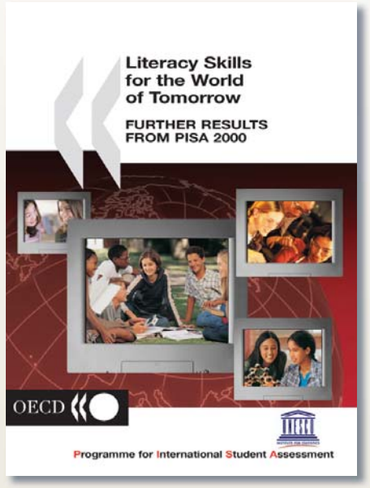
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Since the publication of the first PISA survey in 2001, the OECD has been analysing its results, and their implications for public policy. This is a summary of the key findings.





The Programme for International Student Assessment (PISA) is a powerful tool for measuring the outcomes of education systems. The first three-yearly survey was conducted in 2000, with results first published in 2001.

The Organisation for Economic Co-operation and Development (OECD), which co-ordinated the survey, has published four studies examining thematically what the survey shows about factors behind student performance (see details on back page). This overview picks out some key messages that have emerged from the analysis.

The PISA survey tells countries the extent to which students near the end of compulsory education have acquired some of the knowledge and skills that they will need in later life. The basic results for reading literacy are shown on the facing page. National strategies to improve on such performance against international benchmarks can be usefully informed by analysis of the features that characterise countries with strong results, and of which students and schools perform better within each country. Such analysis is essential to meeting the objectives of PISA, which was designed not as an educational Olympics, but as a tool to help countries to improve educational outcomes against international standards.

What is PISA?

- A three-yearly survey, starting in 2000, of knowledge, skills and other characteristics of 15-year-olds. In the first survey, around 315,000 students in 43 countries took part in pencil and paper tests and filled out questionnaires about themselves. Their schools also provided background information.
- Specifically, an assessment of reading, mathematical and scientific literacies in a way that looks at the capacity of students to address real-life challenges.
- A unique collaboration among governments to monitor educational outcomes, co-ordinated through the OECD.

Of the countries taking part, 27 were the OECD member countries shown in the table opposite; these are the focus of the present summary. The Netherlands participated, but its school response rate was too low to ensure international comparability. A further 15 partner countries also participated.

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The acquisition of knowledge and skills can be influenced by students' individual characteristics, by features of their schools, and by the structure of their education systems.

The PISA survey collected information on a wide range of factors with a bearing on student performance. It looked for example at the backgrounds of individual students, at how they approach learning and at various characteristics of their schools.

Some of these factors, such as students' socio-economic background, cannot be changed by education systems and need to be taken as a given. The influence of these factors is nevertheless worth knowing, since this can inform educators about how to target particular interventions. Other factors, such as the learning strategies adopted by students or the atmosphere of the classroom, are directly susceptible to improvement.

This overview considers factors associated with student performance at three levels:

Characteristics of individual students, including their backgrounds, their attitudes to learning and their behaviour in terms of participation at school and their learning strategies.

Characteristics of schools, including the atmosphere of the school and the classroom as described by students, and resources and school processes as described by principals. Some school characteristics with a bearing on student performance are the sum of individual student characteristics – for example, the average social background of all the students at a school, and their rate of school attendance.

Characteristics of school systems, which affect the experiences of individual schools and students across a whole country. These include, for example, the extent to which secondary school students are differentiated into separate groups rather than all educated together, and the degree to which individual schools are given autonomy within the education system.

The following pages look in turn at each of these aspects across countries. Pages 22-75 present a profile for each OECD country in PISA 2000 summarising these characteristics.

Reading performance in PISA 2000

	Mean score	Percentage at: Level 1 or below	Percentage at: Level 5
Finland	546	7.0	18.5
Canada	534	9.6	16.8
New Zealand	529	13.7	18.7
Australia	528	12.5	17.6
Ireland	527	11.0	14.2
Korea	525	5.8	5.7
United Kingdom	523	12.9	15.6
Japan	522	10.1	9.9
Sweden	516	12.6	11.2
Austria	507	14.6	8.8
Belgium	507	19.0	12.0
Iceland	507	14.5	9.1
Norway	505	17.5	11.2
France	505	15.2	8.5
United States	504	17.9	12.2
OECD average	**500**	**17.9**	**9.5**
Denmark	497	17.9	8.1
Switzerland	494	20.4	9.2
Spain	493	16.3	4.2
Czech Republic	492	17.5	7.0
Italy	487	18.9	5.3
Germany	484	22.6	8.8
Hungary	480	22.7	5.1
Poland	479	23.2	5.9
Greece	474	24.4	5.0
Portugal	470	26.3	4.2
Luxembourg	441	35.1	1.7
Mexico	422	44.1	0.9

Statistically significantly above the OECD average
Not statistically significantly different from the OECD average
Statistically significantly below the OECD average

Note: the PISA results classify students at five levels of reading proficiency. Those at Level 5 can perform highly complex tasks. Students at Level 1 can only manage the most basic literacy tasks, and a small number of students, unable even to do these tasks, are classified as below Level 1.

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PISA underlines the strength of the link between student background and performance, and helps understand its profile in each country.

Students who come from families with more favourable social, economic and cultural characteristics tend to perform better at school. PISA allows the strength of this advantage to be measured and compared among countries and shows that it varies significantly across countries.

Overall, socio-economic difference is the strongest single factor associated with performance in PISA, accounting for about a fifth of all variation in student reading scores. The gap between the least-advantaged quarter of students and the most-advantaged quarter is equivalent to more than one reading proficiency level on PISA's five-level scale. This gap within countries attributable to social background is similar to the range in performance across countries of students with a given social background. Thus, if a country could raise performance of the least-advantaged quarter of its students to that of the most-advantaged quarter, this would be equivalent to the worst-performing country raising the score of each student to the level of a student with similar social characteristics in the best-performing country.

In order to develop policies to raise overall performance and reduce social differences, countries need to start by understanding the characteristics of their "social gradient". Some of its features are described on the facing page, and summarised for each country in the profiles on pages 22-75. A range of strategies may be envisaged, according to the shape of the gradient. For example, where average performance is high but the gradient steep, this argues for a strategy more closely targeted on more disadvantaged students than where below-average performance is more generalised. The stronger the association between social background and performance, the greater the case for using student background as a targeting tool, rather than focusing on under-performance as such. And in countries where the range of social backgrounds among the student population is the greatest, there may be a case for concentrating resources on disadvantaged children or their schools to help provide a learning environment that helps compensate for lower resources in the home.

Such strategies need to take account not only of individual students' backgrounds but of the effects of the socio-economic character of whole schools. School effects in this context are discussed on pages 14-15.

In aiming to raise student performance overall and improve equity by making the social gradient less steep, countries can take heart from the fact that PISA shows that such objectives are mutually compatible. Indeed, analysis of the PISA 2000 results shows that there is a significant negative correlation across countries between the level of the gradient line and its steepness. This means that, on average, in countries where students are performing better overall, social differences are relatively narrow.

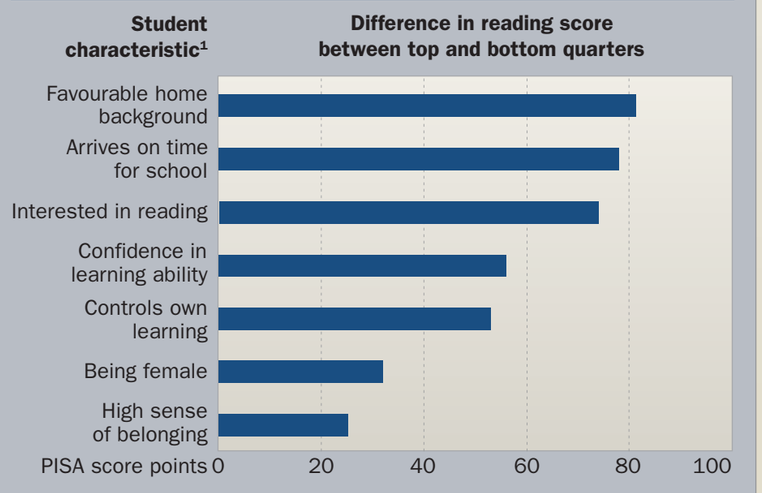
Student characteristics

PISA has identified a number of aspects of students' background, attitudes and behaviours associated with strong performance in reading and other literacies.

Understanding these characteristics can help education policy makers to target interventions designed to help particular groups, and to promote particular characteristics (such as successful approaches to learning) across the student population.

The comparison in the graph to the right gives an indication of the relative importance of a range of student characteristics discussed on the next eight pages.

Characteristics of students who tend to do well at school



1. As reported by students.

Aspects of the socio-economic gradient

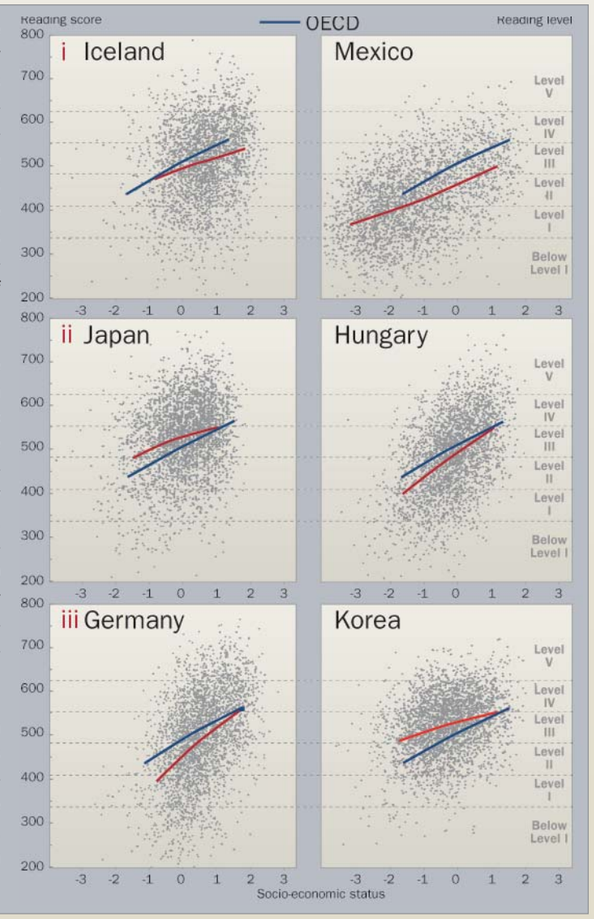
What does the gradient line show? The gradient line slopes up and shows that students from more advantaged socio-economic backgrounds in general perform better in PISA. Specifically, it shows the range of predicted scores of the middle 90 per cent of students on an international index of socio-economic background (5th to 95th percentile). A student from a comparatively less advantaged socio-economic background (5th percentile) tends to be nearly two PISA reading levels behind a student from a comparatively more advantaged socio-economic background (95th percentile). Socio-economic background explains about 20 per cent of all variation in students' reading scores.

The social gradient line reflects not only the extent to which students from advantaged socio-economic backgrounds do better, but also the overall level of student performance in each country. The level of the gradient lines – their average height – shows the average reading score reached by those students in each country whose socio-economic background is equal to the average socio-economic background across OECD countries.

(i) The length and horizontal position of the gradient line shows the spread of student backgrounds: the longer the line, the more varied socio-economic background is among students; the further right the line, the more favourable students' socio-economic background is in general. Students in Iceland have on average a much more advantaged socio-economic background than students in Mexico (the line is further to the right), and the range of socio-economic backgrounds is narrower (the line is shorter). The country profiles on pages 22-75 show adjusted reading scores that each country might expect if its social profile were average.

(ii) Despite the overall pattern, some students with more advantaged socio-economic background do poorly in PISA, while some with less advantaged socio-economic background do well. How closely do they conform to the predicted trend? This is shown by representing each student's performance as a dot, and seeing how closely they cluster around the gradient line. In Finland, Iceland, Japan and Korea, the influence of socio-economic background on student performance is limited, with over 90 per cent of student differences accounted for by other factors. In Hungary, on the other hand, just over a quarter of differences in student reading scores can be attributed to social background.

(iii) How severe is social disadvantage in its effect on performance? The slope of the social gradient line shows how much difference a given amount of social difference makes to a student's predicted reading score: the steeper the gradient, the more inequality. In Germany, it makes nearly three times as much difference as in Japan and Korea.



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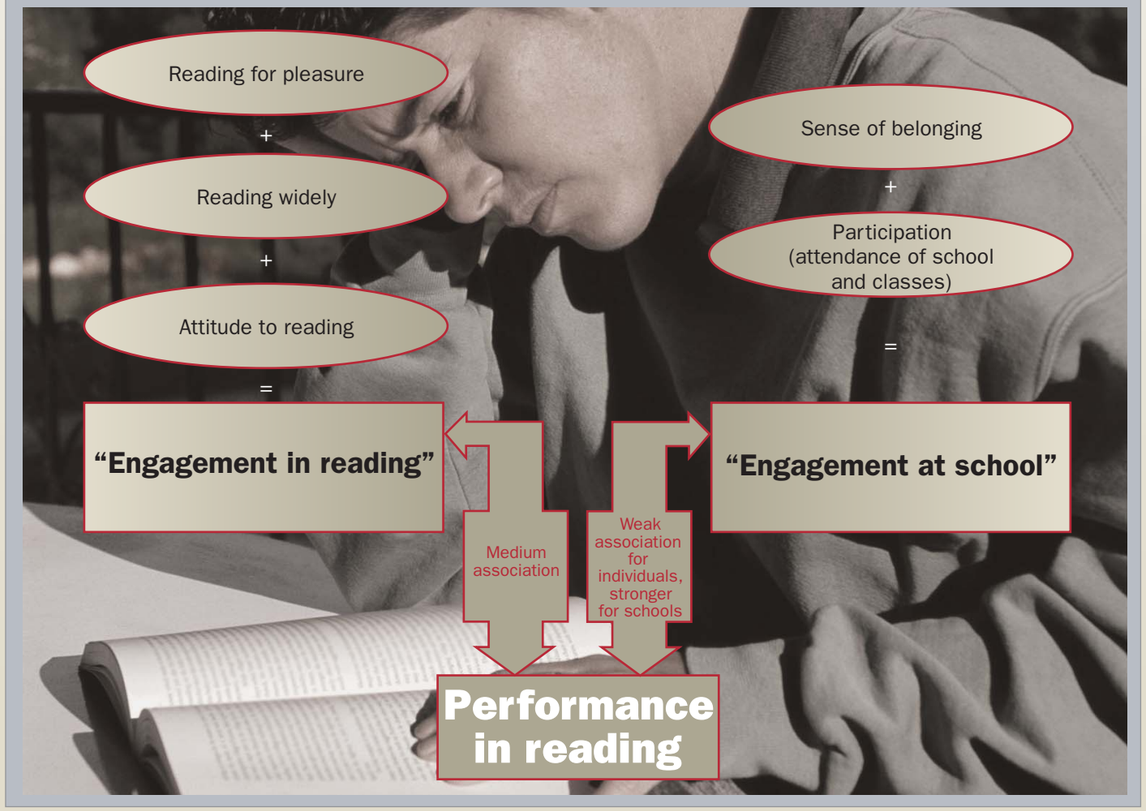
Students who are engaged in reading are far more likely to have high levels of reading literacy. Student engagement at school more generally has a bearing on wider educational outcomes.

Students who are interested in learning tend to learn more effectively, and to achieve better results at school. The PISA results underline the importance of student engagement. For example, students who are habitual readers and who enjoy reading are also more likely than others to have high levels of reading literacy. Greater engagement in reading can be a consequence, as well as a cause, of higher reading skill, but the evidence suggests that these two factors are mutually reinforcing.

The implication for school systems is that improved teaching relies not just on instructional strategies for improving students' cognitive skills, but also on engaging their interest and ensuring that they are well motivated. Different strategies may be appropriate for boys and for girls, who tend to have different reading interests, with girls particularly interested in books, especially fiction, and boys more interested in other forms such as newspapers and comics.

Students from less favourable socio-economic backgrounds are on average less engaged in reading. However, a substantial number of disadvantaged students are among the most interested and wide-ranging readers, and these students tend to perform well in reading. Indeed, the level of a student's reading engagement is a better predictor of literacy performance than his or her socio-economic background, indicating that cultivating a student's interest in reading can help overcome home disadvantages.

Two forms of student engagement



Engagement at school

As well as interest in particular aspects of learning such as reading, a student's overall engagement at school is also a key factor in secondary education. A substantial minority of students – one in four 15-year-olds in the PISA survey – say they do not want to be at school. Analysis of student replies to the PISA questionnaire has identified about one in four students who have a low sense of belonging in the social environment of school, and about one in four who regularly miss or are late for school or classes (low participation). As shown in the table on the right, a substantial proportion – at least 17 per cent – feel a low sense of belonging in all countries, but some countries manage to contain low participation to a smaller number. In Japan and Korea fewer than 10 per cent of students report regular lateness or absence.

Students who are not engaged at school are not necessarily those with the lowest performance. It is notable that substantial numbers of medium to higher achievers are also disengaged from school in this respect. Yet these people may still be at risk in the future, particularly if they decide not to continue their education. Thus, intervention strategies may also be needed to help students who are not necessarily doing badly at school. These students can be hard to target. However, the analysis also showed that ***schools*** where students perform poorly overall also have a tendency to be those where students become disengaged. This suggests that the whole school environment is important for student engagement and that the targeting of particular schools can be appropriate.

Student engagement measures

	How engaged are students in reading?		How many students are weakly engaged at school?	
	Index scores[1]		Low sense of belonging[2] %	Low participation[3] %
Finland	0.46	United Kingdom	17.4	15.0
Iceland	0.27	Sweden	17.7	23.8
Denmark	0.26	Hungary	18.8	17.7
Korea	0.21	Ireland	19.4	17.8
Japan	0.20	Austria	20.3	15.3
Sweden	0.14	Canada	20.5	26.0
Portugal	0.13	Australia	20.7	18.3
Norway	0.09	Portugal	20.7	20.1
Mexico	0.07	Switzerland	20.8	15.7
New Zealand	0.05	Denmark	20.9	m
Hungary	0.03	New Zealand	21.1	26.9
Czech Republic	0.02	Norway	21.1	17.9
Canada	0.01	Finland	21.3	22.9
OECD average	**0.00**	Mexico	22.0	21.4
Switzerland	0.00	Iceland	22.4	26.0
Australia	-0.04	Germany	22.6	12.9
Italy	-0.08	Greece	22.7	28.8
Austria	-0.08	Italy	22.9	21.7
Greece	-0.09	Spain	24.0	34.0
Poland	-0.10	**OECD average**	**24.5**	**20.0**
United Kingdom	-0.10	United States	25.0	20.2
United States	-0.14	Luxembourg	28.3	13.4
France	-0.18	Czech Republic	29.8	20.7
Luxembourg	-0.19	France	30.2	15.3
Ireland	-0.20	Belgium	31.6	14.1
Spain	-0.23	Japan	37.6	4.2
Germany	-0.26	Poland	41.2	29.2
Belgium	-0.28	Korea	41.4	8.4

1. The index is set with a mean of zero and two-thirds of students fall in between 1 and -1.

2. Students were asked whether they strongly agree, agree, disagree or disagree strongly, in each case that: School is a place where: a) I feel like an outsider (or left out of things); b) I make friends easily; c) I feel like I belong; d) I feel awkward and out of place; e) Other students seem to like me; f) I feel lonely. Students with a "low sense of belonging" express negative attitudes in at least one respect.

3. Students' participation is measured according to how many times in the past two weeks they say that they: missed school; skipped classes; arrived late. Students have "low participation" if they report a frequency of at least: "1 or 2 times" to all three items, OR: "3 or 4 times" to "missed school", OR "3 or 4 times" to both "skipped classes" and "arrived late for school".

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PISA found strong relationships between students' attitudes, learning strategies and performance. The results also show that students with the autonomous learning strategies needed to become lifelong learners are characterised by strong motivation and self-belief.

The PISA survey asked students about a range of their characteristics as learners. It asked them about their motivation (for example, their interest in reading, and their commitment to use education to get a good job), their self-belief (for example, whether they believe they can handle learning tasks effectively) and their learning strategies (for example, whether they measure their progress against their goals to control their own learning).

The survey found that in a number of respects, students with stronger approaches to learning are likely to have higher literacy performance, and that these relationships apply across different countries and cultures.

A measure of students' self-belief: how effective do they feel as learners?

	Index of self-efficacy
Mexico	2.76
Austria	2.67
Switzerland	2.65
Scotland	2.63
United States	2.63
Australia	2.62
Belgium (Fl.)	2.60
New Zealand	2.60
Sweden	2.59
Germany	2.59
Italy	2.59
Hungary	2.58
Iceland	2.58
Norway	2.56
OECD average	**2.56**
Portugal	2.54
Denmark	2.52
Ireland	2.50
Luxembourg	2.49
Finland	2.47
Czech Republic	2.41
Korea	2.28

The scale ranges from 1 to 4 and shows how frequently, on average, students agree with statements such as "I am certain I can understand the most difficult material presented in reading": 1 (almost never), 2 (sometimes), 3 (often) and 4 (almost always). Countries at the top have students who are more confident, on average, about dealing with learning situations they find difficult.

The evidence suggests that students who are more self-confident and have stronger motivation do better at school largely because they are more inclined to invest in learning strategies that work. For example, students who believe they can succeed in performing tasks that they find difficult are more likely to make an effort to control their learning, checking their own progress and working out what they still need to know. Such behaviour, in turn, is associated with higher performance in PISA.

These findings suggest that strategies to improve teaching and learning techniques need to do more than just offer students a learning tool-kit. Students will only use learning tools if they feel motivated and believe in their capacity to learn. So measures to improve learning techniques must go hand in hand with measures to nurture stronger attitudes to learning.

How strong are these attitudes in different countries? Such comparisons need to be made with care, since for example it can be shown that students do not always mean the same thing in different cultures when, for example, they say they are interested in reading. However, some cross-country comparisons are more robust, and the table to the left ranks countries in order of students' average level of belief in their learning efficacy.

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Learning autonomy

A further important finding is that students' motivation and self-belief may have even greater implications for their capacity for lifelong learning than for their performance at school. Student approaches to learning measured in PISA explain about a fifth of the difference in students' literacy performance. But if students' tendency to control their learning is taken as an ***outcome*** of learning – since learning autonomy is a key precondition of lifelong learning – an even stronger relationship becomes visible. About two-thirds of differences in student use of "control strategies" can be explained by the varying levels of motivation and self-belief expressed by students who use such strategies more or less often.

Relative performance of students who control their learning more

	Advantage in PISA score points for students who control their learning more[1]	Mean score in reading for students who control their learning…	
		most	least
Portugal	96	517	421
New Zealand	77	571	494
Australia	70	565	495
Czech Republic	66	531	465
Scotland	62	555	493
Germany	61	521	460
United States	61	534	473
Ireland	56	554	498
Mexico	55	449	394
Luxembourg	53	478	425
OECD average	**53**	**528**	**475**
Korea	51	549	498
Sweden	49	538	489
Switzerland	49	522	473
Austria	44	532	488
Italy	44	505	461
Hungary	40	497	457
Iceland	37	527	490
Finland	36	562	526
Denmark	32	516	484
Belgium (Fl.)	27	544	517
Norway	26	520	494

1. Difference in score points between students in the top and bottom quarters of the index of control stategies. Based on students' reports.

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PISA revealed considerable gender differences among 15-year-olds, of which the most consistent among countries is that girls are more interested in reading and perform on average better in reading literacy. Yet both boys and girls have specific strengths and weaknesses, suggesting that differentiated strategies may be needed to meet their needs.

In every country participating in PISA 2000, girls perform on average higher in reading literacy than boys. The average gap is substantial: nearly half a proficiency level (32 points). While the gap is less than half this average in Korea, in other countries the contrast between boys and girls is stark. For example, in Norway, girls score on average 529 points, which is higher than the average student score (for boys and girls) in all but three of the 27 OECD countries in the survey, whereas boys score 486 points, lower than the average in all but seven countries overall.

In mathematical literacy, boys do better overall, but only outperform girls in about half the PISA countries. In the others, there is no significant gender gap. Moreover, even in those countries where girls do less well in mathematics, the nature of this underperformance differs from the underperformance of boys in reading. In the case of mathematics, boys' advantage derives mainly from a disproportionate number of them performing very well. Girls are, on average, no more likely than boys to have low mathematical literacy. In contrast, for reading literacy, boys are nearly 70 per cent more likely than girls to have low performance.

Boys' and girls' reading characteristics

	Reading performance (mean score)		How far girls are ahead (score points)	Interest in reading: how far girls are ahead[1]
	Boys	Girls		
Australia	513	546	34	0.36
Austria	495	520	26	0.62
Belgium[2]	492	525	33	0.54
Canada	519	551	32	m
Czech Republic	473	510	37	0.79
Denmark	485	510	25	0.53
Finland	520	571	51	0.96
France	490	519	29	m
Germany	468	502	35	0.60
Greece	456	493	37	m
Hungary	465	496	32	0.49
Iceland	488	528	40	0.45
Ireland	513	542	29	0.53
Italy	469	507	38	0.58
Japan	507	537	30	m
Korea	519	533	14	0.02
Luxembourg	429	456	27	0.43
Mexico	411	432	20	0.32
New Zealand	507	553	46	0.37
Norway	486	529	43	0.60
Poland	461	498	36	m
Portugal	458	482	25	0.80
Spain	481	505	24	m
Sweden	499	536	37	0.47
Switzerland	480	510	30	0.68
United Kingdom[3]	512	537	26	0.43
United States	490	518	29	0.36
OECD average	485	517	32	0.53

1. This is based on an index of interest in reading and shows positive effect sizes from 0 to 1. Positive effects show that girls are more interested in reading: an effect of 0.20 is small, 0.50 is medium and 0.80 is large.
2. Interest in reading data for the Flemish Community only.
3. Interest in reading data for Scotland only.

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Differences between the interests and study habits of boys and girls

PISA identified a number of qualitative differences between the interests and study habits of boys and girls, which suggest that different strategies may be appropriate in addressing the learning needs of each gender.

Interest in different areas

Girls are more interested in reading, and boys in mathematics. This is clearly a factor associated with differences in performance, and it is notable that in Finland, the country where girls are the furthest ahead of boys in reading performance, there is also the largest gap in interest, whereas Korea has the smallest gap in both respects. However, these two factors are not strongly associated across countries (see table opposite).

PISA also found that boys and girls have different types of reading interests, which is fairly consistent across countries. Boys' interest in a wide range of materials including non-fiction, newspapers and comics, but their much lower interest in reading fiction books, suggests that the choices of reading materials may influence the success of any programme to engage boys more in reading.

Characteristics as learners

Boys and girls each have distinctive strengths and weaknesses in terms of how they approach learning.

Part of this is a matter of attitude and motivation: girls are more confident and motivated in reading; boys in mathematics. Boys also have a stronger general confidence in their ability to overcome obstacles and be effective as learners, while girls report greater effort and persistence.

Another feature of difference is in learning strategies. Girls tend to be more systematic about controlling their own learning, and to memorise material. Boys are more inclined to "elaborate" new knowledge, by relating it to what they already know. While these differences do not apply in every country, they give useful insights into the strengths and weaknesses of boys and girls, and which learning skills each need to work on.

Finally, boys have a stronger preference for competitive learning situations and girls (less consistently across countries) are more inclined to favour co-operative situations.

Engagement at school

Even though girls fare better in PISA than boys in many respects, the survey does not support the notion that difficulties at school age 15 are concentrated among male students. In particular, there is no significant difference overall between the frequency with which boys and girls report having a low sense of belonging at school. There is only a minor difference between their chances of having low attendance, but in some countries these differences are much higher. Notably in Greece and Poland, two of the three countries with the highest number of students missing school or classes, the rate is only two-thirds and three-quarters as high, respectively, for girls as for boys.

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The social background of all students in a school is strongly associated with reading performance.

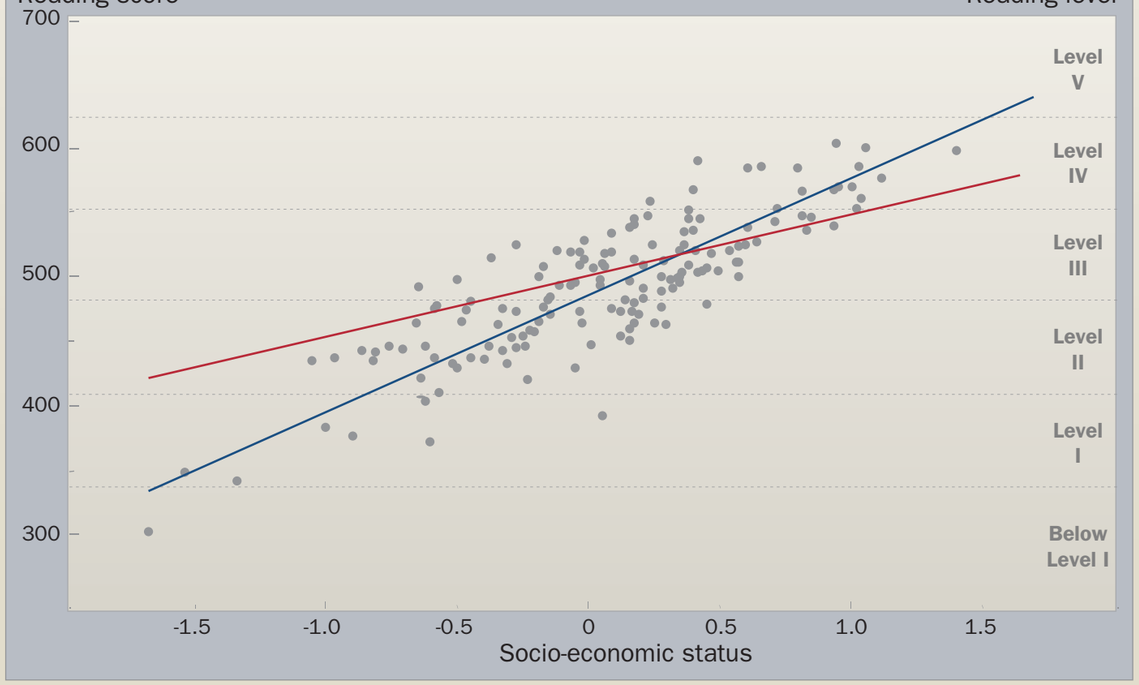
As noted earlier, the social background of an individual student is the strongest single factor associated with performance in PISA. However, it is not just the characteristics of an individual's family but also the characteristics of the families of other students in the school that are closely associated with how well individuals performed in PISA. On average, students who attend schools with a more advantaged "social profile" are likely to show considerably higher levels of literacy than those at less advantaged schools – and this superior performance is greater than can be accounted for by the sum of their own individual advantages.

The importance of the whole-school social profile is illustrated in the graph below, using the United States as an example of a country with average characteristics in terms of the social gradient. Note that the slope of the school gradient is nearly twice that of individuals – *i.e.* if one compares two schools with different social composition, the predicted difference in average reading scores is twice as great as it would be on the basis of predicting the individual scores of each student attending those schools.

This is an average; in some countries the compounding effect is much higher; in others lower. As a result, variation in the steepness of the social gradient across countries is greater when the school effect is taken into account. Iceland has the least severe social gradient at both the individual and the school level, and Germany has the steepest at both levels. However, the slopes of the gradient in the two countries differ by a factor of three at the individual level but a factor of five at the school level.

Average student reading performance and socio-economic status in individual schools in the United States

Each dot represents one school. The case of the United States, a country whose social gradient is similar to the OECD average, illustrates the school effect.

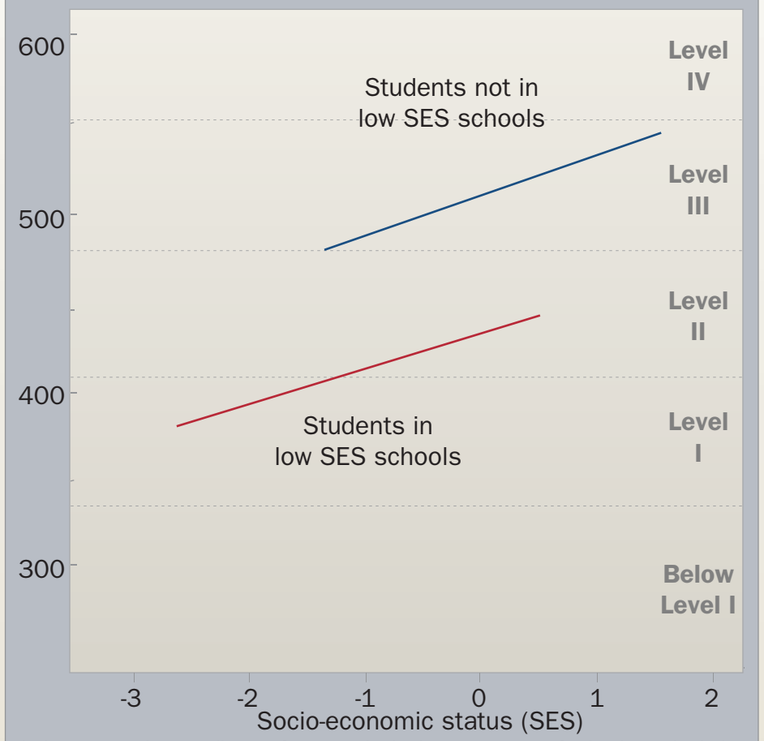


Thus there appears to be an advantage for an individual in attending a school in which other students have more favourable home backgrounds. That advantage may stem from a variety of factors, including peer-group influences, differences in the resources or quality of schools attended by different social groups, or differences in teacher expectations.

However, the results also show that the social profile of a school does not determine its results, and that for two schools whose students have the same average socio-economic status, average reading performance can vary by as much as two proficiency levels.

Analysis of the PISA results indicates that the most important factor influencing whether a school does well compared to other schools with similar social background is whether the less advantaged students within the school achieve good results. In general, the impact of the social profile seems to be greater in schools where there are more disadvantaged students: the lower the social profile, the greater the differences between students from different backgrounds. For students at better-off schools there is more of a "convergence" in their performance, with background mattering less.

Average student reading performance in schools with low socio-economic status[1] compared with other schools



1. Average student reading performance in the lowest quarter of schools on the index of socio-economic status.

Since most variation in student performance tends to be within schools, a key priority is to help the least advantaged individuals within schools to achieve their potential. In particular, those within schools with below-average social profiles may benefit most from compensatory assistance.

However, this analysis also suggests that high segregation of students by social background can create an intense disadvantage for students in the least-favoured schools. The graph above shows that students in the lowest quarter of schools on the index of socio-economic status have no overlap in predicted reading scores with those from other schools. Even one of the 5 per cent most socially privileged students within a less-advantaged school has an expected score below one of the least privileged students in a school with a higher social profile. Thus, policies that limit the extent of social segregation across schools appear likely to help more students to achieve their potential.

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SCHOOL CHARACTERISTICS (2) – CLIMATE AND RESOURCES

The school environment makes a tangible difference to learning outcomes, and in particular the atmosphere created by students and teachers has measurable effects.

How much difference does the quality of a school make to learning outcomes? PISA asked students and school principals questions about various characteristics of schools that might make a difference to learning outcomes. Factors such as the environment in the classroom or the physical infrastructure of the school are more susceptible to policy influence than students' home backgrounds, and therefore of particular interest to policy makers.

The graph shows that a range of school characteristics are associated with student reading performance. Compared to social background, the impact of these factors appears modest: rated on any one of the characteristics shown, the gap between students in the top and bottom quarter of schools is below half a proficiency level, except for student-related factors affecting school climate. Nevertheless, if schools were able to improve performance by these kinds of amounts as a result of improvements in school climate and resources, this would represent a substantial educational gain.

The PISA results underline the particular importance of school climate as a factor affecting school performance. Its effect is more discernible than the level of school resources. Overall, the measured school climate variables account for about 6 per cent of between-school differences in performance, while school resources account for only about 1 per cent. A range of factors affect school climate, including the attitudes of both teachers and students and the quality of the relationship between them. The PISA results indicate that it is student attitudes and behaviour that are particularly important, and that an atmosphere in which they are committed to purposeful learning makes a key difference.

These results confirm a range of other research suggesting that students perform best in a positive learning environment that is oriented towards results. They also relate to PISA's finding that students who are ready to invest effort and who enjoy learning thrive as individuals. They are best able to develop these characteristics in purposeful and well disciplined schools and classroom environments. It is interesting to note that the extent to which teachers emphasise academic performance is also positively related to performance, but less strongly so than the disciplinary climate of the classroom.

School characteristics

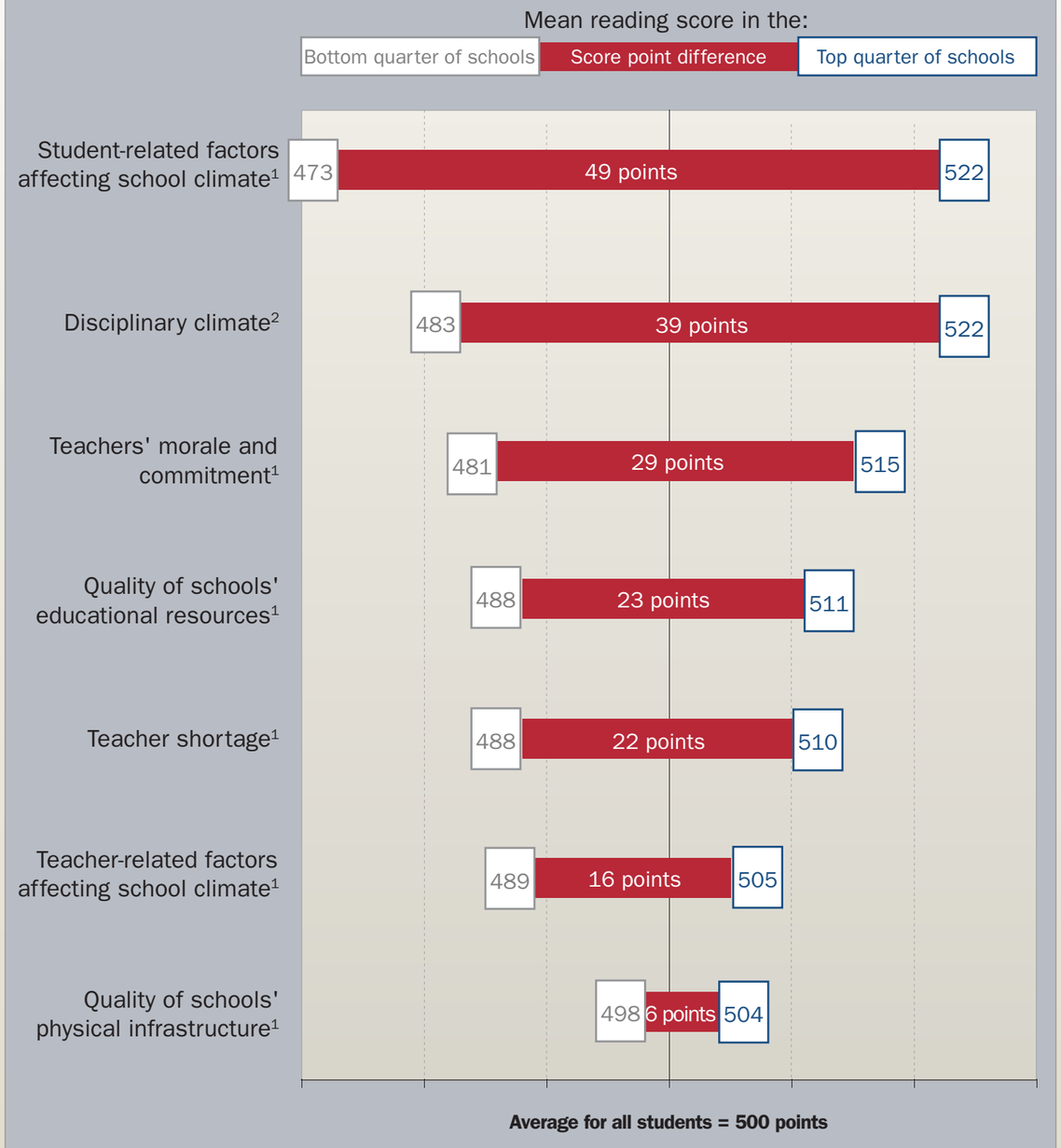
How much difference does it make what school you go to? PISA found that although much variation in student performance is attributable to differences within schools, a substantial amount (varying greatly by country) reflects the fact that students at some schools do better than those at others.

In Austria, Belgium, the Czech Republic, Germany, Greece, Hungary, Italy, Mexico and Poland, between-school variation is greater than within-school variation. By contrast, in Finland, Iceland, Norway and Sweden, around a tenth of variation lies in between-school differences.

What is it that makes students at some schools perform so much better than others? Analysis of the PISA 2000 results shows that the most important influence is the combined background of the students in a school, and in particular differences in average socio-economic status. Characteristics of the school itself play a smaller, but still significant role, and in particular students do better on average in schools with a positive climate for learning.

How much student performance varies with aspects of school climate and resources

(Average effect within OECD countries)



For example: on average in OECD countries the quarter of schools with the least favourable student influences on school climate have average student reading scores of 473 points.

1. As reported by school principals.
2. As reported by students.

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PISA does not allow us to design a perfect education system, but gives clues about which features of school systems are relevant to student outcomes.

Over half of the variation in student performance in OECD countries in PISA 2000 is accounted for by the variation of student performance within each school. About a third is attributed to differences in performance across schools within countries. The amount due to differences across countries is relatively small – 9 per cent of all variation in the case of reading literacy and scientific literacy; 15 per cent for mathematical literacy.

Thus, the degree to which students' educational chances are affected by which country they live in should not be exaggerated. However, different school systems vary not just in their average scores but also in the dispersion of scores and, as seen above, in the strength of the relationship with factors such as social background.

Analysis of the PISA results has started to look at some system features that might help explain differences both in the overall performance and the equity of student outcomes across countries. This analysis does not produce prescriptions for education systems, but makes observations designed to help policy makers think about the effect of certain system features. In looking at features of more successful systems in PISA 2000, three particular observations have emerged.



1 Successful education systems have been extending school autonomy

During the past two decades, many countries have given schools greater autonomy in a range of institutional operations, aiming to raise performance levels by devolving responsibility to the front line.

In most of the countries that performed well in PISA 2000, local authorities and schools now have substantial freedom to adapt and deliver educational content and/or to allocate and manage resources. In all OECD countries, most 15-year-olds are in schools that have some responsibility for student admissions. Except in Germany, Italy and Switzerland, most schools also play a role in deciding on the courses offered. Schools are also gaining autonomy over institutional operations, and most principals have at least some control over budgets, although control of teacher salaries most commonly remains with central authorities.

The PISA 2000 results suggest that in those countries where schools have greater freedom to choose courses, average performance in reading literacy tends to be significantly higher. The picture is similar, though less pronounced, for other aspects of school autonomy, including the relationship between mean performance and the degree of school autonomy in budget allocation. This finding cannot, of course, be interpreted in a causal sense as, for example, school autonomy and performance could well be mutually reinforcing or influenced by other factors.

2 Successful education systems are committed to monitoring student and system performance

Performance standards can only be maintained if they are consistently implemented and assessed. Assessments of student performance are now common in many OECD countries.

These assessment systems have a range of rationales and forms. Different countries use various forms of external assessment, external evaluation or inspection, and schools' own quality assurance and self-evaluation efforts. Some countries see such assessments primarily as tools to reveal best practices and identify shared problems in order to inform improvement. Others extend their purpose to support contestability of public services or market-mechanisms in the allocation of resources, *e.g.* by making comparative results of schools publicly available to facilitate parental choice or by having funds following students. While there is no single model that best supports school improvement, higher-performing countries in PISA have been putting increased emphasis on the monitoring of their schooling systems.

3 The method used in an education system to support low-performing students is critical to the raising of performance

An important aspect of country differences in PISA is that much of the variation in overall performance is attributable to differences in the number of low-performing students. Germany and Japan, for example, both have an average percentage of students reading at level 5, but Germany has twice as many at level 1 or below: this is what makes Germany's average performance below average and Japan's above average. Such differences are also associated with differences in social gradients.

Country approaches to helping disadvantaged students vary widely. Some strategies focus resources on targeted groups of students. Others concentrate on changing the way in which students are allocated to schools, in some cases making schools less selective. The effectiveness of these policies remains controversial. However, the results from PISA 2000 suggest that overall variation in student performance and performance differences between schools tend to be greater in those countries with rigid institutionalised selection and tracking practices at early ages.

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CONCLUSIONS

The initial OECD report on findings from PISA 2000 reported that there is no single key to success in PISA: rather, "successful performance is attributable to a constellation of factors". Subsequent analysis has shed light on the relative importance of factors within this constellation, and offers a profile for each country describing how these relationships play out.

This analysis found some common factors among countries, as well as some important differences.

Important common factors among countries

- The significance of social background differences as a factor that helps explain variations in student performance. While this difference does vary substantially by country, in every country social background was the single most important factor that PISA identified, both in accounting for variations among individuals and for variations across schools.
- The importance of student attitudes as a prerequisite for successful learning. Within countries, students who are interested in what they learn and believe in their own abilities are much more likely to do well, even once other factors have been taken into account. This finding gives a very direct message to school systems that efficient instructional methods are not on their own enough to assure strong learning outcomes: unless the motivation and interest of students can be enhanced, learning gains are likely to be constrained.
- The influence of the atmosphere within schools and classrooms in relation to student outcomes. In every country, having a positive school climate had a stronger measurable relationship with student reading performance than the level of physical resources of the school.

Among the main differences among countries uncovered by PISA, the most striking was the degree to which student performance varied across schools. In some countries, most of the variation in student reading performance can be predicted simply by looking at the characteristics of the school they go to. In others, 90 per cent of variation is contained within individual schools. Some of the extremes of this difference can be accounted for by the fact that some countries separate more and less able students into different schools. However, even the variation across countries with similar education systems is striking in this regard.

Moreover, country differences in the performance advantage associated with individual social background are compounded by the varying degrees to which the social composition of the school appears to advantage students. Thus while the steepness of the "social gradient" varies by a factor of about three across countries when looking just at individuals, the predicted difference in performance between students attending schools with different social profiles is five times as high in the highest country than in the lowest.

In seeking to learn from these differences, countries should note the very strong finding of PISA that achieving greater equity need not be at the expense of overall standards. On the contrary, there is a negative correlation between the amount of difference between the predicted performance of students from social backgrounds and the overall level of performance. This is consistent with the finding that the biggest factor that distinguishes more and less successful countries in PISA is not how well students are doing at the top, but how well they are doing at the bottom. Rather than suggesting that an emphasis on equality might lead to "levelling down", the PISA results indicate that the most successful countries have managed to "level up" standards.

While the need to help less advantaged and worse-performing students is widely shared as a priority, the method of doing so remains controversial. Some systems continue to separate out students by ability; others have more of a "comprehensive" approach to student groupings. PISA cannot determine which system is best for a particular country, but shows that to date the more successful countries have mainly employed an integrated approach to grouping students. This puts the onus on differentiated systems to look carefully at how they can avoid limiting less able students' chances.

PISA together with recent research suggests that in improving their education systems in response to such messages, the important thing for individual countries is not to copy their neighbours directly but to monitor carefully the evolution and outcome of their own system.

Such evaluation does not mean rigid control from the centre; indeed, devolution to the front line has been an important dynamic in educational improvement in many countries. Rather, it means a co-ordinated and consistent approach to tracking outcomes. PISA itself will continue to be part of this process at an international level. The results of the second three-yearly survery appear in *Learning for Tomorrow's World – First Results from PISA* 2003 (OECD, 2004).



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PISA 2000 Profile for Australia

1. Student performance

	In reading literacy					Mean score in mathematical literacy	Mean score in scientific literacy
	Mean score	% at reading level: 5	% at reading level: 1 or below	Standard deviation of reading literacy scores	% of variation between schools		
Australia	528	18	12	102	19	533	528
OECD	500	9	18	100	35	500	500

2. Socio-economic status (SES)

The socio-economic gradient



	Socio-economic status of participating students			Features of the socio-economic gradient			
	Mean socio-economic status	Percentage of explained variation in student performance	Difference in reading literacy score if students had the average OECD SES (score points)	Length of the gradient[1]	Slope of the gradient[2]: Overall	Slope of the gradient[2]: Within schools	Slope of the gradient[2]: Between schools
Australia	0.34	17	-15	2.9	46	34	78
OECD	0.00	20		3.0	41		

1. This shows the socio-economic variation of the middle 90% of students and therefore the gap between the 5 per cent most disadvantaged and the 5 per cent most advantaged students.
2. Score point difference associated with one unit increase of SES. Steeper slopes indicate a greater inequality.

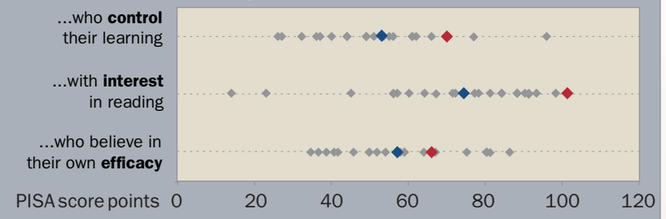
3. Student characteristics

Approaches to learning

Compared to other OECD students, students from Australia have:

above average	confidence in their own **learning efficacy**.
close to average	confidence in their own **reading ability**.
above average	confidence in their own **mathematical ability**.

Performance advantage in reading literacy of students...



Engagement at school

In Australia:

- *21%* of students have a *low sense of belonging*, compared to 25% on average in OECD countries.
- *18%* of students have *low participation* (attendance), compared to 20% on average in OECD countries.

Relationship between student performance in reading literacy and schools...



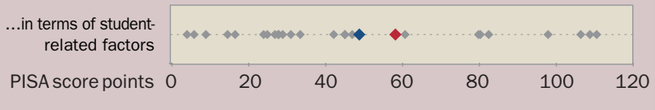
4. School characteristics

Climate

Compared to other OECD students, students from Australia have:

close to average	Disciplinary climate
close to average	Teachers' morale and commitment
less favourable	Teacher-related factors affecting the school climate

Performance advantage in schools with a more positive climate...

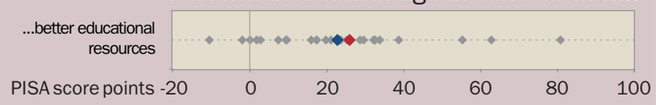


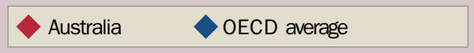
Resources

Compared to other OECD students, students from Australia have:

close to average	Quality of the schools' physical infrastructure
more	Teacher shortage

Performance advantage in schools with...





5. System characteristics

School autonomy

Percentage of students attending schools with at least some responsibility for:

	Student disciplinary policies	Budget allocation	Textbooks used	Student assessment policies	Student admissions	Formulating school budget	Courses offered	Course content	Appointing teachers	Dismissing teachers	Teachers' salary increases	Teachers' starting salaries
Australia	100	100	100	99	94	96	96	84	60	47	19	18
OECD	95	94	92	89	84	76	71	69	61	54	26	23

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PISA 2000 Profile for Austria

1. Student performance

	In reading literacy					Mean score in mathematical literacy	Mean score in scientific literacy
	Mean score	% at reading level: 5	% at reading level: 1 or below	Standard deviation of reading literacy scores	% of variation between schools		
Austria	507	9	15	93	60	515	519
OECD	500	9	18	100	35	500	500

2. Socio-economic status (SES)

The socio-economic gradient



	Socio-economic status of participating students			Features of the socio-economic gradient			
	Mean socio-economic status	Percentage of explained variation in student performance	Difference in reading literacy score if students had the average OECD SES (score points)	Length of the gradient[1]	Slope of the gradient[2]: Overall	Slope of the gradient[2]: Within schools	Slope of the gradient[2]: Between schools
Austria	0.10	14	1	2.7	41	10	135
OECD	0.00	20		3.0	41		

1. This shows the socio-economic variation of the middle 90% of students and therefore the gap between the 5 per cent most disadvantaged and the 5 per cent most advantaged students.
2. Score point difference associated with one unit increase of SES. Steeper slopes indicate a greater inequality.

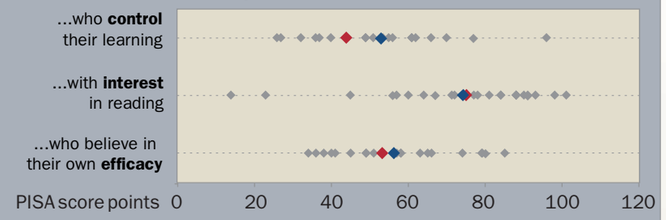
3. Student characteristics

Approaches to learning

Compared to other OECD students, students from Austria have:

above average	confidence in their own **learning efficacy**.
close to average	confidence in their own **reading ability**.
below average	confidence in their own **mathematical ability**.

Performance advantage in reading literacy of students...

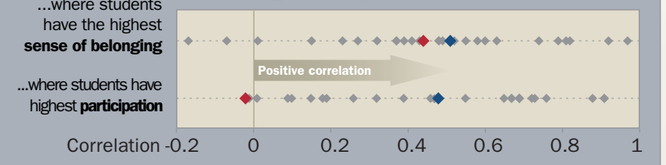


Engagement at school

In Austria:

- *20%* of students have a *low sense of belonging*, compared to 25% on average in OECD countries.
- *15%* of students have *low participation* (attendance), compared to 20% on average in OECD countries.

Relationship between student performance in reading literacy and schools...



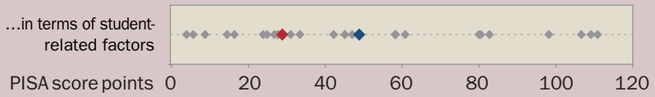
4. School characteristics

Climate

Compared to other OECD students, students from Austria have:

more favourable	Disciplinary climate
more favourable	Teachers' morale and commitment
more favourable	Teacher-related factors affecting the school climate

Performance advantage in schools with a more positive climate...

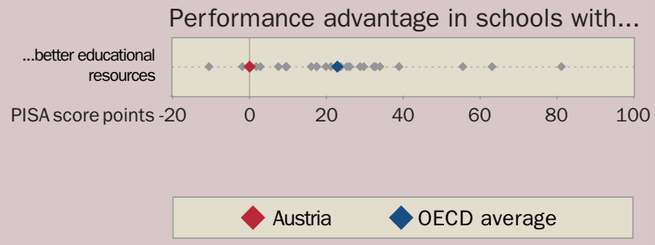


Resources

Compared to other OECD students, students from Austria have:

close to average	Quality of the schools' physical infrastructure
less	Teacher shortage

Performance advantage in schools with...



5. System characteristics

School autonomy

	Percentage of students attending schools with at least some responsibility for:											
	Student disciplinary policies	Budget allocation	Textbooks used	Student assessment policies	Student admissions	Formulating school budget	Courses offered	Course content	Appointing teachers	Dismissing teachers	Teachers' salary increases	Teachers' starting salaries
Austria	96	93	99	69	75	14	57	54	15	5	1	1
OECD	95	94	92	89	84	76	71	69	61	54	26	23

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PISA 2000 Profile for Belgium

1. Student performance

	In reading literacy					Mean score in mathematical literacy	Mean score in scientific literacy
	Mean score	% at reading level 5	% at reading level 1 or below	Standard deviation of reading literacy scores	% of variation between schools		
Belgium	507	12	19	107	60	520	496
OECD	500	9	18	100	35	500	500

2. Socio-economic status (SES)

The socio-economic gradient



	Socio-economic status of participating students			Features of the socio-economic gradient			
	Mean socio-economic status	Percentage of explained variation in student performance	Difference in reading literacy score if students had the average OECD SES (score points)	Length of the gradient[1]	Slope of the gradient[2] Overall	Slope of the gradient[2] Within schools	Slope of the gradient[2] Between schools
Belgium	-0.03	22	13	3.1	48	14	133
OECD	0.00	20		3.0	41		

1. This shows the socio-economic variation of the middle 90% of students and therefore the gap between the 5 per cent most disadvantaged and the 5 per cent most advantaged students.
2. Score point difference associated with one unit increase of SES. Steeper slopes indicate a greater inequality.

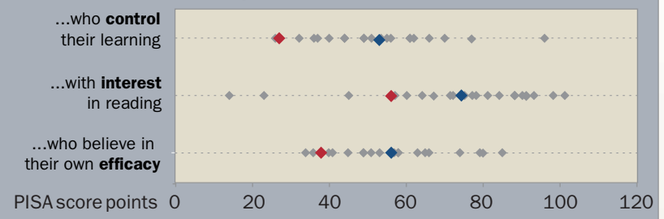
3. Student characteristics

Approaches to learning

Compared to other OECD students, students from Belgium (Fl.) have:

close to average	confidence in their own **learning efficacy**.
below average	confidence in their own **reading ability**.
close to average	confidence in their own **mathematical ability**.

Performance advantage in reading literacy of students...

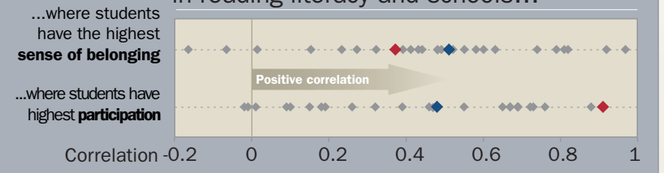


Engagement at school

In Belgium:

- *32%* of students have a *low sense of belonging*, compared to 25% on average in OECD countries.
- *14%* of students have *low participation* (attendance), compared to 20% on average in OECD countries.

Relationship between student performance in reading literacy and schools...



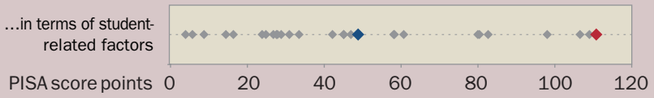
4. School characteristics

Climate

Compared to other OECD students, students from Belgium have:

less favourable	Disciplinary climate
less favourable	Teachers' morale and commitment
close to average	Teacher-related factors affecting the school climate

Performance advantage in schools with a more positive climate...

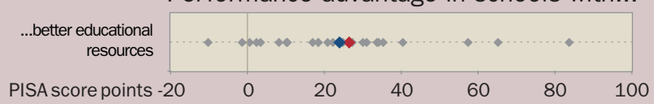


Resources

Compared to other OECD students, students from Belgium have:

higher	Quality of the schools' physical infrastructure
less	Teacher shortage[1]

Performance advantage in schools with...



1. Flemish Community only.



5. System characteristics

School autonomy

	Percentage of students attending schools with at least some responsibility for:											
	Student disciplinary policies	Budget allocation	Textbooks used	Student assessment policies	Student admissions	Formulating school budget	Courses offered	Course content	Appointing teachers	Dismissing teachers	Teachers' salary increases	Teachers' starting salaries
Belgium	99	99	99	100	95	98	61	59	96	95	7	7
OECD	95	94	92	89	84	76	71	69	61	54	26	23

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PISA 2000 Profile for Canada

1. Student performance

	In reading literacy					Mean score in mathematical literacy	Mean score in scientific literacy
	Mean score	% at reading level		Standard deviation of reading literacy scores	% of variation between schools		
		5	1 or below				
Canada	534	17	10	95	18	533	529
OECD	500	9	18	100	35	500	500

2. Socio-economic status (SES)

The socio-economic gradient



	Socio-economic status of participating students			Features of the socio-economic gradient			
	Mean socio-economic status	Percentage of explained variation in student performance	Difference in reading literacy score if students had the average OECD SES (score points)	Length of the gradient[1]	Slope of the gradient[2]		
					Overall	Within schools	Between schools
Canada	0.27	11	-7	3.1	37	28	73
OECD	0.00	20		3.0	41		

1. This shows the socio-economic variation of the middle 90% of students and therefore the gap between the 5 per cent most disadvantaged and the 5 per cent most advantaged students.
2. Score point difference associated with one unit increase of SES. Steeper slopes indicate a greater inequality.

3. Student characteristics

Engagement at school

In Canada:

- *21%* of students have a *low sense of belonging*, compared to 25% on average in OECD countries.
- *26%* of students have *low participation* (attendance), compared to 20% on average in OECD countries.

Relationship between student performance in reading literacy and schools...



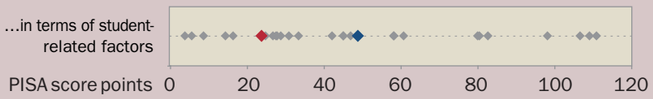
4. School characteristics

Climate

Compared to other OECD students, students from Canada have:

less favourable	Disciplinary climate
close to average	Teachers' morale and commitment
more favourable	Teacher-related factors affecting the school climate

Performance advantage in schools with a more positive climate...

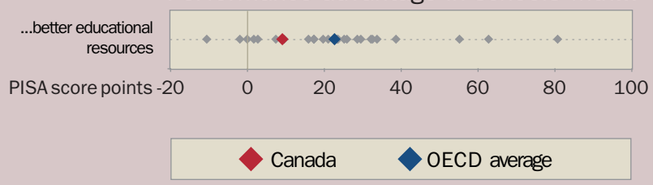


Resources

Compared to other OECD students, students from Canada have:

higher	Quality of the schools' physical infrastructure
close to average	Teacher shortage

Performance advantage in schools with...



5. System characteristics

School autonomy

Percentage of students attending schools with at least some responsibility for:

	Student disci-plinary policies	Budget allocation	Textbooks used	Student assess-ment policies	Student admis-sions	Formulat-ing school budget	Courses offered	Course content	Appointing teachers	Dismiss-ing teachers	Teachers' salary increases	Teachers' starting salaries
Canada	98	99	89	94	89	77	90	49	82	61	34	34
OECD	95	94	92	89	84	76	71	69	61	54	26	23

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PISA 2000 Profile for Czech Republic

1. Student performance

	In reading literacy					Mean score in mathematical literacy	Mean score in scientific literacy
	Mean score	% at reading level: 5	% at reading level: 1 or below	Standard deviation of reading literacy scores	% of variation between schools		
Czech Republic	492	7	18	96	53	498	511
OECD	500	9	18	100	35	500	500

2. Socio-economic status (SES)

The socio-economic gradient



	Socio-economic status of participating students			Features of the socio-economic gradient			
	Mean socio-economic status	Percentage of explained variation in student performance	Difference in reading literacy score if students had the average OECD SES (score points)	Length of the gradient[1]	Slope of the gradient[2]: Overall	Slope of the gradient[2]: Within schools	Slope of the gradient[2]: Between schools
Czech Republic	-0.10	22	10	2.7	49	19	131
OECD	0.00	20		3.0	41		

1. This shows the socio-economic variation of the middle 90% of students and therefore the gap between the 5 per cent most disadvantaged and the 5 per cent most advantaged students.
2. Score point difference associated with one unit increase of SES. Steeper slopes indicate a greater inequality.

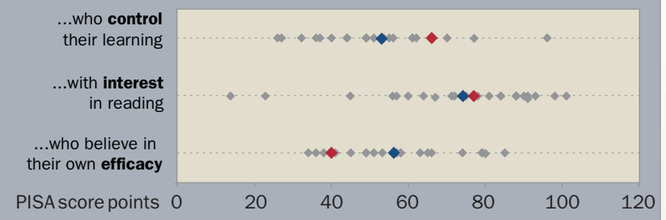
3. Student characteristics

Approaches to learning

Compared to other OECD students, students from Czech Republic have:

below average	confidence in their own **learning efficacy**.
below average	confidence in their own **reading ability**.
below average	confidence in their own **mathematical ability**.

Performance advantage in reading literacy of students...

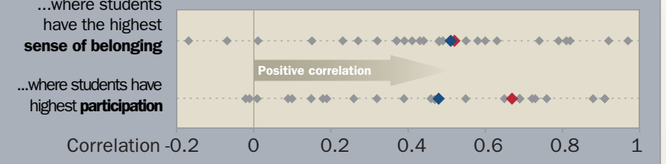


Engagement at school

In Czech Republic:

- *30%* of students have a *low sense of belonging*, compared to 25% on average in OECD countries.
- *21%* of students have *low participation* (attendance), compared to 20% on average in OECD countries.

Relationship between student performance in reading literacy and schools...



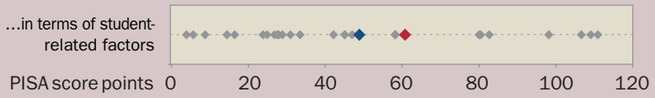
4. School characteristics

Climate

Compared to other OECD students, students from Czech Republic have:

more favourable	Disciplinary climate
less favourable	Teachers' morale and commitment
more favourable	Teacher-related factors affecting the school climate

Performance advantage in schools with a more positive climate...

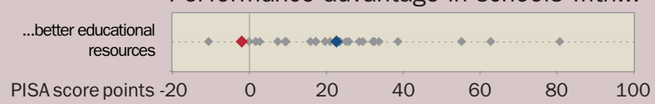


Resources

Compared to other OECD students, students from Czech Republic have:

higher	Quality of the schools' physical infrastructure
less	Teacher shortage

Performance advantage in schools with...





5. System characteristics

School autonomy

	Percentage of students attending schools with at least some responsibility for:											
	Student disciplinary policies	Budget allocation	Textbooks used	Student assessment policies	Student admissions	Formulating school budget	Courses offered	Course content	Appointing teachers	Dismissing teachers	Teachers' salary increases	Teachers' starting salaries
Czech Republic	100	99	100	100	89	83	82	82	96	95	73	70
OECD	95	94	92	89	84	76	71	69	61	54	26	23

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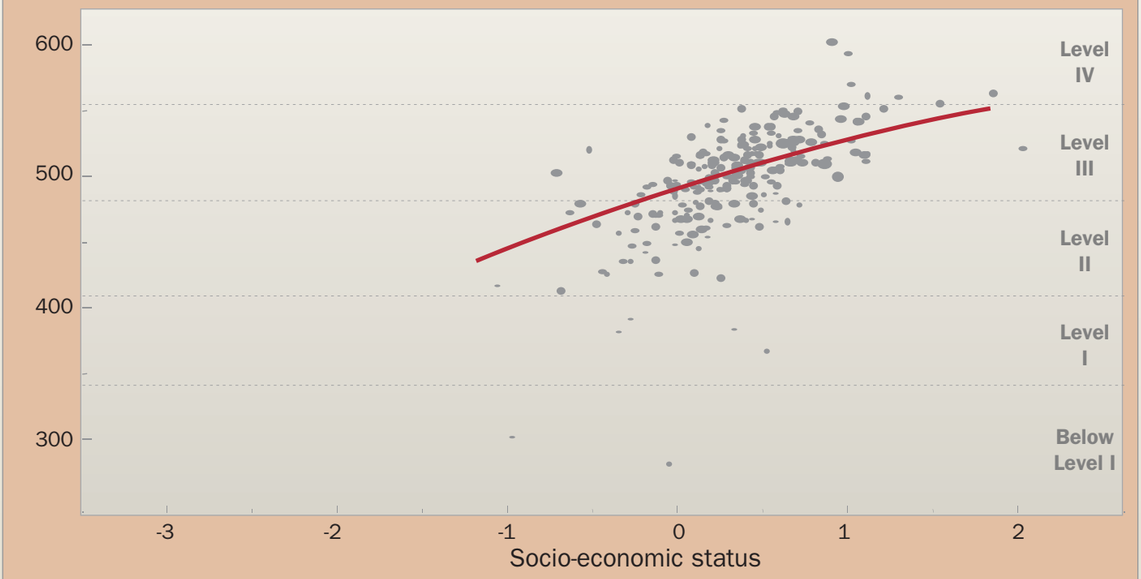
PISA 2000 Profile for Denmark

1. Student performance

	In reading literacy					Mean score in mathematical literacy	Mean score in scientific literacy
	Mean score	% at reading level 5	% at reading level 1 or below	Standard deviation of reading literacy scores	% of variation between schools		
Denmark	497	8	18	98	19	514	481
OECD	500	9	18	100	35	500	500

2. Socio-economic status (SES)

The socio-economic gradient



	Socio-economic status of participating students			Features of the socio-economic gradient			
	Mean socio-economic status	Percentage of explained variation in student performance	Difference in reading literacy score if students had the average OECD SES (score points)	Length of the gradient[1]	Slope of the gradient[2] Overall	Slope of the gradient[2] Within schools	Slope of the gradient[2] Between schools
Denmark	0.11	17	1	2.8	42	34	79
OECD	0.00	20		3.0	41		

1. This shows the socio-economic variation of the middle 90% of students and therefore the gap between the 5 per cent most disadvantaged and the 5 per cent most advantaged students.
2. Score point difference associated with one unit increase of SES. Steeper slopes indicate a greater inequality.

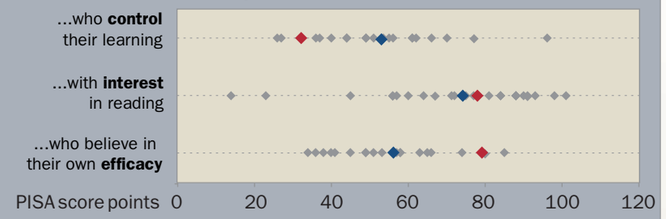
3. Student characteristics

Approaches to learning

Compared to other OECD students, students from Denmark have:

close to average	confidence in their own **learning efficacy**.
above average	confidence in their own **reading ability**.
above average	confidence in their own **mathematical ability**.

Performance advantage in reading literacy of students...

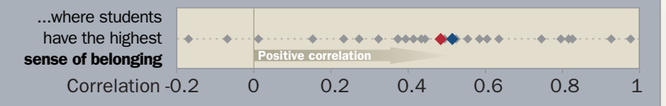


Engagement at school

In Denmark:

- *21%* of students have a *low sense of belonging*, compared to 25% on average in OECD countries.

Relationship between student performance in reading literacy and schools...



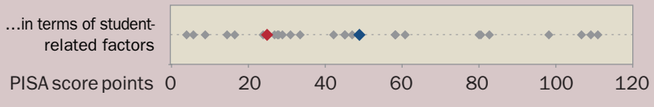
4. School characteristics

Climate

Compared to other OECD students, students from Denmark have:

less favourable	Disciplinary climate
close to average	Teachers' morale and commitment
more favourable	Teacher-related factors affecting the school climate

Performance advantage in schools with a more positive climate...



Resources

Compared to other OECD students, students from Denmark have:

close to average	Quality of the schools' physical infrastructure
less	Teacher shortage

Performance advantage in schools with...



5. System characteristics

School autonomy

Percentage of students attending schools with at least some responsibility for:

	Student disciplinary policies	Budget allocation	Textbooks used	Student assessment policies	Student admissions	Formulating school budget	Courses offered	Course content	Appointing teachers	Dismissing teachers	Teachers' salary increases	Teachers' starting salaries
Denmark	99	98	100	87	87	89	77	90	97	57	15	13
OECD	95	94	92	89	84	76	71	69	61	54	26	23

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PISA 2000 Profile for Finland

1. Student performance

	In reading literacy					Mean score in mathematical literacy	Mean score in scientific literacy
	Mean score	% at reading level: 5	% at reading level: 1 or below	Standard deviation of reading literacy scores	% of variation between schools		
Finland	546	18	7	89	12	536	538
OECD	500	9	18	100	35	500	500

2. Socio-economic status (SES)

The socio-economic gradient



	Socio-economic status of participating students			Features of the socio-economic gradient			
	Mean socio-economic status	Percentage of explained variation in student performance	Difference in reading literacy score if students had the average OECD SES (score points)	Length of the gradient[1]	Slope of the gradient[2]: Overall	Slope of the gradient[2]: Within schools	Slope of the gradient[2]: Between schools
Finland	0.08	9	-2	2.9	30	27	47
OECD	0.00	20		3.0	41		

1. This shows the socio-economic variation of the middle 90% of students and therefore the gap between the 5 per cent most disadvantaged and the 5 per cent most advantaged students.
2. Score point difference associated with one unit increase of SES. Steeper slopes indicate a greater inequality.

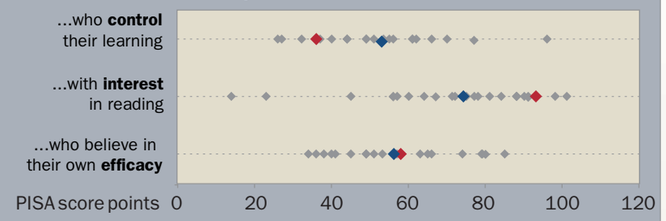
3. Student characteristics

Approaches to learning

Compared to other OECD students, students from Finland have:

below average	confidence in their own **learning efficacy**.
close to average	confidence in their own **reading ability**.
close to average	confidence in their own **mathematical ability**.

Performance advantage in reading literacy of students...

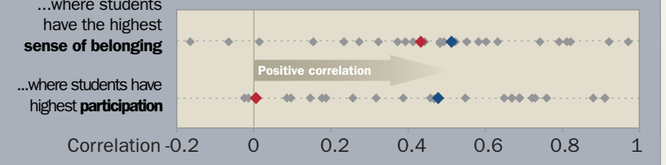


Engagement at school

In Finland:

- *21%* of students have a *low sense of belonging*, compared to 25% on average in OECD countries.
- *23%* of students have *low participation* (attendance), compared to 20% on average in OECD countries.

Relationship between student performance in reading literacy and schools...



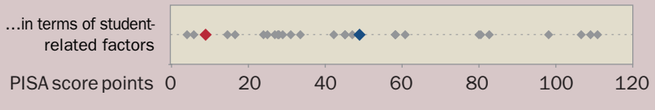
4. School characteristics

Climate

Compared to other OECD students, students from Finland have:

less favourable	Disciplinary climate
close to average	Teachers' morale and commitment
close to average	Teacher-related factors affecting the school climate

Performance advantage in schools with a more positive climate...

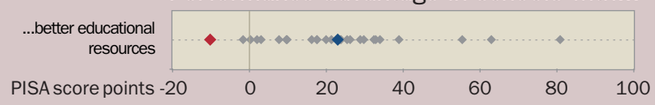


Resources

Compared to other OECD students, students from Finland have:

lower	Quality of the schools' physical infrastructure
close to average	Teacher shortage

Performance advantage in schools with...



5. System characteristics

School autonomy

Percentage of students attending schools with at least some responsibility for:

	Student disciplinary policies	Budget allocation	Textbooks used	Student assessment policies	Student admissions	Formulating school budget	Courses offered	Course content	Appointing teachers	Dismissing teachers	Teachers' salary increases	Teachers' starting salaries
Finland	96	99	100	89	54	56	95	91	35	21	2	1
OECD	95	94	92	89	84	76	71	69	61	54	26	23

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PISA 2000 Profile for France

1. Student performance

	In reading literacy					Mean score in mathematical literacy	Mean score in scientific literacy
	Mean score	% at reading level 5	% at reading level 1 or below	Standard deviation of reading literacy scores	% of variation between schools		
France	505	8	15	92	m	517	500
OECD	500	9	18	100	35	500	500

2. Socio-economic status (SES)

The socio-economic gradient



	Socio-economic status of participating students			Features of the socio-economic gradient			
	Mean socio-economic status	Percentage of explained variation in student performance	Difference in reading literacy score if students had the average OECD SES (score points)	Length of the gradient[1]	Slope of the gradient[2] Overall	Slope of the gradient[2] Within schools	Slope of the gradient[2] Between schools
France	-0.12	23	6	2.9	48	21	106
OECD	0.00	20		3.0	41		

1. This shows the socio-economic variation of the middle 90% of students and therefore the gap between the 5 per cent most disadvantaged and the 5 per cent most advantaged students.
2. Score point difference associated with one unit increase of SES. Steeper slopes indicate a greater inequality.

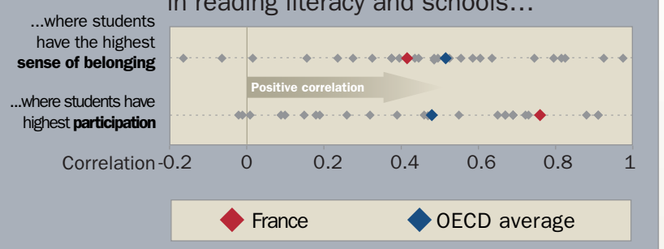
3. Student characteristics

Engagement at school

In France:

- *30%* of students have a *low sense of belonging*, compared to 25% on average in OECD countries.
- *15%* of students have *low participation* (attendance), compared to 20% on average in OECD countries.

Relationship between student performance in reading literacy and schools...



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PISA 2000 Profile for Germany

1. Student performance

	In reading literacy					Mean score in mathematical literacy	Mean score in scientific literacy
	Mean score	% at reading level 5	% at reading level 1 or below	Standard deviation of reading literacy scores	% of variation between schools		
Germany	484	9	23	111	60	490	487
OECD	500	9	18	100	35	500	500

2. Socio-economic status (SES)

The socio-economic gradient



	Socio-economic status of participating students			Features of the socio-economic gradient			
	Mean socio-economic status	Percentage of explained variation in student performance	Difference in reading literacy score if students had the average OECD SES (score points)	Length of the gradient[1]	Slope of the gradient[2] Overall	Slope of the gradient[2] Within schools	Slope of the gradient[2] Between schools
Germany	0.19	22	-11	2.8	60	16	156
OECD	0.00	20		3.0	41		

1. This shows the socio-economic variation of the middle 90% of students and therefore the gap between the 5 per cent most disadvantaged and the 5 per cent most advantaged students.
2. Score point difference associated with one unit increase of SES. Steeper slopes indicate a greater inequality.

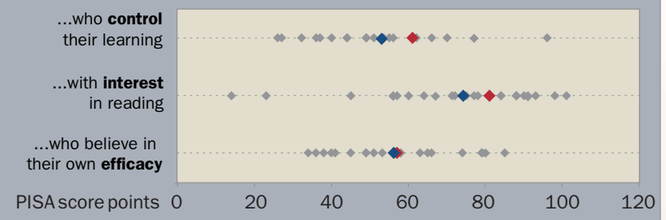
3. Student characteristics

Approaches to learning

Compared to other OECD students, students from Germany have:

close to average	confidence in their own **learning efficacy**.
below average	confidence in their own **reading ability**.
close to average	confidence in their own **mathematical ability**.

Performance advantage in reading literacy of students...

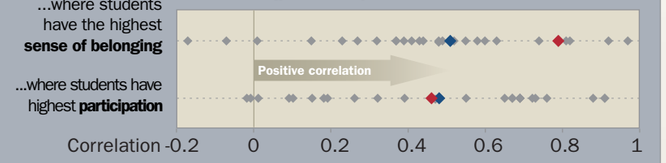


Engagement at school

In Germany:

- *23%* of students have a *low sense of belonging*, compared to 25% on average in OECD countries.
- *13%* of students have *low participation* (attendance), compared to 20% on average in OECD countries.

Relationship between student performance in reading literacy and schools...



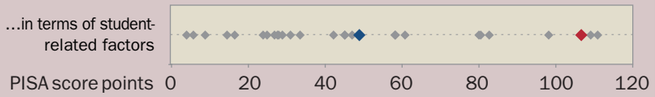
4. School characteristics

Climate

Compared to other OECD students, students from Germany have:

close to average	Disciplinary climate
close to average	Teachers' morale and commitment
less favourable	Teacher-related factors affecting the school climate

Performance advantage in schools with a more positive climate...

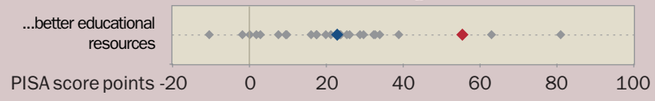


Resources

Compared to other OECD students, students from Germany have:

higher	Quality of the schools' physical infrastructure
more	Teacher shortage

Performance advantage in schools with...



5. System characteristics

School autonomy

Percentage of students attending schools with at least some responsibility for:

	Student disciplinary policies	Budget allocation	Textbooks used	Student assessment policies	Student admissions	Formulating school budget	Courses offered	Course content	Appointing teachers	Dismissing teachers	Teachers' salary increases	Teachers' starting salaries
Germany	95	96	96	79	79	13	35	35	10	4	11	2
OECD	95	94	92	89	84	76	71	69	61	54	26	23

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PISA 2000 Profile for Greece

1. Student performance

	In reading literacy					Mean score in mathematical literacy	Mean score in scientific literacy
	Mean score	% at reading level: 5	% at reading level: 1 or below	Standard deviation of reading literacy scores	% of variation between schools		
Greece	474	5	24	97	50	447	461
OECD	500	9	18	100	35	500	500

2. Socio-economic status (SES)

The socio-economic gradient



	Socio-economic status of participating students			Features of the socio-economic gradient			
	Mean socio-economic status	Percentage of explained variation in student performance	Difference in reading literacy score if students had the average OECD SES (score points)	Length of the gradient[1]	Slope of the gradient[2]: Overall	Slope of the gradient[2]: Within schools	Slope of the gradient[2]: Between schools
Greece	-0.25	16	11	3.3	38	13	93
OECD	0.00	20		3.0	41		

1. This shows the socio-economic variation of the middle 90% of students and therefore the gap between the 5 per cent most disadvantaged and the 5 per cent most advantaged students.
2. Score point difference associated with one unit increase of SES. Steeper slopes indicate a greater inequality.

3. Student characteristics

Engagement at school

In Greece:

- *23%* of students have a *low sense of belonging*, compared to 25% on average in OECD countries.
- *29%* of students have *low participation* (attendance), compared to 20% on average in OECD countries.

Relationship between student performance in reading literacy and schools...



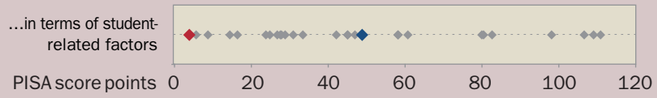
4. School characteristics

Climate

Compared to other OECD students, students from Greece have:

less favourable	Disciplinary climate
more favourable	Teachers' morale and commitment
less favourable	Teacher-related factors affecting the school climate

Performance advantage in schools with a more positive climate...

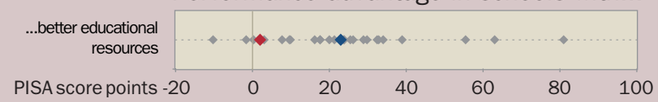


Resources

Compared to other OECD students, students from Greece have:

lower	Quality of the schools' physical infrastructure
more	Teacher shortage

Performance advantage in schools with...





5. System characteristics

School autonomy

Percentage of students attending schools with at least some responsibility for:

	Student disciplinary policies	Budget allocation	Textbooks used	Student assessment policies	Student admissions	Formulating school budget	Courses offered	Course content	Appointing teachers	Dismissing teachers	Teachers' salary increases	Teachers' starting salaries
Greece	97	95	90	94	90	87	89	92	65	70	77	73
OECD	95	94	92	89	84	76	71	69	61	54	26	23

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PISA 2000 Profile for Hungary

1. Student performance

	In reading literacy					Mean score in mathematical literacy	Mean score in scientific literacy
	Mean score	% at reading level 5	% at reading level 1 or below	Standard deviation of reading literacy scores	% of variation between schools		
Hungary	480	5	23	94	67	488	496
OECD	500	9	18	100	35	500	500

2. Socio-economic status (SES)

The socio-economic gradient



	Socio-economic status of participating students			Features of the socio-economic gradient			
	Mean socio-economic status	Percentage of explained variation in student performance	Difference in reading literacy score if students had the average OECD SES (score points)	Length of the gradient[1]	Slope of the gradient[2] Overall	Slope of the gradient[2] Within schools	Slope of the gradient[2] Between schools
Hungary	-0.11	26	7	2.9	54	6	106
OECD	0.00	20		3.0	41		

1. This shows the socio-economic variation of the middle 90% of students and therefore the gap between the 5 per cent most disadvantaged and the 5 per cent most advantaged students.
2. Score point difference associated with one unit increase of SES. Steeper slopes indicate a greater inequality.

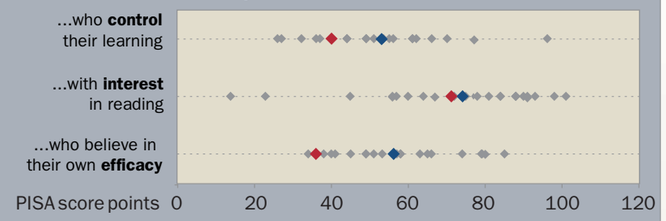
3. Student characteristics

Approaches to learning

Compared to other OECD students, students from Hungary have:

close to average	confidence in their own **learning efficacy**.
below average	confidence in their own **reading ability**.
below average	confidence in their own **mathematical ability**.

Performance advantage in reading literacy of students...

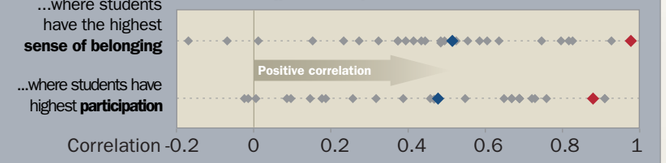


Engagement at school

In Hungary:

- *19%* of students have a *low sense of belonging*, compared to 25% on average in OECD countries.
- *18%* of students have *low participation* (attendance), compared to 20% on average in OECD countries.

Relationship between student performance in reading literacy and schools...



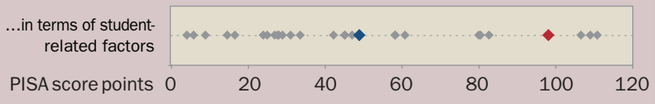
4. School characteristics

Climate

Compared to other OECD students, students from Hungary have:

more favourable	Disciplinary climate
more favourable	Teachers' morale and commitment
more favourable	Teacher-related factors affecting the school climate

Performance advantage in schools with a more positive climate...

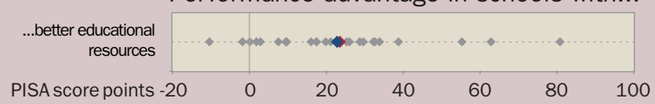


Resources

Compared to other OECD students, students from Hungary have:

higher	Quality of the schools' physical infrastructure
less	Teacher shortage

Performance advantage in schools with...





5. System characteristics

School autonomy

	Percentage of students attending schools with at least some responsibility for:											
	Student disciplinary policies	Budget allocation	Textbooks used	Student assessment policies	Student admissions	Formulating school budget	Courses offered	Course content	Appointing teachers	Dismissing teachers	Teachers' salary increases	Teachers' starting salaries
Hungary	100	92	100	98	99	61	98	97	100	99	50	41
OECD	95	94	92	89	84	76	71	69	61	54	26	23

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PISA 2000 Profile for Iceland

1. Student performance

	In reading literacy					Mean score in mathematical literacy	Mean score in scientific literacy
	Mean score	% at reading level: 5	% at reading level: 1 or below	Standard deviation of reading literacy scores	% of variation between schools		
Iceland	507	9	15	92	8	514	496
OECD	500	9	18	100	35	500	500

2. Socio-economic status (SES)

The socio-economic gradient



	Socio-economic status of participating students			Features of the socio-economic gradient			
	Mean socio-economic status	Percentage of explained variation in student performance	Difference in reading literacy score if students had the average OECD SES (score points)	Length of the gradient[1]	Slope of the gradient[2]: Overall	Slope of the gradient[2]: Within schools	Slope of the gradient[2]: Between schools
Iceland	0.69	7	-15	2.8	24	20	29
OECD	0.00	20		3.0	41		

1. This shows the socio-economic variation of the middle 90% of students and therefore the gap between the 5 per cent most disadvantaged and the 5 per cent most advantaged students.
2. Score point difference associated with one unit increase of SES. Steeper slopes indicate a greater inequality.

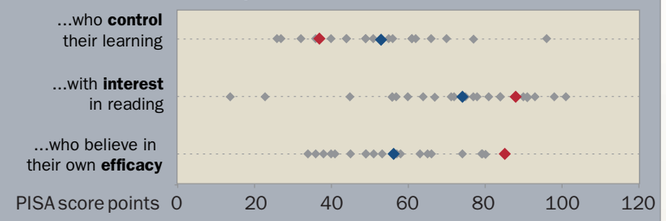
3. Student characteristics

Approaches to learning

Compared to other OECD students, students from Iceland have:

close to average	confidence in their own **learning efficacy**.
close to average	confidence in their own **reading ability**.
close to average	confidence in their own **mathematical ability**.

Performance advantage in reading literacy of students...

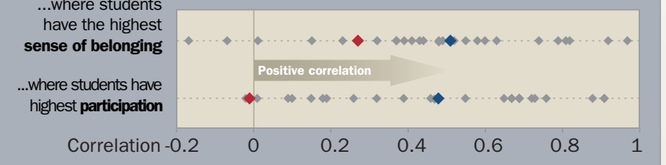


Engagement at school

In Iceland:

- *22%* of students have a *low sense of belonging*, compared to 25% on average in OECD countries.
- *26%* of students have *low participation* (attendance), compared to 20% on average in OECD countries.

Relationship between student performance in reading literacy and schools...



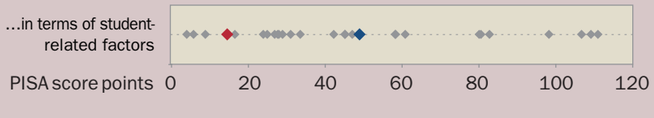
4. School characteristics

Climate

Compared to other OECD students, students from Iceland have:

close to average	Disciplinary climate
more favourable	Teachers' morale and commitment
more favourable	Teacher-related factors affecting the school climate

Performance advantage in schools with a more positive climate...



Resources

Compared to other OECD students, students from Iceland have:

higher	Quality of the schools' physical infrastructure
more	Teacher shortage

Performance advantage in schools with...



5. System characteristics

School autonomy

Percentage of students attending schools with at least some responsibility for:

	Student disciplinary policies	Budget allocation	Textbooks used	Student assessment policies	Student admissions	Formulating school budget	Courses offered	Course content	Appointing teachers	Dismissing teachers	Teachers' salary increases	Teachers' starting salaries
Iceland	99	87	99	98	74	76	62	79	99	99	7	4
OECD	95	94	92	89	84	76	71	69	61	54	26	23

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PISA 2000 Profile for Ireland

1. Student performance

	In reading literacy					Mean score in mathematical literacy	Mean score in scientific literacy
	Mean score	% at reading level: 5	% at reading level: 1 or below	Standard deviation of reading literacy scores	% of variation between schools		
Ireland	527	14	11	94	18	503	513
OECD	500	9	18	100	35	500	500

2. Socio-economic status (SES)

The socio-economic gradient



	Socio-economic status of participating students			Features of the socio-economic gradient			
	Mean socio-economic status	Percentage of explained variation in student performance	Difference in reading literacy score if students had the average OECD SES (score points)	Length of the gradient[1]	Slope of the gradient[2]: Overall	Slope of the gradient[2]: Within schools	Slope of the gradient[2]: Between schools
Ireland	0.02	14	0	2.9	38	28	79
OECD	0.00	20		3.0	41		

1. This shows the socio-economic variation of the middle 90% of students and therefore the gap between the 5 per cent most disadvantaged and the 5 per cent most advantaged students.
2. Score point difference associated with one unit increase of SES. Steeper slopes indicate a greater inequality.

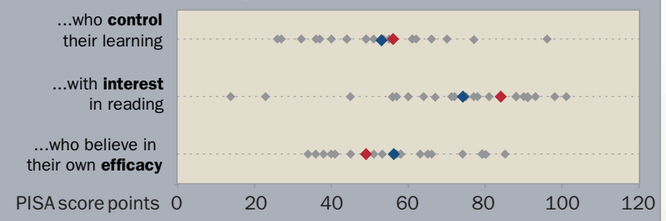
3. Student characteristics

Approaches to learning

Compared to other OECD students, students from Ireland have:

close to average	confidence in their own **learning efficacy**.
above average	confidence in their own **reading ability**.
close to average	confidence in their own **mathematical ability**.

Performance advantage in reading literacy of students...

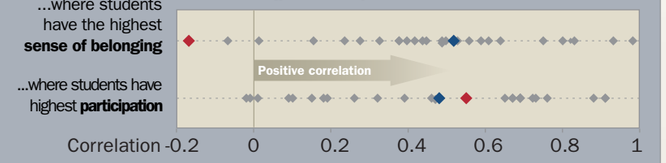


Engagement at school

In Ireland:

- *19%* of students have a *low sense of belonging*, compared to 25% on average in OECD countries.
- *18%* of students have *low participation* (attendance), compared to 20% on average in OECD countries.

Relationship between student performance in reading literacy and schools...



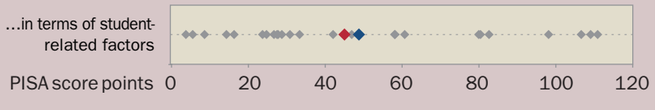
4. School characteristics

Climate

Compared to other OECD students, students from Ireland have:

close to average	Disciplinary climate
more favourable	Teachers' morale and commitment
close to average	Teacher-related factors affecting the school climate

Performance advantage in schools with a more positive climate...

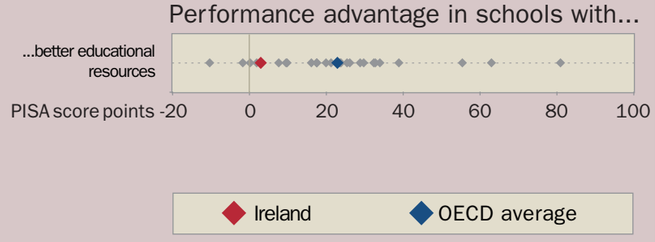


Resources

Compared to other OECD students, students from Ireland have:

higher	Quality of the schools' physical infrastructure
close to average	Teacher shortage

Performance advantage in schools with...



5. System characteristics

School autonomy

Percentage of students attending schools with at least some responsibility for:

	Student disciplinary policies	Budget allocation	Textbooks used	Student assessment policies	Student admissions	Formulating school budget	Courses offered	Course content	Appointing teachers	Dismissing teachers	Teachers' salary increases	Teachers' starting salaries
Ireland	99	100	100	99	95	79	97	37	88	73	5	4
OECD	95	94	92	89	84	76	71	69	61	54	26	23

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PISA 2000 Profile for Italy

1. Student performance

	In reading literacy					Mean score in mathematical literacy	Mean score in scientific literacy
	Mean score	% at reading level: 5	% at reading level: 1 or below	Standard deviation of reading literacy scores	% of variation between schools		
Italy	487	5	19	91	54	457	478
OECD	500	9	18	100	35	500	500

2. Socio-economic status (SES)

The socio-economic gradient



	Socio-economic status of participating students			Features of the socio-economic gradient			
	Mean socio-economic status	Percentage of explained variation in student performance	Difference in reading literacy score if students had the average OECD SES (score points)	Length of the gradient[1]	Slope of the gradient[2]: Overall	Slope of the gradient[2]: Within schools	Slope of the gradient[2]: Between schools
Italy	0.09	11	-2	3.1	32	5	99
OECD	0.00	20		3.0	41		

1. This shows the socio-economic variation of the middle 90% of students and therefore the gap between the 5 per cent most disadvantaged and the 5 per cent most advantaged students.
2. Score point difference associated with one unit increase of SES. Steeper slopes indicate a greater inequality.

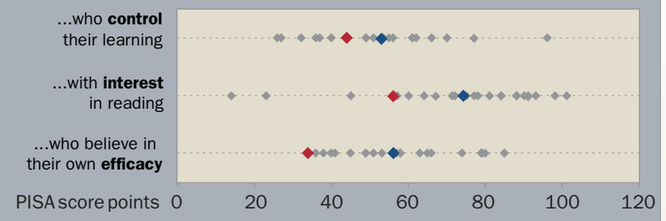
3. Student characteristics

Approaches to learning

Compared to other OECD students, students from Italy have:

close to average	confidence in their own **learning efficacy**.
above average	confidence in their own **reading ability**.
close to average	confidence in their own **mathematical ability**.

Performance advantage in reading literacy of students...

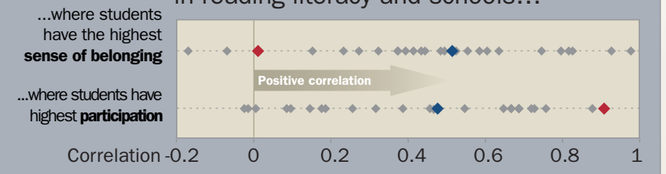


Engagement at school

In Italy:

- *23%* of students have a *low sense of belonging*, compared to 25% on average in OECD countries.
- *22%* of students have *low participation* (attendance), compared to 20% on average in OECD countries.

Relationship between student performance in reading literacy and schools...



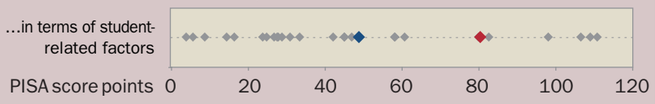
4. School characteristics

Climate

Compared to other OECD students, students from Italy have:

less favourable	Disciplinary climate
less favourable	Teachers' morale and commitment
close to average	Teacher-related factors affecting the school climate

Performance advantage in schools with a more positive climate...



Resources

Compared to other OECD students, students from Italy have:

lower	Quality of the schools' physical infrastructure
more	Teacher shortage

Performance advantage in schools with...





5. System characteristics

School autonomy

Percentage of students attending schools with at least some responsibility for:

	Student disciplinary policies	Budget allocation	Textbooks used	Student assessment policies	Student admissions	Formulating school budget	Courses offered	Course content	Appointing teachers	Dismissing teachers	Teachers' salary increases	Teachers' starting salaries
Italy	100	57	100	100	63	94	22	93	10	11	1	1
OECD	95	94	92	89	84	76	71	69	61	54	26	23

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PISA 2000 Profile for Japan

1. Student performance

	In reading literacy					Mean score in mathematical literacy	Mean score in scientific literacy
	Mean score	% at reading level: 5	% at reading level: 1 or below	Standard deviation of reading literacy scores	% of variation between schools		
Japan	522	10	10	86	45	557	550
OECD	500	9	18	100	35	500	500

2. Socio-economic status (SES)

The socio-economic gradient



	Socio-economic status of participating students			Features of the socio-economic gradient			
	Mean socio-economic status	Percentage of explained variation in student performance	Difference in reading literacy score if students had the average OECD SES (score points)	Length of the gradient[1]	Slope of the gradient[2]: Overall	Slope of the gradient[2]: Within schools	Slope of the gradient[2]: Between schools
Japan	-0.40	8	8	2.6	24	3	124
OECD	0.00	20		3.0	41		

1. This shows the socio-economic variation of the middle 90% of students and therefore the gap between the 5 per cent most disadvantaged and the 5 per cent most advantaged students.
2. Score point difference associated with one unit increase of SES. Steeper slopes indicate a greater inequality.

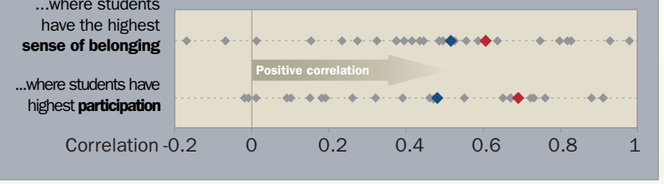
3. Student characteristics

Engagement at school

In Japan:

- *38%* of students have a *low sense of belonging*, compared to 25% on average in OECD countries.
- *4%* of students have *low participation* (attendance), compared to 20% on average in OECD countries.

Relationship between student performance in reading literacy and schools...



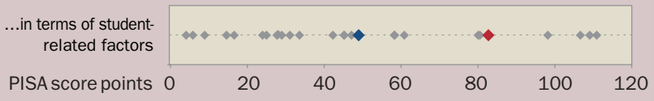
4. School characteristics

Climate

Compared to other OECD students, students from Japan have:

more favourable	Disciplinary climate
more favourable	Teachers' morale and commitment
more favourable	Teacher-related factors affecting the school climate

Performance advantage in schools with a more positive climate...

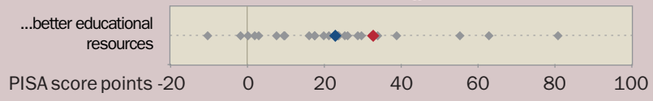


Resources

Compared to other OECD students, students from Japan have:

lower	Quality of the schools' physical infrastructure
less	Teacher shortage

Performance advantage in schools with...





5. System characteristics

School autonomy

	Percentage of students attending schools with at least some responsibility for:											
	Student disciplinary policies	Budget allocation	Textbooks used	Student assessment policies	Student admissions	Formulating school budget	Courses offered	Course content	Appointing teachers	Dismissing teachers	Teachers' salary increases	Teachers' starting salaries
Japan	100	91	99	100	100	50	98	99	33	32	32	32
OECD	95	94	92	89	84	76	71	69	61	54	26	23

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PISA 2000 Profile for Korea

1. Student performance

	In reading literacy					Mean score in mathematical literacy	Mean score in scientific literacy
	Mean score	% at reading level: 5	% at reading level: 1 or below	Standard deviation of reading literacy scores	% of variation between schools		
Korea	525	6	6	70	37	547	552
OECD	500	9	18	100	35	500	500

2. Socio-economic status (SES)

The socio-economic gradient



	Socio-economic status of participating students			Features of the socio-economic gradient			
	Mean socio-economic status	Percentage of explained variation in student performance	Difference in reading literacy score if students had the average OECD SES (score points)	Length of the gradient[1]	Slope of the gradient[2]: Overall	Slope of the gradient[2]: Within schools	Slope of the gradient[2]: Between schools
Korea	-0.31	9	8	2.9	23	7	68
OECD	0.00	20		3.0	41		

1. This shows the socio-economic variation of the middle 90% of students and therefore the gap between the 5 per cent most disadvantaged and the 5 per cent most advantaged students.
2. Score point difference associated with one unit increase of SES. Steeper slopes indicate a greater inequality.

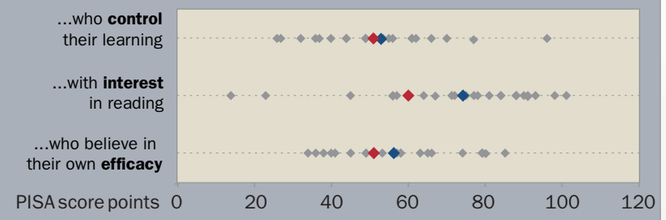
3. Student characteristics

Approaches to learning

Compared to other OECD students, students from Korea have:

below average	confidence in their own **learning efficacy**.
below average	confidence in their own **reading ability**.
below average	confidence in their own **mathematical ability**.

Performance advantage in reading literacy of students...

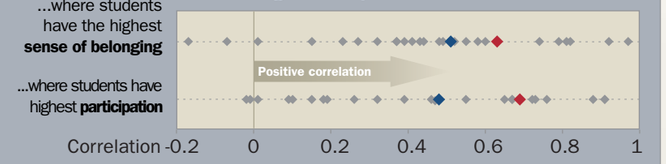


Engagement at school

In Korea:

- *41%* of students have a *low sense of belonging*, compared to 25% on average in OECD countries.
- *8%* of students have *low participation* (attendance), compared to 20% on average in OECD countries.

Relationship between student performance in reading literacy and schools...



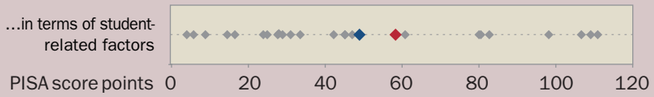
4. School characteristics

Climate

Compared to other OECD students, students from Korea have:

more favourable	Disciplinary climate
less favourable	Teachers' morale and commitment
more favourable	Teacher-related factors affecting the school climate

Performance advantage in schools with a more positive climate...

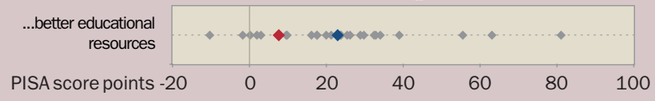


Resources

Compared to other OECD students, students from Korea have:

lower	Quality of the schools' physical infrastructure
less	Teacher shortage

Performance advantage in schools with...





5. System characteristics

School autonomy

	Percentage of students attending schools with at least some responsibility for:											
	Student disciplinary policies	Budget allocation	Textbooks used	Student assessment policies	Student admissions	Formulating school budget	Courses offered	Course content	Appointing teachers	Dismissing teachers	Teachers' salary increases	Teachers' starting salaries
Korea	100	95	99	99	97	88	93	99	32	22	7	15
OECD	95	94	92	89	84	76	71	69	61	54	26	23

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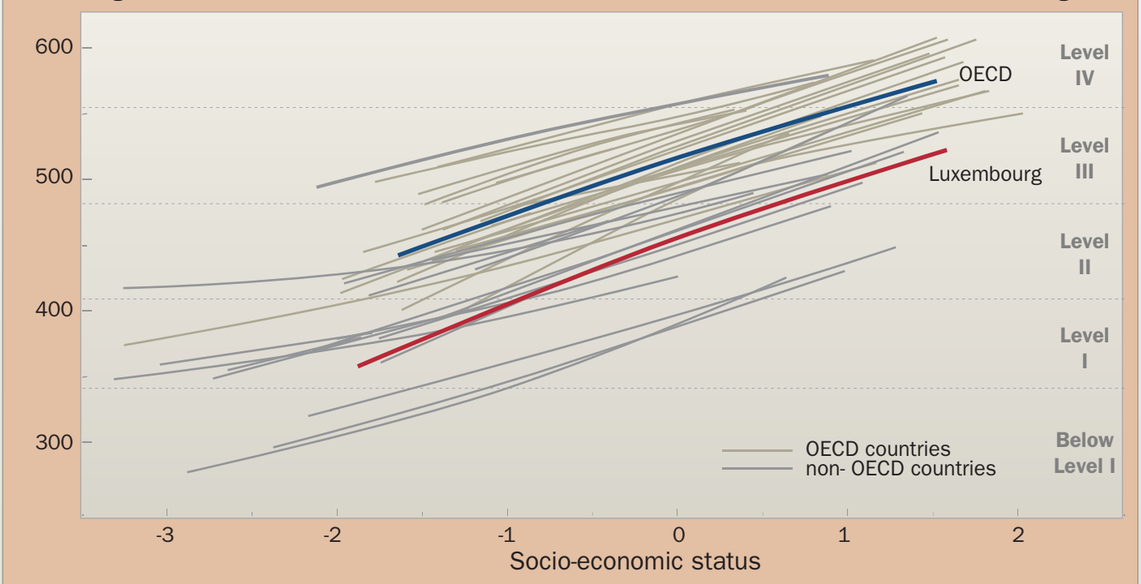
PISA 2000 Profile for Luxembourg

1. Student performance

	In reading literacy					Mean score in mathematical literacy	Mean score in scientific literacy
	Mean score	% at reading level 5	% at reading level 1 or below	Standard deviation of reading literacy scores	% of variation between schools		
Luxembourg	441	2	35	100	31	446	443
OECD	500	9	18	100	35	500	500

2. Socio-economic status (SES)

The socio-economic gradient



	Socio-economic status of participating students			Features of the socio-economic gradient			
	Mean socio-economic status	Percentage of explained variation in student performance	Difference in reading literacy score if students had the average OECD SES (score points)	Length of the gradient[1]	Slope of the gradient[2] Overall	Slope of the gradient[2] Within schools	Slope of the gradient[2] Between schools
Luxembourg	-0.40	26	7	3.4	46	26	110
OECD	0.00	20		3.0	41		

1. This shows the socio-economic variation of the middle 90% of students and therefore the gap between the 5 per cent most disadvantaged and the 5 per cent most advantaged students.
2. Score point difference associated with one unit increase of SES. Steeper slopes indicate a greater inequality.

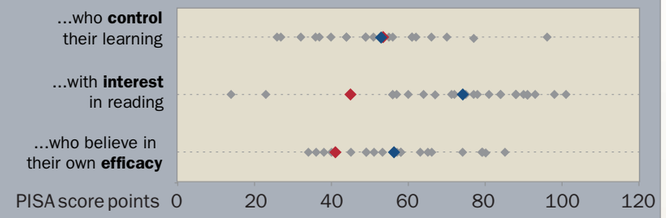
3. Student characteristics

Approaches to learning

Compared to other OECD students, students from Luxembourg have:

below average	confidence in their own **learning efficacy**.
above average	confidence in their own **reading ability**.
close to average	confidence in their own **mathematical ability**.

Performance advantage in reading literacy of students...

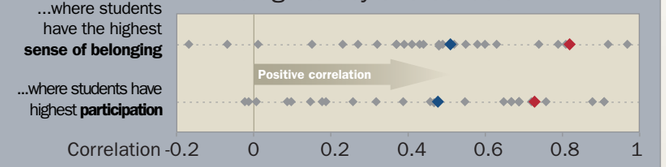


Engagement at school

In Luxembourg:

- *28%* of students have a *low sense of belonging*, compared to 25% on average in OECD countries.
- *13%* of students have *low participation* (attendance), compared to 20% on average in OECD countries.

Relationship between student performance in reading literacy and schools...



4. School characteristics

Climate

Compared to other OECD students, students from Luxembourg have:

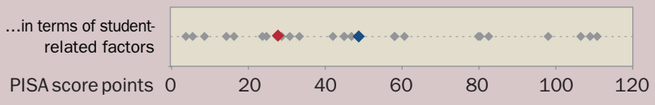
more favourable	Disciplinary climate
close to average	Teachers' morale and commitment
less favourable	Teacher-related factors affecting the school climate

Resources

Compared to other OECD students, students from Luxembourg have:

lower	Quality of the schools' physical infrastructure
close to average	Teacher shortage

Performance advantage in schools with a more positive climate...



Performance advantage in schools with...





5. System characteristics

School autonomy

	Percentage of students attending schools with at least some responsibility for:											
	Student disciplinary policies	Budget allocation	Textbooks used	Student assessment policies	Student admissions	Formulating school budget	Courses offered	Course content	Appointing teachers	Dismissing teachers	Teachers' salary increases	Teachers' starting salaries
Luxembourg		100			100	100						
OECD	95	94	92	89	84	76	71	69	61	54	26	23

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PISA 2000 Profile for Mexico

1. Student performance

	In reading literacy					Mean score in mathematical literacy	Mean score in scientific literacy
	Mean score	% at reading level		Standard deviation of reading literacy scores	% of variation between schools		
		5	1 or below				
Mexico	422	1	44	86	53	387	422
OECD	500	9	18	100	35	500	500

2. Socio-economic status (SES)

The socio-economic gradient



	Socio-economic status of participating students			Features of the socio-economic gradient			
	Mean socio-economic status	Percentage of explained variation in student performance	Difference in reading literacy score if students had the average OECD SES (score points)	Length of the gradient[1]	Slope of the gradient[2]		
					Overall	Within schools	Between schools
Mexico	-1.24	23	38	4.4	35	7	54
OECD	0.00	20		3.0	41		

1. This shows the socio-economic variation of the middle 90% of students and therefore the gap between the 5 per cent most disadvantaged and the 5 per cent most advantaged students.
2. Score point difference associated with one unit increase of SES. Steeper slopes indicate a greater inequality.

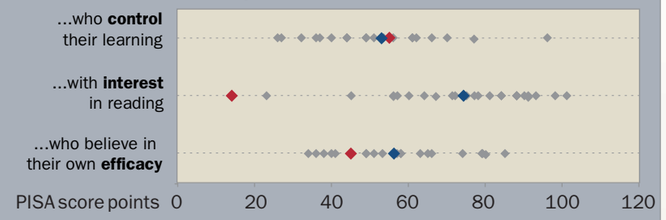
3. Student characteristics

Approaches to learning

Compared to other OECD students, students from Mexico have:

above average	confidence in their own **learning efficacy**.
close to average	confidence in their own **reading ability**.
above average	confidence in their own **mathematical ability**.

Performance advantage in reading literacy of students...

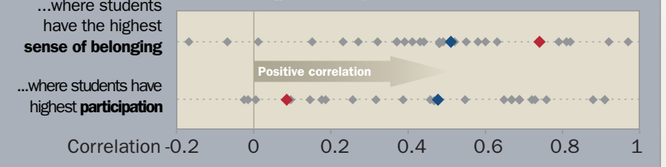


Engagement at school

In Mexico:

- *22%* of students have a *low sense of belonging*, compared to 25% on average in OECD countries.
- *21%* of students have *low participation* (attendance), compared to 20% on average in OECD countries.

Relationship between student performance in reading literacy and schools...



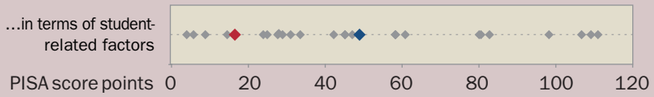
4. School characteristics

Climate

Compared to other OECD students, students from Mexico have:

more favourable	Disciplinary climate
more favourable	Teachers' morale and commitment
less favourable	Teacher-related factors affecting the school climate

Performance advantage in schools with a more positive climate...

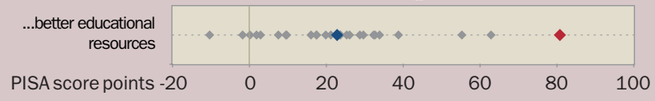


Resources

Compared to other OECD students, students from Mexico have:

lower	Quality of the schools' physical infrastructure
more	Teacher shortage

Performance advantage in schools with...





5. System characteristics

School autonomy

	Percentage of students attending schools with at least some responsibility for:											
	Student disciplinary policies	Budget allocation	Textbooks used	Student assessment policies	Student admissions	Formulating school budget	Courses offered	Course content	Appointing teachers	Dismissing teachers	Teachers' salary increases	Teachers' starting salaries
Mexico	99	77	81	92	86	68	58	59	57	48	28	26
OECD	95	94	92	89	84	76	71	69	61	54	26	23

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PISA 2000 Profile for New Zealand

1. Student performance

	In reading literacy					Mean score in mathematical literacy	Mean score in scientific literacy
	Mean score	% at reading level: 5	% at reading level: 1 or below	Standard deviation of reading literacy scores	% of variation between schools		
New Zealand	529	19	14	108	16	537	528
OECD	500	9	18	100	35	500	500

2. Socio-economic status (SES)

The socio-economic gradient



	Socio-economic status of participating students			Features of the socio-economic gradient			
	Mean socio-economic status	Percentage of explained variation in student performance	Difference in reading literacy score if students had the average OECD SES (score points)	Length of the gradient[1]	Slope of the gradient[2]: Overall	Slope of the gradient[2]: Within schools	Slope of the gradient[2]: Between schools
New Zealand	0.16	17	-6	3.1	45	34	83
OECD	0.00	20		3.0	41		

1. This shows the socio-economic variation of the middle 90% of students and therefore the gap between the 5 per cent most disadvantaged and the 5 per cent most advantaged students.
2. Score point difference associated with one unit increase of SES. Steeper slopes indicate a greater inequality.

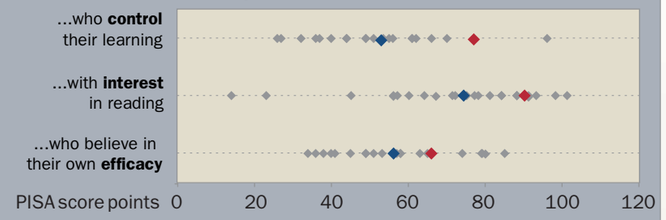
3. Student characteristics

Approaches to learning

Compared to other OECD students, students from New Zealand have:

close to average	confidence in their own **learning efficacy**.
below average	confidence in their own **reading ability**.
above average	confidence in their own **mathematical ability**.

Performance advantage in reading literacy of students...

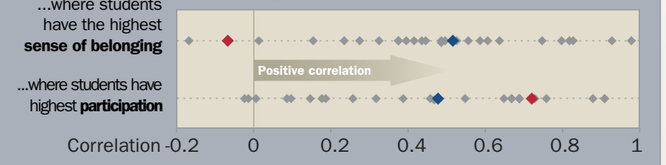


Engagement at school

In New Zealand:

- *21%* of students have a *low sense of belonging*, compared to 25% on average in OECD countries.
- *27%* of students have *low participation* (attendance), compared to 20% on average in OECD countries.

Relationship between student performance in reading literacy and schools...



4. School characteristics

Climate

Compared to other OECD students, students from New Zealand have:

less favourable	Disciplinary climate
more favourable	Teachers' morale and commitment
close to average	Teacher-related factors affecting the school climate

Performance advantage in schools with a more positive climate...

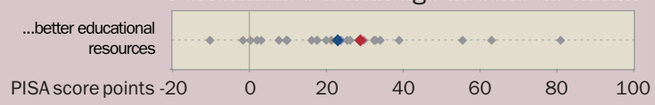


Resources

Compared to other OECD students, students from New Zealand have:

close to average	Quality of the schools' physical infrastructure
more	Teacher shortage

Performance advantage in schools with...





5. System characteristics

School autonomy

Percentage of students attending schools with at least some responsibility for:

	Student disciplinary policies	Budget allocation	Textbooks used	Student assessment policies	Student admissions	Formulating school budget	Courses offered	Course content	Appointing teachers	Dismissing teachers	Teachers' salary increases	Teachers' starting salaries
New Zealand	100	100	100	100	94	98	100	87	100	99	41	17
OECD	95	94	92	89	84	76	71	69	61	54	26	23

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PISA 2000 Profile for Norway

1. Student performance

	In reading literacy					Mean score in mathematical literacy	Mean score in scientific literacy
	Mean score	% at reading level: 5	% at reading level: 1 or below	Standard deviation of reading literacy scores	% of variation between schools		
Norway	505	11	17	104	11	499	500
OECD	500	9	18	100	35	500	500

2. Socio-economic status (SES)

The socio-economic gradient



	Socio-economic status of participating students			Features of the socio-economic gradient			
	Mean socio-economic status	Percentage of explained variation in student performance	Difference in reading literacy score if students had the average OECD SES (score points)	Length of the gradient[1]	Slope of the gradient[2]: Overall	Slope of the gradient[2]: Within schools	Slope of the gradient[2]: Between schools
Norway	0.52	14	-17	2.9	42	38	60
OECD	0.00	20		3.0	41		

1. This shows the socio-economic variation of the middle 90% of students and therefore the gap between the 5 per cent most disadvantaged and the 5 per cent most advantaged students.
2. Score point difference associated with one unit increase of SES. Steeper slopes indicate a greater inequality.

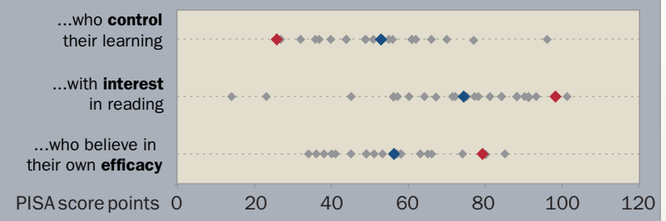
3. Student characteristics

Approaches to learning

Compared to other OECD students, students from Norway have:

close to average	confidence in their own **learning efficacy**.
close to average	confidence in their own **reading ability**.
below average	confidence in their own **mathematical ability**.

Performance advantage in reading literacy of students...

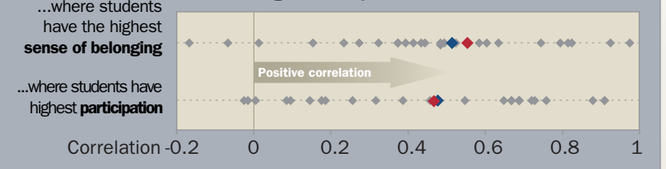


Engagement at school

In Norway:

- *21%* of students have a *low sense of belonging*, compared to 25% on average in OECD countries.
- *18%* of students have *low participation* (attendance), compared to 20% on average in OECD countries.

Relationship between student performance in reading literacy and schools...



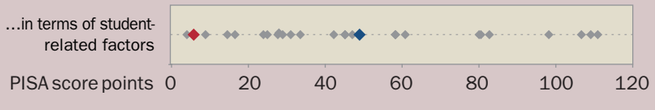
4. School characteristics

Climate

Compared to other OECD students, students from Norway have:

less favourable	Disciplinary climate
close to average	Teachers' morale and commitment
less favourable	Teacher-related factors affecting the school climate

Performance advantage in schools with a more positive climate...



Resources

Compared to other OECD students, students from Norway have:

lower	Quality of the schools' physical infrastructure
more	Teacher shortage

Performance advantage in schools with...





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PISA 2000 Profile for Poland

1. Student performance

	In reading literacy					Mean score in mathematical literacy	Mean score in scientific literacy
	Mean score	% at reading level		Standard deviation of reading literacy scores	% of variation between schools		
		5	1 or below				
Poland	479	6	23	100	63	470	483
OECD	500	9	18	100	35	500	500

2. Socio-economic status (SES)

The socio-economic gradient



	Socio-economic status of participating students			Features of the socio-economic gradient			
	Mean socio-economic status	Percentage of explained variation in student performance	Difference in reading literacy score if students had the average OECD SES (score points)	Length of the gradient[1]	Slope of the gradient[2]		
					Overall	Within schools	Between schools
Poland	-0.35	17	16	3.2	38	3	105
OECD	0.00	20		3.0	41		

1. This shows the socio-economic variation of the middle 90% of students and therefore the gap between the 5 per cent most disadvantaged and the 5 per cent most advantaged students.
2. Score point difference associated with one unit increase of SES. Steeper slopes indicate a greater inequality.

3. Student characteristics

Engagement at school

In Poland:

- *41%* of students have a *low sense of belonging*, compared to 25% on average in OECD countries.
- *29%* of students have *low participation* (attendance), compared to 20% on average in OECD countries.

Relationship between student performance in reading literacy and schools...



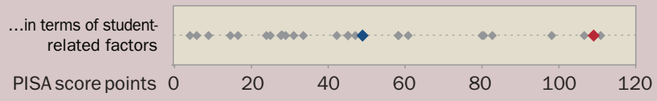
4. School characteristics

Climate

Compared to other OECD students, students from Poland have:

more favourable	Disciplinary climate
less favourable	Teachers' morale and commitment
close to average	Teacher-related factors affecting the school climate

Performance advantage in schools with a more positive climate...

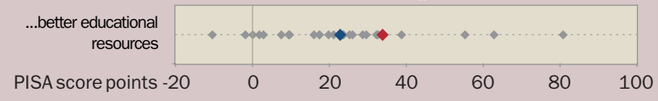


Resources

Compared to other OECD students, students from Poland have:

lower	Quality of the schools' physical infrastructure
less	Teacher shortage

Performance advantage in schools with...





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PISA 2000 Profile for Portugal

1. Student performance

	In reading literacy					Mean score in mathematical literacy	Mean score in scientific literacy
	Mean score	% at reading level 5	% at reading level 1 or below	Standard deviation of reading literacy scores	% of variation between schools		
Portugal	470	4	26	97	37	454	459
OECD	500	9	18	100	35	500	500

2. Socio-economic status (SES)

The socio-economic gradient



	Socio-economic status of participating students			Features of the socio-economic gradient			
	Mean socio-economic status	Percentage of explained variation in student performance	Difference in reading literacy score if students had the average OECD SES (score points)	Length of the gradient[1]	Slope of the gradient[2] Overall	Slope of the gradient[2] Within schools	Slope of the gradient[2] Between schools
Portugal	-0.41	20	17	3.6	41	22	86
OECD	0.00	20		3.0	41		

1. This shows the socio-economic variation of the middle 90% of students and therefore the gap between the 5 per cent most disadvantaged and the 5 per cent most advantaged students.
2. Score point difference associated with one unit increase of SES. Steeper slopes indicate a greater inequality.

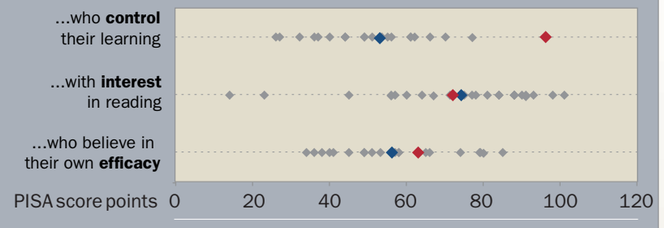
3. Student characteristics

Approaches to learning

Compared to other OECD students, students from Portugal have:

close to average	confidence in their own **learning efficacy**.
close to average	confidence in their own **reading ability**.
below average	confidence in their own **mathematical ability**.

Performance advantage in reading literacy of students...

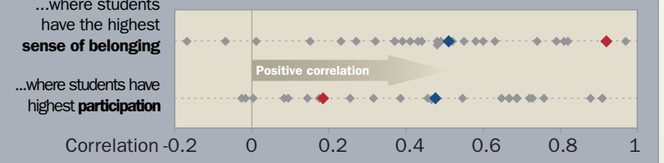


Engagement at school

In Portugal:

- *21%* of students have a *low sense of belonging*, compared to 25% on average in OECD countries.
- *20%* of students have *low participation* (attendance), compared to 20% on average in OECD countries.

Relationship between student performance in reading literacy and schools...



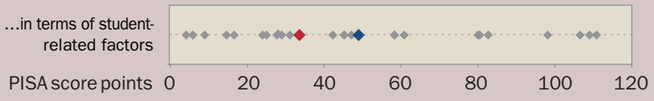
4. School characteristics

Climate

Compared to other OECD students, students from Portugal have:

close to average	Disciplinary climate
less favourable	Teachers' morale and commitment
less favourable	Teacher-related factors affecting the school climate

Performance advantage in schools with a more positive climate...

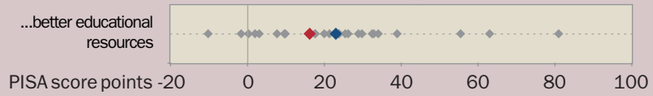


Resources

Compared to other OECD students, students from Portugal have:

higher	Quality of the schools' physical infrastructure
close to average	Teacher shortage

Performance advantage in schools with...





5. System characteristics

School autonomy

Percentage of students attending schools with at least some responsibility for:

	Student disciplinary policies	Budget allocation	Textbooks used	Student assessment policies	Student admissions	Formulating school budget	Courses offered	Course content	Appointing teachers	Dismissing teachers	Teachers' salary increases	Teachers' starting salaries
Portugal	92	95	100	88	85	89	54	20	13	9	1	1
OECD	95	94	92	89	84	76	71	69	61	54	26	23

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PISA 2000 Profile for Spain

1. Student performance

	In reading literacy					Mean score in mathematical literacy	Mean score in scientific literacy
	Mean score	% at reading level		Standard deviation of reading literacy scores	% of variation between schools		
		5	1 or below				
Spain	493	4	16	85	21	476	491
OECD	500	9	18	100	35	500	500

2. Socio-economic status (SES)

The socio-economic gradient



	Socio-economic status of participating students			Features of the socio-economic gradient			
	Mean socio-economic status	Percentage of explained variation in student performance	Difference in reading literacy score if students had the average OECD SES (score points)	Length of the gradient[1]	Slope of the gradient[2]		
					Overall	Within schools	Between schools
Spain	-0.24	17	12	3.3	32	20	55
OECD	0.00	20		3.0	41		

1. This shows the socio-economic variation of the middle 90% of students and therefore the gap between the 5 per cent most disadvantaged and the 5 per cent most advantaged students.
2. Score point difference associated with one unit increase of SES. Steeper slopes indicate a greater inequality.

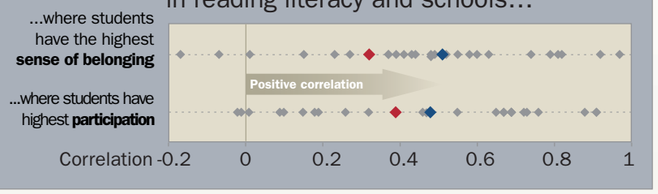
3. Student characteristics

Engagement at school

In Spain:

- *24%* of students have a *low sense of belonging*, compared to 25% on average in OECD countries.
- *34%* of students have *low participation* (attendance), compared to 20% on average in OECD countries.

Relationship between student performance in reading literacy and schools...



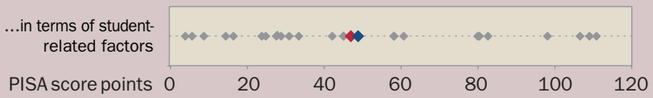
4. School characteristics

Climate

Compared to other OECD students, students from Spain have:

less favourable	Disciplinary climate
less favourable	Teachers' morale and commitment
more favourable	Teacher-related factors affecting the school climate

Performance advantage in schools with a more positive climate...

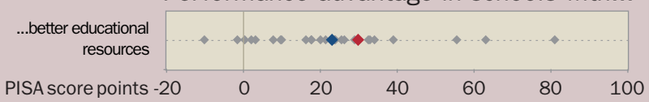


Resources

Compared to other OECD students, students from Spain have:

higher	Quality of the schools' physical infrastructure
less	Teacher shortage

Performance advantage in schools with...





5. System characteristics

School autonomy

Percentage of students attending schools with at least some responsibility for:

	Student disciplinary policies	Budget allocation	Textbooks used	Student assessment policies	Student admissions	Formulating school budget	Courses offered	Course content	Appointing teachers	Dismissing teachers	Teachers' salary increases	Teachers' starting salaries
Spain	99	98	100	97	89	90	54	86	38	39	9	9
OECD	95	94	92	89	84	76	71	69	61	54	26	23

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PISA 2000 Profile for Sweden

1. Student performance

	In reading literacy					Mean score in mathematical literacy	Mean score in scientific literacy
	Mean score	% at reading level: 5	% at reading level: 1 or below	Standard deviation of reading literacy scores	% of variation between schools		
Sweden	516	11	13	92	10	510	512
OECD	500	9	18	100	35	500	500

2. Socio-economic status (SES)

The socio-economic gradient



	Socio-economic status of participating students			Features of the socio-economic gradient			
	Mean socio-economic status	Percentage of explained variation in student performance	Difference in reading literacy score if students had the average OECD SES (score points)	Length of the gradient[1]	Slope of the gradient[2]: Overall	Slope of the gradient[2]: Within schools	Slope of the gradient[2]: Between schools
Sweden	0.36	11	-12	2.7	36	30	69
OECD	0.00	20		3.0	41		

1. This shows the socio-economic variation of the middle 90% of students and therefore the gap between the 5 per cent most disadvantaged and the 5 per cent most advantaged students.
2. Score point difference associated with one unit increase of SES. Steeper slopes indicate a greater inequality.

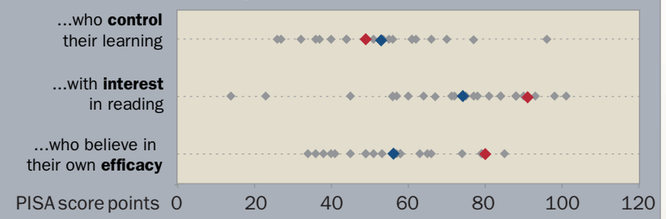
3. Student characteristics

Approaches to learning

Compared to other OECD students, students from Sweden have:

above average	confidence in their own **learning efficacy**.
close to average	confidence in their own **reading ability**.
above average	confidence in their own **mathematical ability**.

Performance advantage in reading literacy of students...

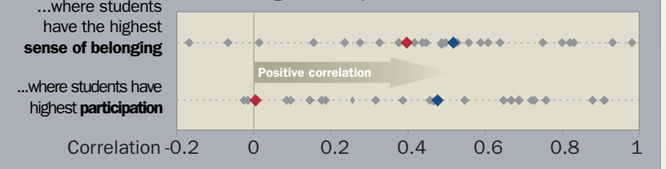


Engagement at school

In Sweden:

- *18%* of students have a *low sense of belonging*, compared to 25% on average in OECD countries.
- *24%* of students have *low participation* (attendance), compared to 20% on average in OECD countries.

Relationship between student performance in reading literacy and schools...



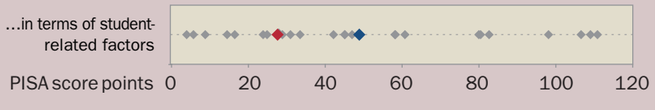
4. School characteristics

Climate

Compared to other OECD students, students from Sweden have:

less favourable	Disciplinary climate
more favourable	Teachers' morale and commitment
close to average	Teacher-related factors affecting the school climate

Performance advantage in schools with a more positive climate...

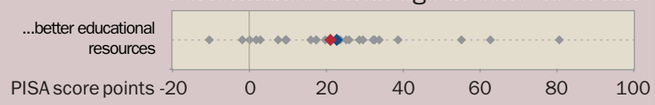


Resources

Compared to other OECD students, students from Sweden have:

close to average	Quality of the schools' physical infrastructure
more	Teacher shortage

Performance advantage in schools with...



5. System characteristics

School autonomy

Percentage of students attending schools with at least some responsibility for:

	Student disciplinary policies	Budget allocation	Textbooks used	Student assessment policies	Student admissions	Formulating school budget	Courses offered	Course content	Appointing teachers	Dismissing teachers	Teachers' salary increases	Teachers' starting salaries
Sweden	100	99	100	97	54	85	76	88	99	83	74	62
OECD	95	94	92	89	84	76	71	69	61	54	26	23

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PISA 2000 Profile for Switzerland

1. Student performance

	In reading literacy					Mean score in mathematical literacy	Mean score in scientific literacy
	Mean score	% at reading level: 5	% at reading level: 1 or below	Standard deviation of reading literacy scores	% of variation between schools		
Switzerland	494	9	20	102	43	529	496
OECD	500	9	18	100	35	500	500

2. Socio-economic status (SES)

The socio-economic gradient



	Socio-economic status of participating students			Features of the socio-economic gradient			
	Mean socio-economic status	Percentage of explained variation in student performance	Difference in reading literacy score if students had the average OECD SES (score points)	Length of the gradient[1]	Slope of the gradient[2]: Overall	Slope of the gradient[2]: Within schools	Slope of the gradient[2]: Between schools
Switzerland	0.01	19	6	3.0	49	26	99
OECD	0.00	20		3.0	41		

1. This shows the socio-economic variation of the middle 90% of students and therefore the gap between the 5 per cent most disadvantaged and the 5 per cent most advantaged students.
2. Score point difference associated with one unit increase of SES. Steeper slopes indicate a greater inequality.

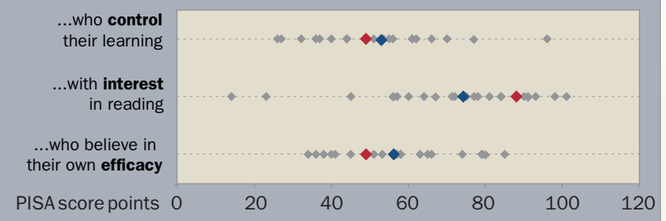
3. Student characteristics

Approaches to learning

Compared to other OECD students, students from Switzerland have:

close to average	confidence in their own **learning efficacy**.
above average	confidence in their own **reading ability**.
below average	confidence in their own **mathematical ability**.

Performance advantage in reading literacy of students...

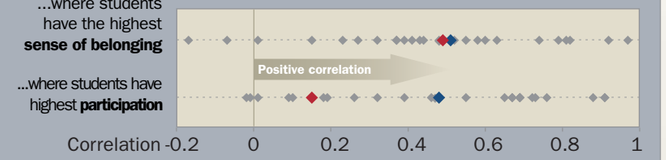


Engagement at school

In Switzerland:

- *21%* of students have a *low sense of belonging*, compared to 25% on average in OECD countries.
- *16%* of students have *low participation* (attendance), compared to 20% on average in OECD countries.

Relationship between student performance in reading literacy and schools...



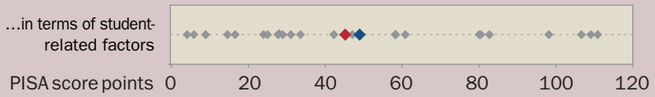
4. School characteristics

Climate

Compared to other OECD students, students from Switzerland have:

more favourable	Disciplinary climate
more favourable	Teachers' morale and commitment
more favourable	Teacher-related factors affecting the school climate

Performance advantage in schools with a more positive climate...

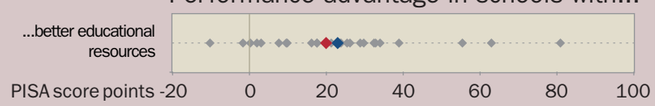


Resources

Compared to other OECD students, students from Switzerland have:

higher	Quality of the schools' physical infrastructure
less	Teacher shortage

Performance advantage in schools with...





5. System characteristics

School autonomy

	Percentage of students attending schools with at least some responsibility for:											
	Student disciplinary policies	Budget allocation	Textbooks used	Student assessment policies	Student admissions	Formulating school budget	Courses offered	Course content	Appointing teachers	Dismissing teachers	Teachers' salary increases	Teachers' starting salaries
Switzerland	98	87	51	75	82	54	34	29	93	82	15	13
OECD	95	94	92	89	84	76	71	69	61	54	26	23

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PISA 2000 Profile for United Kingdom

1. Student performance

	In reading literacy					Mean score in mathematical literacy	Mean score in scientific literacy
	Mean score	% at reading level: 5	% at reading level: 1 or below	Standard deviation of reading literacy scores	% of variation between schools		
United Kingdom	523	16	13	100	21	529	532
OECD	500	9	18	100	35	500	500

2. Socio-economic status (SES)

The socio-economic gradient



	Socio-economic status of participating students			Features of the socio-economic gradient			
	Mean socio-economic status	Percentage of explained variation in student performance	Difference in reading literacy score if students had the average OECD SES (score points)	Length of the gradient[1]	Slope of the gradient[2]: Overall	Slope of the gradient[2]: Within schools	Slope of the gradient[2]: Between schools
United Kingdom	0.11	20	-4	2.9	49	32	94
OECD	0.00	20		3.0	41		

1. This shows the socio-economic variation of the middle 90% of students and therefore the gap between the 5 per cent most disadvantaged and the 5 per cent most advantaged students.
2. Score point difference associated with one unit increase of SES. Steeper slopes indicate a greater inequality.

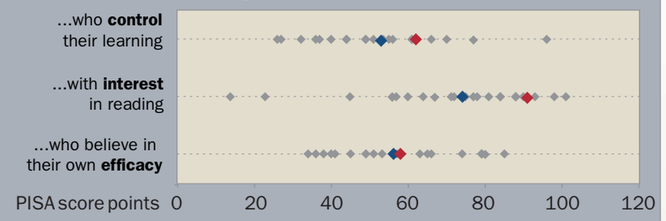
3. Student characteristics

Approaches to learning

Compared to other OECD students, students from Scotland have:

above average	confidence in their own **learning efficacy**.
above average	confidence in their own **reading ability**.
above average	confidence in their own **mathematical ability**.

Performance advantage in reading literacy of students...

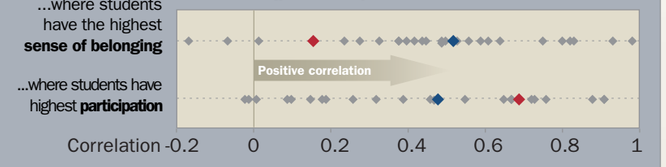


Engagement at school

In United Kingdom:

- *17%* of students have a *low sense of belonging*, compared to 25% on average in OECD countries.
- *15%* of students have *low participation* (attendance), compared to 20% on average in OECD countries.

Relationship between student performance in reading literacy and schools...



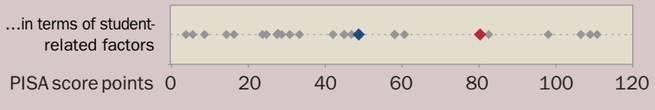
4. School characteristics

Climate

Compared to other OECD students, students from United Kingdom have:

close to average	Disciplinary climate
close to average	Teachers' morale and commitment
close to average	Teacher-related factors affecting the school climate

Performance advantage in schools with a more positive climate...

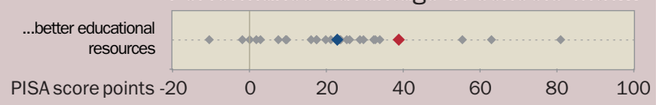


Resources

Compared to other OECD students, students from United Kingdom have:

lower	Quality of the schools' physical infrastructure
more	Teacher shortage

Performance advantage in schools with...





5. System characteristics

School autonomy

Percentage of students attending schools with at least some responsibility for:

	Student disciplinary policies	Budget allocation	Textbooks used	Student assessment policies	Student admissions	Formulating school budget	Courses offered	Course content	Appointing teachers	Dismissing teachers	Teachers' salary increases	Teachers' starting salaries
United Kingdom	99	100	100	100	66	92	100	94	99	89	70	72
OECD	95	94	92	89	84	76	71	69	61	54	26	23

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PISA 2000 Profile for United States

1. Student performance

	In reading literacy					Mean score in mathematical literacy	Mean score in scientific literacy
	Mean score	% at reading level: 5	% at reading level: 1 or below	Standard deviation of reading literacy scores	% of variation between schools		
United States	504	12	18	105	30	493	499
OECD	500	9	18	100	35	500	500

2. Socio-economic status (SES)

The socio-economic gradient



	Socio-economic status of participating students			Features of the socio-economic gradient			
	Mean socio-economic status	Percentage of explained variation in student performance	Difference in reading literacy score if students had the average OECD SES (score points)	Length of the gradient[1]	Slope of the gradient[2]: Overall	Slope of the gradient[2]: Within schools	Slope of the gradient[2]: Between schools
United States	0.17	21	-6	3.3	48	29	92
OECD	0.00	20		3.0	41		

1. This shows the socio-economic variation of the middle 90% of students and therefore the gap between the 5 per cent most disadvantaged and the 5 per cent most advantaged students.
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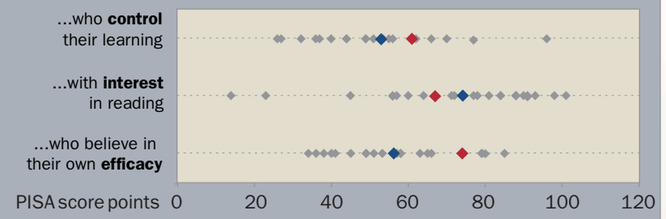
3. Student characteristics

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above average	confidence in their own **learning efficacy**.
above average	confidence in their own **reading ability**.
above average	confidence in their own **mathematical ability**.

Performance advantage in reading literacy of students...

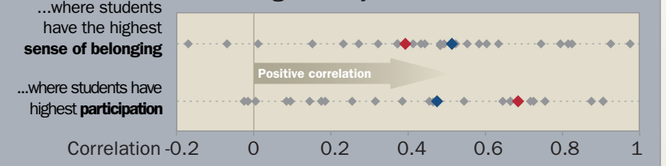


Engagement at school

In United States:

- *25%* of students have a *low sense of belonging*, compared to 25% on average in OECD countries.
- *20%* of students have *low participation* (attendance), compared to 20% on average in OECD countries.

Relationship between student performance in reading literacy and schools...



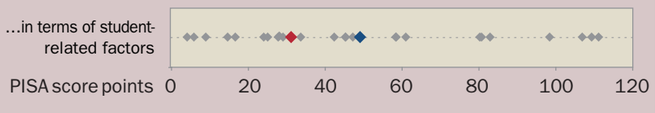
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close to average	Teacher-related factors affecting the school climate

Performance advantage in schools with a more positive climate...

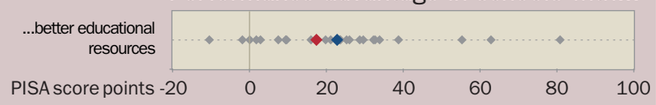


Resources

Compared to other OECD students, students from United States have:

higher	Quality of the schools' physical infrastructure
less	Teacher shortage

Performance advantage in schools with...





5. System characteristics

School autonomy

	Percentage of students attending schools with at least some responsibility for:											
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United States	99	99	92	93	89	96	97	84	97	98	74	76
OECD	95	94	92	89	84	76	71	69	61	54	26	23

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PISA 2000 INITIAL REPORTS

Knowledge and Skills for Life: First Results from PISA 2000

Literacy Skills for the World of Tomorrow: Further Results from PISA 2000

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What Makes School Systems Perform?: Seeing School Systems through the Prism of PISA

Reviews of National Policies for Education: Denmark: Lessons from PISA 2000

School Factors related to Quality and Equity (February 2005)

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Measuring Student Knowledge and Skills: The PISA 2000 Assessment of Reading, Mathematical and Scientific Literacy

Sample Tasks from the PISA 2000 Assessment: Reading, Mathematical and Scientific Literacy

Programme for International Student Assessment (PISA): PISA 2000 Technical Report

Programme for International Student Assessment (PISA): Manual for the PISA 2000 Database

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Problem Solving for Tomorrow's World: First Measures of Cross-Curricular Competencies from PISA 2003

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The PISA 2003 Assessment Framework: Mathematics, Reading, Science and Problem Solving Knowledge and Skills

Programme for International Student Assessment (PISA): PISA 2003 Technical Report (September 2005)

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