# **MESSAGES FROM PISA 2000**

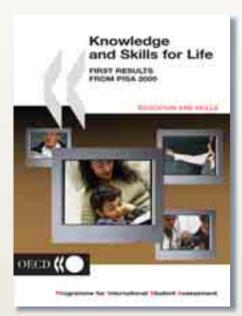
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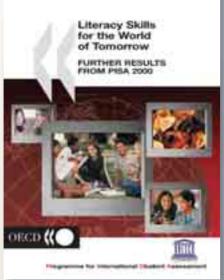
**MESSAGES FROM PISA 2000** 

# STUDENTS, SCHOOLS AND EDUCATION SYSTEMS

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 The Organisation for Economic first published in 2001.



Student Assessment (PISA) is a Co-operation and Development powerful tool for measuring the (OECD), which co-ordinated the outcomes of education systems. survey, has published four studies not as an educational Olympics, The first three-yearly survey was examining thematically what the conducted in 2000, with results 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 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-yearolds. 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.

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**

		Percen	tage at:
		Level 1 or	
	Mean score	below	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.

# STUDENT CHARACTERISTICS (1) - HOME BACKGROUND

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

with more favourable social, eco-country could raise performance nomic and cultural characteristics of the least-advantaged quarter of 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 differassociated with performance in PISA, accounting for about a fifth of all variation in student readleast-advantaged quarter of students and the most-advantaged than one reading proficiency level

Students who come from families given social background. Thus, if a a strategy more closely targeted its students to that of the mostadvantaged 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.

ence is the strongest single factor In order to develop policies to raise overall performance and reduce social differences, countries need to start by understanding ing scores. The gap between the the characteristics of their "social gradient". Some of its features are described on the facing page, quarter is equivalent to more and summarised for each country in the profiles on pages 22-75. A on PISA's five-level scale. This range of strategies may be envisgap within countries attributable aged, according to the shape of to social background is similar to the gradient. For example, where countries of students with a the gradient steep, this argues for acter of whole schools. School

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.

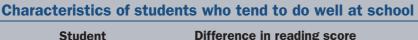
Such strategies need to take account not only of individual students' backgrounds but of the efthe range in performance across average performance is high but fects of the socio-economic char-

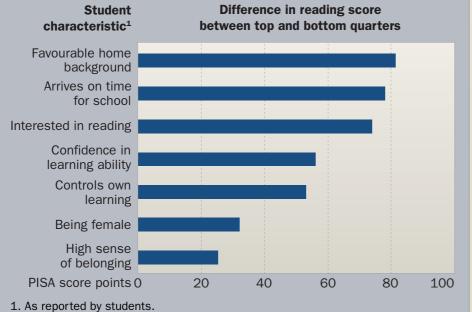
# Student characteristics

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.





cussed 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.

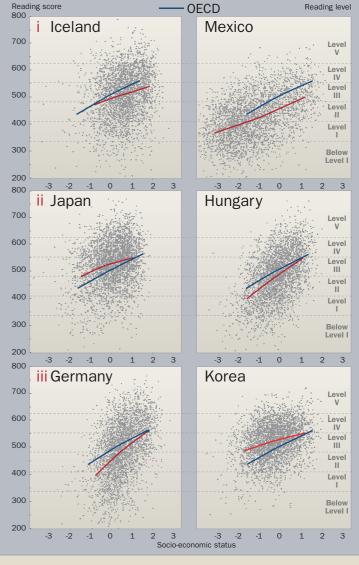
# effects in this context are dis- Aspects of the socio-economic gradient

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 (5<sup>th</sup> to 95<sup>th</sup> percentile). A student from a comparatively less advantaged socio-economic background (5<sup>th</sup> 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 Reading score shows the spread of student backgrounds: the longer the line, the more varied socio-economic background is 700 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 500 advantaged socio-economic background than students in Mexico (the line is further to the right), and the range 400 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 700 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 500 predicted trend? This is shown by representing each student's performance as a dot, and seeing how closely 400 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 at- 700 tributed to social background.
- (iii) How severe is social disadvantage in its effect on 500 performance? The slope of the social gradient line shows how much difference a given amount of social differ- 400 ence makes to a student's predicted reading score: the steeper the gradient, the more inequality. In Germany, 300 it makes nearly three times as much difference as in Japan and Korea.



# **STUDENT CHARACTERISTICS (2) - ENGAGEMENT**

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.

learning tend to learn more effectiems is that improved teaching tively, and to achieve better results relies not just on instructional at school. The PISA results under- strategies for improving stuline the importance of student engagement. For example, students on engaging their interest and who are habitual readers and ensuring that they are well mowho enjoy reading are also more tivated. Different strategies may likely than others to have high be appropriate for boys and for levels of reading literacy. Greater girls, who tend to have differengagement in reading can be a ent reading interests, with girls consequence, as well as a cause, particularly interested in books, of higher reading skill, but the especially fiction, and boys more evidence suggests that these two interested in other forms such as factors are mutually reinforcing.

Students who are interested in The implication for school sysdents' cognitive skills, but also 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 socioeconomic background, indicating that cultivating a student's interest in reading can help overcome home disadvantages.

# Two forms of student engagement Reading for pleasure Sense of belonging Reading widely Participation (attendance of school and classes) Attitude to reading "Engagement in reading" 'Engagement at school" erformance

# **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.

How engaged are students in reading?   Low sense of belongs scores¹   United Kingdom   17.4   15   15   15   15   15   15   15   1	
Index   scores¹   of belong- ing² % tion	
scores¹         ing² %         tion           Finland         0.46         United Kingdom         17.4         15           Iceland         0.27         Sweden         17.7         23           Denmark         0.26         Hungary         18.8         17           Korea         0.21         Ireland         19.4         17           Japan         0.20         Austria         20.3         15           Sweden         0.14         Canada         20.5         26           Portugal         0.13         Australia         20.7         18	W
Finland         0.46         United Kingdom         17.4         15           Iceland         0.27         Sweden         17.7         23           Denmark         0.26         Hungary         18.8         17           Korea         0.21         Ireland         19.4         17           Japan         0.20         Austria         20.3         15           Sweden         0.14         Canada         20.5         26           Portugal         0.13         Australia         20.7         18	cipa-
Iceland         0.27         Sweden         17.7         23           Denmark         0.26         Hungary         18.8         17           Korea         0.21         Ireland         19.4         17           Japan         0.20         Austria         20.3         15           Sweden         0.14         Canada         20.5         26           Portugal         0.13         Australia         20.7         18	3 %
Denmark         0.26         Hungary         18.8         17           Korea         0.21         Ireland         19.4         17           Japan         0.20         Austria         20.3         15           Sweden         0.14         Canada         20.5         26           Portugal         0.13         Australia         20.7         18	.0
Korea       0.21       Ireland       19.4       17         Japan       0.20       Austria       20.3       15         Sweden       0.14       Canada       20.5       26         Portugal       0.13       Australia       20.7       18	.8
Japan         0.20         Austria         20.3         15           Sweden         0.14         Canada         20.5         26           Portugal         0.13         Australia         20.7         18	.7
Sweden         0.14         Canada         20.5         26           Portugal         0.13         Australia         20.7         18	.8
Portugal 0.13 Australia 20.7 18	.3
	.0
Norway 0.09 Portugal 20.7 20	.3
	.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	
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 <b>0ECD average 24.5 20</b>	.0
United Kingdom -0.10 United States 25.0 20	
United States -0.14 Luxembourg 28.3 13	.4
France -0.18 Czech Republic 29.8 20	
Luxembourg -0.19 France 30.2 15	.3
Ireland	
·	.2
Germany -0.26 Poland 41.2 29	.2
Belgium -0.28 Korea 41.4 8	

- 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".

# STUDENT CHARACTERISTICS (3) - APPROACHES TO LEARNING

**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.

about a range of their characteristics as learners. It asked them own learning). about their motivation (for example, their interest in reading, and their commitment to use education to get a good job), their selfbelief (for example, whether they believe they can handle learning tasks effectively) and their learning strategies (for example, wheth-

The PISA survey asked students er they measure their progress. The evidence suggests that stuagainst their goals to control their

> of respects, students with stronglikely to have higher literacy performance, and that these relationships apply across different countries and cultures.

dents who are more self-confident and have stronger motivation do better at school largely because The survey found that in a number they are more inclined to invest in learning strategies that work. For er approaches to learning are 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.

# 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.

# **Learning autonomy**

A further important finding is that difference in students' literacy students' motivation and self- performance. But if students' belief may have even greater im- tendency to control their learnformance at school. Student ap- omy is a key precondition of lifeproaches to learning measured in long learning – an even stronger PISA explain about a fifth of the relationship becomes visible.

About two-thirds of differences in student use of "control strategies" can be explained by the varplications for their capacity for ing is taken as an outcome of ying levels of motivation and selflifelong learning than for their per- learning - since learning auton- belief expressed by students who use such strategies more or less

# Relative performance of students who control their learning more

	Advantage in PISA score points	Mean score in reading for students who contro their learning				
	for students who control their learning more <sup>1</sup>	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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# STUDENT CHARACTERISTICS (4) - GENDER DIFFERENCES

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.

БОУ	s and giris	reauing cir	aracteristics	
	Reading pe	erformance	How far	Interest in
	(mean	score)	girls are	reading:
			ahead	how far
			(score	girls are
	Boys	Girls	points)	ahead <sup>1</sup>
Australia	513	546	34	0.36
Austria	495	520	26	0.62
Belgium <sup>2</sup>	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 <sup>3</sup>	512	537	26	0.43
United States	490	518	29	0.36
OECD average	485	517	32	0.53
1 This is hasad on	an index of inte	arest in reading	and shows nosit	ive effect sizes

Boys' and girls' reading characteristics

- 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.

# 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.

.2 © OECD 2004 © OECD 2004 13

# SCHOOL CHARACTERISTICS (1) - SOCIAL BACKGROUND OF STUDENTS

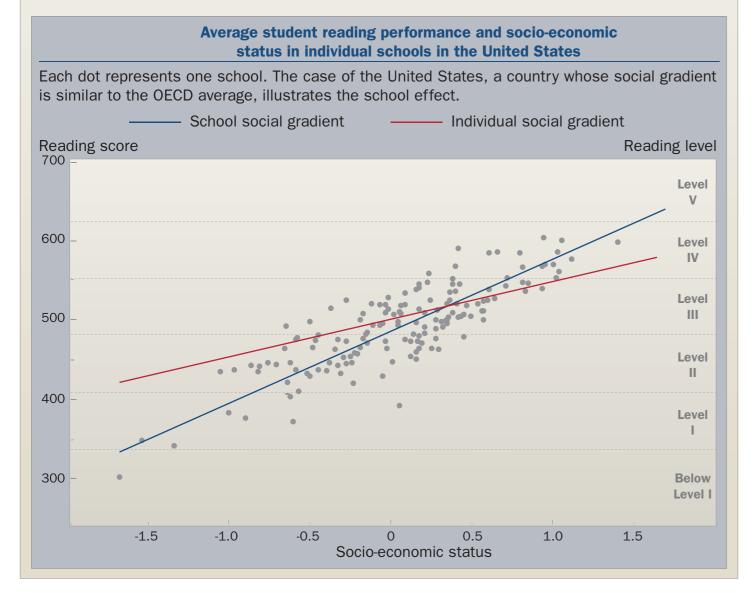
# The social background of all students in a school is strongly associated with reading performance.

background of an individual single factor associated with is not just the characteristics of an individual's family but also the characteristics of the families of other students in the school how well individuals performed likely to show considerably higher slope of the school gradient is steepness of the social gradient

As noted earlier, the social levels of literacy than those at nearly twice that of individuals less advantaged schools - and student is the strongest this superior performance is greater than can be accounted for performance in PISA. However, it by the sum of their own individual advantages.

school social profile is illustrated that are closely associated with in the graph below, using the United States as an example This is an average; in some in PISA. On average, students of a country with average countries the compounding who attend schools with a more characteristics in terms of the effect is much higher; in others advantaged "social profile" are social gradient. Note that the lower. As a result, variation in the

*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 The importance of the whole- scores of each student attending those schools.



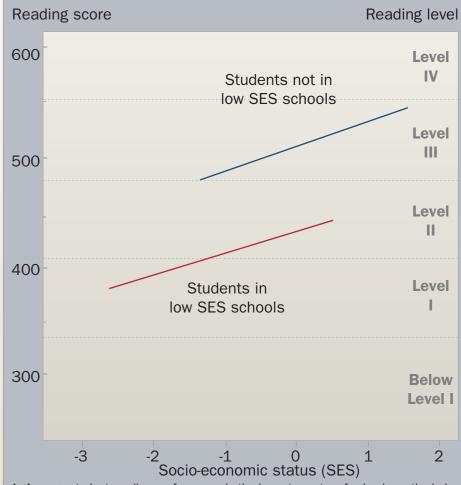
across countries is greater when the school effect is taken into account. Iceland has the least severe social gradient at both the individual and the school level, and Germany has the steepest at both levels. However, the slopes of the gradient in the two countries differ by a factor of three at the individual level but a factor of five at the school level.

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 peergroup 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 Since most variation in student school does well compared to other schools with similar social schools, a key priority is to help background is whether the less the least advantaged individuals advantaged students within the within schools to achieve their school achieve good results. In general, the impact of the social schools where there are more from compensatory assistance. disadvantaged students: the lower the social profile, the greater the However, this analysis also differences between students suggests that high segregation of from different backgrounds. For students by social background can students at better-off schools create an intense disadvantage their potential.

## Average student reading performance in schools with low socio-economic status¹ compared with other schools



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

there is more of a "convergence" for students in the least-favoured in their performance, with background mattering less.

performance tends to be within potential. In particular, those within schools with below-average

schools. The graph above shows that students in the lowest quarter of schools on the index of socioeconomic 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 profile seems to be greater in social profiles may benefit most 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

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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.

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 measured school climate variables to develop these characteristics of school characteristics are account for about 6 per cent in purposeful and well disciplined associated with student reading of between-school differences schools performance. Compared to social background, the impact of these resources account for only about to note that the extent to which factors appears modest: rated 1 per cent. A range of factors teachers emphasise academic on any one of the characteristics affect school climate, including performance is also positively shown, the gap between students the attitudes of both teachers related to performance, but less in the top and bottom quarter of and students and the quality of strongly so than the disciplinary

How much difference does the level, except for student-related The PISA results indicate that it is quality of a school make to learning factors affecting school climate. outcomes? PISA asked students Nevertheless, if schools were and school principals questions able to improve performance and that an atmosphere in which about various characteristics by these kinds of amounts as a of schools that might make a result of improvements in school difference to learning outcomes. climate and resources, this Factors such as the environment 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 students who are ready to invest more discernible than the level of school resources. Overall, the as individuals. They are best able in performance, while school schools is below half a proficiency the relationship between them. climate of the classroom.

student attitudes and behaviour that are particularly important, they are committed to purposeful learning makes a key difference.

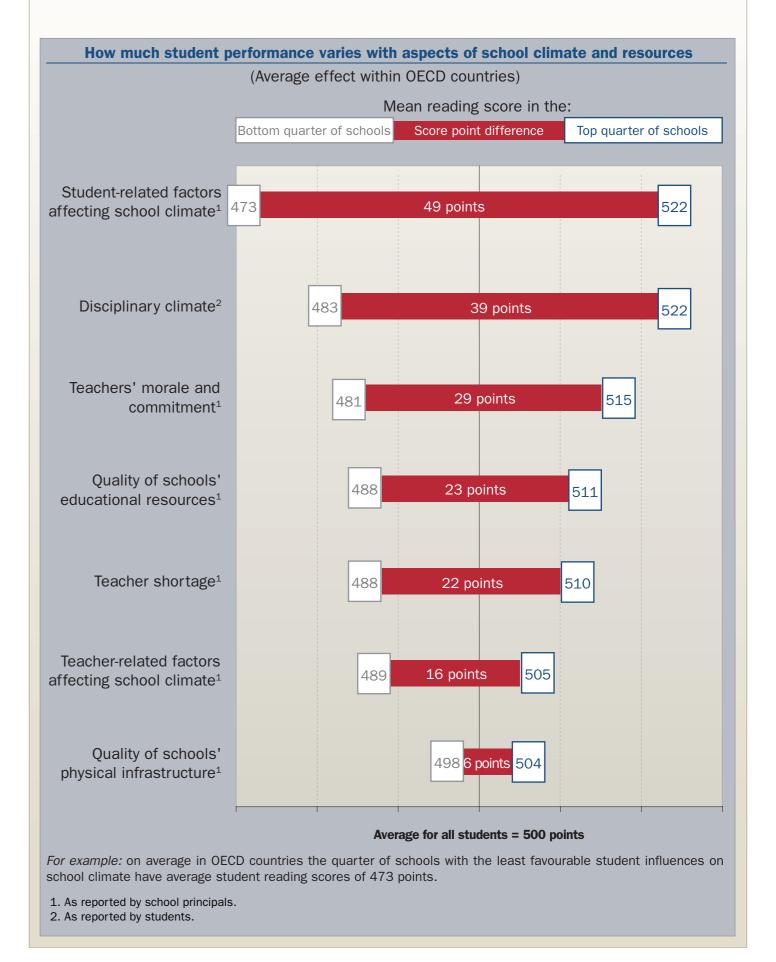
These results confirm a range of other research suggesting that students perform best in a positive learning environment that is oriented towards results. They also relate to PISA's finding that effort and who enjoy learning thrive classroom environments. It is interesting

# **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.



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## **SCHOOL SYSTEM CHARACTERISTICS**

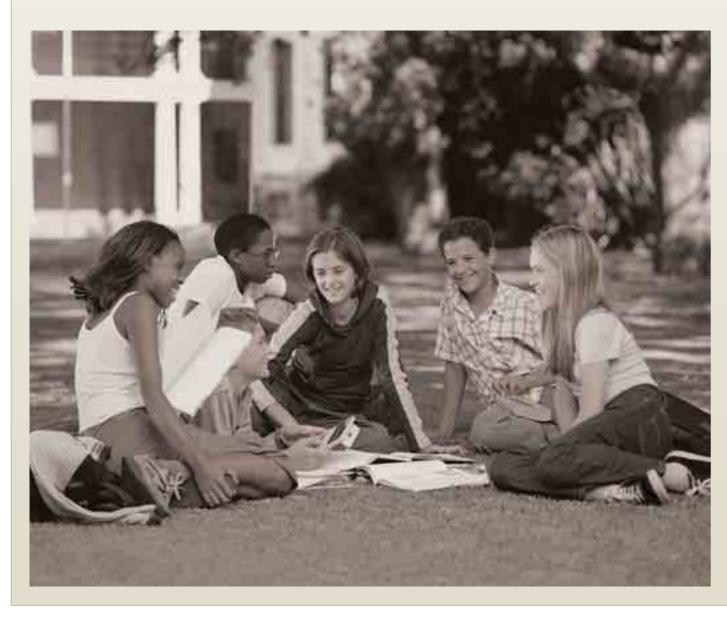
# PISA does not allow us to design a perfect education system, but gives clues about which features of school systems are relevant to student outcomes.

tively small – 9 per cent of all vari- social background. ation in the case of reading literacy for mathematical literacy.

Over half of the variation in student Thus, the degree to which students' performance in OECD countries in educational chances are affected PISA 2000 is accounted for by the by which country they live in should countries. The amount due to dif- seen above, in the strength of the

started to look at some system

features that might help explain differences both in the overall performance and the equity of variation of student performance not be exaggerated. However, dif- student outcomes across counwithin each school. About a third ferent school systems vary not just tries. This analysis does not prois attributed to differences in per- in their average scores but also in duce prescriptions for education formance across schools within the dispersion of scores and, as systems, but makes observations designed to help policy makers ferences across countries is rela- relationship with factors such as think about the effect of certain system features. In looking at features of more successful systems and scientific literacy; 15 per cent Analysis of the PISA results has 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 of factors". attributable to a constellation country describing how these

findings from PISA 2000 analysis has shed light on the reported that there is no single relative importance of factors key to success in PISA: rather, within this constellation, "successful performance is and offers a profile for each

Subsequent 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 Moreover, country differences note the very strong finding among countries uncovered in the performance advantage of PISA that achieving greater by PISA, the most striking was associated with individual so- equity need not be at the the degree to which student cial background are compound- expense of overall standards. performance varied across ed by the varying degrees to On the contrary, there is a schools. In some countries, which the social composition negative correlation between most of the variation in student of the school appears to adreading performance can be vantage students. Thus while between predicted simply by looking at the steepness of the "social the characteristics of the school gradient" varies by a factor of social backgrounds and the they go to. In others, 90 per cent about three across countries of variation is contained within when looking just at individu- This is consistent with the individual schools. Some of the als, the predicted difference in finding that the biggest factor extremes of this difference can be accounted for by the fact that attending schools with differ- less successful countries in some countries separate more ent social profiles is five times PISA is not how well students and less able students into as high in the highest country are doing at the top, but how different schools. However, even the variation across countries with similar education systems is striking in this regard.

than in the lowest.

In seeking to learn from these differences, countries should

the amount of difference the predicted performance of students from overall level of performance. performance between students that distinguishes more and well they are doing at the bottom. Rather than suggesting that an emphasis on equality might lead to "levelling down", 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 try, but shows that to date outcome of their own system.

the PISA results indicate that the more successful countries. Such evaluation does not have mainly employed an inte- mean rigid control from the grated approach to grouping look carefully at how they can avoid limiting less able students' chances.

doing so remains controver- PISA together with recent resial. Some systems continue search suggests that in improvto separate out students by ing their education systems in ability; others have more of a response to such messages, "comprehensive" approach to the important thing for individustudent groupings. PISA can- al countries is not to copy their not determine which system neighbours directly but to moniis best for a particular countor carefully the evolution and

centre; indeed, devolution students. This puts the onus to the front line has been on differentiated systems to 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).





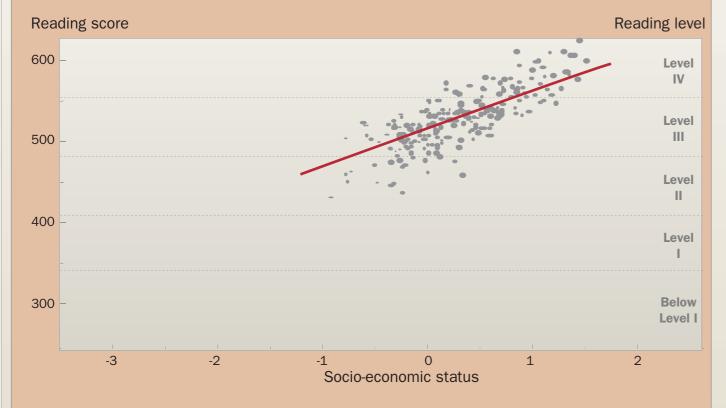
# **PISA 2000 Profile for Australia**

# **1. Student performance**

			In r	eading literacy		Mean score in	Mean score
	Mean	% at read	ding level	Standard deviation of	% of variation	mathematical	in scientific
	score	score 5 1 or below re		reading literacy scores	between schools	literacy	literacy
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 pa	rticipating students	Features of the socio-economic gradient				
		D	Difference in reading literacy	Slope of the gradient <sup>2</sup>				
	Mean socio- economic status	Percentage of explained variation in student performance	score if students had the average OECD SES (score points)	Length of the gradient <sup>1</sup>	Overall	Between schools		
Australia	0.34	17	-15	2.9	46	34	78	
OECD	0.00	20		3.0	41			

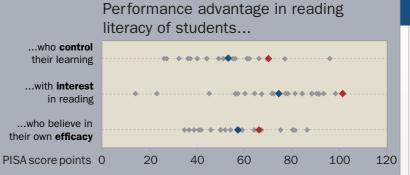
- 1. This shows the socio-economic variation of the middle 90% of students and therefore the gap between the 5 per cent most disadvantaged and the 5 per cent most advantaged students.
- 2. Score point difference associated with one unit increase of SES. Steeper slopes indicate a greater inequality.

# 3. Student characteristics

# **Approaches to learning**

Compared to other OECD students. students from Australia have:

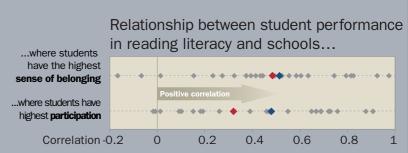
above average	confidence in their own learning efficacy.
close to average	confidence in their own reading ability.
above average	confidence in their own mathematical ability.



### **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.

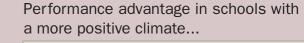


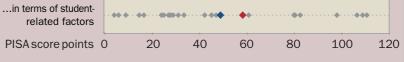
### 4. School characteristics

### **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

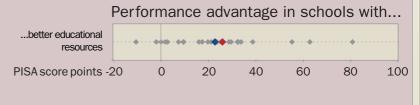




### **Resources**

Compared to other OECD students,

students from Au	ustralia have:
close to average	Quality of the schools' physical infrastructure
more	Teacher shortage





# 5. System characteristics

# **School autonomy**

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

	r or containing or commented action and action are required to the											
	Student			Student								
	disci-			assess-	Student	Formulat-				Dismiss-	Teachers'	Teachers'
	plinary	Budget	Textbooks	ment	admis-	ing school	Courses	Course	Appointing	ing	salary	starting
	policies	allocation	used	policies	sions	budget	offered	content	teachers	teachers	increases	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



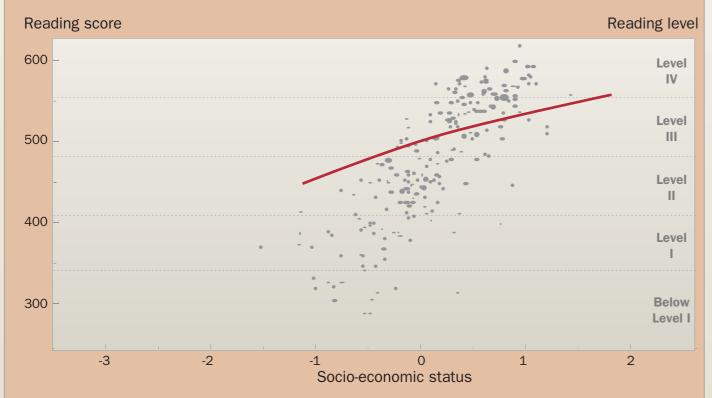
# **PISA 2000 Profile for Austria**

# 1. Student performance

		Mean score in	Mean score				
	Mean	% at reading level		Standard deviation of	% of variation	mathematical	in scientific
	score	5	1 or below	or below reading literacy scores between schools		literacy	literacy
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 pa	rticipating students	Features of the socio-economic gradient			
	Mananania	Davis interest of similarina d	Difference in reading literacy		Slo	pe of the gradie	ent <sup>2</sup>
	Mean socio- economic status	Percentage of explained variation in student performance	score if students had the average OECD SES (score points)	Length of the gradient <sup>1</sup>	Overall	Within schools	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

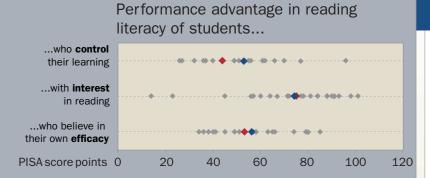
## **Approaches to learning**

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.

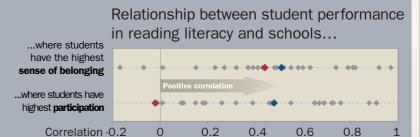


### **Engagement at school**

In Austria:

**Climate** 

- 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.



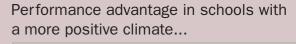
# 4. School characteristics

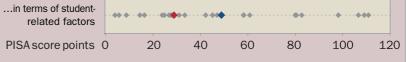
Compared to other OECD students,

more favourable

Teachers' morale and commitment

Teacher-related factors affecting the school climate





### Resources

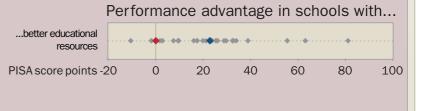
Compared to other OECD students, students from Austria have:

close to average

Quality of the schools' physical infrastructure

less

Teacher shortage





# **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 admissions	Formulat- ing school budget	Courses offered	Course	Appointing teachers	Dismiss- ing 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



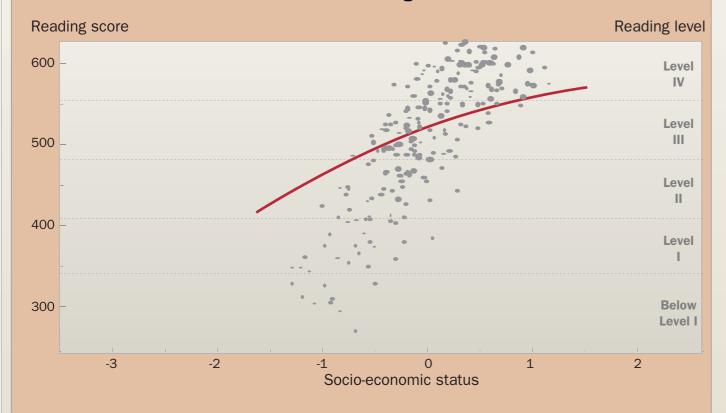
# **PISA 2000 Profile for Belgium**

# **1. Student performance**

		Mean score in	Mean score				
	Mean	% at reading level		Standard deviation of	% of variation	mathematical	in scientific
	score	5	1 or below	reading literacy scores	between schools	literacy	literacy
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 pa	rticipating students	Feature	Features of the socio-economic gradient			
	Mean socio-	Percentage of explained	Difference in reading literacy score if students had the		Slope of the gradient <sup>2</sup>			
	economic status	variation in student performance	average OECD SES (score points)	Length of the gradient <sup>1</sup>	Overall	Within schools	Between schools	
Belgium	-0.03	22	13	3.1	48	14	133	
OECD	0.00	20		3.0	41			

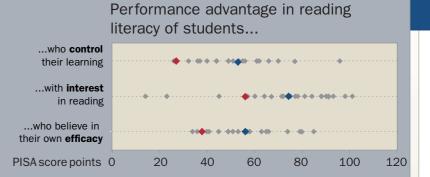
- 1. This shows the socio-economic variation of the middle 90% of students and therefore the gap between the 5 per cent most disadvantaged and the 5 per cent most advantaged students.
- 2. Score point difference associated with one unit increase of SES. Steeper slopes indicate a greater inequality.

## 3. Student characteristics

# **Approaches to learning**

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

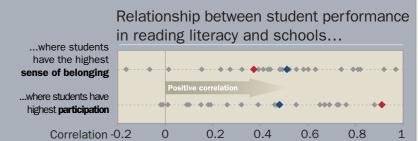
confidence in their own close to average learning efficacy. confidence in their own below average reading ability. confidence in their own close to average mathematical ability.



### **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.



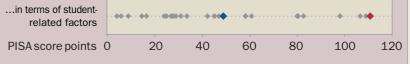
### 4. School characteristics

# **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, studen

nts from Belgium have:				
higher	Quality of the schools' physical infrastructure			
less	Teacher shortage <sup>1</sup>			

Performance advantage in schools with... ...better educational PISA score points -20 20 60 80 100





# 5. System characteristics

# **School autonomy**

Percentage of students attending schools with at least some responsibility for:												
	Student			Student								
	disci-			assess-	Student	Formulat-				Dismiss-	Teachers'	Teachers'
	plinary	Budget	Textbooks	ment	admis-	ing school	Courses	Course	Appointing	ing	salary	starting
	policies	allocation	used	policies	sions	budget	offered	content	teachers	teachers	increases	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



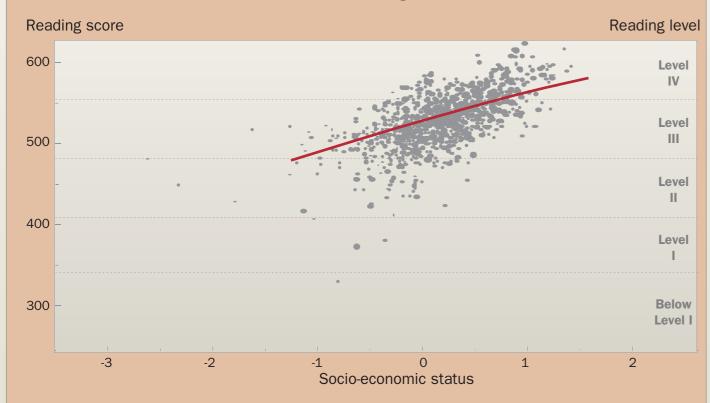
# PISA 2000 Profile for Canada

# 1. Student performance

		Mean score in	Mean score				
	Mean	% at reading level		Standard deviation of	% of variation	mathematical	in scientific
	score	5 1 or below reading literacy scores between schools		literacy	literacy		
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 pa	rticipating students	Featur	es of the soci	es of the socio-economic gradient			
			Difference in reading literacy	Slope of the gradient <sup>2</sup>					
	Mean socio- economic status	Percentage of explained variation in student performance	score if students had the average OECD SES (score points)	Length of the gradient <sup>1</sup>	Overall	Within schools	Between schools		
Canada	0.27	11	-7	3.1	37	28	73		
OECD	0.00	20		3.0	41				

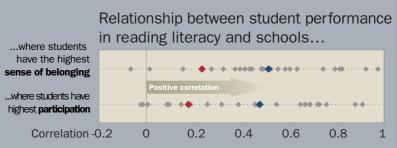
- 1. This shows the socio-economic variation of the middle 90% of students and therefore the gap between the 5 per cent most disadvantaged and the 5 per cent most advantaged students.
- 2. Score point difference associated with one unit increase of SES. Steeper slopes indicate a greater inequality.

# 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.



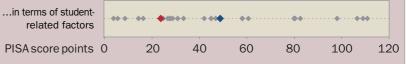
### 4. School characteristics

### **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**

Canada

**OECD** 

Compared to other OECD students, students from Canada have:

students from Canada nave:					
higher	Quality of the schools' physical infrastructure				
close to average	Teacher shortage				

Performance advantage in schools with...

...better educational resources

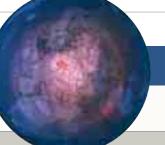
PISA score points -20 0 20 40 60 80 100

OECD average	Canada
OECD average	Canada

# 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 admissions	Formulat- ing school budget	Courses offered	Course	Appointing teachers	Dismiss- ing teachers	Teachers' salary increases	Teachers' starting salaries				
98	99	89	94	89	77	90	49	82	61	34	34				
95	94	92	89	84	76	71	69	61	54	26	23				



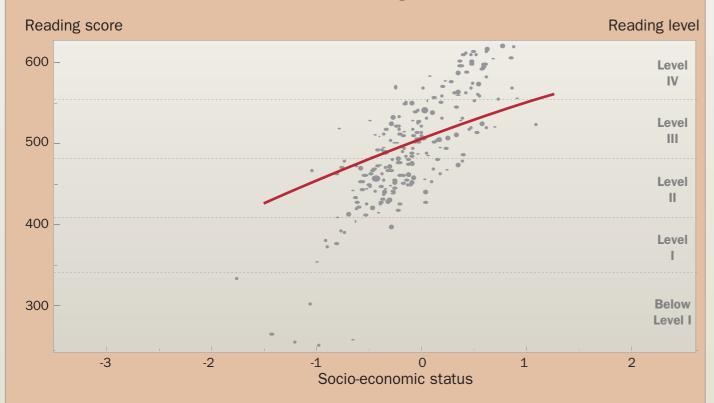
# **PISA 2000 Profile for Czech Republic**

# 1. Student performance In reading literacy

		Mean score in	Mean score					
	Mean	% at reading level		Standard deviation of	% of variation	mathematical	in scientific	
	score	5	1 or below	reading literacy scores	between schools	literacy	literacy	
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 pa	rticipating students	Features of the socio-economic gradient					
			Difference in reading literacy score if students had the		Slope of the gradient <sup>2</sup>				
	Mean socio- economic status	Percentage of explained variation in student performance	average OECD SES (score points)	Length of the gradient <sup>1</sup>	Overall	Within schools	Between schools		
Czech Republic	-0.10	22	10	2.7	49	19	131		
OECD	0.00	20		3.0	41				

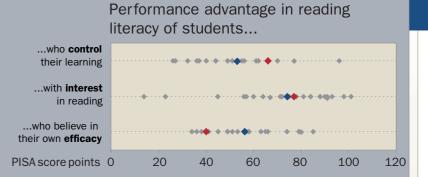
- 1. This shows the socio-economic variation of the middle 90% of students and therefore the gap between the 5 per cent most disadvantaged and the 5 per cent most advantaged students.
- 2. Score point difference associated with one unit increase of SES. Steeper slopes indicate a greater inequality.

## 3. Student characteristics

# Approaches to learning

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

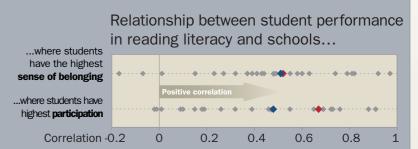
below average	confidence in their own learning efficacy.
below average	confidence in their own reading ability.
below average	confidence in their own mathematical ability.



### **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.

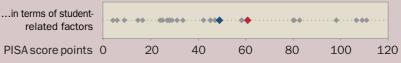


# Climate

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:

from Cz	from Czech Republic have:								
higher Quality of the schools' physical infrastructure									
less	Teacher shortage								

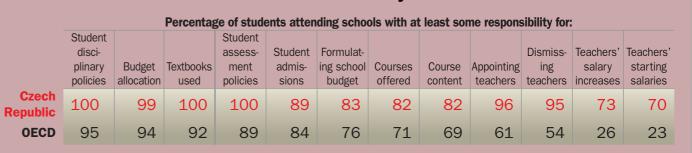




# **5. System characteristics**

4. School characteristics

### **School autonomy**





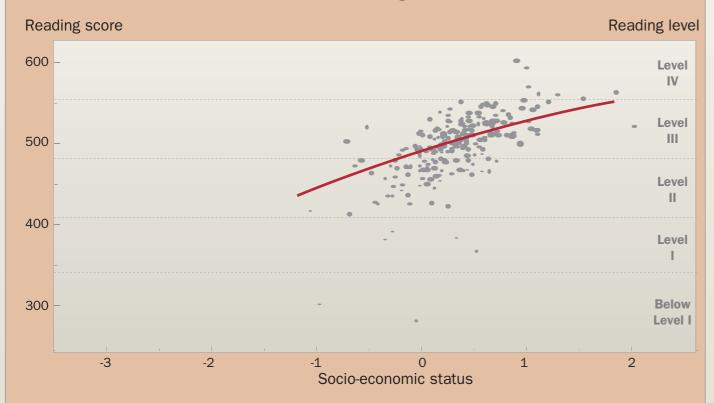
# **PISA 2000 Profile for Denmark**

# 1. Student performance

			In reading literacy  Mean score in mathematical literacy  1 or below reading literacy scores between schools  Mean score in mathematical literacy  In reading literacy  Mean score in mathematical literacy  New 100 100 100 100 100 100 100 100 100 10					
	Mean	% at reading level		Standard deviation of	standard deviation of % of variation mathematic		in scientific	
	score	5	1 or below	reading literacy scores	between schools	literacy	literacy	
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 pa	rticipating students	Features of the socio-economic gradient					
			Difference in reading literacy		Slope of the gradient <sup>2</sup>				
	Mean socio- economic status	Percentage of explained variation in student performance	score if students had the average OECD SES (score points)	Length of the gradient <sup>1</sup>	Overall	Within schools	Between schools		
Denmark	0.11	17	1	2.8	42	34	79		
OECD	0.00	20		3.0	41				

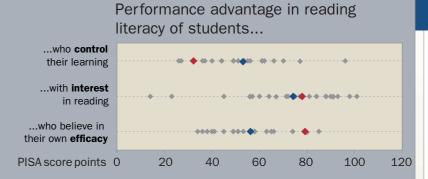
- 1. This shows the socio-economic variation of the middle 90% of students and therefore the gap between the 5 per cent most disadvantaged and the 5 per cent most advantaged students.
- 2. Score point difference associated with one unit increase of SES. Steeper slopes indicate a greater inequality.

# 3. Student characteristics

# **Approaches to learning**

Compared to other OECD students. students from Denmark have:

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



### **Engagement at school**

In Denmark:

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

in reading literacy and schools... ...where students have the highest sense of belonging Correlation -0.2 0.2 0.4 0.6

## 4. School characteristics

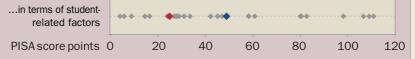
### **Climate**

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						
Resources							

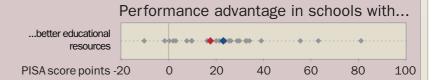
Performance advantage in schools with a more positive climate...

Relationship between student performance



Compared to other OECD students, students from Denmark have:

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





# 5. System characteristics

## **School autonomy**

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

	Student			Student								
	disci-			assess-	Student	Formulat-				Dismiss-	Teachers'	Teachers'
	plinary	Budget	Textbooks	ment	admis-	ing school	Courses	Course	Appointing	ing	salary	starting
	policies	allocation	used	policies	sions	budget	offered	content	teachers	teachers	increases	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



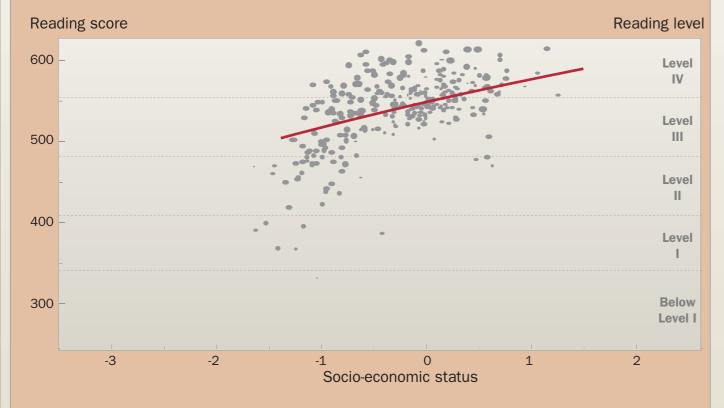
# **PISA 2000 Profile for Finland**

# **1. Student performance**

		Mean score in	Mean score				
	Mean	% at read	ding level	Standard deviation of	% of variation	mathematical	in scientific
	score	5	1 or below	reading literacy scores	between schools	literacy	literacy
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 pa	rticipating students	Feature	es of the soci	o-economic g	radient			
	Manageria	Damenta de of amileiro d	Difference in reading literacy		Slo	Slope of the gradient <sup>2</sup>				
	Mean socio- economic variation in studer status performance		score if students had the average OECD SES (score points)	Length of the gradient <sup>1</sup>	Overall	Within schools	Between schools			
Finland	0.08	9	-2	2.9	30	27	47			
OECD	0.00	20		3.0	41					

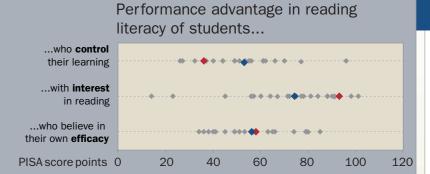
- 1. This shows the socio-economic variation of the middle 90% of students and therefore the gap between the 5 per cent most disadvantaged and the 5 per cent most advantaged students.
- 2. Score point difference associated with one unit increase of SES. Steeper slopes indicate a greater inequality.

# 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.

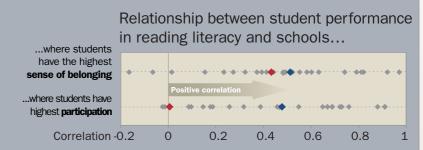


### **Engagement at school**

In Finland:

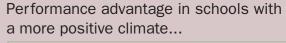
**Climate** 

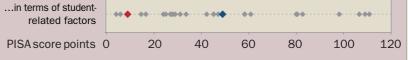
- 21% of students have a low sense of belonging, compared to 25% on average in OECD countries.
- 23% of students have low participation (attendance), compared to 20% on average in OECD countries.



Compared to other OECD students, students from Finland have

students nom in	nana nave.
less favourable	Disciplinary climate
close to average	Teachers' morale and commitment
close to average	Teacher-related factors affecting the school climate
Bassurasa	

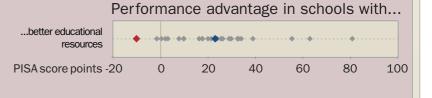




### Resources

Compared to other OECD students.

students from Fir	nland have:
lower	Quality of the schools' physical infrastructure
close to average	Teacher shortage





# 5. System characteristics

# **School autonomy**

4. School characteristics

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

	Student			Student								
	disci-			assess-	Student	Formulat-				Dismiss-	Teachers'	Teachers'
	plinary	Budget	Textbooks	ment	admis-	ing school	Courses	Course	Appointing	ing	salary	starting
	policies	allocation	used	policies	sions	budget	offered	content	teachers	teachers	increases	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



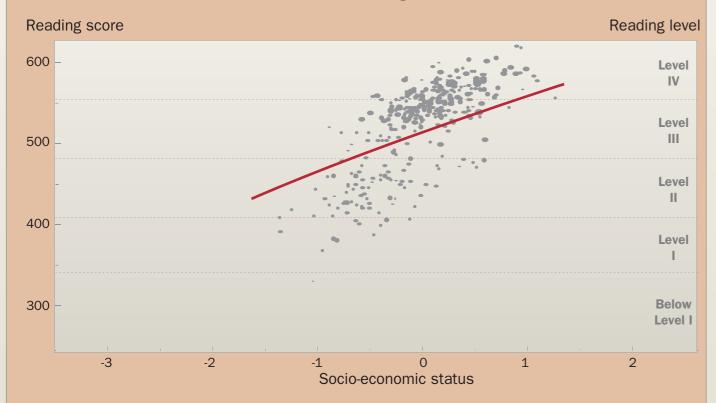
# **PISA 2000 Profile for France**

# 1. Student performance

		Mean score in	Mean score				
	Mean	% at read	ding level	Standard deviation of	% of variation	mathematical	in scientific
	score	5	1 or below	reading literacy scores	between schools	literacy	literacy
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 par	rticipating students	Feature	es of the soci	o-economic g	c gradient			
	Manager	Demonstrate of contained	Difference in reading literacy		Slo	pe of the gradie	ent <sup>2</sup>			
	Mean socio- economic variation in student status performance		score if students had the average OECD SES (score points)	Length of the gradient <sup>1</sup>	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

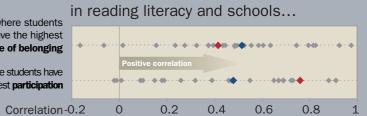
# **Engagement at school**

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

France ◆ OECD average



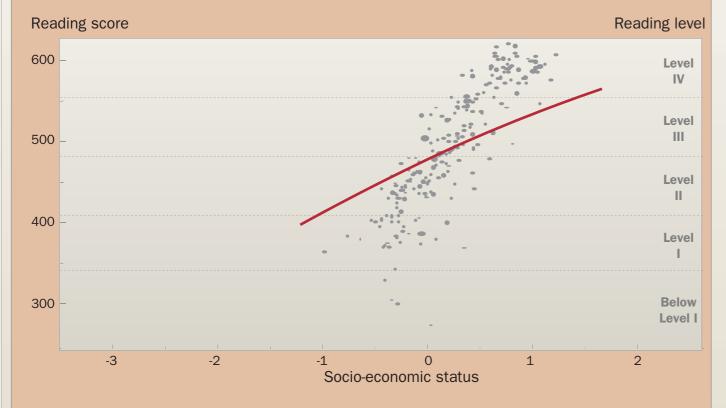
# **PISA 2000 Profile for Germany**

# 1. Student performance

		Mean score in	Mean score				
	Mean	% at read	ding level	Standard deviation of	% of variation	mathematical	in scientific
	score	5	1 or below	reading literacy scores	between schools	literacy	literacy
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 pa	rticipating students	Featur	es of the soci	o-economic g	mic gradient				
			Difference in reading literacy	o o o o o o o o o o o o o o o o o o o							
	Mean socio- economic variation in student status performance		score if students had the average OECD SES (score points)	Length of the gradient <sup>1</sup>	Overall	Within schools	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

highest participation

4. School characteristics

Correlation -0.2

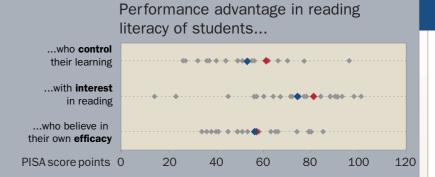
### **Approaches to learning**

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.

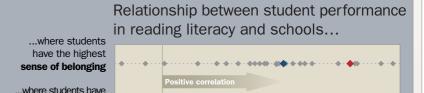
close to average confidence in their own mathematical ability.



### **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.



0.2

## Climate

Compared to other OECD students, students from Germany have:

close to average

Close to average

Close to average

Teachers' morale and commitment

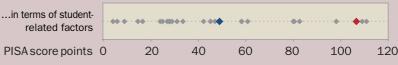
Teacher-related factors affecting the school climate

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

0.4

0.6

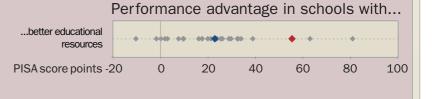
0.8



### Resources

Compared to other OECD students, students from Germany have:

from Ge	ermany have:
higher	Quality of the schools' physical infrastructure
more	Teacher shortage





# **5. System characteristics**

# School autonomy

	Percentage of students attending schools with at least some responsibility for:											
	Student			Student								
	disci-			assess-	Student	Formulat-				Dismiss-	Teachers'	Teachers'
	plinary	Budget	Textbooks	ment	admis-	ing school		Course	Appointing	ing	salary	starting
	policies	allocation	used	policies	sions	budget	offered	content	teachers	teachers	increases	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



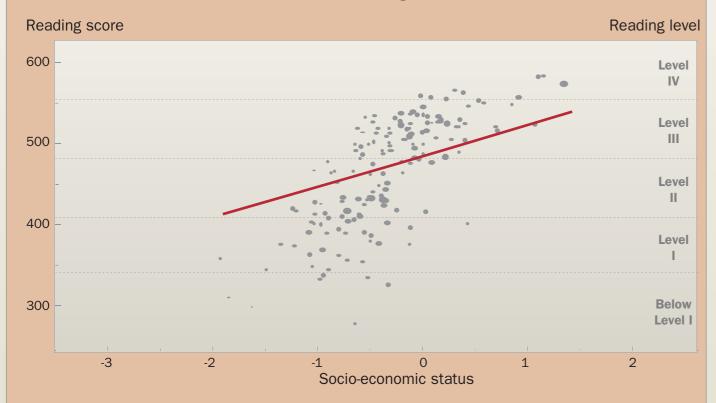
# **PISA 2000 Profile for Greece**

# 1. Student performance

		Mean score in	Mean score				
	Mean	% at reading level		Standard deviation of	% of variation	mathematical	in scientific
	score	5	1 or below	reading literacy scores	between schools	literacy	literacy
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 pa	rticipating students	Featur	es of the soci	o-economic g	radient	
	Managaria	Deventers of symbols of	Difference in reading literacy	olope of the grad			lient <sup>2</sup>	
	Mean socio- economic status	Percentage of explained variation in student performance	score if students had the average OECD SES (score points)	Length of the gradient <sup>1</sup>	Overall	Within schools	Between schools	
Greece	-0.25	16	11	3.3	38	13	93	
OECD	0.00	20		3.0	41			

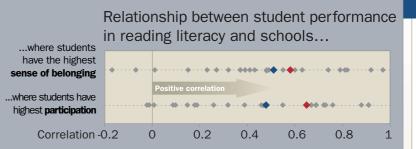
- 1. This shows the socio-economic variation of the middle 90% of students and therefore the gap between the 5 per cent most disadvantaged and the 5 per cent most advantaged students.
- 2. Score point difference associated with one unit increase of SES. Steeper slopes indicate a greater inequality.

# 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.



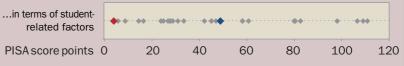
## 4. School characteristics

### **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...

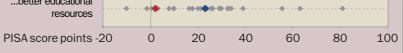


### **Resources**

Compared to other OECD students, students from Greece have:

s from Gr	s from Greece have:					
lower	Quality of the schools' physical infrastructure					
more	Teacher shortage					

# Performance advantage in schools with... ...better educational





# **5. System characteristics**

### **School autonomy**

			Percentag	ge of stude	ents atten	ding schoo	ols with at	t least sor	ne respons	sibility for:		
	Student disci- plinary policies	Budget allocation	Textbooks used	Student assess- ment policies	Student admissions	Formulat- ing school budget	Courses offered	Course	Appointing teachers	Dismiss- ing 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



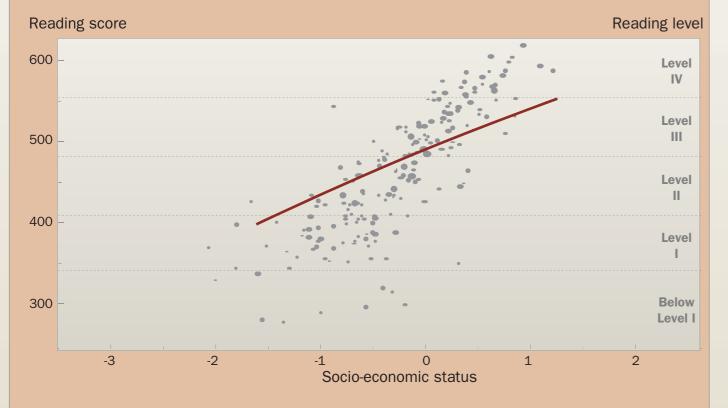
# **PISA 2000 Profile for Hungary**

# 1. Student performance

		Mean score in	Mean score				
	Mean	% at reading level		Standard deviation of	% of variation	mathematical	in scientific
	score	5	1 or below	reading literacy scores	between schools	literacy	literacy
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 pa	rticipating students	Featur	res of the socio-economic gradient			
			Difference in reading literacy		Slope of the gradient <sup>2</sup>			
	Mean socio- economic status	Percentage of explained variation in student performance	score if students had the average OECD SES (score points)	Length of the gradient <sup>1</sup>	Overall	Within schools	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

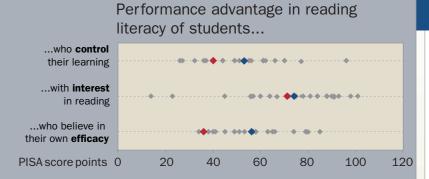
# Approaches to learning

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.

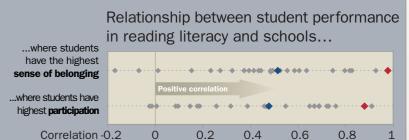


### **Engagement at school**

In Hungary:

**Climate** 

- 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.



Compared to other OECD students, students from Hungary have:

more favourable

more favourable

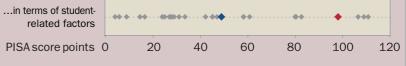
more favourable

more favourable

Teachers' morale and commitment

Teacher-related factors affecting the school climate

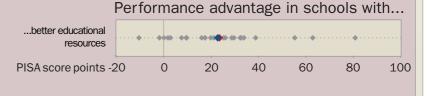
Performance advantage in schools with a more positive climate...



### Resources

Compared to other OECD students, students from Hungary have:

from Hungary have:					
higher	Quality of the schools' physical infrastructure				
less	Teacher shortage				





# **5. System characteristics**

4. School 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 admissions	Formulat- ing school budget	Courses offered	Course	Appointing teachers	Dismiss- ing 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



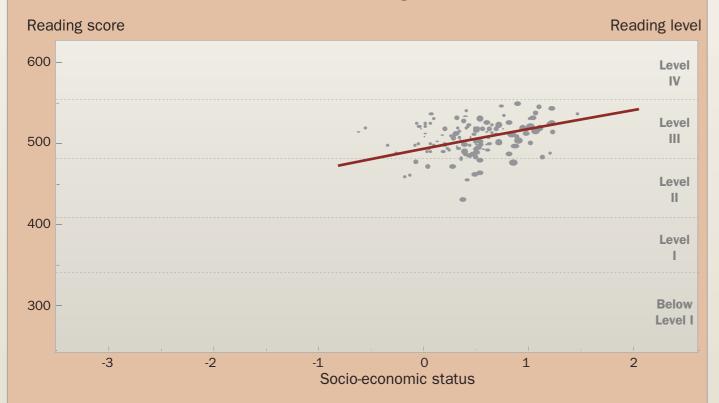
# **PISA 2000 Profile for Iceland**

# **1. Student performance**

		Mean score in	Mean score				
	Mean	% at reading level		Standard deviation of	% of variation	mathematical	in scientific
	score	5	1 or below	reading literacy scores	between schools	literacy	literacy
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 pa	rticipating students	Feature	es of the soci	o-economic g	radient	
			Difference in reading literacy		Slope of the gradient <sup>2</sup>			
	Mean socio- economic status	Percentage of explained variation in student performance	score if students had the average OECD SES (score points)	Length of the gradient <sup>1</sup>	Overall	Within schools	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

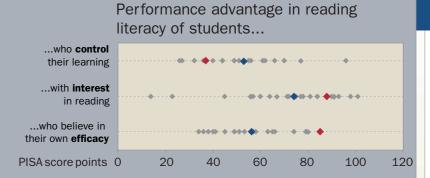
## **Approaches to learning**

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.

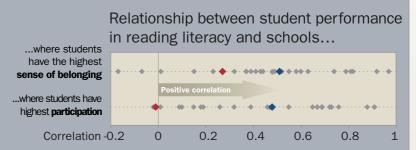


### **Engagement at school**

In Iceland:

**Climate** 

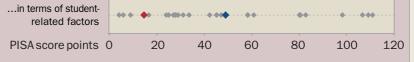
- 22% of students have a *low sense of belonging*, compared to 25% on average in OECD countries.
- 26% of students have *low participation* (attendance), compared to 20% on average in OECD countries.



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

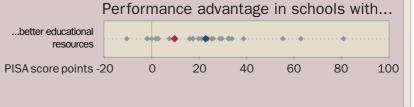
Performance advantage in schools with a more positive climate...



### Resources

Compared to other OECD students, students from Iceland have:

ts from Iceland have:							
higher	Quality of the schools' physical infrastructure						
more	Teacher shortage						



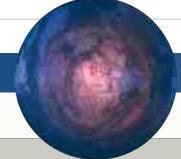


# **5. System characteristics**

4. School 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 admissions	Formulat- ing school budget	Courses offered	Course content	Appointing teachers	U	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



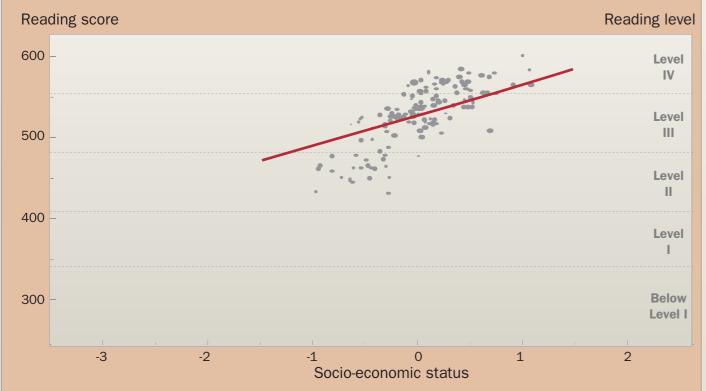
# **PISA 2000 Profile for Ireland**

# **1. Student performance**

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

# 2. Socio-economic status (SES)





	Socio	economic status of pa	rticipating students	Features of the socio-economic gradient				
		D	Difference in reading literacy		Slope of the gradient <sup>2</sup>			
	Mean socio- economic status	Percentage of explained variation in student performance	score if students had the average OECD SES (score points)	Length of the gradient <sup>1</sup>	Overall	Within schools	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

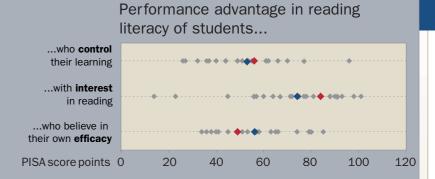
Correlation -0.2

4. School characteristics

## **Approaches to learning**

Compared to other OECD students. students from Ireland have:

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

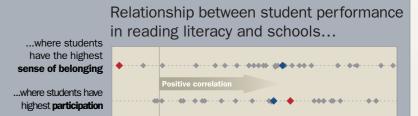


### **Engagement at school**

In Ireland:

**Climate** 

- 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.



Compared to other OECD students, students from Ireland have:

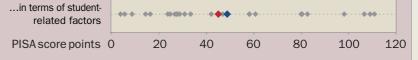
close to average	Disciplinary climate
more favourable	Teachers' morale and commitment
close to average	Teacher-related factors affecting the school climate

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

0.4

0.6

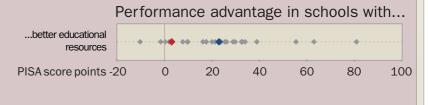
0.8



# Resources

Compared to other OFCD students

tudents from Ireland have:							
higher	Quality of the schools' physical infrastructure						
close to average	Teacher shortage						





# 5. System characteristics

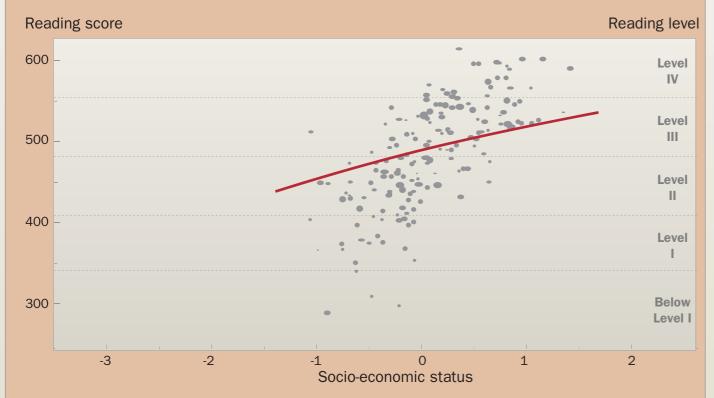
# **School autonomy**

	Percentage of students attending schools with at least some responsibility for:											
	Student			Student								
	disci-			assess-	Student	Formulat-				Dismiss-	Teachers'	Teachers'
	plinary	Budget	Textbooks	ment	admis-	ing school	Courses	Course	Appointing	ing	salary	starting
	policies	allocation	used	policies	sions	budget	offered	content	teachers	teachers	increases	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



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

# 2. Socio-economic status (SES) The socio-economic gradient



	Socio	economic status of pa	rticipating students	Features of the socio-economic gradient				
	Maan aasia	Deventors of syntained	Difference in reading literacy score if students had the		Slope of the gradient <sup>2</sup>			
	Mean socio- economic status	Percentage of explained variation in student performance	average OECD SES (score points)	Length of the gradient <sup>1</sup>	Overall	Within schools	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 Performance advantage in reading **Approaches to learning** literacy of students... Compared to other OECD students. ...who control students from Italy have: their learning confidence in their own ...with interest close to average learning efficacy. in reading confidence in their own above average ...who believe in reading ability. their own efficacy confidence in their own close to average 80 100 PISA score points 0 mathematical ability. Relationship between student performance **Engagement at school** in reading literacy and schools... In Italy: ...where students have the highest • 23% of students have a low sense of belonging, sense of belonging compared to 25% on average in OECD countries. ...where students have • 22% of students have low participation (attendance),

highest participation

Correlation -0.2

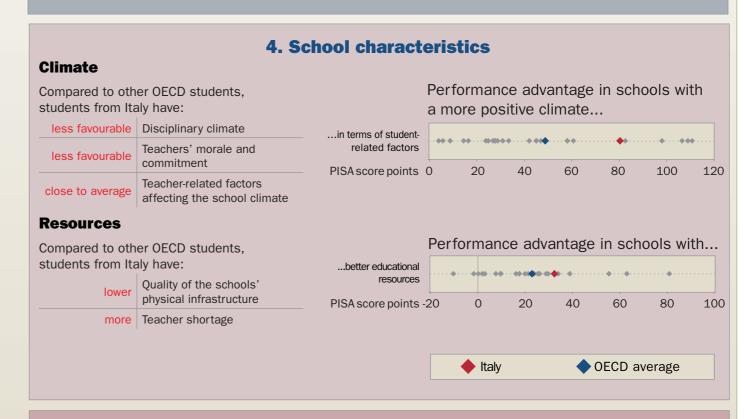
0.2

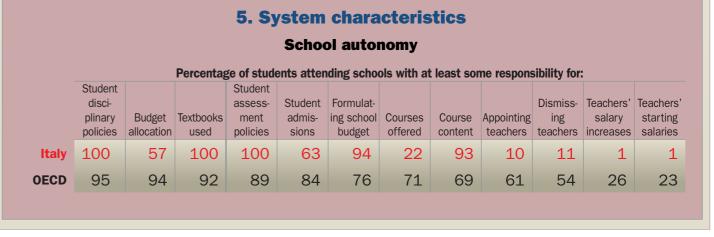
0.4

0.6

0.8

compared to 20% on average in OECD countries.







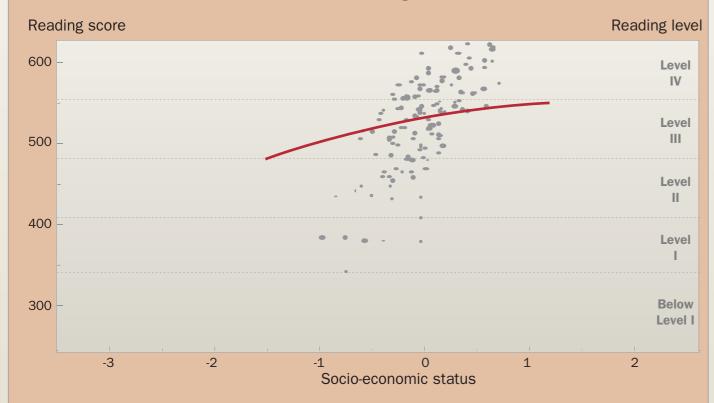
# **PISA 2000 Profile for Japan**

# 1. Student performance

		Mean score in	Mean score				
	Mean	% at read	ding level	Standard deviation of	% of variation	mathematical	in scientific
	score	5	1 or below	reading literacy scores	between schools	literacy	literacy
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 pa	rticipating students	Features of the socio-economic gradient				
	Maan aasia	Deventors of syntained	Difference in reading literacy score if students had the		Slope of the gradient <sup>2</sup>			
	Mean socio- economic status	Percentage of explained variation in student performance	average OECD SES (score points)	Length of the gradient <sup>1</sup>	Overall	Within schools	Between schools	
Japan	-0.40	8	8	2.6	24	3	124	
OECD	0.00	20		3.0	41			

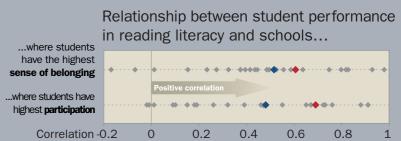
- 1. This shows the socio-economic variation of the middle 90% of students and therefore the gap between the 5 per cent most disadvantaged and the 5 per cent most advantaged students.
- 2. Score point difference associated with one unit increase of SES. Steeper slopes indicate a greater inequality.

# 3. Student characteristics

### **Engagement at school**

In Japan:

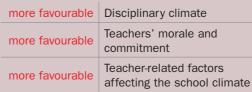
- 38% of students have a *low sense of belonging*, compared to 25% on average in OECD countries.
- 4% of students have *low participation* (attendance), compared to 20% on average in OECD countries.



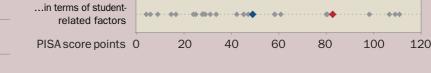
## 4. School characteristics

### **Climate**

Compared to other OECD students, students from Japan have:



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



### Resources

Compared to other OECD students, students from Japan have:

Student disci-

plinary

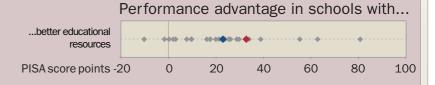
policies

100

95

**OECD** 

lower	Quality of the schools' physical infrastructure
less	Teacher shortage





# **5. System characteristics**

# **School autonomy**

Percentage of students attending schools with at least some responsibility for: Student assess-Student Formulat-Dismiss- Teachers' Teachers' admis- ing school Courses Course Appointing ing Budget Textbooks ment salary starting allocation used policies sions budget offered content teachers teachers increases salaries 91 99 100 100 50 99 33 32 32 23 84 76 71 69 54 26



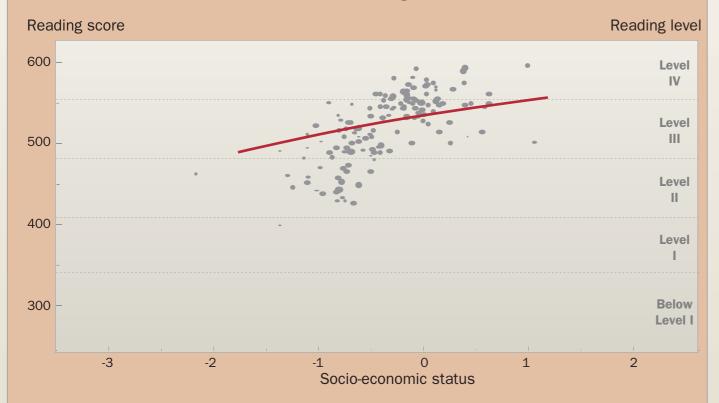
# **PISA 2000 Profile for Korea**

# **1. Student performance**

		Mean score in	Mean score				
	Mean	% at read	ding level	Standard deviation of	% of variation	mathematical	in scientific
	score	5 1 or below reading literacy scores		between schools	literacy	literacy	
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 pa	rticipating students	Features of the socio-economic gradient				
		D		Slo	pe of the gradie	ent <sup>2</sup>		
	Mean socio- economic status	Percentage of explained variation in student performance	score if students had the average OECD SES (score points)	Length of the gradient <sup>1</sup>	Overall	Within schools	Between schools	
Korea	-0.31	9	8	2.9	23	7	68	
OECD	0.00	20		3.0	41			

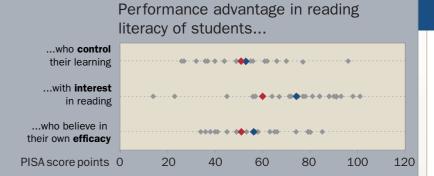
- 1. This shows the socio-economic variation of the middle 90% of students and therefore the gap between the 5 per cent most disadvantaged and the 5 per cent most advantaged students.
- 2. Score point difference associated with one unit increase of SES. Steeper slopes indicate a greater inequality.

## 3. Student characteristics

# **Approaches to learning**

Compared to other OECD students. students from Korea have:

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

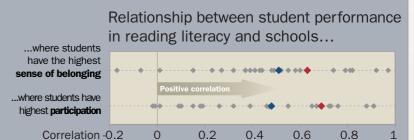


### **Engagement at school**

In Korea:

**Climate** 

- 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.



# 4. School characteristics

# Compared to other OECD students,

students from Korea have: more favourable Disciplinary climate Teachers' morale and commitment

Teacher-related factors more favourable affecting the school climate

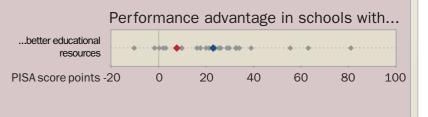
# Performance advantage in schools with a more positive climate... ...in terms of student-

40

### Resources

Compared to other OECD students, students

s from Korea nave:			
lower	Quality of the schools' physical infrastructure		
less	Teacher shortage		





100

# 5. System characteristics

related factors

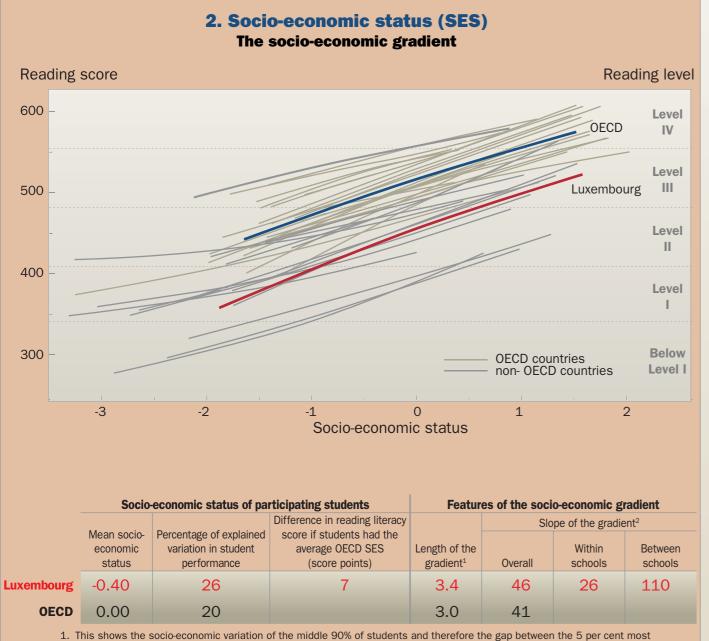
PISA score points 0

# **School autonomy**

	Percentage of students attending schools with at least some responsibility for:											
	Student			Student								
	disci-			assess-	Student	Formulat-				Dismiss-	Teachers'	Teachers'
	plinary	Budget	Textbooks	ment	admis-	ing school	Courses	Course	Appointing	ing	salary	starting
	policies	allocation	used	policies	sions	budget	offered	content	teachers	teachers	increases	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



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



- 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 Performance advantage in reading **Approaches to learning** literacy of students... Compared to other OECD students. ...who control students from Luxembourg have: their learning confidence in their own ..with interest below average learning efficacy. in reading confidence in their own above average ...who believe in reading ability. their own efficacy confidence in their own close to average PISA score points 0 80 100 mathematical ability. Relationship between student performance **Engagement at school** in reading literacy and schools... In Luxembourg: ...where students have the highest • 28% of students have a low sense of belonging, sense of belonging compared to 25% on average in OECD countries. ...where students have • 13% of students have low participation (attendance), highest participation

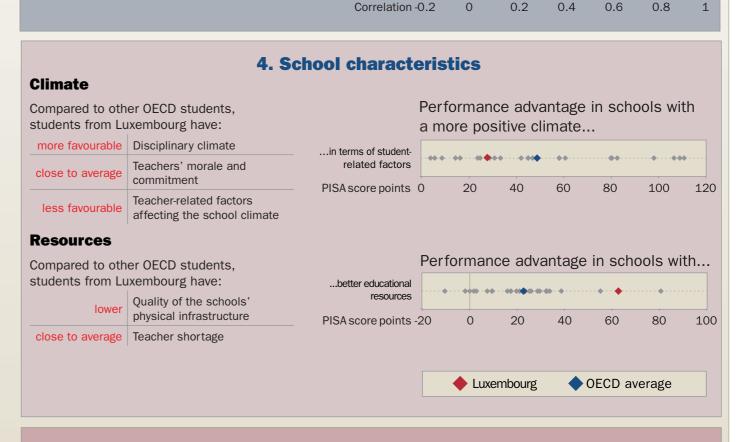
02

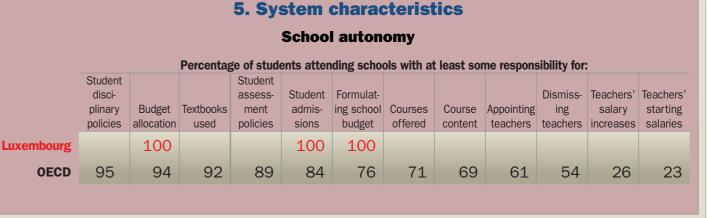
0.4

0.6

0.8

compared to 20% on average in OECD countries.

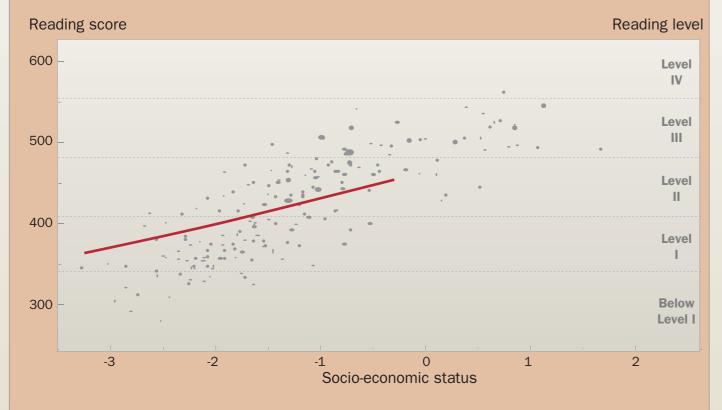




# PISA 2000 Profile for Mexico

	1. Student performance						
	In reading literacy						Mean score
	Mean	% at read	ding level	Standard deviation of	% of variation	mathematical	in scientific
_	score	5	1 or below	reading literacy scores	between schools	literacy	literacy
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 pa	Features of the socio-economic gradient					
	Difference in reading literacy			Slope of the gradie			ent <sup>2</sup>	
	Mean socio- economic status	Percentage of explained variation in student performance	score if students had the average OECD SES (score points)	Length of the gradient <sup>1</sup>	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

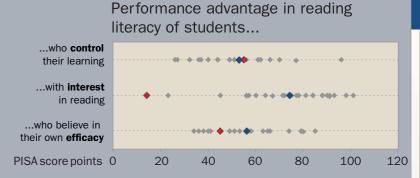
# Approaches to learning

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.

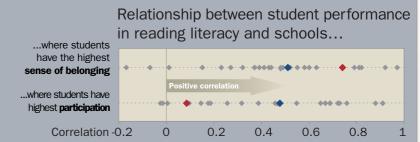
above average confidence in their own mathematical ability.



### **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.

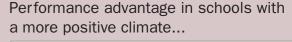


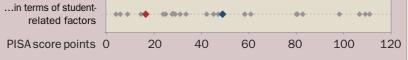
### 4. School characteristics

# **Climate**

Compared to other OECD students, students from Mexico have:

more favourable  more favourable  Teachers' morale and commitment  Teacher-related factors affecting the school climate	students nom wi	students non wexico nave.				
commitment Teacher-related factors	more favourable	Disciplinary climate				
	more favourable					
	less favourable					

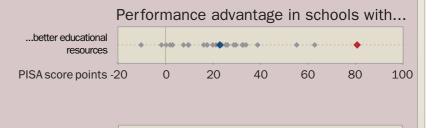




### Resources

Compared to other OECD students, students from Mexico have:

s from Mexico have:				
lower	Quality of the schools' physical infrastructure			
more	Teacher shortage			

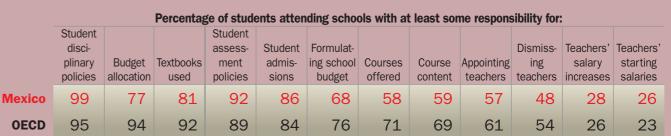


OECD average

Mexico

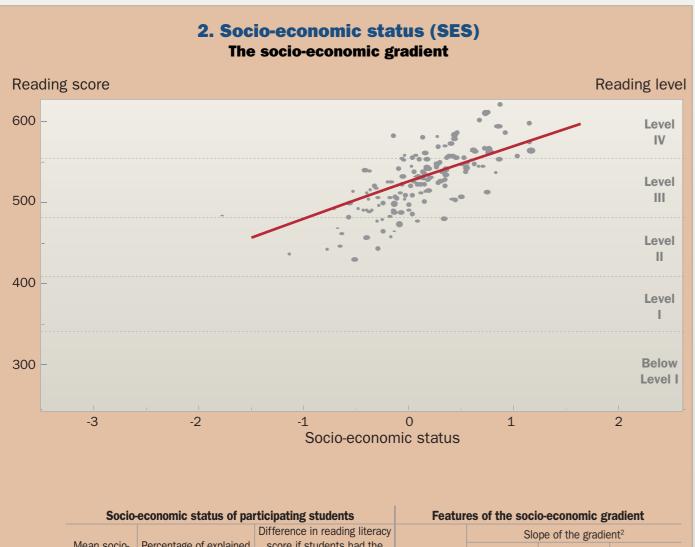


# **School autonomy**





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



	Socio	economic status of pa	Features of the socio-economic gradient				
	Managaria	Demonstrate of combined	Difference in reading literacy		Slo	pe of the gradie	ent <sup>2</sup>
	Mean socio- economic status	Percentage of explained variation in student performance	score if students had the average OECD SES (score points)	Length of the gradient <sup>1</sup>	Overall	Within schools	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

4. School characteristics

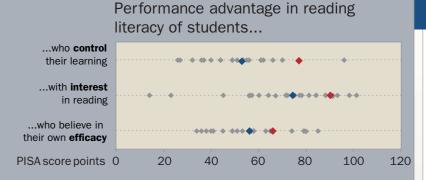
# Approaches to learning

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.

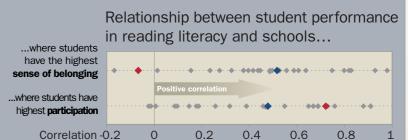
above average confidence in their own mathematical ability.



### **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.



## Climate

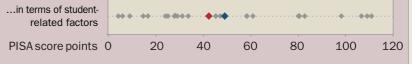
Compared to other OECD students, students from New Zealand have:

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

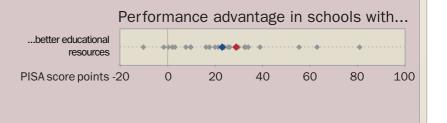
Compared to other OECD students, students from New Zealand have:

close to average

Quality of the schools' physical infrastructure

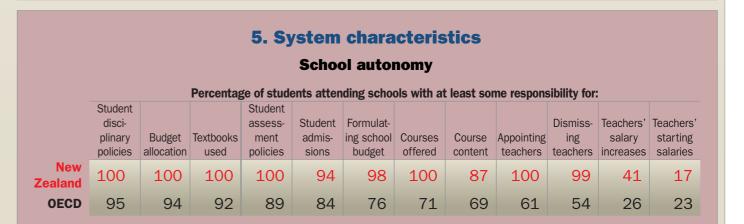
more

Teacher shortage



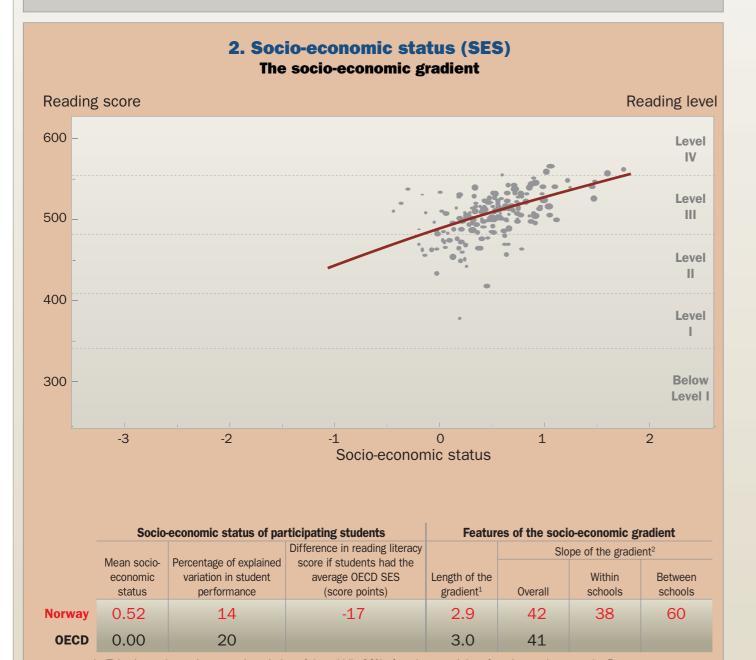
OECD average

New Zealand



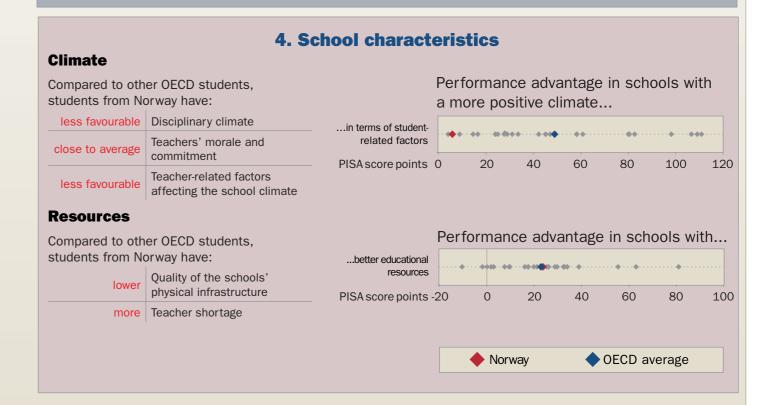


### 1. Student performance In reading literacy Mean score in Mean score % at reading level Standard deviation of Mean % of variation mathematical in scientific 1 or below reading literacy scores score between schools literacy literacy **Norway** 505 11 17 104 11 499 500 **OECD** 500 9 18 100 35 500 500



# 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.

### 3. Student characteristics Performance advantage in reading **Approaches to learning** literacy of students... Compared to other OECD students. ...who control students from Norway have: their learning confidence in their own ...with interest close to average learning efficacy. in reading confidence in their own close to average ...who believe in reading ability. their own efficacy confidence in their own below average PISA score points 0 80 100 mathematical ability. Relationship between student performance **Engagement at school** in reading literacy and schools... In Norway: ...where students have the highest • 21% of students have a low sense of belonging, sense of belonging compared to 25% on average in OECD countries. ...where students have • 18% of students have low participation (attendance), highest participation compared to 20% on average in OECD countries. Correlation -0.2 0.2 0.4 0.6 0.8



<sup>2.</sup> Score point difference associated with one unit increase of SES. Steeper slopes indicate a greater inequality.



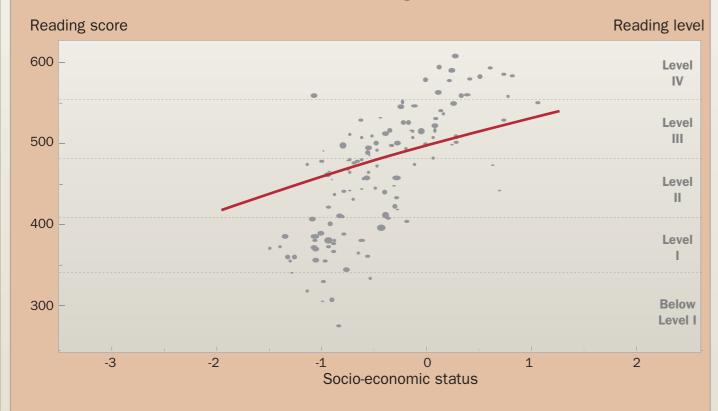
# **PISA 2000 Profile for Poland**

# **1. Student performance**

	In reading literacy						Mean score
	Mean	% at read	ding level	Standard deviation of	% of variation	mathematical	in scientific
	score	5	1 or below	reading literacy scores	between schools	literacy	literacy
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 pa	Features of the socio-economic gradient				
	M	Damanta da afamilaina d	Difference in reading literacy		Slope of the gradient <sup>2</sup>		
	Mean socio- economic status	Percentage of explained variation in student performance	score if students had the average OECD SES (score points)	Length of the gradient <sup>1</sup>	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... ...where students have the highest

...where students have highest participation

sense of belonging

Correlation -0.2 0.2 0.4 0.6

## 4. School characteristics

PISA score points -20

### **Climate**

Compared to other OECD students, students from Poland have:

more favourable Disciplinary climate Teachers' morale and less favourable commitment

Teacher-related factors close to average affecting the school climate

### **Resources**

Compared to other OECD students, students from Poland have:

> Quality of the schools' physical infrastructure less Teacher shortage

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

...in terms of studentrelated factors PISA score points 0



20

Poland ◆ OECD average

60

80

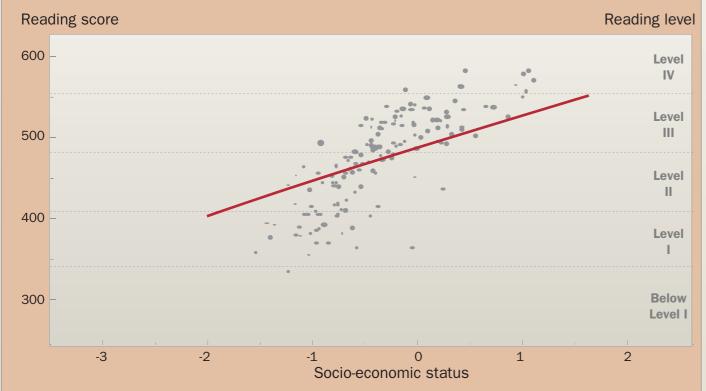
100



# **PISA 2000 Profile for Portugal**

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





	Socio	economic status of pa	Features of the socio-economic gradient				
			Difference in reading literacy		Slo	pe of the gradie	ent <sup>2</sup>
	Mean socio- economic status	Percentage of explained variation in student performance	score if students had the average OECD SES (score points)	Length of the gradient <sup>1</sup>	Overall	Within schools	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

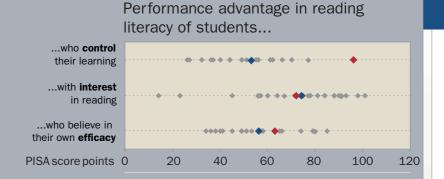
# Approaches to learning

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.

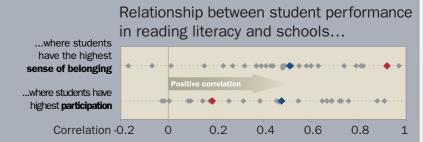


### **Engagement at school**

In Portugal:

**Climate** 

- 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.



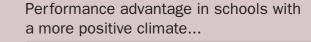
# 4. School characteristics

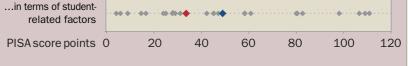
# Compared to other OECD students, students from Portugal have:

 close to average
 Disciplinary climate

 less favourable
 Teachers' morale and commitment

 less favourable
 Teacher-related factors affecting the school climate

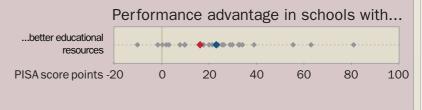




### Resources

Compared to other OECD students, students from Portugal have:

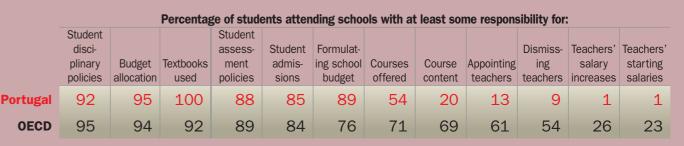
udents from Portugal have:				
higher	Quality of the schools' physical infrastructure			
lose to average	Teacher shortage			





# **5. System characteristics**

# School autonomy





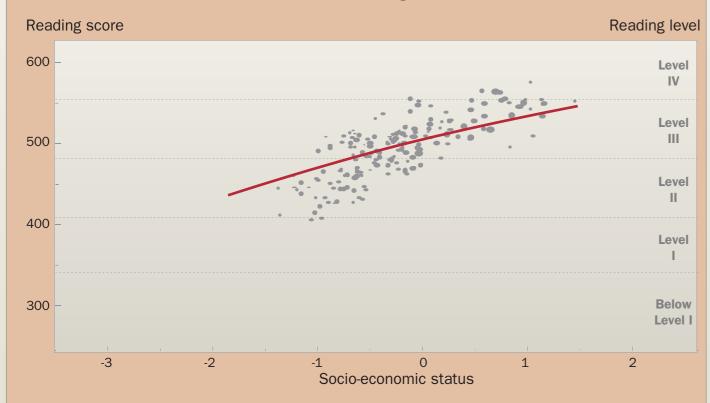
# **PISA 2000 Profile for Spain**

# 1. Student performance

		Mean score in	Mean score				
	Mean	% at read	ding level	Standard deviation of	% of variation	mathematical	in scientific
	score	5	1 or below	reading literacy scores	between schools	literacy	literacy
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 pa	rticipating students	Features of the socio-economic gradient				
	Maanaasia	Deventors of syntained	Difference in reading literacy		Slope of the gradient <sup>2</sup>			
	Mean socio- economic status	Percentage of explained variation in student performance	score if students had the average OECD SES (score points)	Length of the gradient <sup>1</sup>	Overall	Within schools	Between schools	
Spain	-0.24	17	12	3.3	32	20	55	
OECD	0.00	20		3.0	41			

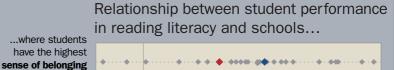
- 1. This shows the socio-economic variation of the middle 90% of students and therefore the gap between the 5 per cent most disadvantaged and the 5 per cent most advantaged students.
- 2. Score point difference associated with one unit increase of SES. Steeper slopes indicate a greater inequality.

# 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.



Positive correlation

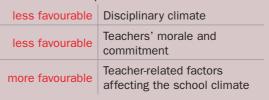
Positive correlation

Correlation -0.2 0 0.2 0.4 0.6 0.8



### **Climate**

Compared to other OECD students, students from Spain have:



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



### **Resources**

Compared to other OECD students, students from Spain have:

Student disci-

plinary

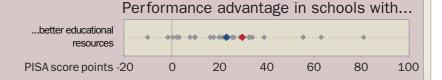
policies

99

95

**OECD** 

students from Spain have:					
higher	Quality of the schools' physical infrastructure				
less	Teacher shortage				



Spain	OECD average

# **5. System characteristics**

### **School autonomy**

Percentage of students attending schools with at least some responsibility for: Student Student Formulatassess-Dismiss- Teachers' Teachers' Budget Textbooks admis- ing school Courses Course Appointing ing ment salary starting allocation used policies sions budget offered content teachers teachers increases salaries 100 97 90 54 86 98 89 84 76 71 69 61 54 26 23



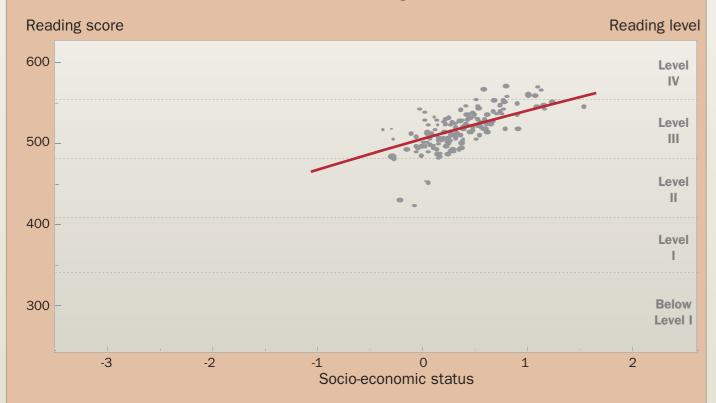
# **PISA 2000 Profile for Sweden**

# 1. Student performance

		Mean score in	Mean score				
	Mean	% at read	ding level	Standard deviation of	Standard deviation of % of variation		in scientific
	score	5 1 or below reading literacy scores between school		between schools	literacy	literacy	
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 pa	rticipating students	Features of the socio-economic gradient				
			Difference in reading literacy	Slope of the gradien			ent <sup>2</sup>	
	Mean socio- economic status	Percentage of explained variation in student performance	score if students had the average OECD SES (score points)	Length of the gradient <sup>1</sup>	Overall	Within schools	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

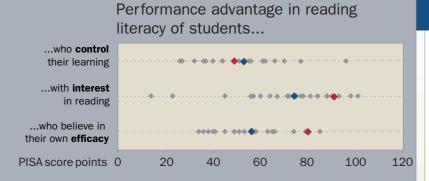
## **Approaches to learning**

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.

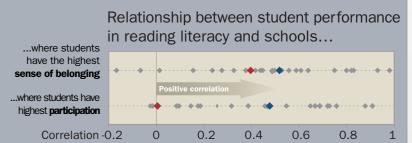
above average confidence in their own mathematical ability.



### **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.

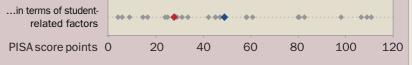


# Climate

Compared to other OECD students, students from Sweden have:

students nom Sweden nave.					
less favourable	Disciplinary climate				
more favourable	Teachers' morale and commitment				
close to average	Teacher-related factors affecting the school climate				
Волошилова					

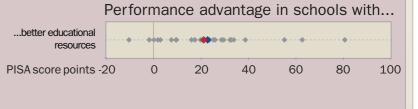
Performance advantage in schools with a more positive climate...



### Resources

Compared to other OECD students, students from Sweden have:

students from Sweden have:				
close to average	Quality of the schools' physical infrastructure			
more	Teacher shortage			





# **5. System characteristics**

4. School characteristics

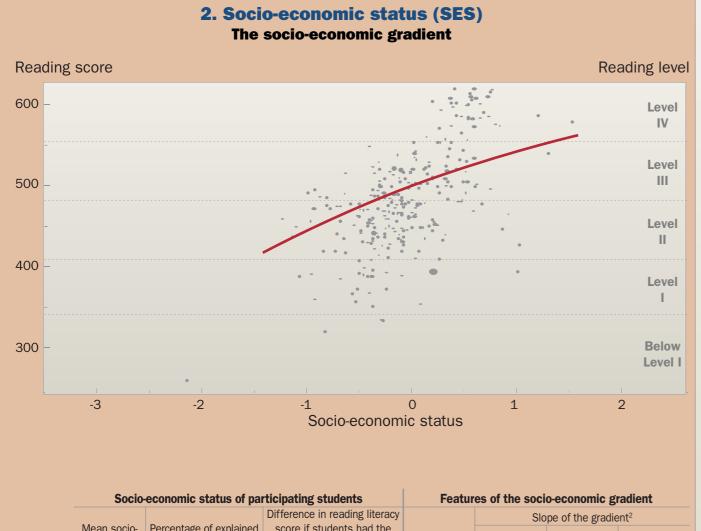
# School autonomy

			Percentag	ge of stude	ents atten	ding schoo	ols with at	least sor	ne respons	sibility for:		
	Student disci- plinary policies	Budget allocation	Textbooks used	Student assess- ment policies	Student admissions	Formulat- ing school budget	Courses offered	Course	Appointing teachers	Dismiss- ing 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



# **PISA 2000 Profile for Switzerland**

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



	Socio	economic status of par	rticipating students	Features of the socio-economic gradient				
			Difference in reading literacy		Slope of the gradient <sup>2</sup>			
	Mean socio-	Percentage of explained	score if students had the					
	economic	variation in student	average OECD SES	Length of the		Within	Between	
	status	performance	(score points)	gradient <sup>1</sup>	Overall	schools	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

highest participation

4. School characteristics

Correlation -0.2

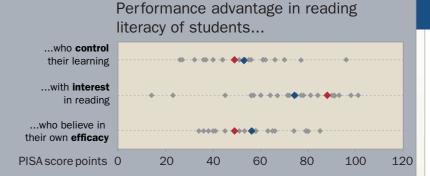
# Approaches to learning

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.

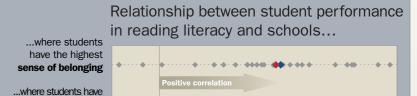
below average confidence in their own reading ability.



### **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.



## 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...

0.6

OECD average

26

54

23

0.8



### Resources

**OECD** 

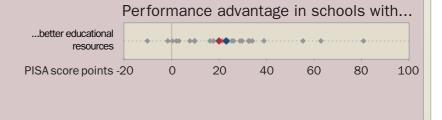
95

92

89

Compared to other OECD students, students from Switzerland have:

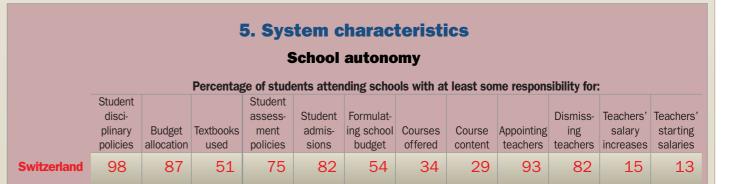
ts from Switzerland have:				
higher	Quality of the schools' physical infrastructure			
less	Teacher shortage			



Switzerland

69

61



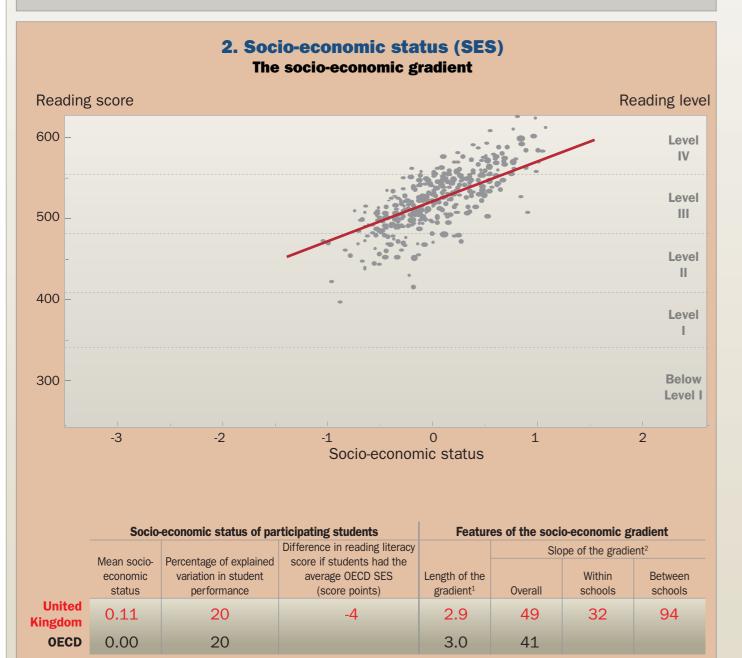
76

71



# **PISA 2000 Profile for United Kingdom**

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



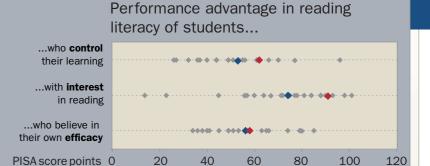
### 1. This shows the socio-economic variation of the middle 90% of students and therefore the gap between the 5 per cent most disadvantaged and the 5 per cent most advantaged students.

## 3. Student characteristics

# **Approaches to learning**

Compared to other OECD students. students from Scotland have:

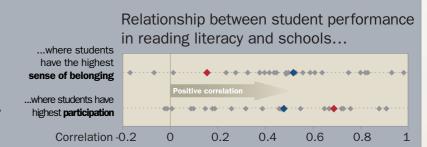
above average	confidence in their own learning efficacy.
above average	confidence in their own reading ability.
above average	confidence in their own mathematical ability.



### **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.



# 4. School characteristics

Compared to other OECD students, students from United Kingdom have

stadonto nom or	iitoa rangaoiii navo.
close to average	Disciplinary climate
close to average	Teachers' morale and commitment
close to average	Teacher-related factors affecting the school climate



40

Performance advantage in schools with

100

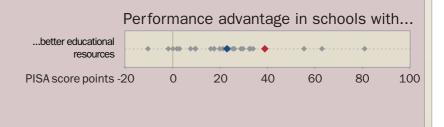
OECD average

### Resources

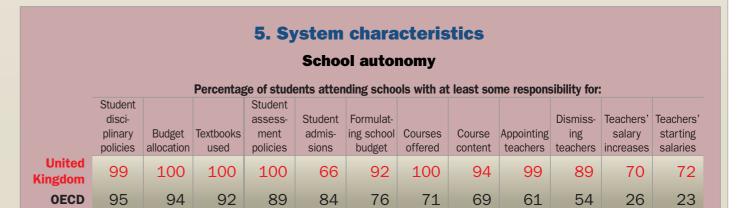
**Climate** 

Compared to other OECD students, studen

its from Ur	ts from United Kingdom have:						
lower Quality of the schools' physical infrastructure							
more	Teacher shortage						



United Kingdom

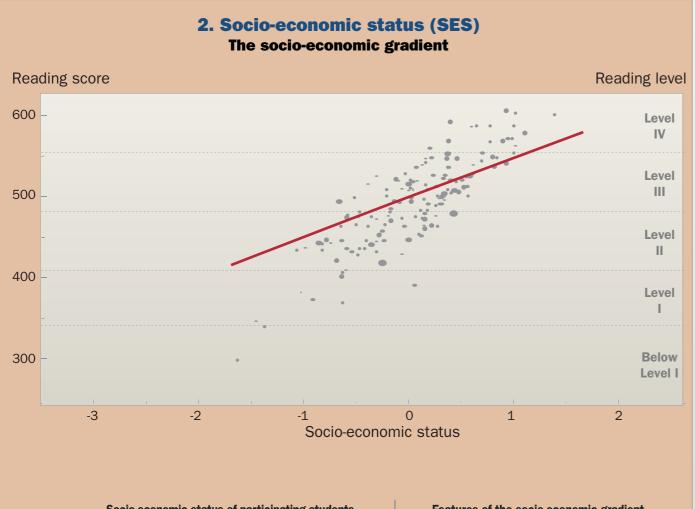


PISA score points 0

<sup>2.</sup> Score point difference associated with one unit increase of SES. Steeper slopes indicate a greater inequality.



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



	Socio	economic status of pa	rticipating students	Features of the socio-economic gradient				
	Managaria	Doministrate of combined	Difference in reading literacy		Slope of the gradient <sup>2</sup>			
	Mean socio- economic status	Percentage of explained variation in student performance	score if students had the average OECD SES (score points)	Length of the gradient <sup>1</sup>	Overall	Within schools	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.
- 2. Score point difference associated with one unit increase of SES. Steeper slopes indicate a greater inequality.

# 3. Student characteristics

Correlation -0.2

4. School characteristics

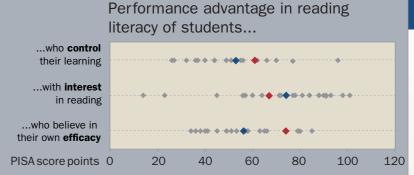
# Compared to other OECD students, students from United States have:

**Approaches to learning** 

above average confidence in their own learning efficacy.

above average confidence in their own reading ability.

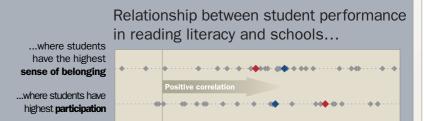
confidence in their own mathematical ability.



### **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.



## Climate

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

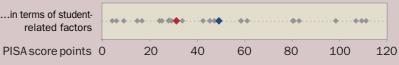
close to average

Teacher-related factors affecting the school climate

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

0.6

0.8



### Resources

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

dents from Ur	nited States have:					
higher Quality of the schools' physical infrastructure						
less	Teacher shortage					





# **5. System characteristics**

# School autonomy

	Percentage of students attending schools with at least some responsibility for:											
	Student			Student								
	disci-			assess-	Student	Formulat-				Dismiss-	Teachers'	Teachers'
	plinary	Budget	Textbooks	ment	admis-	ing school	Courses		Appointing	U	salary	starting
	policies	allocation	used	policies	sions	budget	offered	content	teachers	teachers	increases	salaries
United	99	99	92	93	89	96	97	84	97	98	74	76
States												
OECD	95	94	92	89	84	76	71	69	61	54	26	23

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