

Raising the quality of educational performance at school

**Does poor performance
at school matter?**

**Do high performance standards
come at the price of large
disparities?**

**What can education systems do
to raise performance
standards?**

**Is money always the key
to improving educational
performance?**

**What role can educational
standards play in raising
educational performance?**

**What mechanisms can help
to monitor educational
performance?**

**What support structures are
best suited to translate
evidence into school
improvement?**

**Can devolving responsibility
to the frontline help raise
performance?**

**What role does student
engagement play?**

For further information

For further reading

Where to contact us?

Introduction

To succeed in a rapidly changing world, individuals need to advance their knowledge and skills throughout their lives. Education systems need to lay strong foundations for this, by fostering knowledge and skills and strengthening the capacity and motivation of young adults to continue learning beyond school.

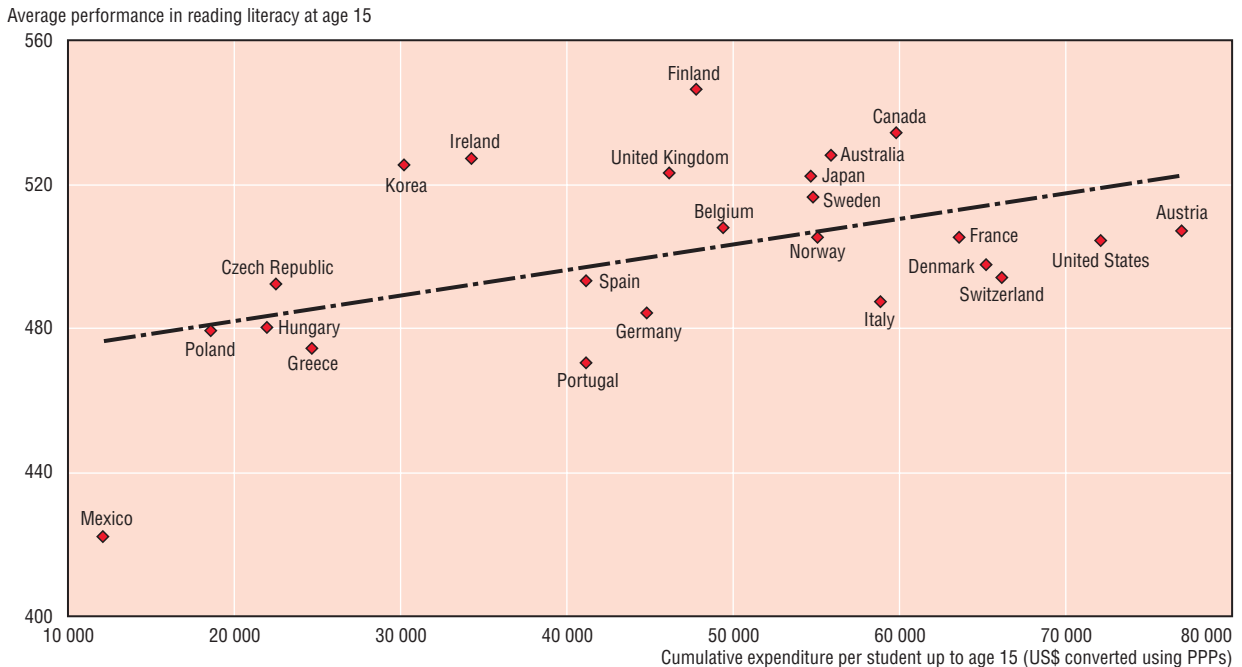
The first OECD-wide assessment of student performance, which was carried out as part of the OECD Programme for International Student Assessment (PISA) in 2000 revealed, however, wide differences in the extent to which countries succeed in equipping young adults with knowledge and skills in key subject areas. The results were disappointing, for some countries, as they showed that their 15-year-olds' performance lagged considerably behind that of other countries, sometimes by the equivalent of several years of schooling and sometimes despite high investments in education (see Figure 1). PISA 2000 also highlighted significant variation in the performance of schools and raised strong concerns about equity in the distribution of learning opportunities.

Even some of the countries that performed well overall saw a significant minority of students – one in five on average across the OECD area – at or below the lowest PISA levels of literacy, signalling serious risks for students in their initial transition from education to work and of failing to benefit fully from further education and learning opportunities throughout life. Often, boys are twice as likely to be found in this group of low performers than girls and in all countries, students from disadvantaged backgrounds faced a significant risk of low performance at age 15.

PISA 2000 also highlighted significant inequalities in the performance of schools. On average across OECD countries, more than one third of the overall performance variation observed between 15-year-olds lies between schools, although this figure ranged from around 10% or less in Iceland, Sweden and Finland to around 70% in Belgium, Germany, Hungary, Austria and Poland. ■

Figure 1. Student performance and spending per student

Relationship between average performance on the PISA reading literacy scale and cumulative expenditure on educational institutions up to age 15 in US \$, converted using purchasing power parities (PPPs)



Source: OECD PISA 2000, www.pisa.oecd.org.

Does poor performance at school matter?

Poor educational attainment comes at a high price for individuals and societies. The share of individuals who have not completed school with an upper secondary qualification – despite significant progress over the last generation, still roughly one in five on average across OECD countries – face significantly poorer labour market prospects.

For example, labour force participation rates rise steeply with educational attainment in most OECD countries. With very few exceptions, the participation rate for graduates of tertiary education is markedly higher than that for upper secondary graduates whose participation rate, in turn, is markedly higher than that for individuals without an upper secondary qualification. The gap in male participation rates is particularly wide between upper secondary graduates and those without an upper secondary qualification and the labour force participation rate for women with less than upper secondary attainment is particularly low.

Similarly, education and earnings are positively linked, with upper secondary education forming a breaking point in many countries beyond which additional education attracts a particularly high premium. In all countries, graduates of tertiary-level education earn substantially more than upper secondary graduates. It is possible to contrast the advantages of education for individuals in terms of higher average earnings, lower risks of unemployment and the public subsidies they receive during their studies with the costs that individuals incur when studying, in terms of the tuition fees they need to pay, lost earnings during their studies or higher tax rates later in life. The annual rate of return on the investment that individuals incur when completing a tertiary degree is higher than real interest rates, and often significantly so, ranging for males from around 7% in Italy and Japan to 17% in the United Kingdom.

Finally, international comparisons show that education plays a pivotal role in fostering labour productivity, and by implication economic growth – not just as an input linking aggregate output to the stock of productive

Raising the quality of educational performance at school

inputs, but also as a determinant of the rate of technological progress. The estimated long-run effect on economic output of one additional year of education in the OECD area is in the order of 6%.

Obviously, learning does not end with compulsory education and modern societies provide various opportunities for individuals to upgrade their knowledge and skills throughout their lives. However, at least when it comes to job-related continuing education and training, about three times as many training hours are invested in employees with a tertiary qualification, on average across OECD countries, than in employees without an upper secondary qualification. Thus, initial education combines with other influences to make job-related training beyond school least likely for those who need it most. This underlines why a solid foundation of knowledge and skills at school is fundamental for the future success of individuals. It is in that sense that the results from PISA 2000 give rise to concern in many countries. ■

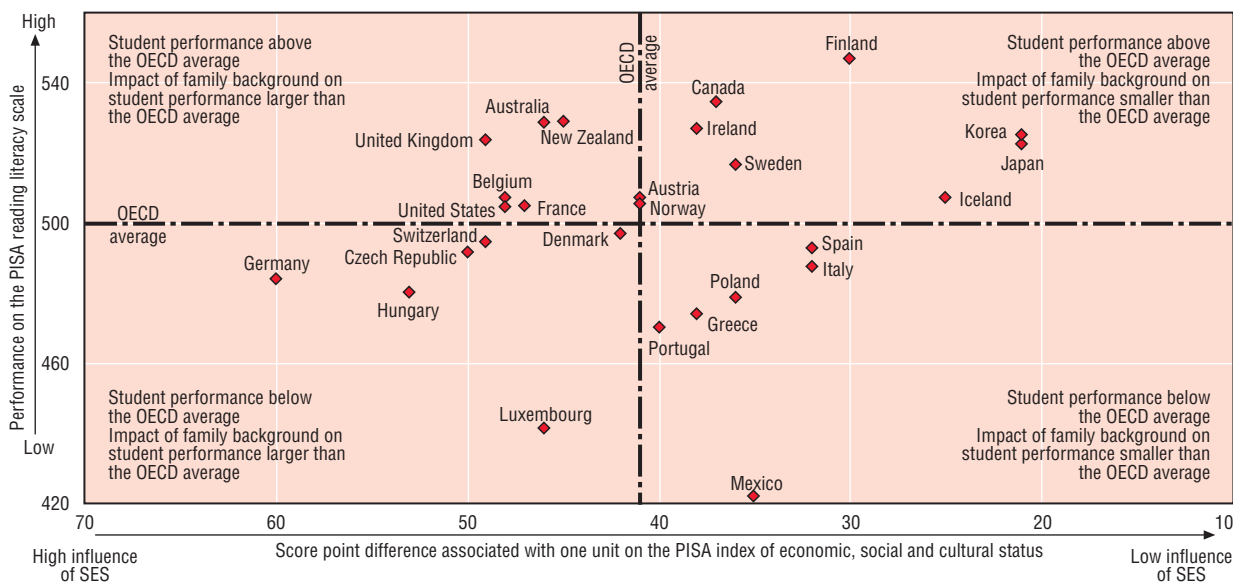
Do high performance standards come at the price of large disparities?

Some of the results from PISA 2000 mirror findings from national assessments of educational performance. But the value international comparisons add lies in revealing what *can* be achieved. Figure 2 summarises the average performance of countries on the PISA 2000 reading literacy assessment (vertical axis) as well as social inequities in the distribution of learning opportunities, as measured by the strength of the relationship between social background and students' knowledge and skills (horizontal axis).

The performance of countries, such as Finland, Japan and Korea, in PISA 2000 reveals that excellence in education is an attainable goal, at reasonable cost. Equally important is that some countries show that it is possible to combine high performance levels with a socially equitable distribution of learning opportunities. In particular, the examples of Canada, Finland, Japan,

Figure 2. Some countries achieve both high performance standards and an equitable distribution of learning outcomes

Relationship between the average performance on the PISA reading literacy scale and the socio-economic distribution of student performance



Note: The mean reading performance in five countries is not statistically different from the OECD average: Denmark, France, Norway, Switzerland and the United States. The socio-economic distribution of student performance in eight countries is not statistically different from the OECD average: Austria, Denmark, Greece, Ireland, New Zealand, Norway, Poland and Portugal.

For the definition of the PISA index of economic, social and cultural status, see Annex 1, "Knowledge and Skills for Life", PISA 2000.

Source: OECD PISA 2000, www.pisa.oecd.org.

Korea and Sweden underline that poor performance in school does not automatically follow from a disadvantaged socio-economic background of students. Results from these countries demonstrate that the challenge of achieving a high and equitable distribution of learning outcomes can be addressed and so set ambitious goals for others. ■

What can education systems do to raise performance standards?

The tradition of education systems is often characterised as knowledge-poor – in the sense that education systems still face difficulties in enabling schools and teachers to share, jointly develop and implement knowledge about their work and performance. While those who run education systems usually have access to relevant evidence, those who deliver educational services at school often do not, or face obstacles in translating such knowledge into effective teaching practices. Some countries leave the establishment of instructional policies and practices entirely to teachers and schools. However, if combined with a knowledge-poor environment, schools and teachers in such situations have often found themselves working in isolation. Other countries have approached the issue with a high degree of prescription over educational content. Often schools and teachers have then found themselves merely at the receiving end of implementing national curricula.

Some countries have begun to link prescription with advanced feedback mechanisms, thus including teachers in the process of development and school improvement but, ultimately, the challenge will be to create a knowledge-rich profession in which those responsible for delivering educational services, most notably teachers and school principals, act as partners and have the authority to act, the necessary information to do so, and access to effective support systems to assist them in implementing change. This also involves improving school leadership and changes in school organisation in ways that strengthen professional networks and encourage collaborative learning within and between schools.

A widely recognised key to creating knowledge-rich schooling systems that can help students to learn better, teachers to teach better, and schools to be more effective, lies in the quality of teachers and teaching, to which another policy brief has been devoted. But to offer quality learning, teachers and schools depend on the right policy framework and

institutional context. Important policy levers here entail formulating educational goals and standards; monitoring adherence to these and feeding results back to the principal stakeholders; establishing rewards, support systems and consequences that flow from them; and combining governance structures that devolve responsibility to the front line with an equitable distribution of learning opportunities. ■

Is money always the key to improving educational performance?

Figure 1 compares the money that countries spend per student, on average, from the beginning of primary education up to the age of 15, with average student performance at age 15. As expenditure per student on schools increases, so also, on average, does a country's mean performance. However, deviations from the trend line suggest that moderate spending per student is not necessarily associated with poor student performance. For example, Ireland and Korea are among the best performing countries, but spend less than US\$35,000 per student up to the age of 15 years, well below the OECD average of US\$45,000. Conversely, Italy spends almost US\$60,000 per student but performs significantly below the OECD average. The results suggest that, as much as spending on schools is necessary for the provision of high-quality schooling, spending alone does not guarantee better outcomes. ■

What role can educational standards play in raising educational performance?

The shift in public and governmental concern, away from mere control over the resources and content of education toward a focus on outcomes has, in many countries, driven the establishment of standards for the quality of the work of educational institutions. The approaches to standard-setting that countries pursue range from the definition of broad educational goals up to the formulation of concise performance expectations in well-defined subject areas. There is still considerable debate as to how standards can best be harnessed to raise educational aspirations, establish transparency with regard to educational objectives and content, and provide a useful reference framework for teachers to understand and foster student learning while avoiding the risks of narrowing the curriculum and teaching to the test.

Some countries have gone beyond establishing educational standards as mere yardsticks and introduced performance benchmarks that students at particular age or grade levels should reach. A question frequently debated in this context is how such performance targets can best be defined to ensure baseline quality in educational outcomes while, at the same time, raising performance and aspirations for *all* students, including those who face particular disadvantages as well as those who show particular talents. Countries have found different answers to this question. England, for example, defines average student performance at the end of each “key stage”; Finland and Sweden establish minimum performance standards that all students should reach at specified grade levels as well as standards that constitute excellence; other countries stick to a normative use of performance standards.

Schools, too, can make an important difference to performance orientation in education. PISA 2000 indicates that students and schools perform better in a climate characterised by high expectations and the readiness to invest effort, the enjoyment of learning, a strong disciplinary climate and good teacher-student relations. Among these aspects, students’ perception of teacher-student relations and classroom disciplinary climate display the strongest relationships with student performance, across countries. Students’ perceptions of the extent to which teachers emphasise academic performance and place high demands on students also tended to be positively related to performance, albeit less strongly so. ■

What mechanisms can help to monitor educational performance?

Performance standards can only work if they are consistently implemented and monitored. Assessments of student performance are now common in many OECD countries – and often the results are widely reported and used in public debate as well as by those concerned with school improvement. However, the rationale for assessments and the nature of the instruments used vary greatly within and across countries. Methods employed in OECD countries include different forms of external assessment, external evaluation or inspection, and schools’ own quality assurance and self-evaluation efforts.

There are also diverging views on how results from evaluation and assessment can and should be used. Some see them primarily as tools to reveal best prac-

tices and identify shared problems in order to encourage teachers and schools to improve and develop more supportive and productive learning environments. 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 funding schools based on their enrolments. These issues lead to the question of what type of performance benchmarks are being used and reported for the various stakeholders involved, including parents, teachers and schools. ■

What support structures are best suited to translate evidence into school improvement?

Formulating educational goals and standards, and monitoring adherence to them, are widely considered to be prerequisites for raising performance levels and are well established in most of the countries that performed well in PISA 2000. But the more difficult challenges lie in: feeding data on performance back to those who deliver educational services, most notably teachers and school principals; establishing rewards and support systems that flow from them; and combining governance structures that devolve responsibility to the front line with an equitable distribution of learning opportunities.

Raising performance levels therefore critically relies on effective support systems, either located at individual school level or in specialised support institutions which provide professional advice and assistance to teachers and school management. Countries have established different types of support systems. Some seek to primarily address heterogeneity in the student body, with services directed towards individual students on a needs basis, including services for students requiring special educational or social assistance, or educational and career counselling. Others relate to establishing networks between individual schools and between schools and other institutions aimed at facilitating performance improvement of teachers and schools. Some countries provide independent professional support structures while others have integrated support systems into school administration, school inspection or the academic sector.

Performance variation between schools provides a particular challenge for quality and equity in education systems. In some countries – including Austria,

Belgium, the Czech Republic, Germany, Greece, Hungary, Italy and Poland – differences between schools accounted for between half and three quarters of the OECD average variation in student performance according to the PISA 2000 assessment. On the other hand, Finland and Sweden trace their success in establishing high and universal performance levels across the entire school system at least in part back to the support structures they provide for schools to recognise and address their weaknesses.

It is noteworthy in this context that much of the difference in average performance of countries in PISA 2000 can be explained by the prevalence of poorly performing students and schools. For example, Germany and Japan have similar proportions of students performing at the highest level of reading literacy in PISA 2000 but Germany has more than twice the proportion than Japan performing at risk levels. The equitable performance standards in Japan make Japan one of the top performers in PISA 2000 while the large disparities in Germany drag overall performance well below the OECD average.

Similarly, countries vary much more in the performance of students from disadvantaged socio-economic contexts than in the performance of students from advantaged backgrounds. This suggests that raising performance levels depends critically on the capacity of education systems to address the needs of poorly performing students and schools.

The approaches countries have chosen for this purpose vary and include increased resource allocation for socially disadvantaged students, changes to selection and streaming practices, or transformation of management structures and practices. Some countries offer non-selective school systems that seek to provide all students with similar opportunities for learning. Other countries respond to diversity by forming groups of students of similar levels of performance through selection either within or between schools, with the aim of serving students according to their specific needs.

The effectiveness of these policies and practices remains controversial but the results from PISA 2000 suggest that both 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. By contrast, virtually all countries that performed well in PISA 2000 place emphasis on strategies and approaches for teaching heterogeneous groups of learners within integrated education systems, which

include a high degree of individualised learning processes. ■

Can devolving responsibility to the frontline help raise performance?

Increased autonomy over a wide range of institutional operations, with the objective of raising performance levels through devolving responsibility to the frontline and encouraging responsiveness to local needs, has been a main aim of the restructuring and systemic reform since the early 1980s.

In fact, in most of the countries that performed well in PISA 2000 local authorities and schools now have substantial autonomy with regard to adapting and implementing educational content and/or allocating and managing resources. In all OECD countries, the majority of 15-year-olds are enrolled in schools which have some responsibility for student admissions (OECD average 84%). With the exception of Germany, Italy and Switzerland, the majority of 15-year-olds are also enrolled in schools that play a role in deciding on the courses offered (the OECD average is 71%). Finally, almost all principals report that disciplinary policies, assessment policies and choice of textbooks are school responsibilities.

In most countries, the vast majority of principals (OECD average 94%) report that their school is involved in decisions on how money is spent within schools. There is more variation with regard to the roles that schools play in the formulation of budgets, Austria and Germany reporting the least involvement of schools with this task. Schools in Australia, Belgium, Italy, Luxembourg, the Netherlands, New Zealand, the United Kingdom and the United States have a comparatively high degree of school autonomy with regard to budget formulation.

By contrast, schools in most countries have little say in the establishment of teachers' starting salaries and in determining teachers' salary increases and there is limited flexibility for schools with regard to the appointment and dismissal of teachers.

Does the distribution of decision-making responsibilities affect student performance? In some countries, most notably Australia, Austria, Canada, Ireland, Spain and Switzerland, the relationship between school autonomy and student performance is strong and significant, even when other school characteristics are held constant. In other countries, the association between the different aspects of school autonomy

and student performance *within* the country tends to be weaker, often because legislation specifies the distribution of decision-making responsibilities so that there is little variation among schools.

When looking *across* countries, PISA 2000 suggests that in those countries in which principals report, on average, a higher degree of school autonomy with regard to choice of courses, the 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.

The trend towards devolved responsibility has also not been uniform across the different areas of decision-making. In some countries, the development and adaptation of educational content can be considered the main expression of school autonomy. Others, by contrast, have focused on strengthening the management and administration of individual schools through market-oriented governance instruments or collaboration between schools and other stakeholders in local communities while, in some cases, even moving towards centralised governance of curricula and standards.

While countries with greater levels of school autonomy in particular areas tended to perform better in PISA 2000, a concern is that greater independence of schools might lead to greater inequalities in the performance of schools. One way to examine this is by relating the PISA measures of school autonomy to the proportion of student performance differences existing between schools. This comparison does not reveal a consistent relationship, and therefore suggests that greater school autonomy is not *necessarily* associated with greater disparities in school performance, as long as governments provide a framework in which poorer performing schools receive the necessary support for improvement. In fact, Finland and Sweden, among the countries with the highest degree of school autonomy on many of the measures used in PISA 2000 display, together with Iceland, the smallest performance differences among schools. ■

What role does student engagement play?

Developing the predisposition of students to engage in learning and the capacity to do so effectively are

important objectives, especially with an eye to fostering lifelong learning. Students who leave school with the capacity to set their own learning goals, and with a sense that they can reach those goals, are potential learners for life.

Although it is difficult for education policy to directly shape student motivation and engagement, the results from PISA 2000 show significant cross-country variation in students' disposition to learning and their engagement with school more generally. The results also show a consistent relationship between student engagement and performance, and it is perhaps no surprise that the country with the highest level of performance in reading literacy, Finland, is also the country where students show – by far – the highest level of engagement in reading. PISA 2000 findings also suggest that student engagement in reading may be an important factor that can offset social disadvantage.

Finally, results from PISA 2000 suggest that schools can make a difference to bringing students into the virtuous circle of seeking mutual reinforcement of cognitive skills, self concept, learning strategies and motivation, particularly for boys. There seems therefore to be room for education policy to contribute to a learning environment and organisation of schools that stimulates the predisposition of students to engage with learning and the capacity to do so effectively. Given that engagement with learning and school is likely to influence students' choices and further educational pathways and, perhaps most importantly, their dispositions towards lifelong learning, such factors need to receive due attention in education systems often still heavily focused on transmitting subject-matter content.

Further PISA assessments in 2003, 2006, 2009, etc. will enable countries to regularly and predictably monitor their progress in meeting key learning objectives, and reveal which countries are progressing in the right direction and which are falling further behind. They will also help to better explain how school resources, policies and practices interact with home background and influence student performance. ■

For further information

For more information about OECD's work on PISA or other indicators on educational performance see www.pisa.oecd.org or contact: Andreas Schleicher, tel.: (33-1) 45 24 93 66, email: Andreas.Schleicher@OECD.org.

For further reading

- **Learners for Life – Student Approaches to Learning**, 2003.
ISBN: 9264103902, €21, 136 p.
- **Student Engagement at School – A Sense of Belonging and Participation**, 2003.
ISBN: 9264018921, €21, 84 p.
- **Literacy Skills for the World of Tomorrow**, 2003.
ISBN: 9264102868, €21, 392 p.
- **Knowledge and Skills for Life. First Results from PISA 2000**, 2001.
ISBN: 9264196714, €21, 322 p.
- **Education at a Glance – OECD Indicators**, 2003.
ISBN: 9264102337, €49, 456 p.
- **Education Policy Analysis, 2003**.
ISBN: 9264104550, €21, 116 p.
- **Reading for Change: Performance and Engagement across Countries**, 2002.
ISBN: 9264099263, €24, 264 p.

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