

Education at a Glance: OECD Indicators - 2005 Edition

Summary in English

Education and lifelong learning play a critical role in the development of economies and societies. This is true in the most advanced economies as well as in those currently experiencing periods of rapid growth and development. Human capital is a key factor in driving economic growth and improving economic outcomes for individuals, and evidence is growing of its influence on non-economic outcomes including health and social inclusion.

Education at a Glance 2005 provides a rich, comparable and up-to-date collection of indicators on the performance of education systems. While the focus is on the 30 OECD countries, the indicators also increasingly cover partner countries. The indicators examine participation in education, what is spent on it, how education and learning systems operate and a wide range of outcomes.

New material includes: a presentation of the Programme for International Student Assessment (PISA) 2003 survey results in Indicators A4, A5 and A6, focusing on the mathematics performance of 15 year olds; data on earnings distribution by education level in Indicator A9; evidence of non-economic outcomes of education in Indicator A10; comparisons of the participation of labour force members in continuing education and training in Indicator C6; an analysis of student learning time out of school in Indicator D1; data on the effect on student performance of the status (public or private) of a school in Indicator D5; and, in Indicator D6, data on whether secondary school systems differentiate among students when organising learning and what impact that has on student performance.

Key findings of this edition are as follows:

More people are studying for longer, but tertiary graduation rates vary widely

Educational attainment continues to grow among the adult population of OECD countries, fed by the rising number of young people obtaining upper secondary and

tertiary level qualifications. Adults aged 25 to 64 now average qualifications that take just over 12 years to complete, about the equivalent of upper secondary education. For young people currently completing their studies, upper secondary education has become the norm, with over 70% reaching this level in all but four OECD countries with data, and an average of one in three young people in OECD countries getting higher qualifications at the university (tertiary-type A) level.

The indicators in *Education at a Glance 2005* also show that:

- Many OECD countries where large numbers failed to complete secondary education in the past are rapidly catching up in terms of upper secondary completion. In Belgium, France, Greece, Ireland and Korea, where around half of those born in the 1950s did not complete secondary school, between 72% and 97% of those born in the 1970s have done so. Young adults in Mexico, Turkey and Portugal remain less likely than those in other countries to have finished upper secondary education.
- Advances in tertiary completion rates have been more uneven than for upper secondary. The total graduates in OECD countries has grown largely due to increases in a few countries. Current graduation rates range from below 20% in Austria, the Czech Republic, Germany and Turkey to over 40% in Australia, Denmark, Finland, Iceland and Poland. Such differences are associated with different tertiary education systems. High graduation rates are more common in countries with more flexible degree structures.
- Females are completing both upper secondary and tertiary education at faster rates than males in most countries. However, females remain less engaged in mathematics and science at secondary school and less likely to obtain tertiary qualifications in these fields.
- Newly updated data show that the number of science graduates per 100 000 employed persons ranges from below 700 in Hungary, to above 2 200 in Australia, Finland, France, Ireland, Korea, and the United Kingdom.

Student performance varies widely across and between countries, in curriculum-linked disciplines like mathematics and in students' wider capacity to solve problems

In 2003, PISA reported for the second time on 15-year-olds' knowledge and skills, focusing on mathematics. Among OECD countries, students in Finland, Korea, the Netherlands and Japan were the top performers in mathematics overall. Many of the most revealing comparisons concerned sources of within-country variation among students, including the extent to which students in different schools perform differently. Among the survey's key findings:

- At least one in five students are proficient in complex mathematics tasks in Australia, Belgium, Canada, Finland, Japan, Korea, the Netherlands, New Zealand and Switzerland. This is an indicator of these countries' pools of people with high-level mathematical skills who are likely to play a crucial role in advancing the knowledge economy.
- Whereas the great majority of students in OECD countries have at least a basic level of mathematical proficiency, the proportion who lack such proficiency varies widely:

from below 10% in Finland and Korea to above one-quarter in Italy, Greece, Mexico, Portugal and Turkey. This is an indicator of how many students are likely to encounter serious problems in using mathematics in the future.

- On average, differences between school results account for about one third of student differences in mathematics performance within each country. A number of countries achieve high levels of performance across schools, with low between-school differences. In Finland, less than 5 per cent of the performance variation among students lies between schools and in Canada, Denmark, Iceland and Sweden it is 17 per cent or less.

Clear returns to education can be measured in terms of individual job prospects, individual earnings and overall economic growth

Investment in education brings both individual and collective rewards. Better-educated adults are more likely to work, and earn on more on average when they do. These effects vary across countries and educational levels. A particularly strong employment effect applies to males without upper secondary education, who are much less likely to work than those who complete this level. The sharpest earnings effects tend to be between those with tertiary qualifications and those who have only gained upper secondary or post-secondary non-tertiary qualifications. Whole-economy effects are harder to measure accurately, but the indicators show clear effects of human capital on productivity and economic growth. Specific indicators show that:

- Females with low levels of education are particularly unlikely to be in work, both compared with males with low levels of education and females with higher levels of education. This is especially pronounced in Greece, Ireland, Italy, Mexico, Spain and Turkey, where fewer than 40% of 25-to-64-year-old females without upper secondary completion are working, compared to over 70% of similarly educated males. In these countries, the great majority of highly educated females are working: at least 70% of those with tertiary qualifications, 63% in Turkey.
- New data on earnings show that, beyond differences in average earnings by educational level, the dispersion of earnings among people with the same educational level varies across countries. For instance, across all educational levels combined, countries such as Belgium, France, Hungary and Luxembourg have relatively few individuals who earn below half of median earnings.
- Rising labour productivity accounted for at least half of GDP per capita growth in most OECD countries from 1990 to 2000. The estimated long-term effect on economic output of one additional year of education in the OECD area generally falls between 3 and 6%. Consideration is also given to the evidence for effects of education on health and social cohesion.

Spending on education is rising, but not always as fast as GDP

OECD countries are expanding the scope of their education systems, but at the same time trying to contain the cost burden on hard-pressed public budgets. Conflicting pressures have produced varying trends. In tertiary education, where student numbers are rising the fastest, pressures to cut unit costs are greatest. In primary and secondary

education, where in some cases demography causes a fall in enrolments, spending per student is rising in almost all countries. Specifically:

- Spending per student in non-tertiary education rose by 30% or more between 1995 and 2002 in Australia, Greece, Ireland, New Zealand, Poland, Portugal, Spain and Turkey. In some other countries it rose by below 10%, and in Sweden it fell slightly.
- In tertiary education, spending per student has in some cases fallen by over 10%, as spending levels have not kept pace with expanding student numbers. This has occurred in the Czech Republic, Poland and the Slovak Republic, where enrolments have risen rapidly; and in Australia and Sweden, where they have grown at a slower rate. In Greece, Spain, Switzerland and Turkey, spending per student in tertiary education has risen by over 30%.
- In only half of countries did the overall growth in educational expenditure at least keep pace with GDP growth between 1995 and 2002. In Ireland, where the GDP grew particularly rapidly, spending on non-tertiary educational institutions grew only about half as fast, although tertiary spending nearly kept pace with GDP. Spending on educational institutions grew over twice as fast as GDP in New Zealand and Turkey at the non-tertiary level, and in Greece, Hungary, Italy, Japan, Mexico, Poland Switzerland and Turkey at tertiary level.

Private spending on education is substantial in some areas, but resources for education continue to depend heavily on the allocation of public budgets

Public funding today provides for most spending by educational institutions, with over 90% of primary and secondary expenditure in OECD countries coming from this source. In tertiary and pre-primary education, private funding is more significant, particularly in certain countries. In recent years, public spending on education has been threatened by a decline in most countries in the percentage of GDP spent publicly overall. The allocation of a growing proportion of these budgets to education has helped to reduce the impact. Indicators on public and private spending show that:

- In tertiary education the percentage of funding coming from private sources varies widely, from below 4% in Denmark, Finland, Greece, Norway to over 50% in Australia, Japan and the United States, and even above 80% in Korea.
- In some countries, tertiary institutions are now relying more heavily on private sources of funding such as fees than they did in the mid-1990s. Private contribution rose by over five percentage points in Australia, Mexico, Portugal, the Slovak Republic, Turkey and the United Kingdom from 1995 to 2002. In primary and secondary education, the shares of public and private spending have remained broadly unchanged.
- On average in OECD countries, public budgets declined relative to GDP; public education spending grew as a share of those budgets, but grew more slowly than GDP. Denmark, New Zealand and Sweden saw particularly significant shifts in public funding toward education.

Educational expectancy continues to rise, and most young people now expect to undertake some tertiary education during their lives.

A child at the age of five can now expect to undertake between 16 and 21 years of education during his or her lifetime, in most OECD countries, if present patterns of participation continue. In every country, educational expectancy measured in these terms has risen since 1995, as participation has risen in pre-primary, upper secondary and tertiary education. On average, 53% of young people will undertake at least some tertiary education at university level or equivalent, based on present patterns.

The indicators show that:

- Expected years in education for a child who was five in 2003 exceeds 16 years in all countries except Luxembourg, Mexico, the Slovak Republic and Turkey, and is greatest in Australia, Belgium, Finland, Iceland, Sweden and the United Kingdom, at between 19 and 21 years.
- In the Czech Republic, Greece, Hungary, Iceland, Korea, Poland, Sweden, Turkey and the United Kingdom, educational expectancy grew by above 15% from 1995 to 2003.
- Based on current participation rates, 53% of today's young people in OECD countries will university level or equivalent programmes. About 16% will enter other types of tertiary programmes (tertiary-type B) – but there is some overlap in these two groups. In Australia, Finland, Hungary, Iceland, New Zealand, Norway, Poland and Sweden, over 60% of young people will enter tertiary-type A programmes. Other forms of tertiary education are most common in Korea and New Zealand, where over half of young people can expect to participate in tertiary-type B education.

Students crossing borders represent a growing and changing feature of enrolment in tertiary education

In 2003, 2.12 million people studying in OECD countries were foreign students, i.e. enrolled outside their country of origin. This represented an 11.5% increase in total foreign students' intakes reported to the OECD since the previous year. Most notably:

- The United States, the United Kingdom, Germany, France and Australia receive 70% of foreign students in OECD countries. Since 1998, Australia's share has risen, but those of the United Kingdom and the United States have fallen.
- In absolute numbers, students from Korea, Japan, Germany, France, Greece and Turkey represent the largest sources of intakes from OECD countries. Students from China, India and Southeast Asia comprise the largest numbers of foreign students from partner countries.

Young adults combine working and learning in different ways, but a substantial number are spending time doing neither

The transition from compulsory education to employment may be very protracted in OECD countries, with learning often interspersed with working. But students who reach their late 20s without gaining qualifications are seriously at risk:

- Those without at least an upper secondary education face higher risk of unemployment. In Belgium, the Czech Republic, Germany, Poland and the Slovak Republic, over 15% of 25-to-29-year-olds without upper secondary qualifications are unemployed.
- In some countries young people are spending substantial amounts of time neither in education nor in jobs (unemployed or outside the labour force). The average time spent in this situation between age 15 and 29 exceeds two years in Belgium, the Czech Republic, Greece, Hungary, Italy, Mexico, the Slovak Republic, Spain, Poland, Turkey and the United States.
- In some countries, education and work largely occur consecutively; in other countries they are concurrent. Work-study programmes, relatively common in European countries, offer coherent vocational education routes to recognised occupational qualifications. In other countries, initial education and work are rarely associated.

Educational inputs can be measured not just by how many hours children learn and in what size classes, but also by learning outside the classroom

In the compulsory years of education, educational inputs vary strikingly across countries. Students can get 50% more instruction time, and be in classes well over 50% larger, in one country compared with another. But not everything occurs in the classroom, and new data from PISA shows that out-of-class learning time also varies greatly. Among the findings on teaching and learning inputs:

- The total number of instruction hours that students are intended to receive between ages 7 and 14 averages 6 852 hours among OECD countries. Formal requirements range from 5 523 hours in Finland to around 8 000 hours in Australia, Italy, the Netherlands and Scotland.
- When the PISA 2003 survey asked 15-year-old students about learning outside class, they gave very different replies across countries. While in Austria, Belgium, the Czech Republic, Iceland, Japan, Norway, Portugal, Sweden and Switzerland, learning in classroom settings makes up 80% of total school-related learning, students in Greece report spending over 40% learning in other settings, including homework and out-of-school classes.
- The average class size in lower secondary education is 24 students per class but varies from 30 or more in Japan, Korea and Mexico to below 20 in Denmark, Iceland and Switzerland.
- On average for the ten OECD countries with data, 30% of the staff in primary and secondary schools are not teachers, ranging from below 20% in Korea and New Zealand to over 40% in the Czech Republic and France.

Teachers' pay and contact time varies greatly across countries, and the pay structure is in some cases changing

Relative to GDP per capita, teachers in some countries are paid over twice as much as in others. Teachers also work very different hours across countries. Supply and demand factors are causing some changes. The indicators show that:

- Mid-career salaries for teachers in lower secondary education are over twice as high as GDP per capita in Korea and Mexico, whereas in Iceland and Slovak Republic salaries are below 75% of GDP per capita.
- Annual teaching hours in lower secondary education ranges from 535 in Japan to over 1 000 hours in Mexico and the United States, with similar variations at other levels.
- On an hourly basis, teachers are much better paid in upper secondary than in primary education. Salary per teaching hour is 80% higher for upper secondary than for primary school teachers in the Netherlands and Spain, but below 5% higher in New Zealand, Poland, the Slovak Republic and the United States.
- A desire to attract new teachers may have contributed to the faster rise in starting salaries than other salaries for teachers since 1996 in Australia, Denmark, England, Finland and Scotland. Mid-career salaries have risen relatively quickly in Austria, Japan, Netherlands, New Zealand and Portugal. In New Zealand, top-of-the-scale salaries have also risen faster than starting salaries, but as it only takes eight years to reach to the top of the scale, this is compatible with recruitment incentives for new teachers.

Different types of schools and school systems perform differently, but the effect of these structural differences needs to be interpreted carefully

The PISA 2003 survey of the mathematics performance of 15-year-olds noted significant differences in performance between students in public and private schools, and some differences between outcomes in secondary education systems with greater or lesser differentiation in the grouping of students. Such comparisons need to be treated with care. The main conclusions were that:

- Private schools generally outperform public schools. Students in private schools score 33 score point higher on average on the mathematics scale, about half a proficiency level. The biggest difference is in Germany (66 points). However, once socio-economic factors are fully taken into account, the performance of private schools no longer tends to be superior.
- Students in more differentiated and selective education systems perform slightly lower on average than those in more comprehensive systems, but this is not statistically significant. More differentiated systems show much larger variation in performance among students, from one school to another and also when comparing students from more and less advantaged family backgrounds.

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