

# Education at a Glance 2006

## *Highlights*



ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT



# EXECUTIVE SUMMARY

*Education at a Glance 2006* 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 include a number of partner countries from throughout the world. The indicators look at who participates in education, what is spent on it, how education and learning systems operate and a wide range of outcomes, from how well secondary school children can solve problems to the effect of education on adults' chances of securing employment.

New material in this edition includes further analysis of results of the 2003 survey of the OECD's Programme for International Student Assessment (PISA), covering the lowest performing students and the effects of family background (Indicator A6), the way classes are organised in schools (Indicator A7) and student access to and use of Information and Communication Technology (ICT) (Indicator D5). Other new data cover: tertiary qualifications (Indicator A3); survival rates in tertiary education (Indicator A3); the impact of demographic trends on education systems and implications for expenditure to the year 2015 (Indicator A11); average tuition fees charged by educational institutions (Indicator B5); trends in expected years of education (Indicator C1); a global picture of the distribution of foreign students by destinations and their contribution to the graduate output of their country of study (Indicator C3); and instruction time per subject for 9-to-14-year-olds (Indicator D1).

Key findings for this edition are as follows:

## ■ Educational attainment is rising across the OECD area

As ever more students participate in education beyond compulsory schooling, the rate of completion of upper secondary education has risen to above eight in ten, and the rate of completion of tertiary education at the level of a traditional degree is now above one-third. However, these averages for the OECD mask wide variations across countries, especially at the tertiary level, where graduation rates are only around one in five in Austria, the Czech Republic and Germany, and one in ten in Turkey. This will have important consequences for the distribution of highly qualified labour in the years ahead.

The indicators show that:

- In most OECD countries, the vast majority of young people are completing upper-secondary education, normally in programmes giving access to further study.
- Some countries saw large increases in the proportion of young people obtaining university degree-level qualifications between 2000 and 2004. The greatest increases were in Italy and Switzerland, where the availability of new shorter duration degrees was associated with at least a doubling in the proportion of young people graduating.
- While large numbers of young people are entering tertiary education, not all complete their courses. In Mexico, New Zealand and the United States, only just over half of those enrolled for degree-level programmes obtain a corresponding qualification, whereas at least 80% do in Ireland, Japan and Korea.

- Gender differences in educational qualification rates continue to shift in favour of females. Among the population aged 25 to 64, men still have on average more years of schooling than women in 18 OECD countries, most markedly in Switzerland and Korea. However, females in younger cohorts are generally doing better in education. Their advantage is especially marked at upper secondary level, where in every country but Turkey their graduation rate is higher than males’.

### ■ **Country differences in student performance at age 15 are characterised by wide variations in the number performing below international norms**

Further analysis of PISA 2003 results shows the extent to which students aged 15 have low performance in mathematics, indicating an inability to use mathematical skills in straightforward real-life contexts. In some countries a large proportion of students underperform; in others very few. In Greece, Italy, Mexico, Portugal, Turkey and the United States at least 25% fail to reach PISA’s Level 2 of mathematics proficiency. In Finland, fewer than 7% perform below this threshold. Analysis of PISA also reveals that:

- Under-performance in mathematics is associated with under-performance in reading to different degrees in different countries. In Belgium, Germany, Japan, Luxembourg, Mexico and the Slovak Republic, students who struggle in mathematics are also relatively likely to struggle in reading. In Finland, Greece, Ireland, Korea, Poland and Sweden, however, this association is relatively weak. This suggests that in the latter countries, weakness in mathematics has more to do with a specialised difficulty with the subject compared to general difficulties with school or with learning.
- Students from the least socio-economically advantaged backgrounds are on average 3.5 times as likely to be low mathematics performers as those from the most advantaged backgrounds. In Belgium, Germany, Hungary and the Slovak Republic, the ratio is highest – above 4.6 to 1. In all OECD countries it is at least 2 to 1.
- Wider socio-economic differences in performance are associated with secondary school systems that differentiate students into different schools or programmes. Student background accounts for, on average, 19% of performance variation in countries with four or five programmes, compared to 14% in countries with only one or two programmes.

### ■ **Investment in education brings high social and private returns, with completion of upper secondary education bringing a particularly large payback for individuals**

Evidence of the public and private benefits of education is growing. Application of knowledge and skills are at the heart of economic growth, with the OECD attributing half of GDP per capita growth from 1994 to 2004 to rising labour productivity. Many national analyses also show positive effects of education on physical and mental health. For individuals, private returns (calculated by comparing future earnings prospects to the private cost of studying) show a rate of return above 8% for tertiary education in all countries, and generally even higher returns at the upper-secondary level. Part of this return is due to better employment outcomes, especially associated with gaining upper secondary qualifications, with the reward greatest for males.

### ■ Demographic change will have significant implications for resourcing education in some countries

In 23 out of the 30 OECD countries as well as in the partner country Chile, there will be fewer children in compulsory schooling over the next decade, and in some countries, the fall will be dramatic. In others, earlier demographic downturns will affect demand for later stages of education and the numbers coming onto the labour market. For example, between 2005 and 2015:

- In Korea, the population aged 5 to 14 will decline by as much as 29%, reducing demand for primary and secondary education.
- In the Czech Republic, Poland and the Slovak Republic, the population aged 15-to-19 will fall by at least 30%, cutting demand for upper secondary education.
- In Spain, the population aged 20-to-29 will fall by 34%.

### ■ Trends in spending on education vary by sector, as well as by country

While education spending overall is rising, in one-third of countries it grew more slowly than GDP between 1995 and 2003. In tertiary education, spending rises have been driven by expanded student numbers, although spending per student has sometimes fallen; in primary and secondary education, the rise has tended to be driven by unit costs as staff salaries increase with general earnings. Specifically:

- Spending per student grew by at least 30% from 1995 to 2003, at levels below tertiary education, in Australia, Greece, Hungary, Ireland, Mexico, the Netherlands, Poland, Portugal, the Slovak Republic and Turkey as well as the partner country Chile.
- Total spending on tertiary education grew by 30% between 2000 and 2003, in the Czech Republic, Greece, Hungary, Mexico, Poland, the Slovak Republic and Switzerland. Half of countries saw more pronounced growth in tertiary spending in this period than in the previous five years.
- The cumulative amount spent on a child's schooling (primary and secondary education) varies from at least USD 100 000 in Austria, Denmark, Iceland, Italy, Luxembourg, Norway, Switzerland and the United States, to below USD 40 000 in Mexico, Poland, the Slovak Republic and Turkey as well as the partner countries Brazil and Chile. However, Hungary, Korea, Poland and Portugal have spent less than average per student in absolute terms, but more than average relative to GDP per capita.

### ■ Private funding is slowly becoming more important, mainly in tertiary education, but public support remains strong

Over 90% of spending on primary and secondary education in OECD countries is public. However, in tertiary education 24% comes from private sources, and this is higher outside Europe. Between 1995 and 2003, the public share across all levels rose in as many countries as it fell. However, in tertiary education the private share has risen overall. It went up by more than 3 percentage points in half of countries reporting data, and by over 9 percentage points in Australia, Italy and the United Kingdom. Specifically:

- The proportion of tertiary education funded privately varies from less than 5% in Denmark, Finland, Greece, Norway and Turkey to more than 50% in Australia, Japan Korea and the United States as well as the partner country Chile.
- Most of private funding comes from households, most notably through tuition fees. One-quarter of countries do not charge fees, and the level of fees among the rest varies widely. All of the seven OECD countries with the highest fees are outside Europe.
- Public funding of education remains a social priority, even in OECD countries with relatively little public involvement in other areas. Between 1995 and 2003, education took a growing share of total public expenditure in most countries. In Denmark, Greece, New Zealand, the Slovak Republic and Sweden there have been particularly significant shifts in public funding in favour of education.

### ■ **Education extends well beyond compulsory schooling for most people, with a majority now taking part in tertiary education**

Educational expectancy – the number of years of study over a lifetime based on present patterns of participation – is above 17 years on average in the OECD area and above 20 years in Australia, Sweden and the United Kingdom. This reflects growing participation both before and after compulsory primary and secondary schooling. Two-thirds of children across the OECD – and three-quarters within Europe – are enrolled in an educational establishment at age 3 to 4. Over half of young people in OECD countries will enter tertiary programmes leading to type A (degree-level) qualifications. In contrast, only 2% of young people will enter advanced research programmes during their lifetime. On average in OECD countries, a 17-year-old can expect to receive 3 years of tertiary education during his or her lifetime. Other significant aspects of educational participation include:

- The importance of non-university level (Type B) tertiary education varies across OECD countries. Although some countries have little of this type of provision, in Belgium and to a lesser extent in Japan and Korea, wide access to these programmes counterbalances comparatively low rates of entry into university-level courses.
- A rapidly growing number of students are enrolling in tertiary education outside their home country. In 2004, they comprised 2.7 million students worldwide, an 8% increase on the previous year and more than twice as many as in 1995. Four OECD countries – France, Germany, the United Kingdom and the United States – receive 52% of these students.
- The amount of non-formal job-related training in which adults engage over their lifetime varies both by country and according to previous qualifications. In Greece, Italy and the Netherlands, adults with tertiary education have a relatively low chance of participating and spend on average around 300 hours or less in such training over their lives; this compares with over 1 000 hours in Denmark, Finland, France and Switzerland.

### ■ **Different countries make very different choices in allocating resources to school instruction**

While all OECD countries have compulsory schooling in primary and lower secondary education, the resources it receives vary greatly. For example, in lower secondary education, the number of students per class, the level of teacher salaries relative to GDP per capita and the annual number

of hours worked per teacher are each at least twice as high in some countries than in others. Specifically in lower secondary education:

- There are 30 or more students per class in Japan, Korea, Mexico and the partner countries Brazil, Chile and Israel, but 20 or fewer in Denmark, Iceland, Luxembourg, Switzerland and the partner country the Russian Federation.
- Teachers earn at least twice as much as GDP per capita in Korea and Mexico, but less than GDP per capita in Hungary, Iceland, Norway, Poland, Sweden and in the partner country Israel.
- The number of teaching hours per year in public schools varies from over 1 000 in Mexico and the United States to 534 in Japan. There are also considerable variations in how teaching time is distributed throughout the year, with, for example, teachers in Iceland working more hours in the year over a 36-week school year than teachers in Denmark where the school year lasts 42 weeks.
- One aspect of schooling that is changing the context of instruction is the spread of ICT. New analysis of data from the PISA study shows that while computers are becoming more widely available in schools, their accessibility remains variable. Some countries have more than one computer for every five students, but it is less than 1 to 10 in Germany, Greece, Mexico, Poland, Portugal, the Slovak Republic, Spain and Turkey as well as in the partner countries Brazil and the Russian Federation.

## EDUCATIONAL ATTAINMENT OF THE ADULT POPULATION

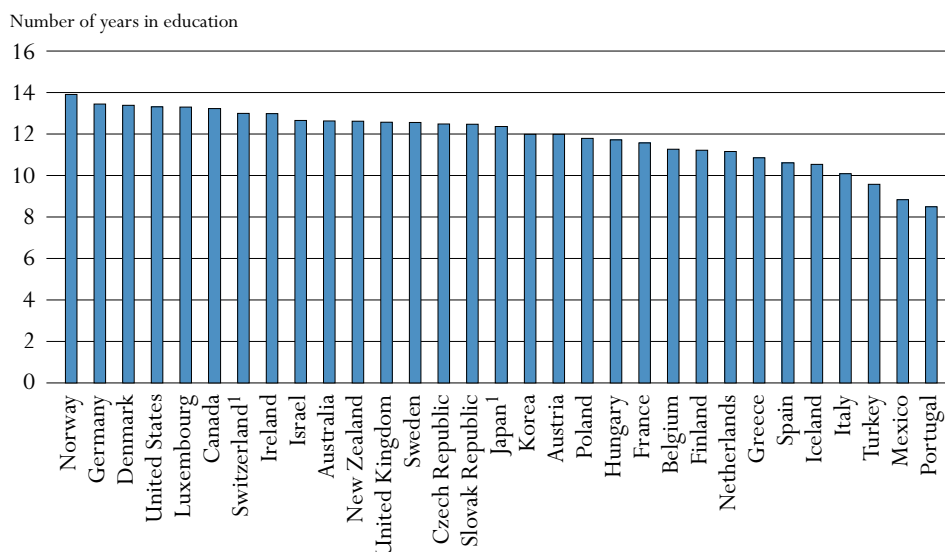
This indicator profiles the educational attainment of the adult population, as captured through formal educational qualifications. As such it provides a proxy for the knowledge and skills available to national economies and societies. Data on educational attainment by age groups are also used in this indicator both to project educational attainment of countries' adult populations ten years in the future and to view changes over time in each country's contribution to the OECD-wide pool of tertiary-level graduates.

### Key results

#### **Chart A1.1. Educational attainment of the adult population: average number of years in the education system (2004)**

*The chart depicts the number of years that today's 25-to-64-year-olds have spent in formal education.*

The average educational attainment of the adult population in OECD countries is 11.9 years, based on the duration of current formal educational programmes. For the 17 countries ranking above the OECD average, years of schooling range on average from 12 to 13.9 years. For the 13 countries below, the spread is greater, ranging from 8.5 to 11.8 years.



1. Year of reference 2003.

Countries are ranked in descending order of the average number of years in the education system of 25-to-64-year-olds. Source: OECD, Table A1.5. See Annex 3 for notes ([www.oecd.org/edu/eag2006](http://www.oecd.org/edu/eag2006)).

StatLink: <http://dx.doi.org/10.1787/701655207564>



### Other highlights of this indicator

- The proportion of individuals who have completed upper secondary education has been growing in almost all OECD countries, rapidly in some: in 22 countries, the proportion ranges from 73 to 97% among 25-to-34-year-olds. Many countries with traditionally low levels of education are catching up and completion of upper secondary education has grown almost everywhere, becoming the norm for youth cohorts.
- In 18 OECD countries, the level of educational attainment among males – measured by the average number of years in schooling – is still higher than that of females, and sometimes considerably so, as in Switzerland and Korea. Nonetheless the difference between males and females is less than 0.4 years in 10 out of these 18 countries.

## CURRENT UPPER SECONDARY GRADUATION RATES

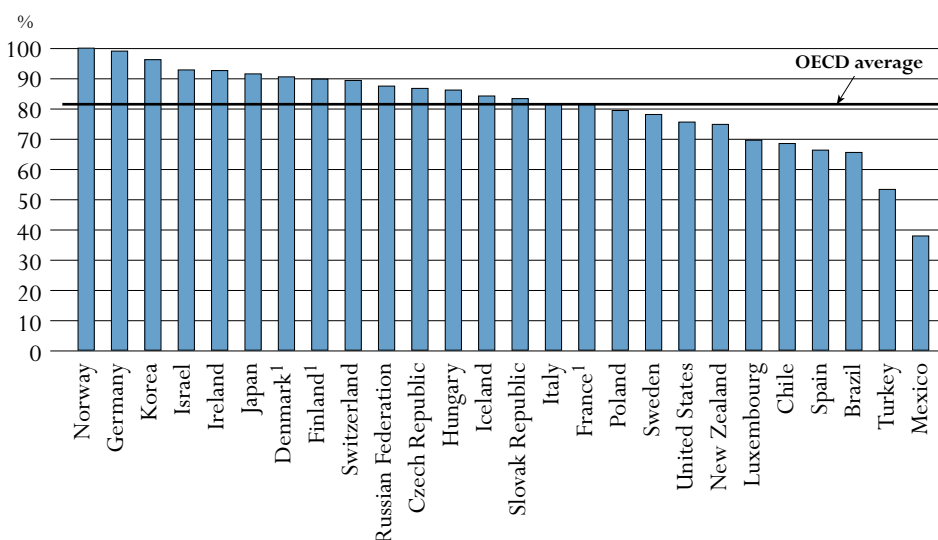
This indicator shows the current upper secondary graduate output of education systems, *i.e.* the percentage of the typical population of upper secondary school age that follows and successfully completes upper secondary programmes.

### Key results

#### Chart A2.1. Upper secondary graduation rates (2004)

The chart shows the number of students completing upper secondary education programmes for the first time, as a percentage of the age group normally completing this level. Although not all of the graduates are in this age band, this calculation gives an indication of how many of today's young people are completing upper secondary education.

In 18 of 22 OECD countries and in 2 of the 4 partner countries for which comparable data are available, the ratio of upper secondary graduates to the population at the typical age of graduation exceeds 70%. In Denmark, Finland, Germany, Ireland, Japan, Korea and Norway, and the partner country Israel, graduation rates equal or exceed 90%. The challenge is now to ensure that the remaining fraction is not left behind, with the risk of limited job prospects that this may entail.



1. Year of reference 2003.

Countries are ranked in descending order of upper secondary graduation rates.

Source: OECD, Table A2.1. See Annex 3 for notes ([www.oecd.org/edu/eag2006](http://www.oecd.org/edu/eag2006)).

StatLink: <http://dx.doi.org/10.1787/141843246636>

### Other highlights of this indicator

- Females are now more likely to complete upper secondary education than males in almost every OECD country, a reversal of the historical pattern. Today, only in Turkey are graduation rates for females below those for males.
- The vast majority of students who graduate from upper secondary programmes graduate from programmes that are designed to provide access to further tertiary education.
- Most students obtain upper secondary qualifications giving them access to university-level study (ISCED 5A), although the extent to which students go on to take up such study varies significantly between countries.
- In many countries, males are more likely to be on vocational courses. Still, in nearly half of the countries represented there is either no gender difference or a higher proportion of females on such courses.
- In some countries, a significant proportion of students broaden their knowledge at the post-secondary non-tertiary level after completing a first upper secondary programme. In the Czech Republic, Hungary and Ireland, 20% or more of a typical age cohort complete a post-secondary non-tertiary programme.

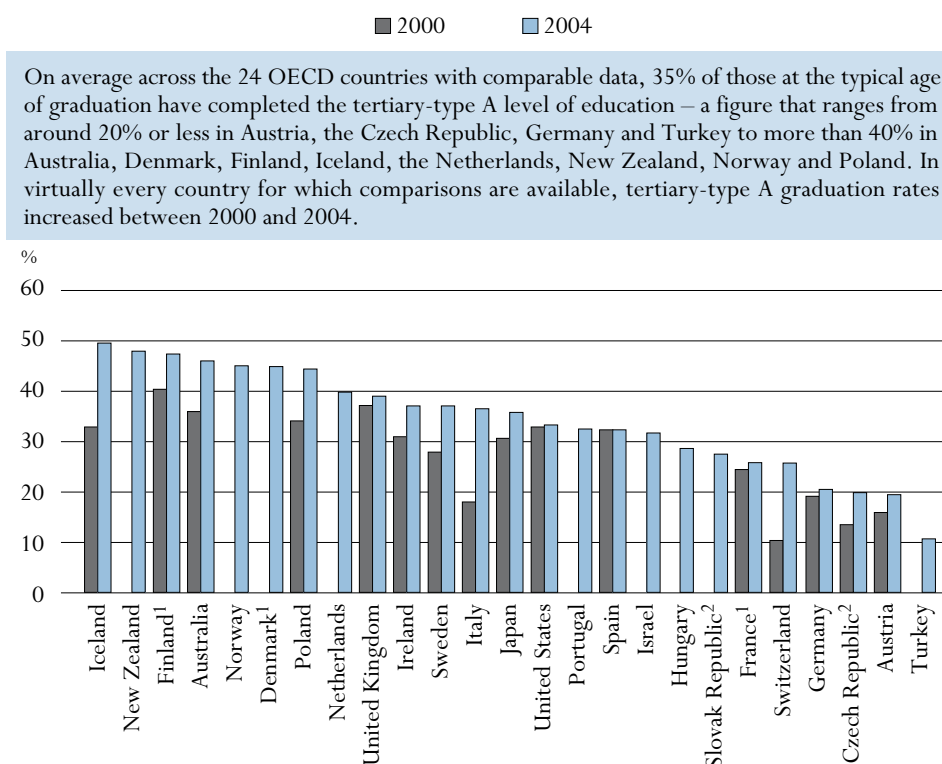
## CURRENT TERTIARY GRADUATION AND SURVIVAL RATES

This indicator first shows the current tertiary graduate output of educational systems, *i.e.* the percentage of the population in the typical age cohort for tertiary education that follows and successfully completes tertiary programmes, as well as the distribution of tertiary graduates across fields of education. The indicator then shows survival rates at the tertiary level, *i.e.* the proportion of new entrants into the specified level of education who successfully complete a first qualification. Tertiary education covers a wide range of programmes, but overall serves as an indicator of the rate at which countries produce advanced knowledge. A traditional university degree is associated with completion of “type A” tertiary courses; “type B” generally refers to shorter and often vocationally oriented courses. The indicator also sheds light on the internal efficiency of tertiary educational systems.

### Key results

#### Chart A3.1. Tertiary-type A graduation rates (2000, 2004)

The charts show the number of students of any age completing tertiary-type A programmes for the first time, in 2000 and 2004, as a percentage of the age-group normally completing each level. Although not all of those completing are in this age band, this figure gives an indication of how many of today’s young people are obtaining a high-level qualification.



1. Year of reference 2003.

2. Gross graduation rate may include some double counting.

Countries are ranked in descending order of the graduation rates for tertiary-type A education in 2004.

Source: OECD. Table A3.1. See Annex 3 for notes ([www.oecd.org/edu/eqg2006](http://www.oecd.org/edu/eqg2006)).

StatLink: <http://dx.doi.org/10.1787/436145613668>

### Other highlights of this indicator

- Tertiary-type A graduation rates tend to be higher in countries where the programmes provided are mainly of shorter duration.
- The graduation rate is 9% at the tertiary-type B level and 1.3% for programmes leading to advanced research qualifications.
- On average, some 30% of tertiary-type A students fail to successfully complete these programmes though there is marked variation from country to country. The highest tertiary-type A “survival rates” are reported by Ireland, Japan and Korea, at over 80% while the survival rates for Mexico, New Zealand and the United States are just over 50%. Tertiary-type B survival rates are on average lower than those for type A programmes.

## WHAT 15-YEAR-OLDS CAN DO IN MATHEMATICS

This indicator examines the mathematics performance of 15-year-old students, drawing on 2003 data from the OECD’s Programme for International Student Assessment (PISA). It describes mathematical proficiency in each country in terms of the percentage of students reaching one of six competency levels as well as in terms of the mean scores achieved by students on the overall mathematics scale and on different aspects of mathematics. It also examines the distribution of student scores within countries.

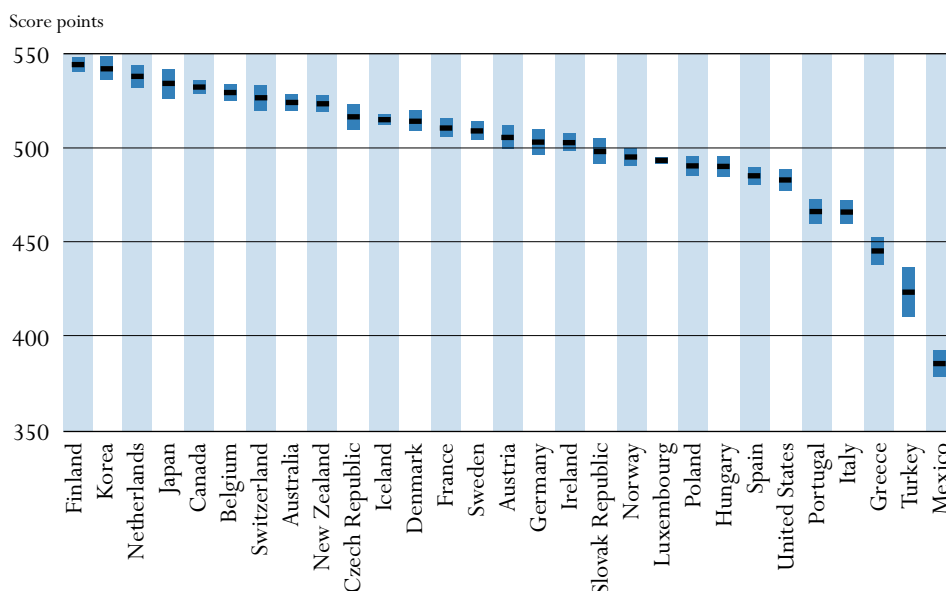
### Key results

**Chart A4.1. Distribution of student performance on the OECD PISA mathematics scale (2003)**

The chart summarises the overall performance of 15-year-old students in different countries on the OECD PISA 2003 mathematics scale. The width of the symbols indicates the statistical uncertainty with which the mean performance was estimated.

- 95% confidence interval around the mean score
- Mean score on the mathematical literacy scale

Three OECD countries (Finland, Korea and the Netherlands) achieve statistically similar average scores that are higher than the average scores in all other OECD countries. Students’ average scores in these countries – ranging from 538 points in the Netherlands to 544 points in Finland – are over one-half a proficiency level higher than the average. Eleven other countries (Australia, Belgium, Canada, Czech Republic, Denmark, France, Iceland, Japan, New Zealand, Sweden, and Switzerland) have mean scores that are above the OECD mean. Four countries (Austria, Germany, Ireland and the Slovak Republic) perform similarly to the OECD mean, and the remaining 11 countries perform below it.



Source: OECD PISA 2003 database. Table A4.3.

StatLink: <http://dx.doi.org/10.1787/564711722418>

### Other highlights of this indicator

- At least 7% of students in Belgium, Japan, Korea, the Netherlands and Switzerland reach the highest level of mathematics proficiency (Level 6). Furthermore, in these countries and in Canada, Finland and New Zealand, over 20% of students reach at least Level 5. In Greece, Mexico, Portugal and Turkey, however, less than 6% of students reach these two levels of proficiency.
- With the exception of Finland and Korea, all OECD countries have at least 10% of students that perform at Level 1 or below, and there are 12 countries in which this exceeds one-fifth of all students. In Mexico and Turkey, a majority of students perform only at Level 1 or below.
- In the majority of countries, the range of performance in the middle half of the students exceeds the magnitude of two proficiency levels, and in Belgium and Germany it is around 2.4 proficiency levels. This suggests that educational programmes, schools and teachers need to cope with a wide range of student knowledge and skills.

## BETWEEN- AND WITHIN-SCHOOL VARIATION IN THE MATHEMATICS PERFORMANCE OF 15-YEAR-OLDS

This indicator examines the between- and within-school variation in student performance on the mathematics scale. It also compares between-school variation in PISA 2000 and PISA 2003.

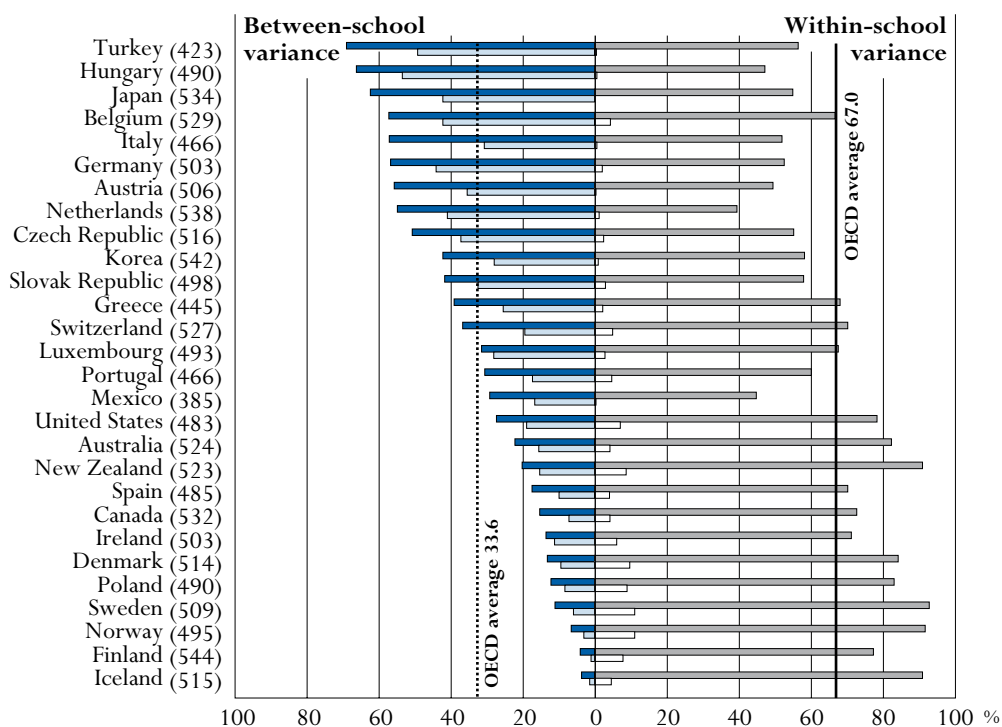
### Key results

**Chart A5.1. Variance in student performance between and within schools on the OECD PISA mathematics scale (2003)**

The chart shows to what extent mathematics performance varies between schools. The longer the left side of the bar, the greater the performance differences among schools. This is measured by the percentage of the average variance in performance that lies between schools. One hundred points on this index equals the total variation in student performance, between and within schools, on average in OECD countries.

- Total between-school variance
- Total within-school variance
- Between-school variance explained by the index of economic, social and cultural status of students and schools
- Within-school variance explained by the index of economic, social and cultural status of students and schools

The proportion of between-school variance is around one-tenth of the OECD average level in Finland and Iceland, and half or less in Canada, Denmark, Ireland, Norway, Poland and Sweden. In these countries, performance is largely unrelated to the schools in which students are enrolled. Canada, Denmark, Finland, Iceland, Ireland, Norway and Sweden also perform well or at least above the OECD average level. Parents in these countries can be less concerned about school choice in order to enhance their children's performance, and can be confident of high and consistent performance standards across schools in the entire education system.



Source: OECD PISA 2003 database. Table A5.1.

StatLink: <http://dx.doi.org/10.1787/332470076170>



### Other highlights of this indicator

- Students in all OECD countries show widely varying performance, but countries vary widely in the extent to which students in different schools perform differently. On average across OECD countries, differences in the performance in mathematics between schools account for 34% of total variation in achievement. However, in nine countries between-school variation is above half the overall variation in OECD countries, while in three countries it is below 10%.
- While some between-school variance is attributable to students' socio-economic backgrounds, some of it also likely reflects the structural features of schools and/or education systems, and/or the policies and practices of school administrators and teachers. Thus, there may be an added value associated with attending a particular school.
- Some, though not all, countries that performed well in PISA also showed low or modest levels of between-school variance, suggesting that securing similar student performance among schools is a policy goal that is both important in itself and compatible with the goal of high overall performance standards.

## FIFTEEN-YEAR-OLD STUDENTS WHO PERFORM AT THE LOWEST LEVELS OF PROFICIENCY IN MATHEMATICS (2003)

This indicator focuses on those students who performed at the lowest levels of proficiency on the OECD Programme for International Student Assessment (PISA) 2003 mathematics literacy scale. It shows the percentages of students performing at these levels on average and across individual countries, and examines the influence of students' background on the likelihood of them being among the lowest performers in mathematics. It looks at the reading proficiency of the lowest mathematics performers to explore whether their low performance in mathematics reflects overall difficulty in school or only in mathematics.

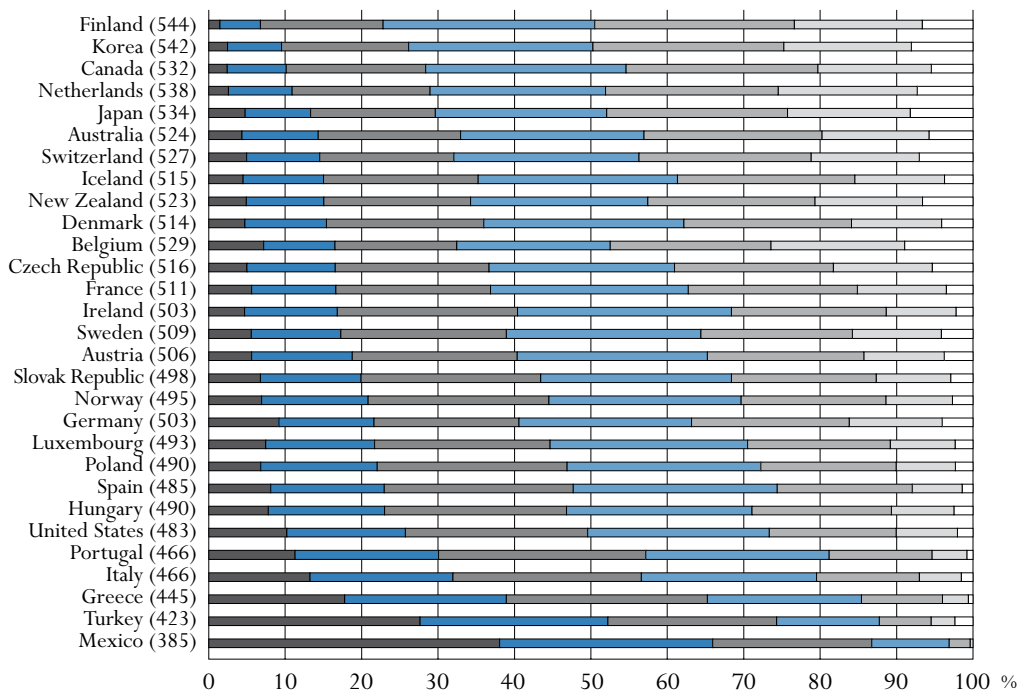
### Key results

**Chart A6.1. Percentage of students at low proficiency levels on the OECD PISA mathematics scale (2003)**

*Level 2 represents a baseline proficiency at which students begin to demonstrate skills that enable them to actively use mathematics. At Level 2, they can use direct inference to recognise the mathematical elements of a situation, are able to use a single representation to help explore and understand a situation, can use basic algorithms, formulae and procedures, and can make literal interpretations and apply direct reasoning.*

■ Below Level 1 ■ Level 1 ■ Level 2 ■ Level 3 ■ Level 4 ■ Level 5 ■ Level 6

A quarter or more of students fail to reach Level 2 in Greece, Italy, Mexico, Portugal, Turkey and the United States. In Finland, less than 7% of students perform below this threshold.



Countries are sorted in ascending order of the percentage of students at Level 1 and below.

Source: OECD PISA 2003 database. Table A4.1.

StatLink: <http://dx.doi.org/10.1787/133160111888>

### Other highlights of this indicator

- Across OECD countries, students from the least socio-economically advantaged backgrounds are on average 3.5 times more likely to be low mathematics performers, *i.e.* at or below Level 1, than those from the most socio-economically advantaged backgrounds.
- Countries vary in the percentage of students who perform both the least well in mathematics and reading, and in the mean reading scores for these lowest mathematics performers. In six countries, students who perform the least well in mathematics have reading scores below the average for all the lowest mathematics performers across all countries *and* there are higher-than-average percentages of low mathematics students who are also among the lowest performing readers. In six other countries, the situation is reversed: the lowest performers in mathematics have above-average reading scores compared to their peers, as well as lower-than-average representation among the lowest performing readers.

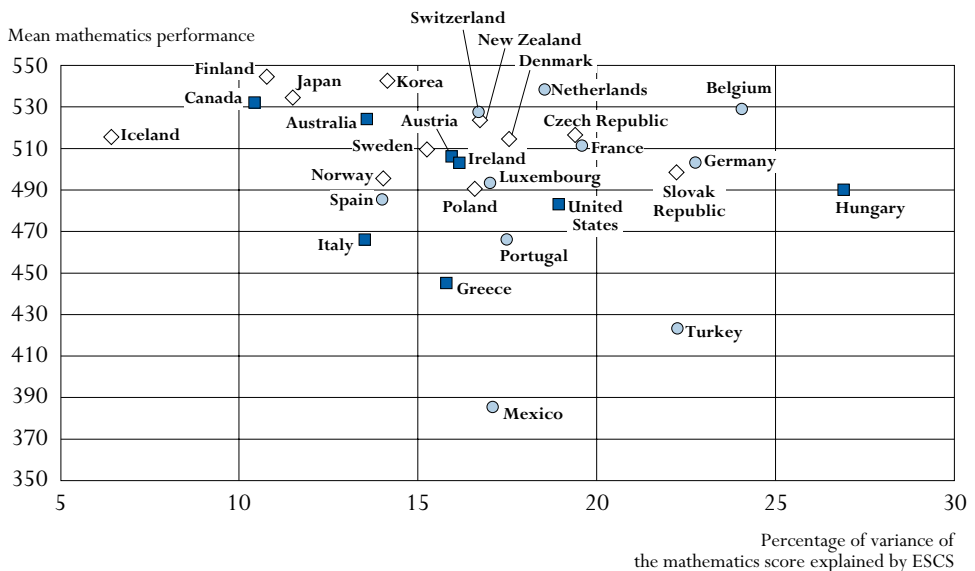
## INSTITUTIONAL DIFFERENTIATION, SOCIO-ECONOMIC STATUS AND 15-YEAR-OLD STUDENTS' MATHEMATICS PERFORMANCE (2003)

As previous analyses of data from PISA have shown, socio-economic background accounts for a sizeable proportion of variance in mathematics performance. Some socio-economic background influences are attributable to the impact of student sorting or selection on the basis of differentiation practices in schools. This indicator examines the relative influence of socio-economic background and three forms of institutional differentiation on student mathematics performance on the PISA 2003 mathematics literacy assessment, and provides evidence on various forms of institutional differentiation and the proportion of variance in student mathematics performance that is associated with these practices relative to the proportion of variance that is attributable to students' socio-economic backgrounds.

### Key results

**Chart A7.1. Performance and variance in mathematics attributable to socio-economic status, by prevalence of grade retention in OECD countries**  
*In countries in which larger proportions of 15-year-old students have repeated the school year, the impact that social background has on mathematics performance tends to be stronger.*

Grade retention rate at age 15: ◇ Less than 7% ■ Between 7% and 15% ○ More than 15%



Source: OECD PISA 2003 database. Table A7.1.

StatLink: <http://dx.doi.org/10.1787/650647703470>

### Other highlights of this indicator

- The relationship between mathematics performance and between-school differences is stronger in countries that offer more distinct education programmes. For example, in countries with one or two programmes, the proportion of variance in mathematics performance associated with differences between schools is 19.2% compared with 42.2% in countries offering four or five programmes.
- On average, differences between grades (related largely to the degree to which students have been retained at some point during their school careers) account for less of the variance in mathematics performance than do differences between schools and differences between programmes. However, the relationship between mathematics performance and between-grade differences is generally stronger among countries in which higher percentages of students have repeated a school year, even though in some countries different starting ages for schools in different regions also play a role.
- Across OECD countries, as the number of distinct education programmes available to 15-year-olds increases, the proportion of variance in mathematics scores associated with socio-economic background also tends to increase. The average proportion of variance in mathematics scores accounted for by differences in students' socio-economic background ranges from 13.8% in countries with one or two programmes to 19.3% in countries with four or five programmes.

## LABOUR FORCE PARTICIPATION BY LEVEL OF EDUCATIONAL ATTAINMENT

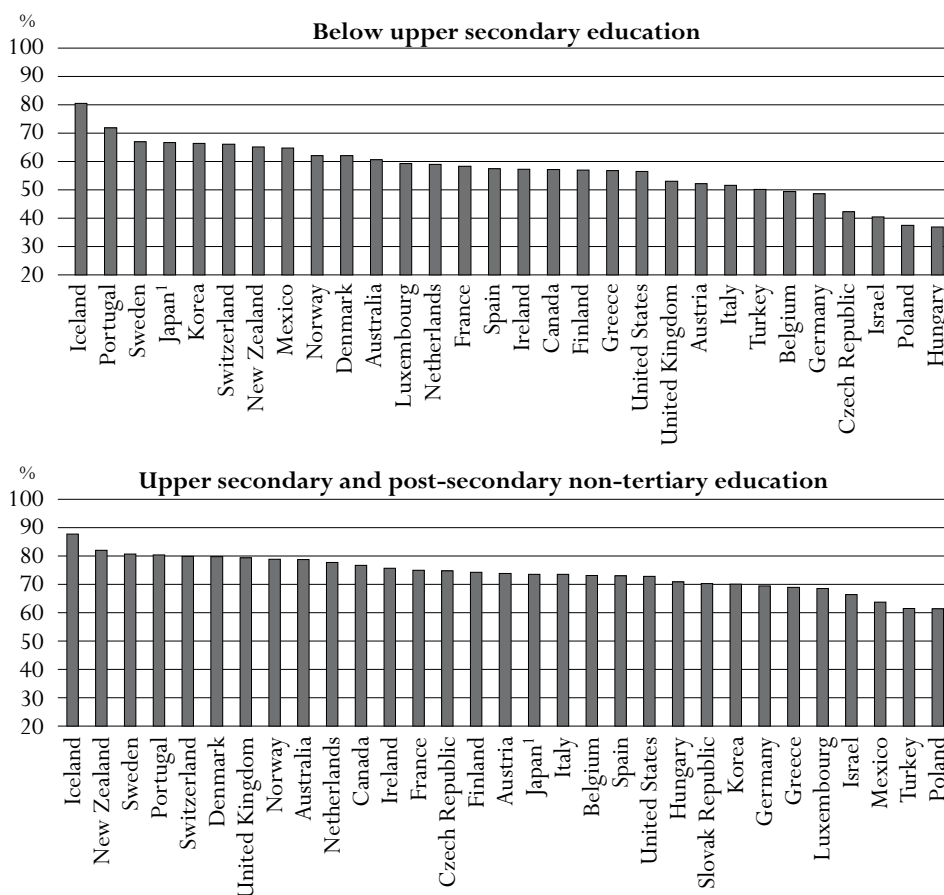
This indicator examines relationships between educational attainment and labour force status, for both males and females, and considers changes in these relationships over time. The match between workers' skills and the skill requirements of the labour market is a critical issue for policy makers.

### Key results

**Chart A8.1. Employment rates by educational attainment (2004)**

The chart shows the percentage of the 25-to-64-year-old population that is employed

Compared to people who have not completed upper secondary education, people who have completed upper secondary education are much more likely to be in work, but the employment advantage of upper secondary attainment varies across countries.



1. Year of reference 2003.

Countries are ranked in descending order of the employment rates.

Source: OECD. Table A8.3. See Annex 3 for notes ([www.oecd.org/edu/eag2006](http://www.oecd.org/edu/eag2006)).

StatLink: <http://dx.doi.org/10.1787/015830764831>

### Other highlights of this indicator

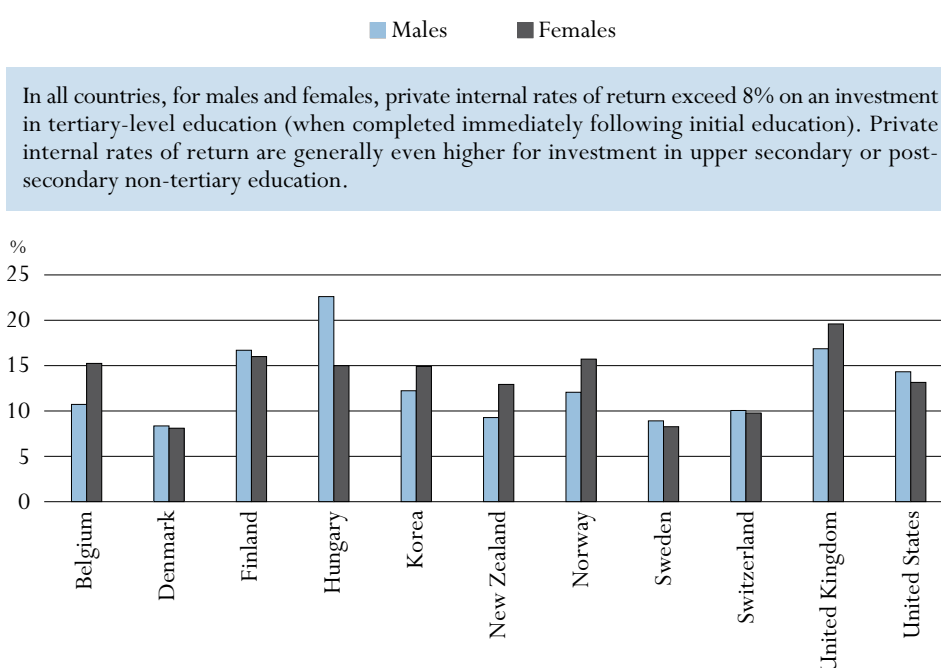
- Employment rates rise with educational attainment in most OECD countries. With few exceptions, the employment rate for graduates of tertiary education is markedly higher than the rate for upper secondary graduates. For males, the gap is particularly wide between upper secondary graduates and those without an upper secondary qualification.
- Differences in employment rates between males and females are wider among less educated groups. The chance of being in employment is 23 points higher for males than for females among those without upper secondary qualifications, falling to 10 points for the most highly qualified.
- Those with low educational attainment are both less likely to be labour force participants and more likely to be unemployed. Unemployment rates fall with higher educational attainment. The greatest gender differences in unemployment rates are seen among lower-qualified adults (Chart A8.3).
- Unemployment rates are higher for females at each level of educational attainment in 12 OECD countries. Unemployment rates are higher for males at each level of educational attainment in only three countries (Chart A8.3).

## THE RETURNS TO EDUCATION: EDUCATION AND EARNINGS

This indicator examines the relative earnings of workers with different levels of educational attainment as well as the financial returns to investment at these levels. Rates of return are calculated for investments undertaken as a part of initial education, as well as for the case of a hypothetical 40-year-old who decides to return to education in mid-career. This indicator also presents data that describe the distribution of pre-tax earnings within five (ISCED) levels of educational attainment to help show how returns to education vary within countries among individuals with comparable levels of educational attainment.

### Key results

**Chart A9.1. Private internal rates of return (RoR) for an individual obtaining a university-level degree (ISCED 5/6) from an upper secondary and post-secondary non-tertiary level of education (ISCED 3/4) (2003)**



In all countries, for males and females, private internal rates of return exceed 8% on an investment in tertiary-level education (when completed immediately following initial education). Private internal rates of return are generally even higher for investment in upper secondary or post-secondary non-tertiary education.

Source: OECD, Table A9.6. See Annex 3 for notes ([www.oecd.org/edu/eag2006](http://www.oecd.org/edu/eag2006)).

StatLink: <http://dx.doi.org/10.1787/815010258467>



### Other highlights of this indicator

- Attaining higher levels of education can be viewed as an economic investment in which there are costs paid by the individual (including reductions in earnings while receiving education) that typically result in higher earnings over the individual's lifetime. In this context, the investment to obtain a university level degree, when undertaken as part of initial education, can produce private annual returns as high as 22.6%, with all countries showing a rate of return above 8%.
- Countries differ significantly in the dispersion of earnings among individuals with similar levels of educational attainment. Although individuals with higher levels of education are more likely to be in the highest earnings group, this is not always the case.
- Countries differ in the relative share of men and women in the upper and lower categories of earnings.
- Females earn less than males with similar levels of educational attainment in all countries (Table A9.3). For a given level of educational attainment, they typically earn between 50 and 80% of what males earn.

## **THE RETURNS TO EDUCATION: LINKS BETWEEN EDUCATION, ECONOMIC GROWTH AND SOCIAL OUTCOMES**

This indicator focuses on the role of human capital as a determinant of the level and rate of growth of output per capita within countries. The indicator complements Indicator A9, which examines the relationship between human capital and economic returns at the individual and public levels. While Indicator A9 depicts what happens to the earnings of an individual as his or her level of schooling rises, Indicator A10 seeks to capture the effects of changes in a country's overall stock of human capital on labour productivity and health status.

### Key results

- The estimated long-term effect on economic output of one additional year of education in the OECD area is generally between 3 and 6%. Analyses of human capital across 14 OECD economies – based on literacy scores – also suggest significant positive effects on growth.
- An analysis by the OECD secretariat of the causes of economic growth shows that rising labour productivity accounted for at least half of GDP per capita growth in most OECD countries from 1994 to 2004.
- Many national analyses indicate a positive causal relationship between higher educational attainment and better mental and physical health.

## IMPACT OF DEMOGRAPHIC TRENDS ON EDUCATION PROVISION

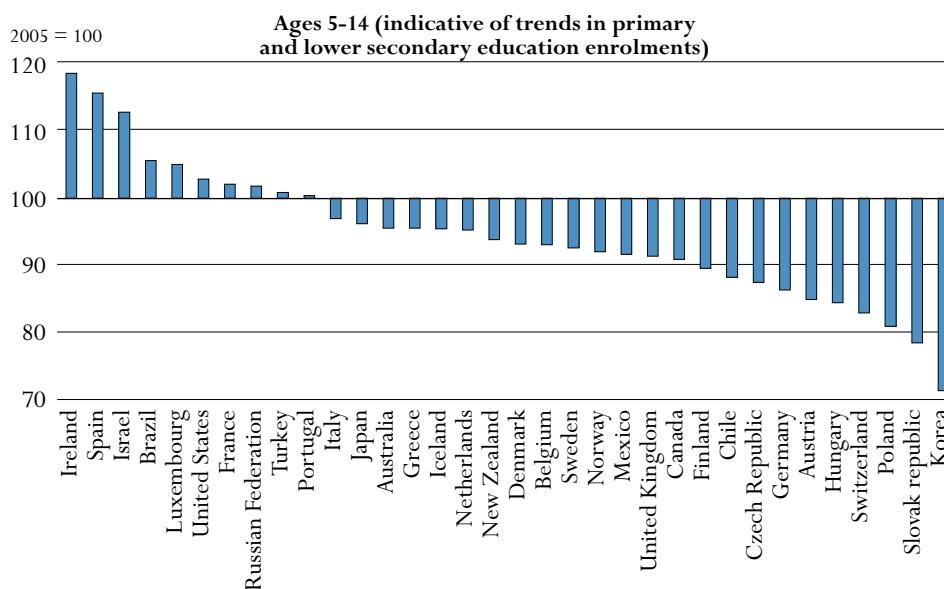
This indicator examines the trends in population numbers over the next ten years and illustrates the impact that these population trends can have on the size of the student population and the corresponding provision of educational services in countries.

### Key results

#### Chart A11.1. Expected demographic changes within the youth population aged 5-14, over the next decade (2005-2015)

*The chart shows the projected change between 2005 and 2015 in the population aged 5-14, broadly corresponding to the age of students in primary and lower secondary education, between 2005 and 2015*

In 23 of the 30 OECD countries as well as in the partner country Chile, the size of the student population in compulsory schooling is set to decline over the next ten years with significant implications for the allocation of resources and the organisation of schooling in countries. This trend is most dramatic in Korea where the population aged 5-14 years is projected to decline by 29%.



Countries are ranked in descending order of the change in the size of the 5- to-14-year-old population. Source: OECD Table A11.1. See Annex 3 for notes ([www.oecd.org/edu/eqq2006](http://www.oecd.org/edu/eqq2006)).

StatLink: <http://dx.doi.org/10.1787/850142374718>

### Other highlights of this indicator

- Sharp downward trends of 30% or more are projected in the population aged 15-to-19 years, broadly corresponding to upper secondary school age, in the Czech Republic, Poland and the Slovak Republic and in the partner country the Russian Federation, with likely impacts on the numbers graduating from upper secondary education and therefore on the pool of students entering tertiary education.
- In some countries, the population decline in the school age population has occurred earlier, and ten years from now will be impacting on the adult population and correspondingly to the flow of new graduates and highly qualified people in the population. For instance, in Spain, the population aged 20-to-29 years is set to decline by 34% over the next ten years.
- Taken together, the population trends over the next ten years present both opportunities and challenges to countries for resourcing education services.

## EDUCATIONAL EXPENDITURE PER STUDENT

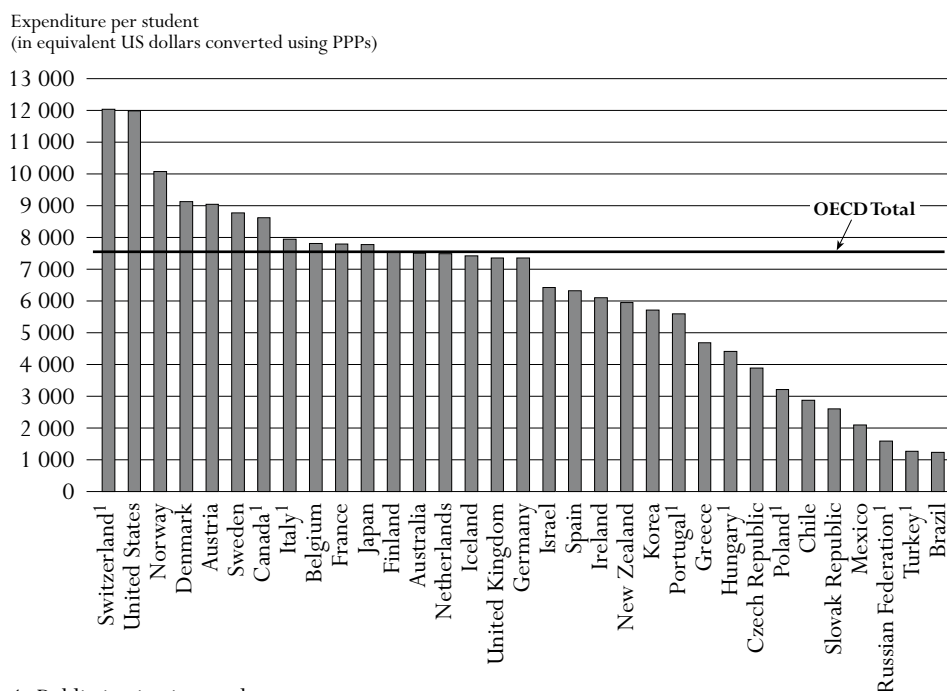
This indicator provides an assessment of the investment made in each student. Expenditure per student is largely influenced by teacher salaries (see Indicators B6 and D3), pension systems, teaching materials and facilities, the programme orientation provided to pupils/students (see Indicator C2) and the number of students enrolled in the education system (see Indicator C1). Policies put in place to attract new teachers or to reduce average class size or staffing patterns (see Indicator D2) have also contributed to changes in expenditure per student.

### Key results

**Chart B1.1. Annual expenditure on educational institutions per student in primary through tertiary education (2003)**

*Expenditure on educational institutions per student gives a measure of unit costs in formal education. This chart expresses annual expenditure on educational institutions per student in equivalent US dollars converted using purchasing power parities, based on full-time equivalents*

OECD countries as a whole spend USD 7 471 per student annually between primary and tertiary education, USD 5 055 per primary student, USD 6 936 per secondary student and USD 14 598 per tertiary student, but these averages mask a broad range of expenditure across countries. As represented by the simple average across all OECD countries, countries spend twice as much per student at the tertiary level than at the primary level.



1. Public institutions only.

Countries are ranked in descending order of expenditure on educational institutions per student.

Source: OECD, Table B1.1a. See Annex 3 for notes ([www.oecd.org/edu/eq2006](http://www.oecd.org/edu/eq2006)).

StatLink: <http://dx.doi.org/10.1787/717773424252>

### Other highlights of this indicator

- Excluding R&D activities and ancillary services, expenditure on educational core services in tertiary institutions represents on average USD 7 774 and ranges from USD 4 500 or below in Greece, Poland, the Slovak Republic and Turkey to more than USD 9 000 in Canada, Denmark, Norway, Switzerland, the United Kingdom and the United States.
- The programme orientation provided to students at secondary level influences the level of expenditure per student in most of the OECD and partner countries. The 14 OECD countries for which data are available spend on average USD 1 130 more per student in upper secondary vocational programmes than in general programmes.
- OECD countries spend on average USD 77 204 per student over the theoretical duration of primary and secondary studies. The cumulative expenditure for each primary and secondary student ranges from less than USD 40 000 in Mexico, Poland, the Slovak Republic and Turkey, and the partner countries Brazil, Chile and the Russian Federation, to USD 100 000 or more in Austria, Denmark, Iceland, Italy, Luxembourg, Norway, Switzerland and the United States.
- Lower unit expenditure does not necessarily lead to lower achievement and it would be misleading to equate lower unit expenditure generally with lower quality of educational services. For example, the cumulative expenditure per student between primary and secondary education of Korea and the Netherlands are below the OECD average and yet both were among the best-performing countries in the PISA 2003 survey.
- In some OECD countries, low annual expenditure per student at the tertiary level still translates into high overall costs per tertiary student because students participate in tertiary studies over a long period of time.
- Countries with low levels of expenditure per student can nevertheless show distributions of investment relative to GDP per capita similar to those countries with high levels of spending per student. For example, Hungary, Korea, Poland and Portugal – countries with expenditure per student and GDP per capita below the OECD average at primary, secondary and post-secondary non-tertiary level of education – spend a higher proportion of money per student relative to GDP per capita than the OECD average.
- Expenditure on education tends to rise over time in real terms, as teachers' pay (the main component of costs) rises in line with general earnings. However the rate of the rise may indicate the extent to which countries contain costs and raise productivity. This differs considerably across educational sectors. Expenditure per student at primary, secondary and post-secondary non-tertiary levels increased by 30% or more between 1995 and 2003 in Australia, Greece, Hungary, Ireland, Mexico, the Netherlands, Poland, Portugal, the Slovak Republic and Turkey, and in the partner country Chile. At the tertiary level, however, spending per student has in some cases fallen, as expenditure does not keep up with expanding student numbers.

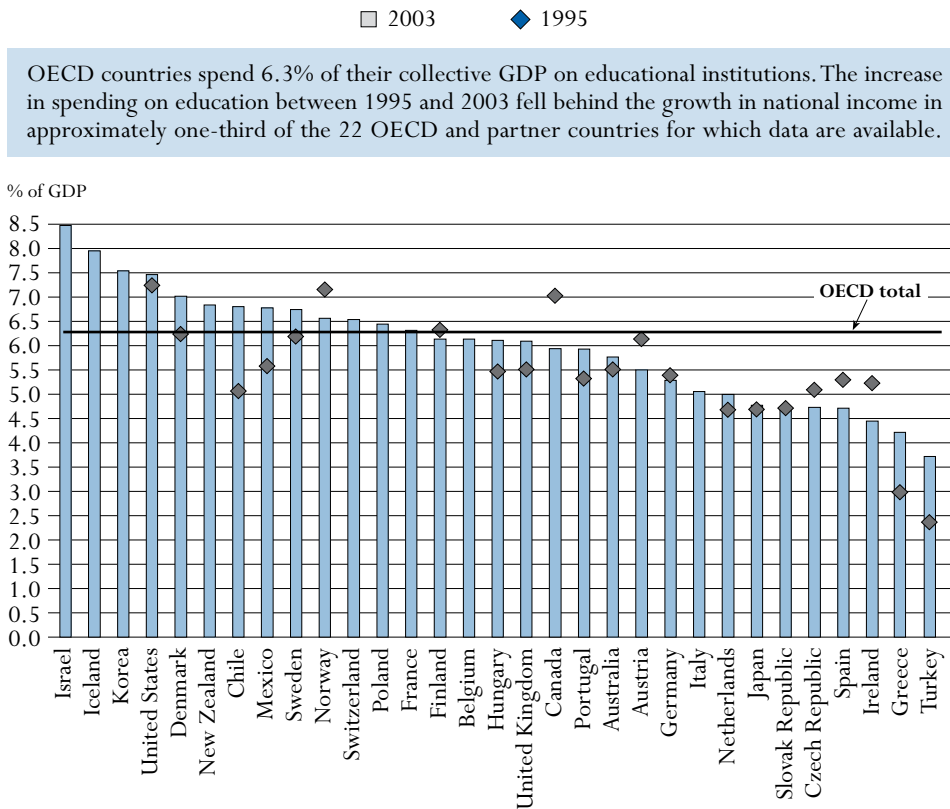
## EXPENDITURE ON EDUCATIONAL INSTITUTIONS RELATIVE TO GROSS DOMESTIC PRODUCT

Education expenditure as a percentage of GDP shows how a country prioritises education in relation to its overall allocation of resources. Tuition fees and investment in education from private entities other than households (see Indicator B5) have a strong impact on differences in the overall amount of financial resources that OECD countries devote to their education systems, especially at the tertiary level.

### Key results

**Chart B2.1. Expenditure on educational institutions as a percentage of GDP for all levels of education (1995, 2003)**

*This chart measures educational investment through the share of national income that each country devotes to spending on educational institutions. It captures both direct and indirect expenditure on educational institutions from both public and private sources of funds.*



Countries are ranked in descending order of total expenditure from both public and private sources on educational institutions in 2003.

Source: OECD, Table B2.1a. See Annex 3 for notes ([www.oecd.org/edu/eq2006](http://www.oecd.org/edu/eq2006)).

StatLink: <http://dx.doi.org/10.1787/633760656440>



### Other highlights of this indicator

- Around two-thirds of expenditure on educational institutions, or 3.9% of the combined GDP in the OECD area, is devoted to primary, secondary and post-secondary non-tertiary education.
- Tertiary education accounts for more than one-quarter of the combined OECD expenditure on educational institutions (1.9% of the combined GDP).
- Canada, Korea and the United States spend 2.4, 2.6 and 2.9% of their GDP respectively on tertiary institutions. These three countries, along with the partner country Chile, show the highest proportions of private expenditure at the tertiary level of education.
- More people are completing upper secondary and tertiary education than ever before, and in many countries the expansion has been accompanied by massive financial investments. In total, expenditure on educational institutions increased in all countries between 1995 and 2003. The increase is usually larger for tertiary education than for the combined primary to post-secondary non-tertiary level of education.
- At the tertiary level of education, over the period 1995-2003, the increase of expenditure is more pronounced from 2000 than before 2000 in half of the countries. Between 2000 and 2003, expenditure increased by more than 30 percentage points in the Czech Republic, Greece, Hungary, Mexico, Poland, the Slovak Republic and Switzerland.
- The size of the school-age population shapes the potential demand for initial education and training and therefore affects expenditure on educational institutions. If the structure of the population in each country were adjusted to the OECD average level, total educational expenditure as a percentage of GDP would be expected to be more than 15% higher in Germany, Italy and Japan, while it would be lower by approximately 30% in Mexico and Turkey. Expenditure at the tertiary level as a percentage of GDP would decrease by 25% in Turkey and increase by up to 18% in Sweden.

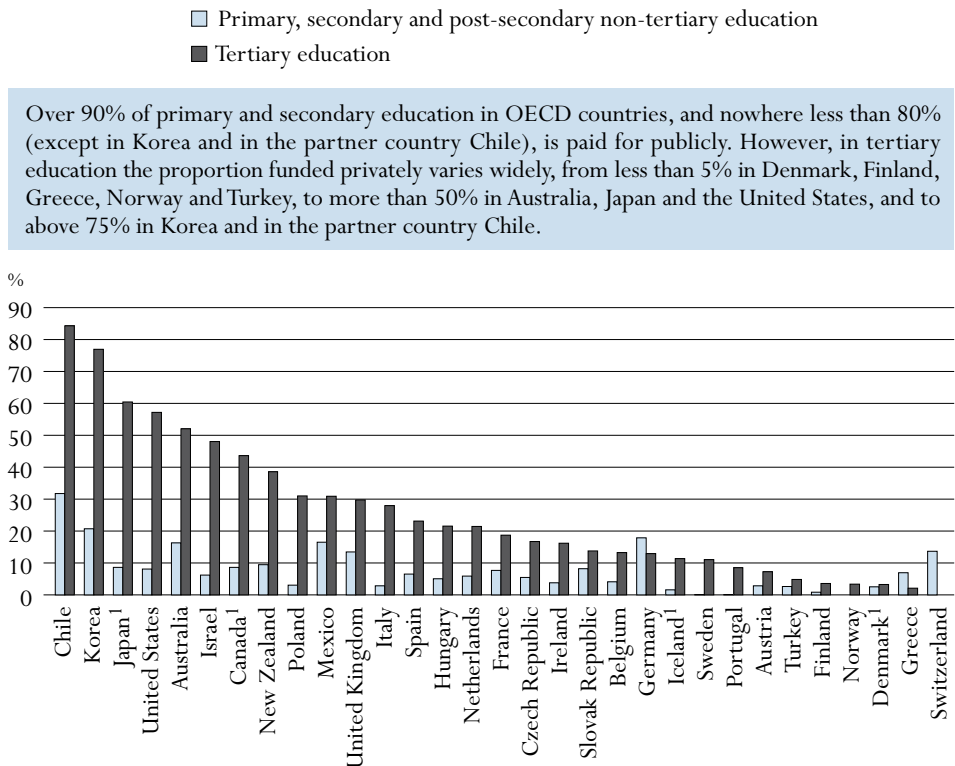
## PUBLIC AND PRIVATE INVESTMENT IN EDUCATIONAL INSTITUTIONS

This indicator examines the proportion of public and private funding allocated to educational institutions for each level of education. It also provides the breakdown of private funding between household expenditure and expenditure from private entities other than households. This indicator sheds some light on the widely debated issue of how the financing of educational institutions should be shared between private entities and the public, particularly those at the tertiary level. The higher the amount of household expenditure required for educational institutions, the stronger the pressure on families. Thus access to tertiary studies may be influenced both by the amount of private expenditure needed and by the financial subsidies to households that are analysed in Indicator B5.

### Key results

#### Chart B3.1. Share of private expenditure on educational institutions (2003)

The chart shows private spending on educational institutions as a percentage of total spending on educational institutions. This includes all money transferred to such institutions through private sources, including public funding via subsidies to households, private fees for educational services or other private spending (e.g. on accommodation) that passes through the institution.



1. Some levels of education are included with others. Refer to “x” code in Table B1.1a for details. Countries are ranked in descending order of the share of private expenditure on educational institutions for tertiary education.

Source: OECD. Tables B3.2a and B3.2b. See Annex 3 for notes ([www.oecd.org/edu/eag2006](http://www.oecd.org/edu/eag2006)).

StatLink: <http://dx.doi.org/10.1787/403751686342>

### Other highlights of this indicator

- Between 1995 and 2003, among countries for which comparable data are available, the share of public funding for all levels of education combined decreased in as many countries as it increased.
- The share of tertiary spending from private sources rose substantially in some countries between 1995 and 2003, but this was not the case at other levels of education.
- On average among the 18 OECD countries for which trend data are available, the share of public funding in tertiary institutions slightly decreased between 1995 and 2000 and every year between 2001 and 2003.
- The share of public funding at the tertiary level in OECD countries represents on average 76% in 2003.
- Compared to other levels of education, tertiary institutions and to a lesser extent pre-primary institutions obtain the largest proportions of funds from private sources: respectively 24% and 19% of funds at these levels come from private sources.
- In tertiary education, households cover 76% of all private expenditure. Private expenditure from other entities than households is still significant, representing 10% or more in Australia, Canada, Hungary, Korea, the Netherlands, Sweden, the United Kingdom and the United States, and the partner country Israel.

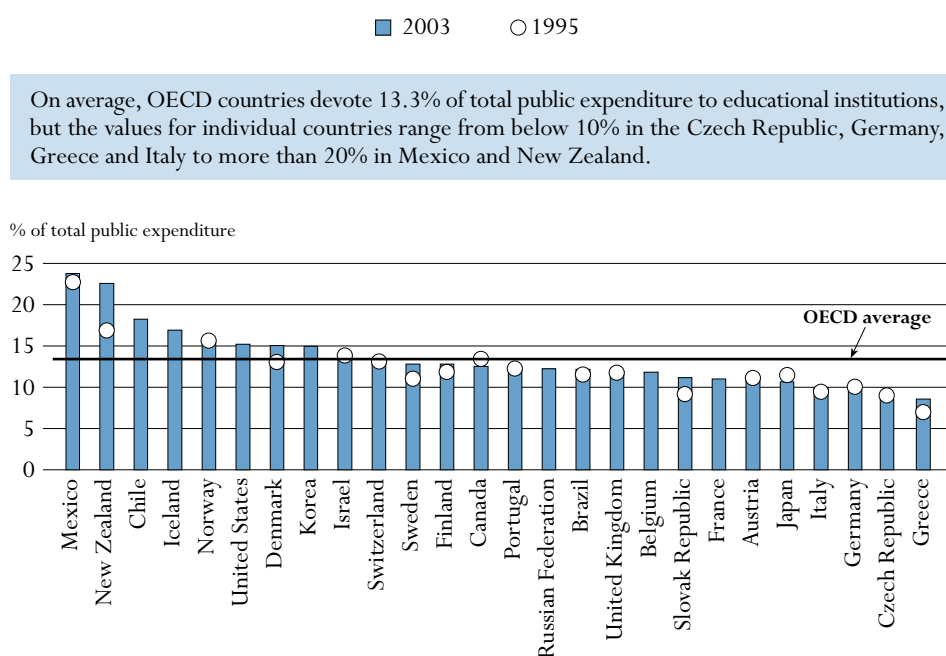
## TOTAL PUBLIC EXPENDITURE ON EDUCATION

Public expenditure on education as a percentage of total public expenditure indicates the value placed on education relative to that of other public investments such as health care, social security, defence and security. It provides an important context for the other indicators on expenditure, particularly for Indicator B3 (the public and private shares of educational expenditure), as well as quantification of an important policy lever in its own right.

### Key results

**Chart B4.1. Total public expenditure on education as a percentage of total public expenditure (1995, 2003)**

The chart shows direct public expenditure on educational institutions plus public subsidies to households (which include subsidies for living costs) and other private entities, as a percentage of total public expenditure, by level of education and year. This must be interpreted in the context of public sectors that differ in the size and breadth of responsibility from country to country.



On average, OECD countries devote 13.3% of total public expenditure to educational institutions, but the values for individual countries range from below 10% in the Czech Republic, Germany, Greece and Italy to more than 20% in Mexico and New Zealand.

Countries are ranked in descending order of total public expenditure on education at all levels of education as a percentage of total public expenditure in 2003.

Source: OECD, Table B4.1. See Annex 3 for notes ([www.oecd.org/edu/eqq2006](http://www.oecd.org/edu/eqq2006)).

StatLink: <http://dx.doi.org/10.1787/086554011765>

### Other highlights of this indicator

- Public funding of education is a social priority, even in OECD countries with little public involvement in other areas.
- In OECD countries, public funding of primary, secondary and post-secondary non-tertiary education is on average three times that of tertiary education, mainly due to largely universal enrolment rates but also because the private share in expenditure tends to be higher at the tertiary level. This ratio varies by country from less than double in Canada, Denmark and Finland to more than five times in Korea and partner country Chile. The latter figure is indicative of the relatively high proportion of private funds that go into tertiary education in Korea and the partner country Chile.
- Between 1995 and 2003, public budgets as a percentage of GDP tended to decline. Education, however, took a growing share of total public expenditure in most countries, although it did not on average grow as fast as GDP. In Denmark, Greece, New Zealand, the Slovak Republic and Sweden, there have been particularly significant shifts in public funding in favour of education.
- On average among OECD countries, 83% of public expenditure on education is transferred to public institutions. In three-quarters of the OECD countries as well as in the partner country Brazil, the share of public expenditure on education transferred to public institutions exceeds 80%. The share of public expenditure transferred to the private sector is larger at the tertiary level than at primary to post-secondary non-tertiary levels and reaches 28% on average among OECD countries with available data.

## TUITION FEES CHARGED BY TERTIARY INSTITUTIONS AND SUPPORT FOR STUDENTS AND HOUSEHOLDS THROUGH PUBLIC SUBSIDIES

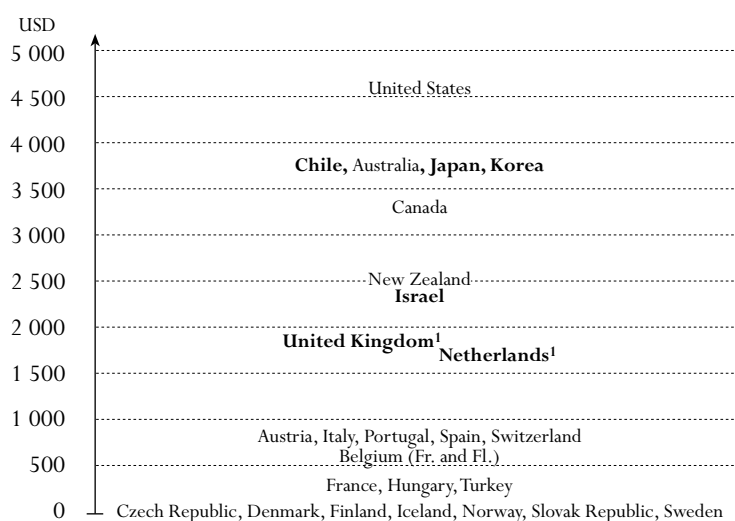
This indicator examines the relationships between annual tuition fees charged by institutions, direct and indirect public spending on educational institutions, and public subsidies to households for student living costs. It considers whether financial subsidies for households are provided in the form of grants or loans and poses related questions central to this discussion: Are scholarships/grants and loans more appropriate in countries with higher tuitions fees charged by institutions? Are loans an effective means to help increase the efficiency of financial resources invested in education and shift some of the cost of education to the beneficiaries of educational investment? Or are student loans less appropriate than grants in encouraging low-income students to pursue their education? While these questions cannot be answered here, this indicator presents the policies for tuition fees and subsidies in different OECD countries.

### Key results

#### Chart B5.1. Average annual tuition fees charged by tertiary-type A public institutions (school year 2003-2004)

*The chart shows the annual tuition fees charged by tertiary-type A public institutions for full-time national students in equivalent US dollars converted using PPPs. Countries in bold indicate that tuition fees refer to public institutions but that more than two-thirds of students are enrolled in private institutions.*

There are large differences between OECD and partner countries for which data are available in the average tuition fees charged by tertiary-type A public institutions. There are no tuition fees charged by public institutions in seven OECD countries, but one-third of countries have annual tuitions fees charged by public institutions for national students that exceed USD 2 000. Among the EU19 countries, only the Netherlands and the United Kingdom have annual tuitions fees that represent more than USD 1 000 per full-time student; these relate to government-dependent institutions.



*Note:* This chart does not take into account grants, subsidies or loans that partially or fully offset the student's tuition fees.

1. Public institutions do not exist at this level of education and all the students are enrolled in government-dependent institutions.

Source: OECD, Table B5.1. See Annex 3 for notes ([www.oecd.org/edu/eqg2006](http://www.oecd.org/edu/eqg2006)).

StatLink: <http://dx.doi.org/10.1787/540845273375>

### Other highlights of this indicator

- In OECD countries where students are required to pay tuition fees, public subsidies are of particular importance in providing students with access to educational opportunities regardless of their financial situation. In, for example, Australia, New Zealand and the United Kingdom, and the partner country Chile, closely regulated public subsidies are earmarked for payments to educational institutions.
- Low annual tuition fees charged by tertiary-type A institutions are not associated systematically with a low proportion of subsidies provided to households/students. Except Iceland, all the Nordic countries with no tuition fees devote more than 10% of total public expenditure on tertiary education for scholarships/grants designed to help students cover their living expenses.
- An average of 17% of public spending on tertiary education is devoted to supporting students, households and other private entities. In Australia, Denmark, New Zealand, Norway and Sweden, and the partner country Chile, public subsidies to households account for about 28% or more of public tertiary education budgets.
- Subsidised student loan systems operate in some countries with high levels of participation at the tertiary level. It is notable, for instance, that Australia, New Zealand, Norway and Sweden, which are among OECD countries reporting the largest subsidies in the form of student loans at tertiary education, also have some of the highest rates of entry into tertiary education of OECD countries.

## EXPENDITURE IN INSTITUTIONS BY SERVICE CATEGORY AND BY RESOURCE CATEGORY

This indicator compares OECD countries with respect to the division of spending between current and capital expenditure, and the distribution of current expenditure by resource category. This indicator is largely influenced by teacher salaries (see Indicator D3), pension systems, teacher age distribution, size of the non-teaching staff employed in education (see Indicator D2 in *Education at a Glance 2005*) and the degree to which expansion in enrolments requires the construction of new buildings. It also compares how OECD countries' spending is distributed by different functions of educational institutions.

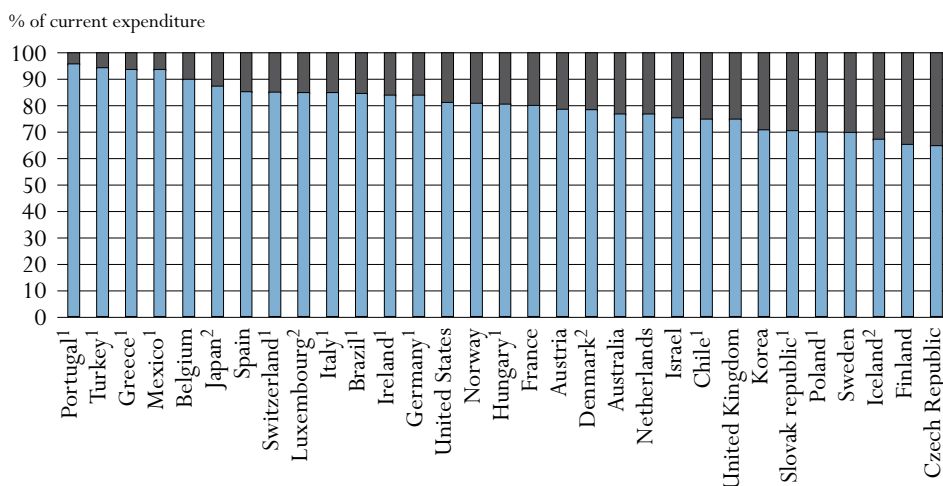
### Key results

#### Chart B6.1. Distribution of current expenditure on educational institutions for primary, secondary and post-secondary non-tertiary education (2003)

The chart shows the distribution of current spending on educational institutions by resource category. Spending on education can be broken down into capital and current expenditure. Within current expenditure, one can distinguish resource categories compared to other items and service categories such as spending on instruction compared to ancillary and R&D services. The biggest item in current spending, teacher compensation, is examined further in Indicator D3.

■ Compensation of all staff ■ Other current expenditure

In primary, secondary and post-secondary non-tertiary education combined, current expenditure accounts for an average of 92% of total spending across OECD countries. In all but three OECD and partner countries, 70% or more of primary, secondary and post-secondary non-tertiary current expenditure is spent on staff salaries.



1. Public institutions only.

2. Post-secondary non-tertiary included in both upper secondary and tertiary education.

Countries are ranked in descending order of the share of compensation of all staff on primary, secondary and post-secondary non-tertiary education.

Source: OECD. Table B6.2. See Annex 3 for notes ([www.oecd.org/edu/eqg2006](http://www.oecd.org/edu/eqg2006)).

StatLink: <http://dx.doi.org/10.1787/028135635270>



### Other highlights of this indicator

- OECD countries spend an average of 35% of current expenditure at the tertiary level on purposes other than the compensation of educational personnel. This is explained by the higher cost of facilities and equipment in higher education.
- On average, OECD countries spend 0.2% of their GDP on subsidies for ancillary services provided by primary, secondary and post-secondary non-tertiary institutions. This represents 5% of total spending. At the high end, Finland, France, Korea, the Slovak Republic and Sweden allocate about 10% or more of total spending on educational institutions in percentage of GDP on ancillary services.
- A distinctive feature of tertiary institutions is high spending on R&D, which on average comprises over one-quarter of spending at this level. The fact that some countries spend much more on this item than others helps explain the wide differences in overall tertiary spending. Significant differences among OECD countries in the emphasis on R&D in tertiary institutions also contribute to the observed variation.
- The payment of instructional staff is not as great a share of spending in tertiary institutions as at other levels, because of the higher cost of facilities and equipment.

## ENROLMENT IN EDUCATION FROM PRIMARY EDUCATION TO ADULT LIFE

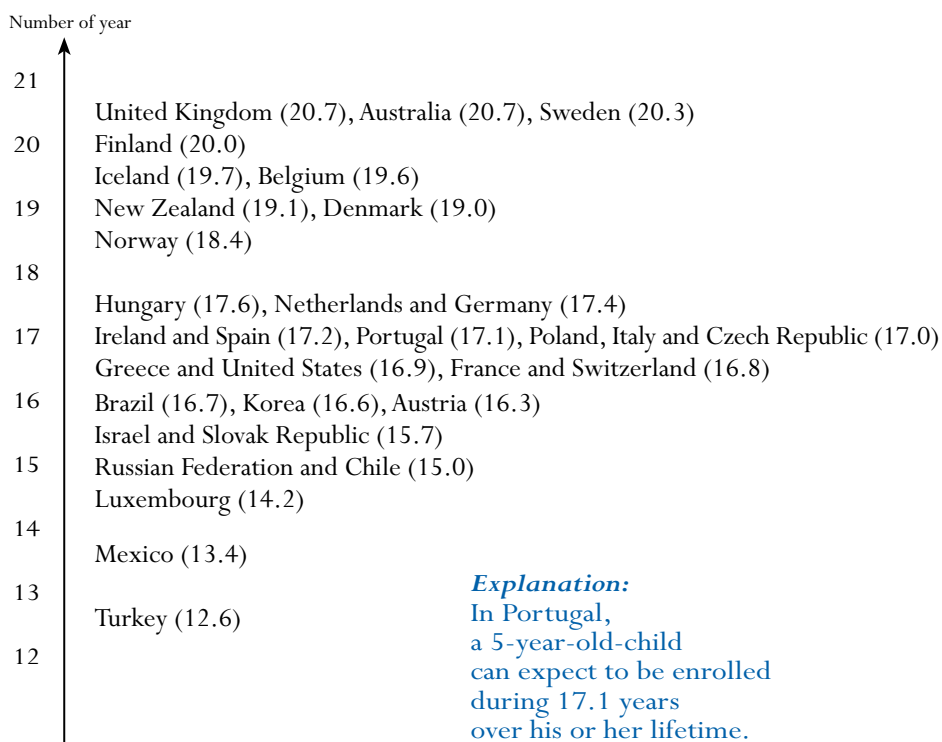
This indicator depicts the structure of the education systems in terms of student participation. It examines enrolment at all levels of education: first by using the number of years, or education expectancy, of full-time and part-time education in which a 5-year-old can be expected to enrol over his or her lifetime, and second, by using information on enrolment rates at various levels of education to examine educational access. Finally, trends in enrolments are used to compare the evolution of access to education from 1995 to 2004.

### Key results

#### Chart C1.1. Education expectancy

*This chart shows the average number of years a 5-year-old can expect to be formally enrolled in education during his or her lifetime. The education expectancy is calculated by adding the net enrolment rates for each single year of age from five onwards. When comparing data on education expectancy, however, it is important to note that the length of the school year, intensity of participation and the quality of education vary considerably across countries.*

In 24 of 28 OECD and 1 of 4 partner countries with comparable data, individuals participate in formal education for between 16 and 21 years.



Source: OECD, Table C1.1.

StatLink: <http://dx.doi.org/10.1787/555553154612>

### Other highlights of this indicator

- In most OECD countries, virtually all young people have access to at least 12 years of formal education. At least 90% of students are enrolled in an age band spanning 14 or more years in Belgium, Czech Republic, France, Iceland, Japan and Spain. By contrast, Mexico and Turkey have enrolment rates exceeding 90% for a period of only nine and six years. For partner countries Brazil, Chile, Israel and the Russian Federation, the corresponding number of years is respectively 10, 9, 12 and 9 years.
- In more than half of the OECD countries, 70% of children aged 3 to 4 are enrolled in either pre-primary or primary programmes.
- A child can expect to be enrolled at age 4 and under more often in the 19 European countries that are members of the OECD (EU19) than in the other OECD countries. On average, the enrolment rate for children aged 3 to 4 is 73.5% for the EU19 whereas the OECD average is 66.3%.
- Education expectancy for all levels of education combined increased by 1.5 years between 1995 and 2004 in all OECD countries reporting comparable data. A student in an OECD member country can expect to receive 0.6 years more pre-primary, primary, secondary and post-secondary non-tertiary education and 0.9 years more tertiary education in 2004 than in 1995.
- In OECD countries, a 5-year-old can expect to have 17.4 years of education, with females receiving 0.8 more years of education, on average, than males. Australia, Sweden and United Kingdom which have educational expectancy of more than 20 years count between three and six years of part-time education.
- A 17-year-old can expect to spend an average of three years in tertiary education.

## PARTICIPATION IN SECONDARY AND TERTIARY EDUCATION

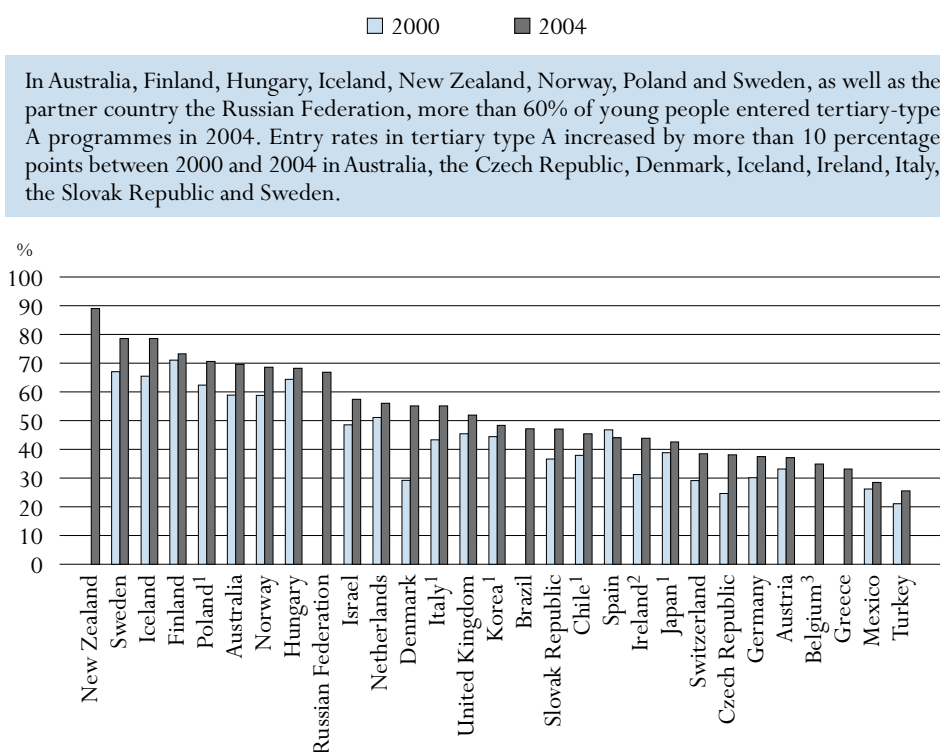
This indicator shows patterns of participation at the secondary level of education and the percentage of the youth cohort that will enter different types of tertiary education during their lives. Entry and participation rates reflect both the accessibility of tertiary education and the perceived value of attending tertiary programmes. This indicator also focuses on the comparative role played by public and private providers of education across OECD and partner countries.

### Key points

**Chart C2.1a. Entry rates into tertiary-type A education (2000, 2004)**

*Sum of net entry rates for each year of age*

*The chart shows the proportion of people who enter into tertiary-type A education for the first time, and the change between 2000 and 2004. Entry rates measure the inflow to education at a particular time rather than the stock of students who are already enrolled. They have the advantage over enrolment rates in that the comparability between countries is not distorted by different course lengths.*



In Australia, Finland, Hungary, Iceland, New Zealand, Norway, Poland and Sweden, as well as the partner country the Russian Federation, more than 60% of young people entered tertiary-type A programmes in 2004. Entry rates in tertiary type A increased by more than 10 percentage points between 2000 and 2004 in Australia, the Czech Republic, Denmark, Iceland, Ireland, Italy, the Slovak Republic and Sweden.

1. Entry rate for tertiary-type A programmes calculated as gross entry rate. This applies to Italy and Poland only in 2000.

2. Full-time entrants only.

3. Excludes the German-speaking Community of Belgium.

Countries are ranked in descending order of the entry rates for tertiary-type A education in 2004.

Source: OECD. Table C2.1. See Annex 3 for notes ([www.oecd.org/edu/eq2006](http://www.oecd.org/edu/eq2006)).

StatLink: <http://dx.doi.org/10.1787/230327441661>

### Other highlights of this indicator

- Today, 53% of young people in OECD countries will enter tertiary-type A programmes during their lifetime whereas 2% of young people in the 17 OECD countries for which data are comparable, will enter advanced and research programmes during their lifetime.
- The proportion of students who enter tertiary-type B programmes is generally smaller than for tertiary-type A programmes. In OECD countries with available data, 16% of young people, on average, will enter tertiary-type B programmes. The figures range from 4% or less in Italy, Mexico, Norway, Poland and the Slovak Republic to more than 30% in Belgium, Japan, Korea and New Zealand. Changes from 2000 to 2004 are rather contrasted between countries.
- In Belgium, and to a lesser extent in Japan and Korea, wide access to tertiary-type B programmes counterbalances comparatively low rates of entry into tertiary-type A programmes. By contrast, Iceland, Norway, Poland and Sweden have entry rates above the OECD average for tertiary-type A programmes and comparatively very low rates of entry into tertiary-type B programmes. New Zealand stands out as a country with entry rates at both levels that are the highest among OECD countries.
- Traditionally, students typically enter tertiary-type A programmes immediately after having completed upper secondary education. This remains true in many OECD countries.
- In 14 OECD countries, the majority of upper secondary students attend vocational or apprenticeship programmes. Vocational education is school based in most OECD countries.
- Across OECD countries, education at all levels is still predominantly a publicly provided service – 89% of students in primary education are in public institutions – though the private sector is becoming more prominent beyond compulsory education. Privately managed schools now enrol, on average, 11% of primary students, 15% of lower secondary students and 20% of upper secondary students.
- On average among OECD countries, 12% of students enrolled at tertiary-type A education (including advanced research programmes) will follow their studies in independent private institutions. This proportion is two times higher than the EU19 country average.

## STUDENT MOBILITY AND FOREIGN STUDENTS IN TERTIARY EDUCATION

This indicator provides a picture of student mobility and the significance of internationalisation of tertiary education in OECD and partner countries. It shows global trends and highlights the major destinations of international students and trends in market shares on the international education market. Some of the factors underlying students' choice of a country of study are also examined. In addition, the indicator looks at the extent of student mobility in different destinations and presents the profile of the international student intake in terms of their distribution by countries and regions of origin, types of programmes, and fields of education. The distribution of students enrolled outside of their country of citizenship by destination is also examined. Lastly, the contribution of international students to the graduate output is examined alongside immigration implications for their host countries. The proportion of international students in tertiary enrolments provides a good indication of the magnitude of student mobility in different countries.

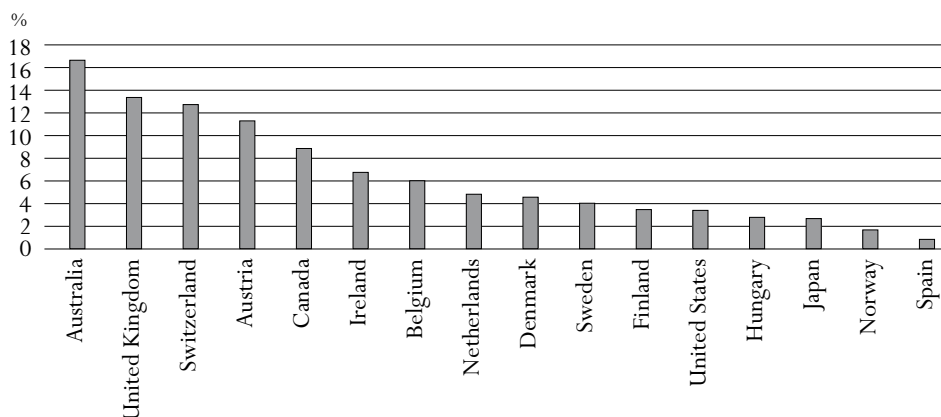
### Key results

#### **Chart C3.1. Student mobility in tertiary education (2004)**

*This chart shows the percentage of international students in tertiary enrolments. According to country-specific immigration legislations and data availability constraints, student mobility is either defined on the basis of students' country of residence or the country where students received their prior education.*

*Note that the data on the mobility of international students presented in this chart are not comparable with data on foreign students in tertiary education (defined on the basis of citizenship) presented in previous editions of Education at a Glance or elsewhere in this chapter.*

Student mobility – i.e. international students who travelled to a country different from their own for the purpose of tertiary study – ranges from below 1 to almost 17% of tertiary enrolments. International students are most numerous in tertiary enrolments in Australia, Austria, Canada, Switzerland and the United Kingdom.



Countries are ranked in descending order of the percentage of international students in tertiary education. Source: OECD, Table C3.1. See Annex 3 for notes ([www.oecd.org/edu/eag2006](http://www.oecd.org/edu/eag2006)).

StatLink: <http://dx.doi.org/10.1787/221673686112>

### Other highlights of this indicator

- In 2004, 2.7 million tertiary students were enrolled outside their country of citizenship. This represented a 8% increase in total foreign student intake reported to the OECD and the UNESCO Institute for Statistics since the previous year.
- France, Germany, the United Kingdom and the United States receive more than 50% of all foreign students worldwide.
- In absolute numbers, international students from France, Germany, Japan and Korea represent the largest numbers from OECD countries. Students from China and India comprise the largest numbers of international students from partner countries.
- In Finland, Spain and Switzerland, more than 14% of international students are enrolled in highly theoretical advanced research programmes. The same holds for foreign students enrolled in France.
- As far as fields of education are concerned, 30% or more of international students are enrolled in sciences, agriculture or engineering in Australia, Finland, Germany, Hungary, Sweden, Switzerland, the United Kingdom and the United States. The same holds for foreign students enrolled in Portugal and the Slovak Republic.
- International graduates contribute to 20% or more of the graduate output for tertiary-type A or advanced research programmes in Australia, Canada, Switzerland and the United Kingdom. The same holds for foreigners graduating from advanced research programmes in Belgium, France and the United States. The contribution of international and foreign graduates to the tertiary graduate output is especially high for advanced research programmes in Belgium, Canada, France, Switzerland, the United Kingdom and the United States.

## EDUCATION AND WORK STATUS OF THE YOUTH POPULATION

This indicator shows the years that young people are expected to spend in education, employment and non-employment and examines the education and employment status of young people by gender. During the past decade, young people have spent more time in initial education, delaying their entry into the world of work. Part of this additional time is spent combining work and education, a practice that is widespread in some countries. Once young people have completed their initial education, access to the labour market is often impeded by spells of unemployment or non-employment, although this situation affects males and females differently. Based on the current situation of persons between the ages of 15 and 29, this indicator gives a picture of major trends in the transition from school to work.

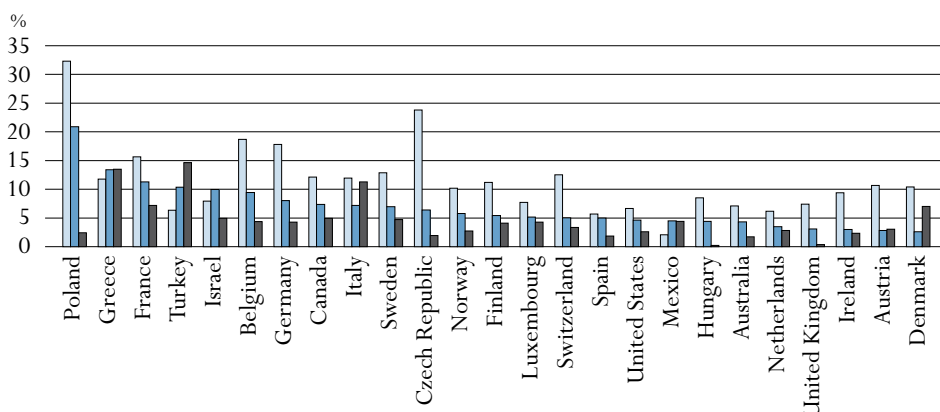
### Key results

#### Chart C4.1. Share of the 25-to-29-year-olds who are unemployed and not in education, by level of educational attainment (2004)

*In this chart, the height of the bars indicates the percentage of 25-to-29-year-olds not in education and unemployed, for each level of attainment.*

- Below upper secondary education
- Upper secondary and post-secondary non-tertiary education
- Tertiary education

At the end of the transition period, when most young people have finished studying, access to employment is linked to the education level attained. Not attaining an upper secondary qualification is clearly a serious handicap. Conversely, tertiary education offers a premium for most job seekers.



Countries are ranked in descending order of the ratio of the population not in education and unemployed to the 25-to-29-year-old population having attained upper secondary and post-secondary non-tertiary education. Source: OECD, Table C4.3. See Annex 3 for notes ([www.oecd.org/edu/eqg2006](http://www.oecd.org/edu/eqg2006)).

StatLink: <http://dx.doi.org/10.1787/244741462084>



### Other highlights of this indicator

- On average across OECD member countries, a young person aged 15 in 2004 can expect to continue in formal education for a little under seven years. In 18 of the 29 countries for which data are available, including Israel, this period ranges from five and a half years to seven and a half years. However, the range of this figure is wide, from a low of 3 years to a high of 9.7 years.
- In addition to the expected number of years spent in education, a young person aged 15 can expect to hold a job for 6 of the 15 years to come, to be unemployed for a total of 0.9 years and to be out of the labour market for 1.3 years.
- The percentage of 20-to-24-year-olds not in education ranges from 50 to 70% in 19 out of 27 OECD countries for which data are available. In 19 OECD countries, a higher proportion of female 15-to-19-year-olds take part in education than do males of the same age group. Males in the 15-to-19-year-old age group are more likely to be employed.
- In some countries, education and work largely occur consecutively, while 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.

## PARTICIPATION IN ADULT LEARNING

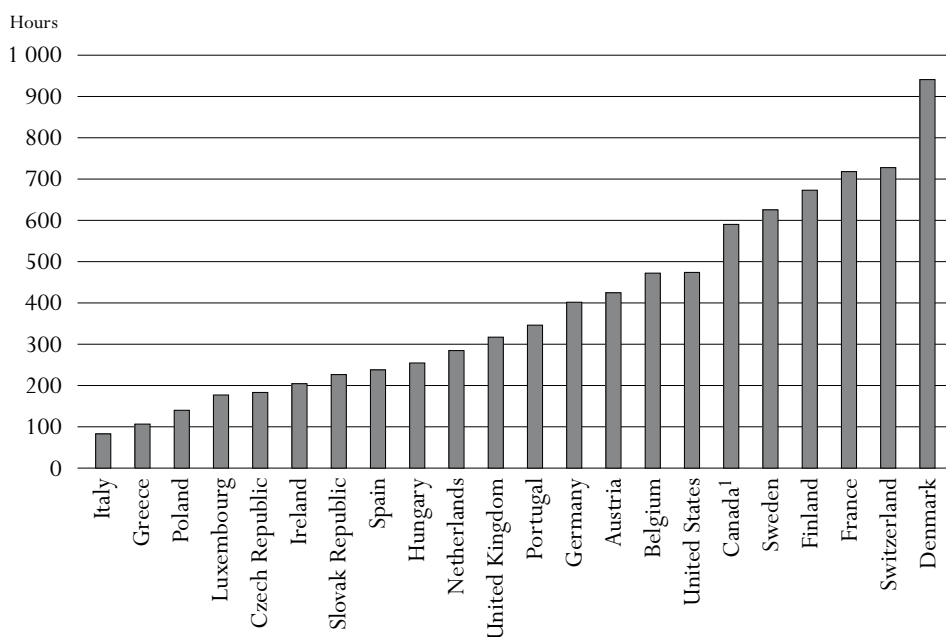
This indicator examines the participation of the adult population in non-formal job-related education and training. This year a new estimation of the expected number of hours in non-formal job-related education and training between the ages of 25 and 64 is included. This calculation refers to the time that a hypothetical individual (facing current conditions in terms of adult learning opportunities at different stages in life) is expected to give to such education and training over a typical working life (a forty year period).

### Key results

#### Chart C5.1. Expected hours in non-formal job-related training (2003)

This chart shows the hours that people in different countries can expect to spend in non-formal job-related education and training over the course of a typical working life.

There are major differences across countries in the time that individuals can expect to spend in non-formal job-related education and training over a typical working life.



1. Year of reference 2002.

Countries are ranked in ascending order of the expected hours in non-formal job-related education and training. Source: OECD, Table C5.1a. See Annex 3 for notes ([www.oecd.org/edu/eag2006](http://www.oecd.org/edu/eag2006)).

StatLink: <http://dx.doi.org/10.1787/558317523300>

### Other highlights of this indicator

- Adults with higher levels of educational attainment – whether upper-secondary and post-secondary non-tertiary education or tertiary-level education – are more likely to participate in non-formal job-related continuing education and training than adults with lower educational attainment.
- There are major differences in the number of hours that individuals can expect to spend in non-formal job-related education and training over a typical working life. At the tertiary level, this ranges from below 350 hours in Greece, Italy and the Netherlands to more than 1 000 hours in Denmark, Finland, France and Switzerland.
- In all but six countries – Finland, France, Greece, Hungary the Netherlands and Portugal – men can expect to spend more hours in non-formal job-related continuing and education and training than women.

## TOTAL INTENDED INSTRUCTION TIME FOR STUDENTS IN PRIMARY AND SECONDARY EDUCATION

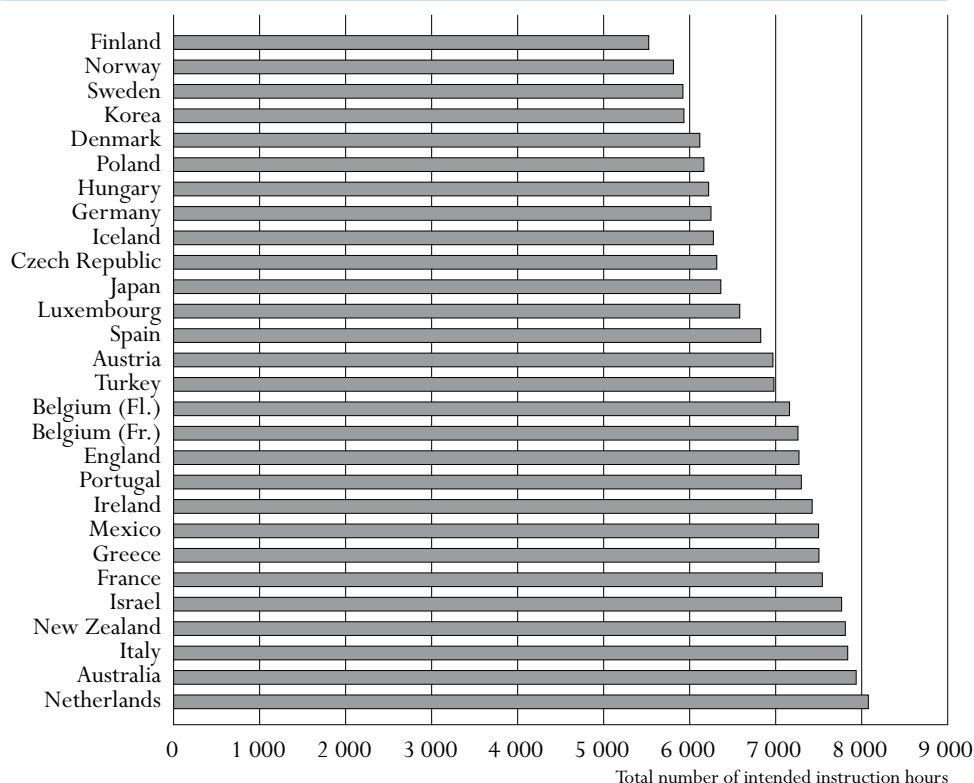
This indicator examines the amount of instruction time that students are supposed to receive between the ages of 7 and 15. It also discusses the relationship between instruction time and student learning outcomes.

### INDICATOR D1

#### Key results

**Chart D1.1. Cumulative number of intended instruction hours in public institutions between the ages of 7 and 14 (2004)**

Students in OECD countries are expected to receive, on average, 6 847 hours of instruction between the ages of 7 and 14, of which 1 570 hours are between ages 7 and 8, 2 494 hours between ages 9 and 11, and 2 785 hours between ages 12 and 14 years. The large majority of intended hours of instruction are compulsory.



Countries are ranked in ascending order of total number of intended instruction hours.

Source: OECD, Table D1.1. See Annex 3 for notes ([www.oecd.org/edu/eag2006](http://www.oecd.org/edu/eag2006)).

StatLink: <http://dx.doi.org/10.1787/076822220227>

### Other highlights of this indicator

- In OECD countries, students between the ages of 7 and 8 receive an average of 758 hours per year of compulsory instruction time and 785 hours per year of intended instruction time in the classroom. Students between the ages of 9 and 11 receive about 50 hours more per year and those aged between 12 and 14 receive nearly 100 hours more per year than those aged between 9 and 11.
- On average among OECD countries, the teaching of reading and writing, mathematics and science comprises nearly 50% of the compulsory instruction time of students aged 9 to 11 and 41% for students aged 12 to 14. For 9-to-11-year-olds, there is great variation among countries in the proportion of compulsory curriculum devoted to reading and writing: from 13% or less in Australia and partner countries Chile and Israel to 30% in France, Mexico and the Netherlands.

## INDICATOR D1

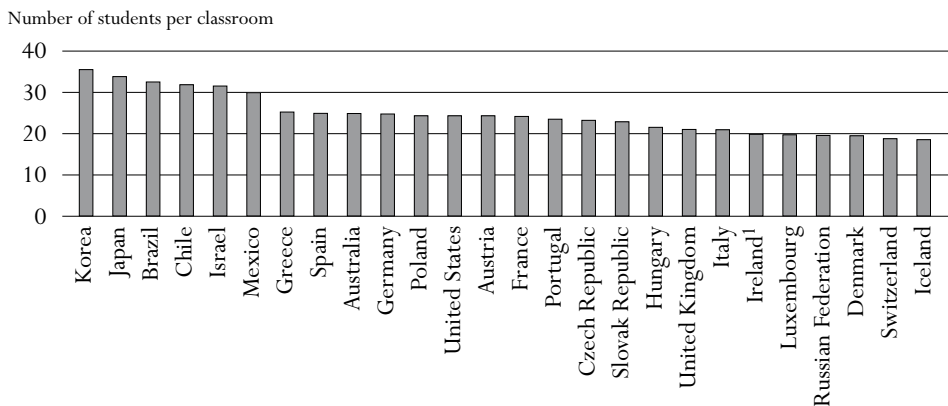
## CLASS SIZE AND RATIO OF STUDENTS TO TEACHING STAFF

This indicator examines the number of students per class at the primary and lower secondary levels, the ratio of students to teaching staff at all levels and the breakdown of class sizes and ratio of student to teaching staff between public and private institutions. The indicator illustrates a much discussed aspect of the education students receive and is one of the determinants of the size of the teaching force within countries, along with the total instruction time of students (see Indicator D1), teachers' average working time (see Indicator D4) and the division of teachers' time between teaching and other duties.

### Key results

**Chart D2.1. Average class size in lower secondary education (2004)**

The average class size in lower secondary education is 24 students per class but varies from 30 or more in Japan, Korea, Mexico and partner countries Brazil, Chile and Israel to 20 or less in Denmark, Iceland, Luxembourg and Switzerland, and the partner country the Russian Federation.



1. Public institutions only.

Countries are ranked in descending order of average class size in lower secondary education.

Source: OECD, Table D2.1. See Annex 3 for notes ([www.oecd.org/edu/eag2006](http://www.oecd.org/edu/eag2006)).

StatLink: <http://dx.doi.org/10.1787/108323448085>

### Other highlights of this indicator

- The average class size in primary education is 21, but varies between countries from 34 students per class in Korea to half of that number or less in Iceland, Luxembourg and Portugal, and the partner country the Russian Federation.
- The number of students per class increases by an average of nearly three students between primary and lower secondary education, but ratios of students to teaching staff tend to decrease with increasing levels of education due to more annual instruction time, though this pattern is not uniform among countries.
- On average across OECD countries, the availability of teaching resources relative to student numbers in secondary education is more favourable in private institutions than in public institutions. This is most striking in Mexico where, at the secondary level, there are around 13 more students per teacher in public institutions than there are in private institutions. Consistently, at the lower secondary level, there is one student more per class on average in public institutions than in private institutions.

## TEACHERS' SALARIES

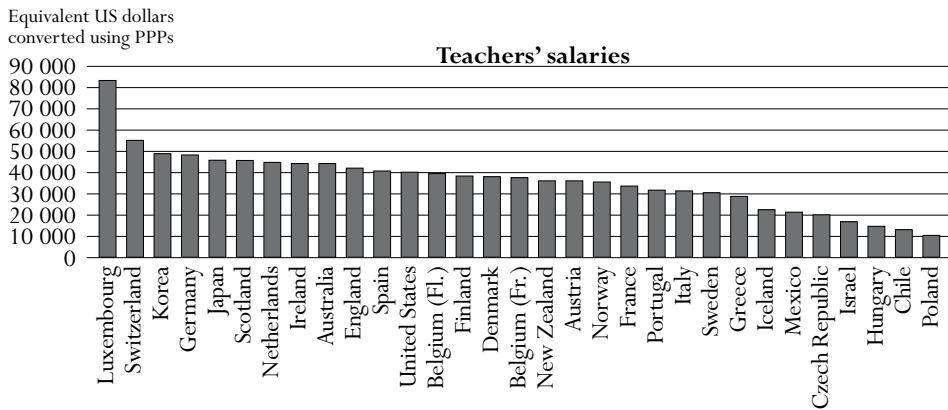
This indicator shows the starting, mid-career and maximum statutory salaries of teachers in public primary and secondary education, and various additional payments and incentive schemes used in teacher rewards systems. Together with average class size (see Indicator D2) and teachers' working time (see Indicator D4), this indicator presents some key measures of the working lives of teachers. Differences in teachers' salaries, along with other factors such as student to staff ratios (see Indicator D2), provide some explanation for differences in expenditure per student (see Indicator B1).

### Key results

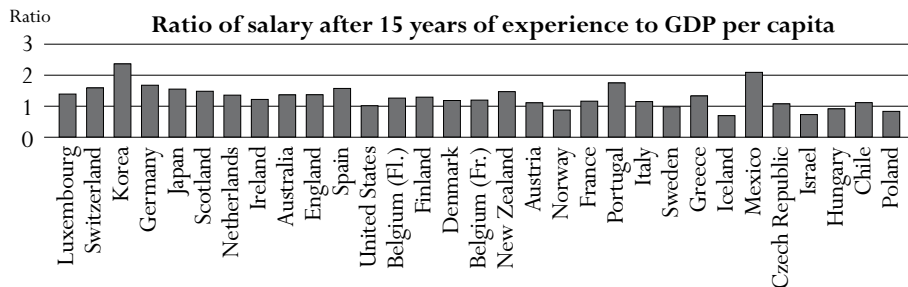
#### Chart D3.1. Teachers' salaries in lower secondary education (2004)

*Annual statutory teachers' salaries in public institutions in lower secondary education, in equivalent US dollars converted using PPPs, and the ratio of salary after 15 years of experience to GDP per capita*

Salaries of teachers with at least 15 years experience at the lower secondary level range from about USD 10 000 in Poland to USD 48 000 or more in Germany, Korea and Switzerland and even exceed USD 80 000 in Luxembourg.



Salaries for teachers with at least 15 years experience in lower secondary education are over twice the level of GDP per capita in Korea and Mexico whereas in Iceland and the partner country Israel salaries are less than 75% of GDP per capita.



Countries are ranked in descending order of teachers' salaries in lower secondary education after 15 years of experience and minimum training.

Source: OECD, Table D3.3. See Annex 3 for notes ([www.oecd.org/edu/eqg2006](http://www.oecd.org/edu/eqg2006)).

StatLink: <http://dx.doi.org/10.1787/083407611234>



### Other highlights of this indicator

- Teachers' salaries have risen in real terms between 1996 and 2004 in virtually all countries, with the largest increases evident in Finland, Hungary and Mexico. Salaries at the primary and upper secondary levels in Spain fell in real terms over the same period, even if they remain above the OECD average level.
- On average, upper secondary teachers' salary per teaching hour exceeds that of primary teachers by 42%, though the difference is lower than 5% in New Zealand and Poland and is greater than 75% in the Netherlands and Spain, where the difference between teaching time at primary and upper secondary level is greatest.
- Salaries at the top of the scale are on average around 70% higher than starting salaries for both primary and secondary education, though this differential usually varies between countries largely in line with the number of years it takes for a teacher to progress through the scale. For instance, top-of-the-scale salaries in Korea are almost three times that of starting salaries, but it takes 37 years to reach the top of the scale. In Portugal, however, the ratio of salaries at the top of the scale to starting salaries is close to that in Korea, but teachers reach the top of salary after 26 years of service.

## TEACHING TIME AND TEACHERS' WORKING TIME

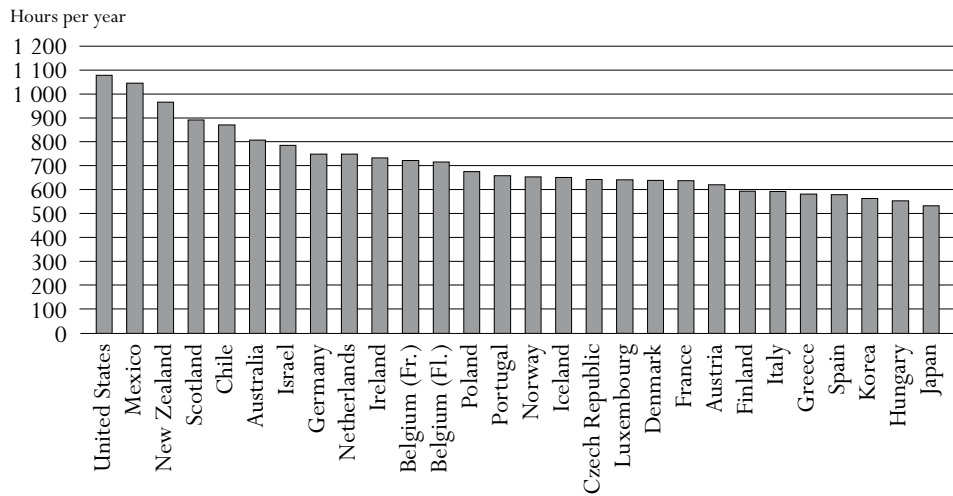
This indicator focuses on the statutory working time of teachers at different levels of education as well as their statutory teaching time. Although working time and teaching time only partly determine the actual workload of teachers, they do give some valuable insights into differences among countries in what is demanded of teachers. Together with teachers' salaries (see Indicator D3) and average class size (see Indicator D2), this indicator presents some key measures of the working conditions of teachers.

### Key results

**Chart D4.1. Number of teaching hours per year in lower secondary education (2004)**

*Net contact time in hours per year in public institutions*

The number of teaching hours per year in public lower secondary schools averages 704 hours but ranges from 534 hours per year in Japan to over 1 000 hours in Mexico (1 047 hours) and the United States (1 080 hours).



Countries are ranked in descending order of the number of teaching hours per year in lower secondary education.

Source: OECD, Table D4.1. See Annex 3 for notes ([www.oecd.org/edu/eag2006](http://www.oecd.org/edu/eag2006)).

StatLink: <http://dx.doi.org/10.1787/421472785265>

### Other highlights of this indicator

- The number of teaching hours per year in public primary schools averages 805 hours (10 more than in 2003), but ranges from around 650 hours or less in Denmark, Japan and Turkey to 1 080 hours in the United States.
- The average number of teaching hours in upper secondary general education is 663 hours, but ranges from less than 500 in Japan (466 hours) to more than 1 000 hours in the United States (1 080 hours).
- The composition, in terms of days, weeks and hours per day, of teachers' annual teaching time varies considerably. For instance, while teachers in Denmark teach for 42 weeks in the year (at all ISCED levels) compared with 36 weeks per year in Iceland, the total teaching time (in hours) for teachers in Iceland is greater than for teachers in Denmark.
- Regulations of teachers' working time also vary. In most countries, teachers are formally required to work a specific number of hours; in others, teaching time is only specified as the number of lessons per week.

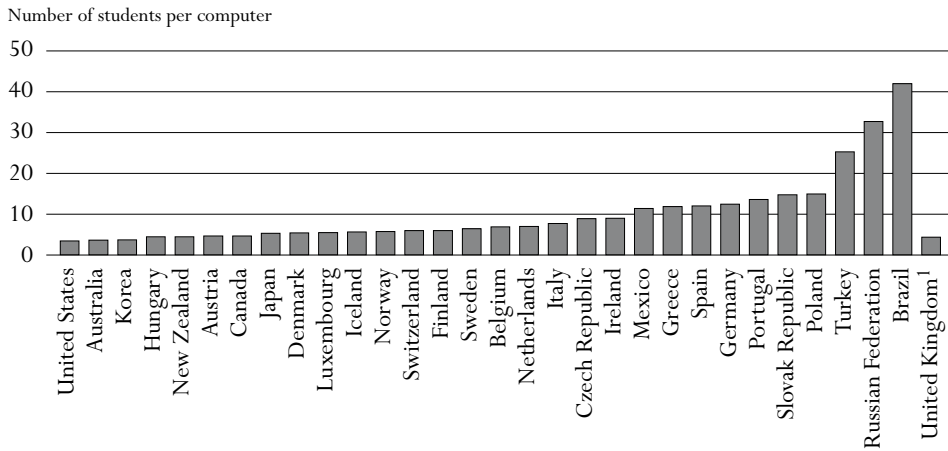
## ACCESS TO AND USE OF ICT

This indicator focuses on access to information and communication technology (ICT) in schools across OECD countries, using the PISA 2003 data drawn from the responses of 15-year-old students and their school principals. This data provides information on ICT access for both students and staff within schools. The resulting analysis considers the number of computers in schools per 15-year-old student, the availability of computers to staff, and the perceptions of principals concerning the level of ICT resources in their school.

### Key results

**Chart D5.1. Number of students per computer (2003)**

Virtually all students in OECD countries and partner countries are in schools with at least one computer, but there is substantial variation in the number of computers available to students: around one computer for nearly 3 students in the United States and Australia against one computer for 42 students in the partner country Brazil.



1. Response rate too low to ensure comparability.  
 Countries are ranked in ascending order of number of students per computer.  
 Source: OECD PISA 2003 database, Table D5.1.

StatLink: <http://dx.doi.org/10.1787/203814216003>

### Other highlights of this indicator

- On average among OECD countries, the number of computers per student in schools has increased since PISA 2000. This increase has occurred in all but three OECD countries (Denmark, Poland and Portugal).
- There is substantial variation in the level of access students have to computers at schools. Some OECD countries have more than one computer for every five students, while eight OECD countries have, on average, less than one computer per ten students (Germany, Greece, Mexico, Poland, Portugal, the Slovak Republic, Spain and Turkey).
- Even though access to computers is greater at school than at home, 15-year-old students use their computers at home more frequently. Nearly three-quarters of students are using computers at home several times each week.
- Twenty-six per cent of school principals believe that ICT resources are at a level that does not hinder instruction in OECD countries. But there is substantial variation within and between countries. On average across OECD countries, 11% of school principals believe that a lack of ICT resources in their school hinders the instruction of students “a lot”.