

# Education at a Glance 2007

## *Highlights*



ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT



# EXECUTIVE SUMMARY

*Education at a Glance* is the OECD's annual round-up of data and analysis on education, providing a rich, comparable and up-to-date array of indicators on education systems in the OECD's 30 member countries and in a number of partner economies. The main areas covered are:

- Participation and achievement in education
- Public and private spending on education
- The state of lifelong learning
- Conditions for pupils and teachers

The 2007 edition investigates the effects of expanding tertiary education on labour markets. Graduation rates from higher education have grown significantly in OECD countries in recent decades, but has the increasing supply of well-educated workers been matched by the creation of high-paying jobs? Or will everyone with a university degree some day work for the minimum wage? Using recent data and indicators comparable among OECD countries, *Education at a Glance 2007* finds that the expansion of tertiary education has had a positive impact for individuals and national economies, and that there are, so far, no signs of an inflation of the value of qualifications.

For the first time, *Education at a Glance* also examines the issue of efficiency in education (Indicator B7). While this indicator is still exploratory, it does reveal the scale of the effort needed for education to re-invent itself, in ways that other professions have already done, so as to provide better value-for-money at a time of increasing pressure on public budgets.

Key findings for this edition:

## ■ **There has been marked progress in the numbers completing secondary education across the OECD area.**

In 22 out of the 29 OECD countries, and in partner economies Estonia, Israel, the Russian Federation and Slovenia, 60% or more of adults have now completed at least upper secondary education, while 26% have completed tertiary education. The findings also show that:

- The proportion of 25-to-34-year-olds across OECD member countries that have attained upper secondary education averages 13 percentage points higher than that of the 45-to-54-year-old age group. This trend is particularly dramatic in Belgium, France, Greece, Ireland, Italy, Korea, Portugal and Spain, and in the partner economy Chile, all of which have seen increases of 20 percentage points or more in the numbers of younger adults who have completed secondary education.
- In all OECD countries, younger adults (25 to 34) are more than three times as likely to hold degrees in science than older adults (55 to 64). However, this ratio falls to below two for engineering. In Denmark, Germany, Hungary and Norway, there will soon be more engineers leaving the labour market than have entered it in recent years.

- Younger people are gravitating toward the social sciences, business and law. Nearly one-third of the adult population have pursued these studies, while younger adults hold nearly 3.5 times as many individual degrees in these subjects as older adults.
- The ratio of younger to older age groups studying education is close to 1 among OECD countries. In Denmark, Germany, the Netherlands, Sweden and the United Kingdom, this ratio is below 1, indicating a potential problem in finding replacement educators as the older generation retires in the coming years.

### ■ But variations in performance are observed among 15-year-olds between general and vocational programmes.

In 9 out of the 10 OECD countries for which data are available, the results from PISA 2003 show that 15-year-olds in pre-vocational and vocational programmes demonstrate statistically significant lower performances in mathematics compared to students enrolled in general programmes. On average, across OECD countries, 15-year-olds enrolled in general programmes perform 45 score points higher, and after adjusting for socio-economic factors the difference still remains, at 27 score points.

### ■ More young people are graduating from upper secondary education, and the gender balance is shifting.

Since 1995, the graduation rate from upper secondary education has increased at an average of 7% across OECD countries with comparable data. In 21 out of the 24 OECD countries, the graduation rate exceeds 70%, while in Finland, Germany, Greece, Ireland, Japan, Korea and Norway it equals or exceeds 90%. Meanwhile, the gap between the graduation rates of Mexico and Turkey and of other OECD countries is narrowing.

- Females are now more likely to complete upper secondary education than males – a reversal of the historical pattern. Graduation rates for females are below those of males only in Korea, Switzerland and Turkey; they are equal to those of males only in the partner economy Slovenia.
- While males in many countries are more likely to study vocational courses, in nearly half the countries represented, there is either no difference or a higher proportion of females that pursue such studies.

### ■ The numbers graduating from tertiary education are also rising.

Across the 24 OECD countries with comparable data, an average of 36% of students have completed a traditional university degree. In Austria, Finland, Italy, Portugal, the Slovak Republic and Switzerland, graduation rates have doubled over the past 10 years. However, there are wide disparities among countries in the rates of students who successfully complete either a university degree or a vocationally oriented tertiary education. Indicators show that:

- Rates of graduation from traditional universities range from around 20% or less in Austria, Germany and Turkey to more than 40% in Australia, Denmark, Finland, Iceland, Italy, the Netherlands, New Zealand, Norway and Poland. These graduation rates tend to be higher in countries where the programmes provided are of shorter duration.
- The graduation rate for shorter, vocationally oriented programmes represents 9%, and 1.3% for programmes leading to advanced research qualifications.

- Across the 19 OECD countries for which such data are available, an average of 30% of students enrolled in tertiary education fail to complete the programme.

### ■ **There are wide variations in the proportions of young people who expect to go on to tertiary education.**

Some 57% of 15-year-olds in OECD countries expect to go to university, but this rate varies from as high as 95% of students in Korea to as low as 21% in Germany. Indicators show that expectations vary within countries according to individual performance levels, gender, socio-economic background and immigrant status.

- Data collected in 2003 through the OECD's Programme for International Student Assessment (PISA) show that 15-year-olds' expectations for completing a university-level programme are closely linked with their performance in mathematics and reading.
- Regardless of their relative academic abilities, 15-year-olds from lower socio-economic backgrounds are less likely to expect to complete tertiary education than those from higher socio-economic backgrounds.
- In most countries, 15-year-old students from immigrant backgrounds are more likely to expect to complete a university-level programme than their native counterparts. The relative expectations of these students are even higher when compared with native students of similar aptitudes and socio-economic backgrounds.

### ■ **Schools and societies face major challenges in integrating immigrants.**

International migration has become a key issue in most OECD countries, sparking intense debate on how immigrants can be successfully integrated into societies and labour markets. PISA adds an important new perspective to the discussion by assessing the educational success of 15-year-old students from immigrant families. It is clear that serious challenges lie ahead for education systems, particularly in Europe. Indicators show that:

- Among the 14 OECD countries with significant immigrant populations, first-generation students lag an average of 48 score points – equivalent to more than a school year's progress – behind their native counterparts on the PISA mathematics scale. The performance disadvantage of second-generation students is a still-significant 40 score points. In Canada, Luxembourg, Sweden and Switzerland and the partner economy Hong Kong-China, second-generation students perform significantly better than first-generation students, with the performance gap reduced by 31 score points in Switzerland and 58 score points in Sweden.
- The performance disadvantage of students with an immigrant background varies widely across countries, from insignificant amounts in Australia, Canada and New Zealand, to more than 90 score points in Belgium and Germany, even for second-generation children.

### ■ **Few countries can afford to rely only on families rich in wealth and/or human capital to provide society with higher-educated individuals.**

Countries vary greatly in how well they succeed in enabling students from blue-collar backgrounds to participate in higher education. The decline of unskilled jobs in developed countries suggests that low-skilled workers risk becoming an increasing social burden and may face deepening inequalities. Leveling the playing field between affluent and less-affluent students is not only a

matter of equality, it is also a way of enlarging the recruiting ground for high-skilled jobs and increasing overall labour competitiveness. Indicators show that:

- In many countries, students are substantially more likely to be in higher education if their fathers completed higher education. Ireland and Spain provide the most equitable access to higher education, whereas in Austria, France, Germany and Portugal, students from a blue-collar background are only about one-half as likely to be in higher education as compared with what their proportion in the population would suggest.

### ■ **The longer individuals spend in education, the more likely they are to be in employment and to earn more.**

The economies of OECD countries increasingly rely on a stable supply of well-educated workers, and this is a trend that is likely to grow. As populations in OECD countries age, higher levels of education and longer participation in employment will help to lower dependency rates and help alleviate the burden of financing public pensions. Indicators show that:

- 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 that for upper secondary graduates.
- Female employment is a primary factor in overall employment rates. The seven countries with the highest overall rate of employment for individuals aged 25 to 64 – Denmark, Iceland, New Zealand, Norway, Sweden, Switzerland and the United Kingdom – also have among the highest overall rate of employment for females.
- Differences in employment rates between males and females are wider among less-educated groups. Among those without secondary qualifications, the chance of being employed is 23% higher for males than for females. This falls to 10 percentage points for the most highly qualified.
- Across 25 OECD countries and the partner economy Israel, individuals with university degrees and advanced research education had earnings that were at least 50% higher than individuals whose highest level of educational attainment was below the upper secondary level.
- In all countries studied, females earn less than males with similar levels of educational attainment. They usually earn between 50 and 80% of what their male counterparts earn.

### ■ **OECD countries spend 6.2% of their collective GDP on educational institutions, and are beginning to think more about efficiency in their education systems.**

The expansion of education has been accompanied by massive financial investments. Between 1995 and 2004, and for all levels of education combined, expenditure on educational institutions increased by an average of 42% in OECD countries. Indicators show that across OECD countries, learning outcomes can be increased by 22% while maintaining the current level of expenditures. Among the findings:

- Expenditure on core educational services (excluding research and development activities and ancillary services) in tertiary institutions averages about USD 7 664 per student, ranging from USD 4 500 or below in Greece, Italy, Poland and Turkey, to more than USD 9 000 in Australia, Austria, Denmark, Norway, Switzerland and the United States.

- OECD countries spend an average of USD 81 485 per student over the duration of primary and secondary studies, ranging from less than USD 40 000 in Mexico, Poland, the Slovak Republic and Turkey to USD 100 000 or more in Austria, Denmark, Iceland, Luxembourg, Norway, Switzerland and the United States.
- Lower unit expenditure does not necessarily lead to lower achievement. For example, the cumulative expenditure of Korea and the Netherlands is below the OECD average, yet both are among the best-performing countries in the PISA 2003 survey.

**■ Private sources of funding for education are becoming increasingly important, but the proportion of private funding as well as the tuition fees charged by educational institutions varies widely.**

On average, OECD countries devote 13.4% of total public expenditure to educational institutions, but the values for individual countries range from 10% or less in the Czech Republic, Germany, Greece, Italy and Japan to more than 20% in Mexico and New Zealand. In 2004, an average of 87% of expenditure on all levels of education came from public sources. In all countries for which comparable data are available, for all levels of education combined, public funding increased between 1995 and 2004. However, private spending increased even more in nearly three-quarters of these countries. Some 24% of expenditure on tertiary education and 20% of expenditure on pre-primary institutions came from private sources.

Large differences are observed among OECD countries and partner economies in the average tuition fees charged by tertiary-type A educational institutions. There are no tuition fees charged by public institutions in one-quarter of OECD countries (all Nordic countries, the Czech Republic, Ireland and Poland). By contrast, one-quarter of OECD countries and partner economies have annual tuitions fees for national students charged by public institutions that exceed USD 1 500. Among the EU19 countries, only 2 have annual tuitions fees that represent more than USD 1 100 per full-time national student, but these fees related to government dependent private institutions.

**■ OECD countries where students are required to pay tuition fees can nevertheless have also large access to tertiary-type A.**

OECD countries where students are required to pay tuition fees and can benefit from particularly large public subsidies do not show lower levels of access to tertiary-type A education compared to the OECD average. For example, Australia (82%) and New Zealand (79%) have one of the highest entry rates to tertiary-type A education and the Netherlands (59%) and the United States (64%) are above the OECD average. The United Kingdom (51%) is just below the OECD average (54%), although entry to tertiary-type A education increased by 4 percentage points between 2000 and 2005.

**■ People are taking advantage of educational opportunities both earlier in life and later, and more of them are looking abroad to study.**

While there is substantial variation among countries in participation rates in non-formal, job-related continuing education and training, in four OECD countries – Denmark, Finland, Sweden and the United States – more than 35% of the population between 25 and 64 years of age has participated in that type of education and training within the previous 12 months.

- Adults with higher levels of educational attainment are more likely to participate in non-formal, job-related continuing education and training than adults with lower educational attainment.
- In more than half of the OECD countries, 70% of children aged 3 to 4 are enrolled in either pre-primary or primary programmes. In the 19 European OECD countries, that proportion reaches 75.9%.
- In 2005, over 2.7 million tertiary students were enrolled in education outside their country of citizenship, representing a 5% increase in total foreign-student intake over the previous year.

### ■ **Instruction time, teachers' salaries, and student-teacher ratios vary widely among countries.**

The choices countries make about how many hours and years students spend in the classroom and the subjects they study reflect national priorities and preferences. Budgetary considerations also help shape education: teachers' salaries represent the largest single cost in providing school education and, as such, are a critical consideration for policy-makers striving to both maintain the quality of education and to contain spending. While class size has become a hot topic in many OECD countries, evidence on its impact on student performance is mixed. Among the findings on these nuts-and-bolts educational policy issues:

- Among OECD countries, the teaching of reading, writing and literature, mathematics and science account for nearly 50% of the compulsory instruction time of students aged 9 to 11. In Australia and partner economies Chile and Israel, 13% or less of the compulsory curriculum is devoted to reading, writing and literature; while in France, Mexico and the Netherlands, 30% or more of the compulsory curriculum is devoted to those subjects.
- 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; in Iceland and Norway, and the partner economy Israel, salaries are 75% or less than GDP per capita. Those salaries range from less than USD 16 000 in Hungary to USD 51 000 or more in Germany, Korea and Switzerland, and more than USD 88 000 in Luxembourg.
- Whereas student assessments in school accountability and evaluation arrangements are increasingly common across OECD countries and two-thirds of OECD countries have regulations that require evaluation or self-evaluation of lower-secondary schools, very few countries utilise school evaluation and accountability information to provide financial rewards and/or sanctions to schools.
- From 2000 to 2005, average class size did not vary significantly, but differences in class size among OECD countries seem to have diminished. Class size decreased in countries that had relative large classes, such as Japan, Korea and Turkey, and increased in countries with relatively small class size, such as Iceland.





# EDUCATION AT A GLANCE 2007

## OECD INDICATORS

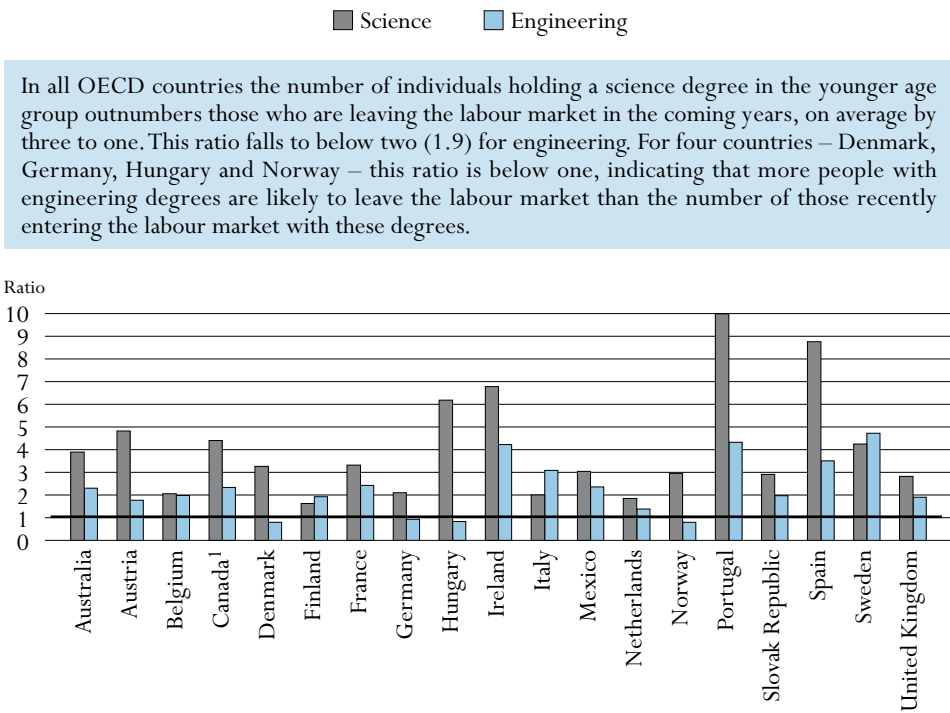
TO WHAT LEVEL HAVE ADULTS STUDIED?

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 attainment by fields of education and by age groups are also used in this indicator both to examine the distribution of skills in the population and to have a rough measure of what skills have recently entered the labour market and of what skills will be leaving the labour market in the coming years. It also looks at the effects of tertiary education expansion and asks whether this leads to the overqualified crowding out the lesser qualified.

Key results

Chart A1.1. Picture of generational difference in science and in engineering (2004)


This chart depicts the ratio of 25-to-34-year-olds with an ISCED 5A level of education and 30-to-39-year-olds with an ISCED 6 level of education to 55-to-64-year-olds with ISCED 5A and 6 levels of education in science and engineering (2004).



1. Year of reference 2001.

Note: The numerator includes population aged 25 to 34 with an ISCED 5A level of education and aged 30 to 39 with an ISCED 6 level of education. The denominator includes population aged 55 to 64 with ISCED 5A and 6 levels of education.

Source: OECD, Table A1.5. See Annex 3 for notes ([www.oecd.org/edu/eqg2007](http://www.oecd.org/edu/eqg2007)).

StatLink  <http://dx.doi.org/10.1787/068015451617>

### *Other highlights of this indicator*

- The proportion of individuals who have completed upper secondary education has been growing in almost all OECD countries, becoming the norm of youth cohorts. As of 2005, in 22 OECD countries, the proportion of 25-to-34-year-olds who have completed upper secondary education ranges from 73 to 97%. This increase has been particularly rapid in countries such as Korea and Ireland, and so countries with traditionally low levels of education are catching up to countries that have traditionally had higher levels of education.
- Social sciences, business and law are the major educational fields in most countries. They constitute 29% of the overall ISCED 5A and 6 levels of educational attainment in the population among the OECD countries. This may be due to these subjects' popularity among younger individuals. On average, there are three and one-half times as many individuals with degrees in these subjects among 25-to-34-year-olds with an ISCED 5A level of education and 30-to-39-year-olds with an ISCED 6 level of education than there are 55-to-64-year-olds with ISCED 5A and 6 levels of education in these subjects.
- The ratio of younger to older age groups with education as a field of study (ISCED 5A and 6 levels of education) is close to 1 among the OECD countries. For Denmark, Germany, Netherlands, Sweden and United Kingdom, this ratio is below 1, which might signal a potential problem of finding replacements as the older generation retires in the coming years.
- Data shows that increasing levels of tertiary education have not had a negative effect on employment. On the contrary, in the countries where tertiary education expanded most rapidly, a small rise in the relative risk of unemployment in the late 1990s was followed by a fall in the early 2000s. Nor has growth in tertiary attainment generally caused a slump in graduate pay, although on average it has not risen faster than pay generally.

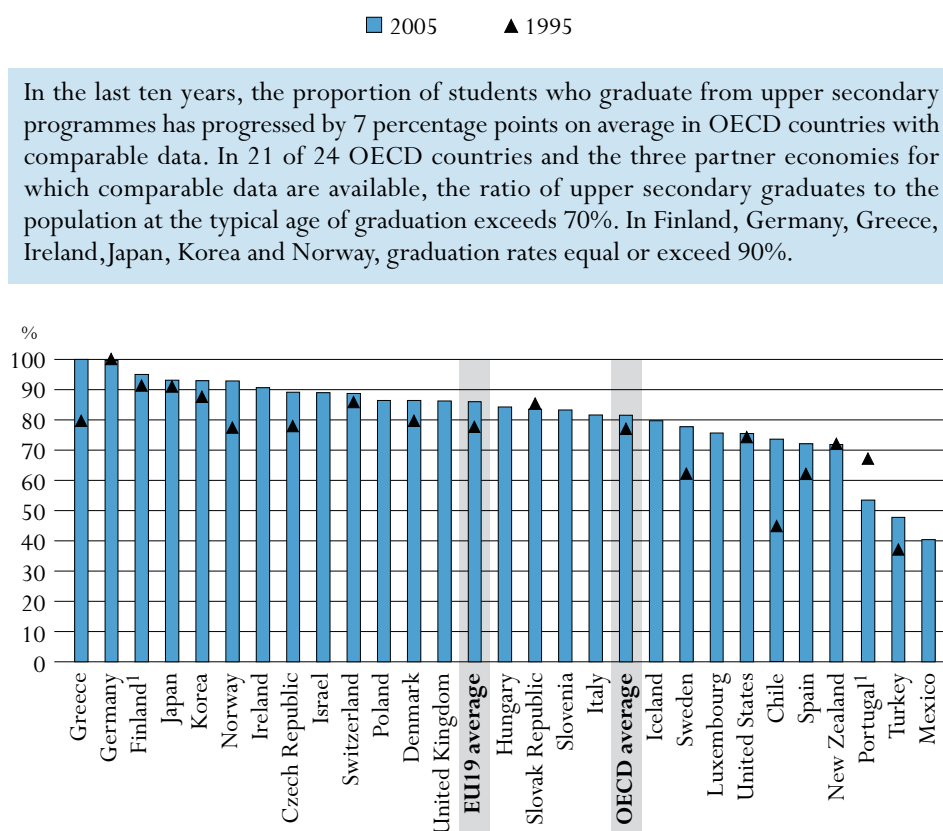
## HOW MANY STUDENTS FINISH SECONDARY EDUCATION?

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 (1995, 2005)

The chart shows the number of students completing upper secondary education programmes for the first time in 1995 and 2005, as a percentage of the age group normally completing this level; it gives an indication of how many young people complete upper secondary education compared to ten years before.



1. Year of reference 2004.

Countries are ranked in descending order of upper secondary graduation rates in 2005.

Source: OECD, Table A2.1. See Annex 3 for notes ([www.oecd.org/edu/eag2007](http://www.oecd.org/edu/eag2007)).

StatLink <http://dx.doi.org/10.1787/068023602135>

### *Other highlights of this indicator*

- Females are now more likely to complete upper secondary education than males in almost all OECD countries and partner economies, a reversal of the historical pattern. Today, graduation rates for females are below those for males only in Korea, Switzerland and Turkey and are equal only in the partner economy Slovenia.
- In many countries, males are more likely to be on vocational courses. Still, in nearly one-half of the countries represented there is either no gender difference or a higher proportion of females on such courses.
- 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 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 and Hungary, 20% or more of a typical age cohort complete a post-secondary non-tertiary programme.

## HOW MANY STUDENTS FINISH TERTIARY EDUCATION?

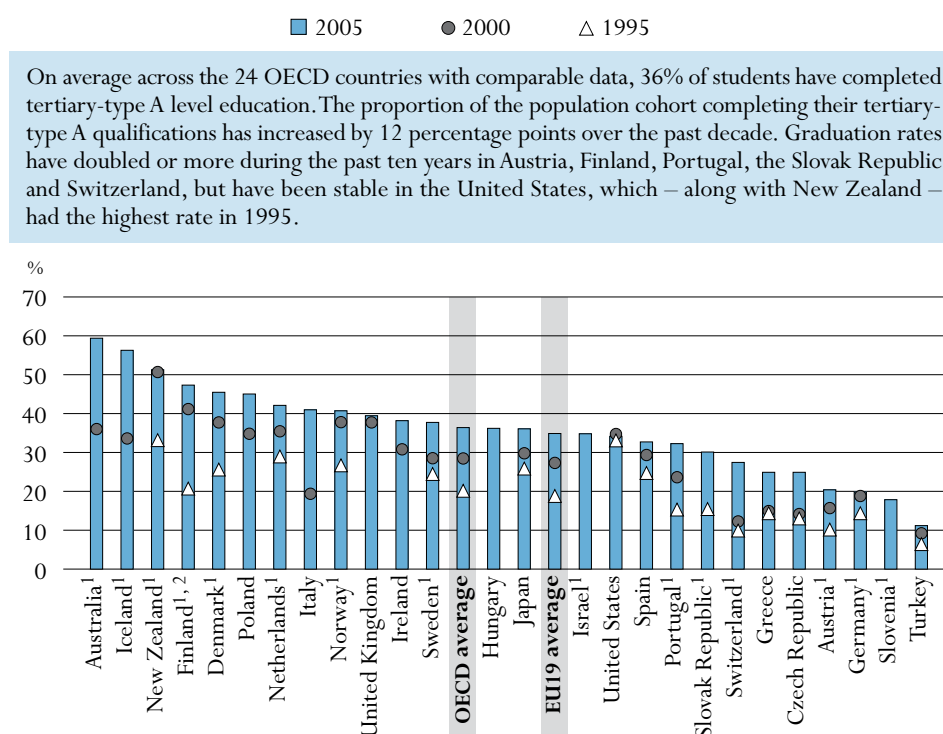
This indicator first shows the current tertiary graduate output of educational systems, *i.e.* the percentage of the population in the typical age cohort for tertiary education that follows and successfully completes tertiary programmes, as well as the distribution of tertiary graduates across fields of education. The indicator then examines the number of science graduates in relation to employed persons. It also considers whether gender differences concerning motivation in mathematics at the age of 15 may affect tertiary graduation rates. Finally, the indicator 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 (1995, 2000, 2005)

The chart shows the number of students completing tertiary-type A programmes for the first time, in 1995, 2000 and 2005, as a percentage of the relevant group.



1. Net graduation rate is calculated by summing the graduation rates by single year of age in 2005.

2. Year of reference 2004.

Countries are ranked in descending order of the graduation rates for tertiary-type A education in 2005.

Source: OECD, Table A3.2. See Annex 3 for notes ([www.oecd.org/edu/eqa2007](http://www.oecd.org/edu/eqa2007)).

StatLink <http://dx.doi.org/10.1787/068037263103>

### *Other highlights of this indicator*

- Tertiary-type A graduation rates figures range from around 20% or less in Austria, Germany and Turkey and the partner economy Slovenia, to more than 40% in Australia, Denmark, Finland, Iceland, Italy, the Netherlands, New Zealand, Norway and Poland.
- 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.
- The survival rates in tertiary education represent the proportion of those who enter a tertiary-type A or a tertiary-type B programme, who go on to graduate from either a tertiary-type A or a tertiary-type B programme. On average across the 19 OECD countries for which data are available, some 30% of tertiary students fail to successfully complete a programme equivalent to this level of education. Survival rates differ widely among OECD countries. In Greece and New Zealand, less than 60% of those who have entered tertiary programmes will graduate from either a tertiary-type A or a tertiary-type B programme in contrast to their counterparts in Belgium (Fl.), France, Ireland and Japan where the survival rates is at or above 76%.

## WHAT ARE STUDENTS' EXPECTATIONS FOR EDUCATION?

Drawing on data from the Programme for International Student Assessment (PISA) 2003 survey, this indicator presents the highest level of education that 15-year-old students report they expect to complete. The indicator first provides an overall picture of students' academic expectations in OECD countries and then examines relationships between expectations for tertiary education (ISCED 5 or 6) and variables such as individual performance levels, gender, socio-economic status and immigrant status, in order to shed light on equity issues.

### Key results

- At the country level, there is wide variation in students' educational expectations, likely the result of the complex interaction of social, economic, and educational factors in each national context. Fifteen-year-old students' expectations for completing at least a tertiary level education (ISCED 5B, 5A or 6) vary from 21 to 95%, and these expectations are not necessarily related to countries' overall performance or attainment levels.
- PISA 2003 data shows that 15-year-old students' expectations for completing a university-level programme (ISCED 5A or 6) are closely associated with their performance in mathematics and reading. Within every OECD country, students' expectations for their educational attainment rise with their performance level in mathematics and reading. In a number of countries, there are particularly large percentage point differences between the expectation rates for those students at the highest levels of mathematics and reading proficiency and those at the lowest levels.
- In over two-thirds of OECD countries, 15-year-old female students are more likely than males to expect to complete ISCED 5A or 6.
- 15-year-old students from lower socio-economic backgrounds are less likely to expect to complete ISCED 5A or 6 than students from higher socio-economic backgrounds. Even after controlling for mathematics performance, *i.e.* comparing students of similar ability, students with lower socio-economic backgrounds remain less likely to expect to complete these levels of education.
- In most countries, 15-year-old students from an immigrant background have high expectations regarding their education and are more likely to expect to complete ISCED 5A or 6 than their native counterparts. In addition, the relative expectations of these students are even higher when controlling for mathematics performance and socio-economic status.



## WHAT ARE STUDENTS' ATTITUDES TOWARDS MATHEMATICS?

### INDICATOR A5

This indicator examines how 15-year-old students' attitudes toward and approaches to learning and school vary across countries and across groups of countries, as well as the relationship between these characteristics and students' performance in mathematics. The indicator draws on data from the OECD Programme for International Student Assessment's (PISA) 2003 survey.

### Key results

- Students from countries that are in close geographical or cultural proximity to one another tend to share similar attitudes toward learning and similar school contexts, though the attitudes and characteristics bringing them together differ across subgroups of countries. The strength of the relationship between students' attitudes toward mathematics, approaches to learning and school contexts and their mathematics performance vary in similar ways across groups of countries.
- In Denmark, Finland and Sweden, students' attitudes toward mathematics have a strong relationship with students' achievement in mathematics. In these countries above-average positive relationship between interest, instrumental motivation, and self-concept with performance and an above-average negative relationship between anxiety and mathematics performance can be observed.
- Japan and Korea, as well as the Nordic countries, show above-average positive associations between at least two of the PISA 2003 indices of students' approaches to learning and their mathematics performance, indicating the importance of strategic learning techniques for students in these countries.
- Of the school-related indices, disciplinary climate consistently has the largest positive effect on mathematics performance across countries. Among the other school-related indices, the largest positive associations are between students' attitudes toward school and teacher support in the countries in the two subgroups that represent most of the Anglophone and Nordic countries in the sample.

## WHAT IS THE IMPACT OF IMMIGRANT BACKGROUND ON STUDENT PERFORMANCE?

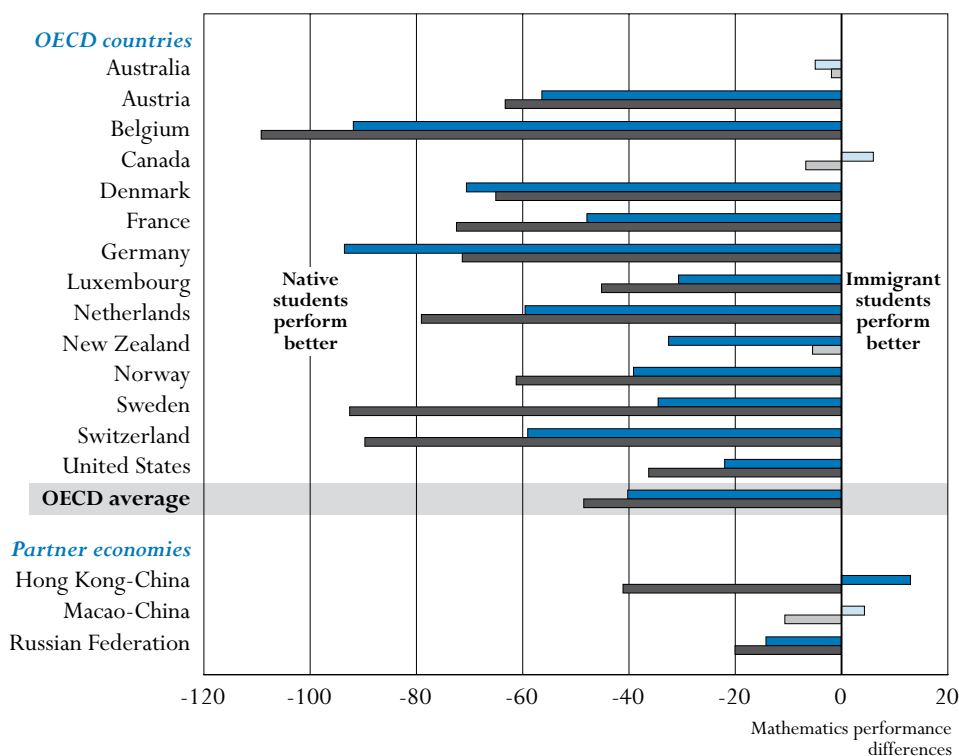
This indicator compares the performance in mathematics and reading of 15-year-old students with an immigrant background with their native counterparts, using data from the OECD Programme for International Student Assessment (PISA) 2003 survey. It also looks at the motivation of these students to learn.

### Key results

**Chart A6.1. Differences in mathematics performance by immigrant status (2003)**

- Difference in mathematics performance between native and second-generation students
- Difference in mathematics performance between native and first-generation students

Among the 14 OECD countries with significant immigrant populations, first-generation students lag 48 score points behind their native counterparts on the PISA mathematics scale, equivalent to more than a school year's progress, on average. The performance disadvantage of second-generation students also remains significant, at 40 score points. The disadvantage of students with an immigrant background varies widely across countries, from insignificant amounts in Australia, Canada, New Zealand and Macao-China to more than 90 score points in Belgium and Germany even for second-generation children.



Note: Statistically significant differences are marked in darker tones.

Source: OECD PISA 2003, Table A6.1a.

StatLink <http://dx.doi.org/10.1787/068061288083>

### *Other highlights of this indicator*

- Second-generation students (who were born in the country of the assessment) tend to perform better than their first-generation counterparts (who were born in another country), as one might expect since they did not need to make transitions across systemic, cultural and linguistic borders. However, the gains vary widely across countries. In Canada, Luxembourg, Sweden and Switzerland and the partner economy Hong Kong-China, second-generation students perform significantly better than first-generation students, with the performance gap reduced by 31 score points in Switzerland and 58 score points in Sweden, while in Germany and New Zealand second-generation students born in these countries perform worse than first-generation students.
- The mathematics achievement of the highest performers among students with an immigrant background varies much less across countries than the achievement of the lowest performing students with an immigrant background.
- Despite performing less well on the whole than native students and generally coming from less advantaged families, students who have experienced immigration first-hand tend to report, throughout the OECD area, higher levels of interest and motivation in mathematics.

## DOES THE SOCIO-ECONOMIC STATUS OF THEIR PARENTS AFFECT STUDENTS' PARTICIPATION IN HIGHER EDUCATION?

This indicator examines the socio-economic status of students enrolled in higher education, an important gauge of access to higher education for all. International comparable data on the socio-economic status of students in higher education is not widely available and this indicator is a first attempt to illustrate the analytical potential that would be offered by better data on this issue. It takes a close look at data from ten OECD countries, examining the occupational status (white collar or blue collar) of students' fathers and the fathers' educational background and also considers data from the OECD Programme for International Student Assessment (PISA) 2000 survey.

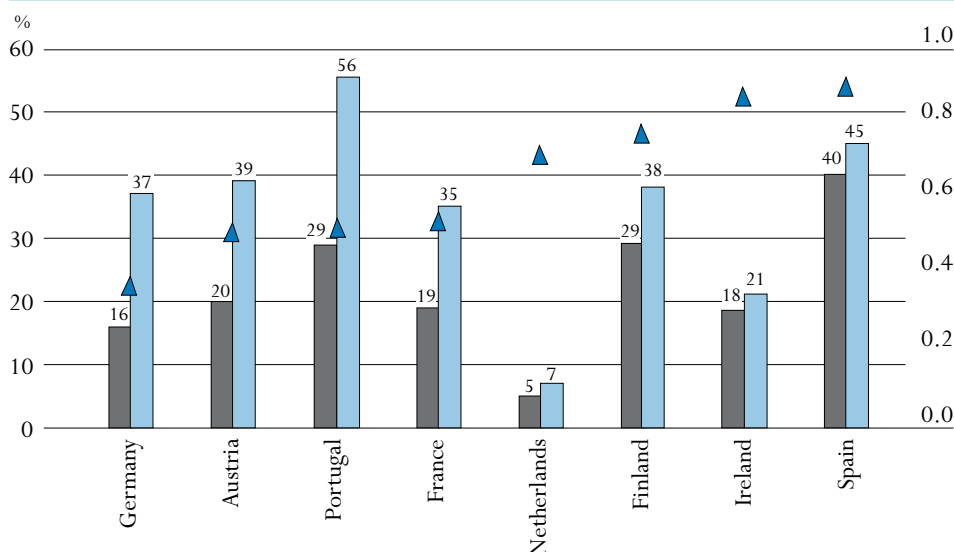
### Key results

#### Chart A7.1. Occupational status of students' fathers

*This chart depicts the proportion of higher education students' fathers compared with the proportion of men of corresponding age (40-to-60-year-olds) from a blue-collar background, in %.*

- Students' father (left-hand scale)
- Men in same age group (left-hand scale)
- ▲ Odds-ratio (right-hand scale)

There are large differences between countries in how well they succeed in having students from a blue-collar background participate in higher education. Ireland and Spain stand out as providing the most equitable access to higher education, whereas in Austria, France, Germany and Portugal students from a blue-collar background are about one-half as likely to be in higher education as compared with what their proportion in the population would suggest.



Source: EUROSTUDENT 2005.

StatLink <http://dx.doi.org/10.1787/068114616808>

### *Other highlights of this indicator*

- When measuring the socio-economic status of students in higher education by their fathers' educational background large differences between countries emerge. In many countries, students are substantially more likely to be in higher education if their fathers completed higher education. Students from such a background are more than twice as likely to be in higher education in Austria, France, Germany, Portugal and the United Kingdom than are students whose fathers did not complete higher education. In Ireland and Spain this ratio drops to 1.1 and 1.5, respectively.
- Among the countries providing information on the socio-economic status of students in higher education it appears that inequalities in previous schooling are reflected in the intake of students from less advantaged backgrounds. Countries providing more equitable access to higher education – such as Finland, Ireland and Spain – were also the countries with the most equal between-school performances in PISA 2000.

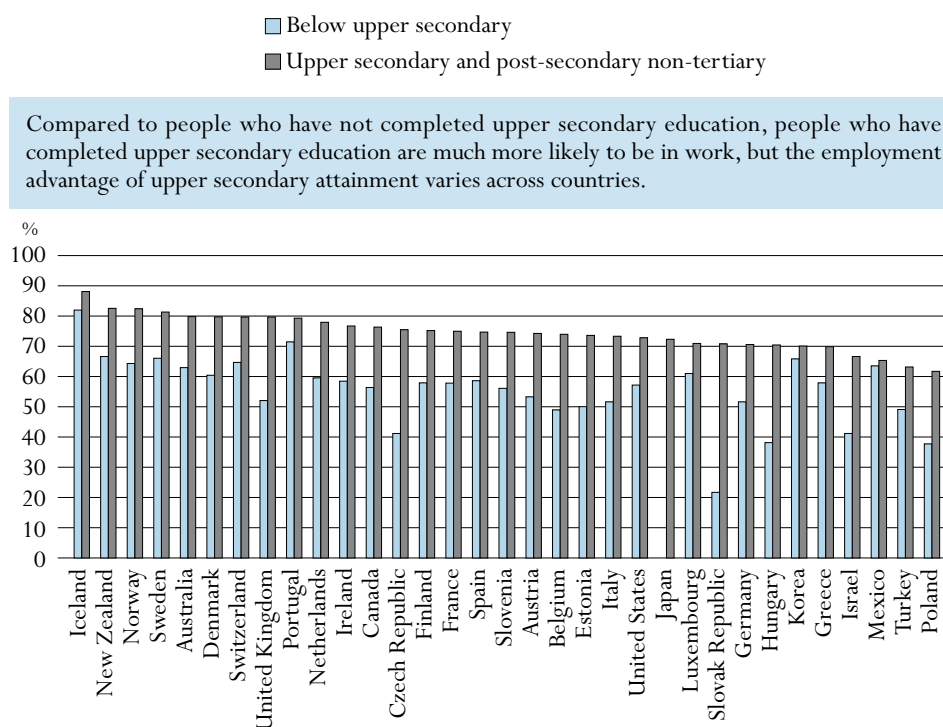
## HOW DOES PARTICIPATION IN EDUCATION AFFECT PARTICIPATION IN THE LABOUR MARKET?

This indicator examines relationships between educational attainment and labour force status, for both males and females, and considers changes in these relationships over time.

### Key results


#### Chart A8.1. Employment rates by educational attainment (2005)

*This chart shows the percentage of the 25-to-64-year-old population that is employed.*



*Countries are ranked in descending order of the employment rates in upper secondary and post-secondary non-tertiary education.*

Source: OECD. Table A8.3. See Annex 3 for notes ([www.oecd.org/edu/eag2007](http://www.oecd.org/edu/eag2007)).

StatLink  <http://dx.doi.org/10.1787/068152681851>

### *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.
- Higher educated individuals also face a more stable labour market than lower educated individuals. In almost all OECD countries, tertiary-educated adults have had substantially less variation in unemployment rates compared with lower secondary educated adults. This advantage appears to be particularly large in the Czech Republic, Germany, Ireland, Norway and the Slovak Republic.
- 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 adults with lower levels of education (Chart A8.3).
- Differences in employment rates between males and females are also wider among less educated groups. The chance of being in employment is 23 percentage points higher for males than for females among those without upper secondary qualifications, falling to 10 points for the most highly qualified.

## WHAT ARE THE ECONOMIC BENEFITS OF EDUCATION?

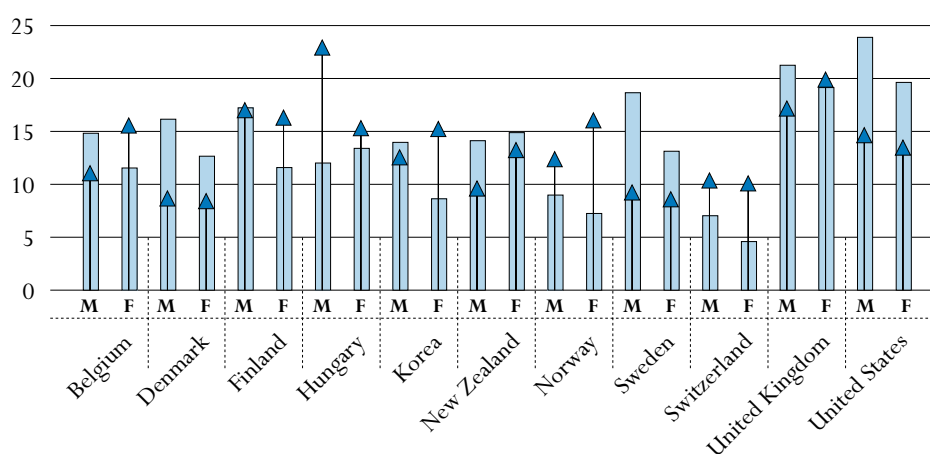
This indicator examines the relative earnings of workers with different levels of educational attainment in 25 OECD countries and the partner economy Israel. This indicator also presents data that describe the distribution of pre-tax earnings (see Annex 3 for notes) within five ISCED levels of educational attainment to help show how returns to education vary within countries among individuals with comparable levels of educational attainment. The financial returns to educational attainment 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. For the first time, this indicator presents new estimates of the rate of return for an individual investing in upper secondary education instead of working for the minimum wage with a lower secondary level of education.

### Key results

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


- Private internal rates of return for an individual immediately acquiring the next level of education: an upper secondary or post-secondary non-tertiary education, ISCED 3/4
- ▲ Private internal rates of return for an individual immediately acquiring the next level of education: a tertiary level degree, ISCED 5/6

In all countries, for males and females, private internal rates of return exceed 4.5% on an investment in upper secondary education (completed immediately following initial education). Private internal rates of return are, on average, higher for investment in upper secondary or post-secondary non-tertiary education than for tertiary education. 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 in obtaining a tertiary 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%.



M: Male  
F: Female

Source: OECD, Tables A9.5 and A9.6. See Annex 3 for notes ([www.oecd.org/edu/eag2007](http://www.oecd.org/edu/eag2007)).

StatLink  <http://dx.doi.org/10.1787/068170623457>



### *Other highlights of this indicator*

- Earnings increase with each level of education. Those who have attained upper secondary, post-secondary non-tertiary or tertiary education enjoy substantial earnings advantages compared with those of the same gender who have not completed upper secondary education. Across all countries, individuals with tertiary-type A and advanced research education had earnings that were at least 50% higher than individuals whose highest level of educational attainment was below upper secondary level of education (Chart A9.4).
- In all countries, females earn less than males with similar levels of educational attainment (Table A9.3). For a given level of educational attainment, they typically earn between 50 and 80% of what males earn.
- 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. The proportion of individuals with the highest educational attainment (tertiary-type A and advanced research programmes) in the lowest earning category (at or below half of the median) vary from 0 to 19.6%, in Portugal and Canada, respectively. Countries also differ in the relative share of men and women in the upper and lower categories of earnings.
- In all countries, it is profitable for a 40-year-old to return to education mid-career and obtain a tertiary degree. This applies to both males and females. The rate of return when the individual, at age 40, begins the next level of higher education in full-time university studies varies between 6.5% for males in New Zealand and 28.2% for females in Belgium.

## HOW MUCH IS SPENT PER STUDENT?

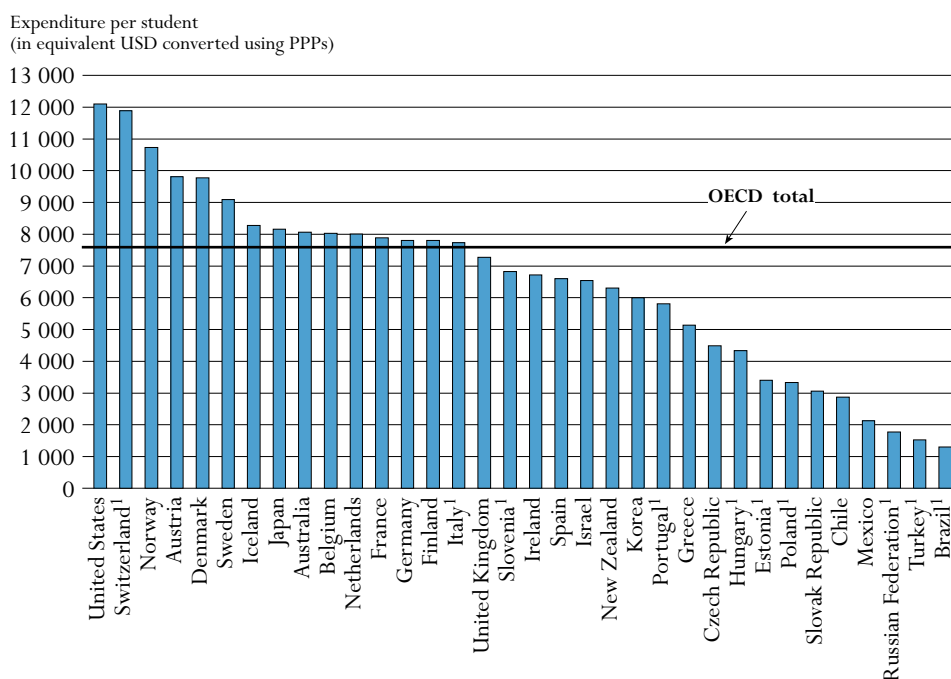
This indicator provides an assessment of the investment made in each student. Expenditure per student is largely influenced by teacher salaries (see Indicators B6 and D3), pension systems, instructional and teaching hours (see Indicators D1 and D4), teaching materials and facilities, the programme orientation 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 over the time in expenditure per student.

### Key results

#### Chart B1.1. Annual expenditure on educational institutions per student in primary through tertiary education (2004)

*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 USD converted using purchasing power parities, based on full-time equivalents.*

OECD countries as a whole spend USD 7 572 per student annually between primary and tertiary education, that is – USD 5 331 per primary student, USD 7 163 per secondary student and USD 14 027 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, Tables B1.1a. See Annex 3 for notes ([www.oecd.org/edu/eqq2007](http://www.oecd.org/edu/eqq2007)).

StatLink <http://dx.doi.org/10.1787/068176572003>

### *Other highlights of this indicator*

- Excluding R&D activities and ancillary services, expenditure on educational core services in tertiary institutions represents on average USD 7 664 and ranges from USD 4 500 or below in Greece, Italy, Poland and Turkey to more than USD 9 000 in Australia, Austria, Denmark, Norway, Switzerland and the United States.
- OECD countries spend on average USD 81 485 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 economies Brazil, Chile, Estonia and the Russian Federation, to USD 100 000 or more in Austria, Denmark, Iceland, 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 of Korea and the Netherlands is below the OECD average and yet both are among the best-performing countries in the PISA 2003 survey.
- 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, and the partner economy Estonia – 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. On the one hand, rising unit costs that are not paralleled by increasing outcomes raise the spectre of falling productivity levels in education. This differs considerably across educational sectors. Expenditure per student at primary, secondary and post-secondary non-tertiary levels increased by 50% or more between 1995 and 2004 in Greece, Hungary, Ireland, Poland, Portugal, the Slovak Republic and Turkey, and the partner economy Chile. On the other hand, spending per student at the tertiary level has in some cases fallen, as expenditure does not keep up with expanding student numbers.

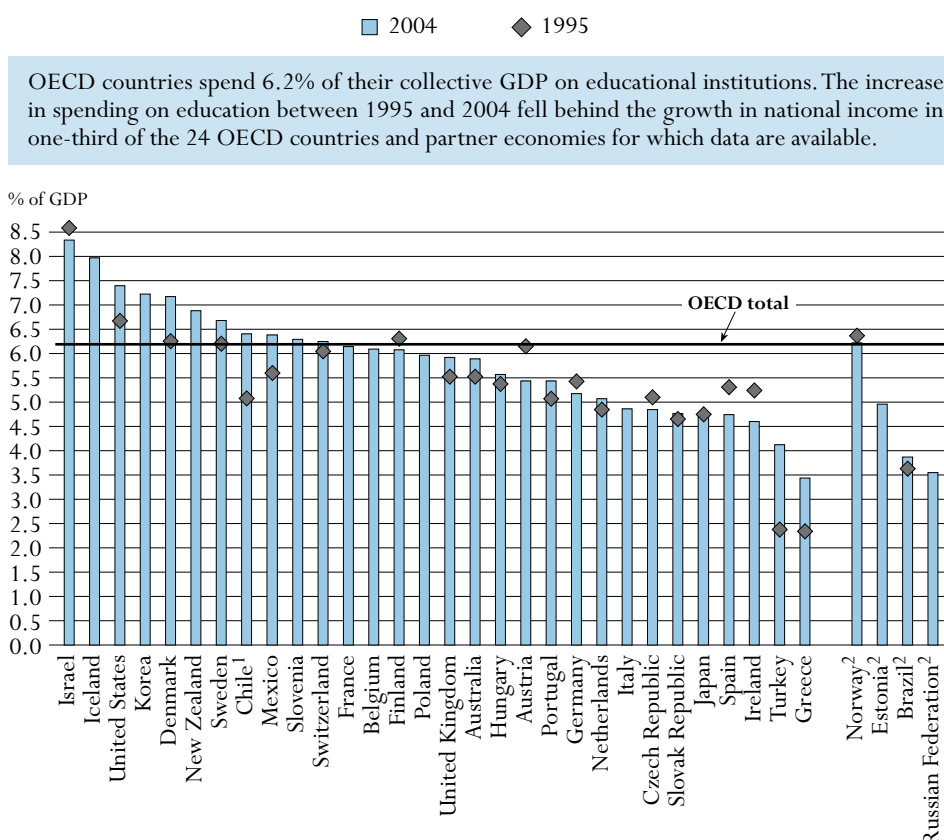
## WHAT PROPORTION OF NATIONAL WEALTH IS SPENT ON EDUCATION?

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, 2004)**

*This chart measures educational investment through the share of national income that each country devotes to spending on educational institutions in 1995 and 2004. It captures both direct and indirect expenditure on educational institutions from both public and private sources of funds.*



1. Years of reference 2005 and 1995.

2. Expenditure from public sources only.

Countries are ranked in descending order of total expenditure from both public and private sources on educational institutions in 2004.

Source: OECD, Table B2.1. See Annex 3 for notes ([www.oecd.org/edu/eqa2007](http://www.oecd.org/edu/eqa2007)).

StatLink <http://dx.doi.org/10.1787/068186423156>

### *Other highlights of this indicator*

## INDICATOR B2

- Around two-thirds of expenditure on educational institutions, or 3.8% of the combined GDP in the OECD area, are devoted to primary, secondary and post-secondary non-tertiary education. Iceland and New Zealand, and, to a lesser extent, Sweden and Switzerland, spend more than twice the level of expenditure compared to their GDP than Greece.
- Tertiary education accounts for more than one-quarter of the combined OECD expenditure on educational institutions (1.9% of the combined GDP).
- Korea and the United States spend 2.3 and 2.9% of their GDP, respectively, on tertiary institutions. These two countries, along with the partner economy Chile (2.0%), show the highest proportions of private expenditure at the tertiary level of education. Compared to GDP, the United States spends on tertiary education up to three times more than Italy, Portugal and Turkey and partner economy Estonia, and four times more than partner economies Brazil and the Russian Federation.
- 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. Between 1995 and 2004 and for all levels of education combined, expenditure on educational institutions increased in the 24 countries with comparable data for the period. The increase was, on average, 42% in OECD countries. The increase is usually larger for tertiary education than for primary to post-secondary non-tertiary levels of education combined.
- At the tertiary level of education, the increase of expenditure over the period 1995-2004 was more pronounced from 2000 onward than before 2000 in nearly one-half of OECD countries. Between 2000 and 2004, expenditure increased by more than 30 percentage points in the Czech Republic, Greece, Mexico, Poland, the Slovak Republic and Switzerland, and the partner economy Chile.
- The size of the school-age population shapes the potential demand for initial education and training and therefore affects expenditure on educational institutions. Thus, countries with more than 25% of their population enrolled in education have an above OECD average proportion of their GDP devoted to education. On the contrary, countries with less than 20% of their population enrolled in education have a below OECD average proportion of their GDP devoted to education.

## HOW MUCH PUBLIC AND PRIVATE INVESTMENT IS THERE IN EDUCATION?

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 public entities and private ones, particularly those at the tertiary level.

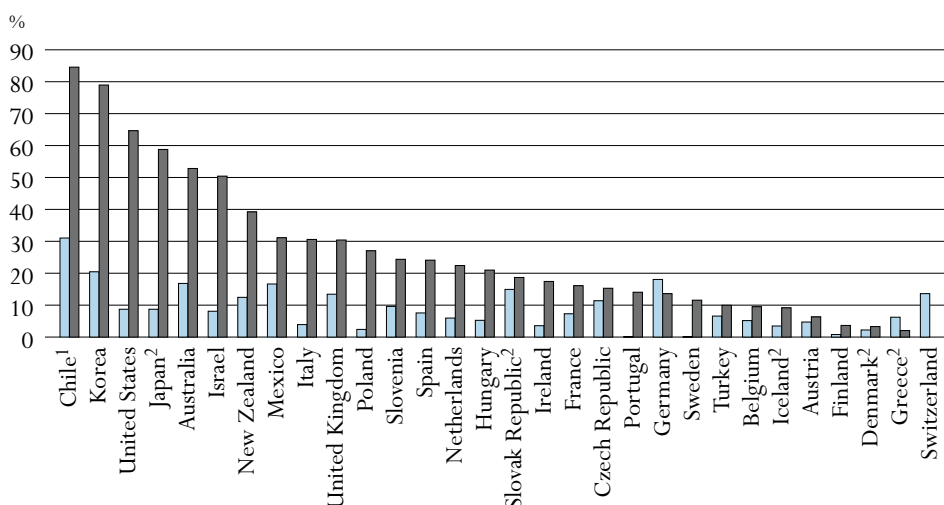
### Key results

#### Chart B3.1. Share of private expenditure on educational institutions (2004)

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.

■ Primary, secondary and post-secondary non-tertiary education  
■ Tertiary education


On average over 90% of primary and secondary education in OECD countries, and nowhere less than 80% (except in Korea and in the partner economy Chile), is paid for publicly. However, in tertiary education the proportion funded privately varies widely, from less than 5% in Denmark, Finland and Greece, to more than 50% in Australia, Japan and the United States and in partner economy Israel, and to above 75% in Korea and in the partner economy Chile.



1. Year of reference 2005.

2. Some levels of education are included with others. Refer to "x" code in Table B1.1b 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/eag2007](http://www.oecd.org/edu/eag2007)).

StatLink  <http://dx.doi.org/10.1787/068188403262>

### *Other highlights of this indicator*

- In all countries for which comparable data are available, for all levels of education combined, public funding increased between 1995 and 2004. However, private spending increased even more in nearly three-quarters of these countries. Nevertheless, in 2004, on average 87% of expenditure, for all levels of education combined, was still from public sources.
- The share of tertiary spending from private sources rose substantially in some countries between 1995 and 2004, 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 decreased slightly between 1995 and 2000, as well as every year between 2001 and 2004. However in general the increase of private investment has not displaced public financing, but rather complemented it.
- The share of public funding at the tertiary level in OECD countries represents on average 76% in 2004.
- 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 20% of funds at these levels come from private sources.
- In tertiary education, households cover the majority of all private expenditure in all countries with available data except Greece, Hungary and Sweden. Private expenditure from other entities than households is still significant, representing 10% or more in Australia, Hungary, Italy, Korea, the Netherlands, Sweden, the United Kingdom and the United States, and the partner economy Israel.

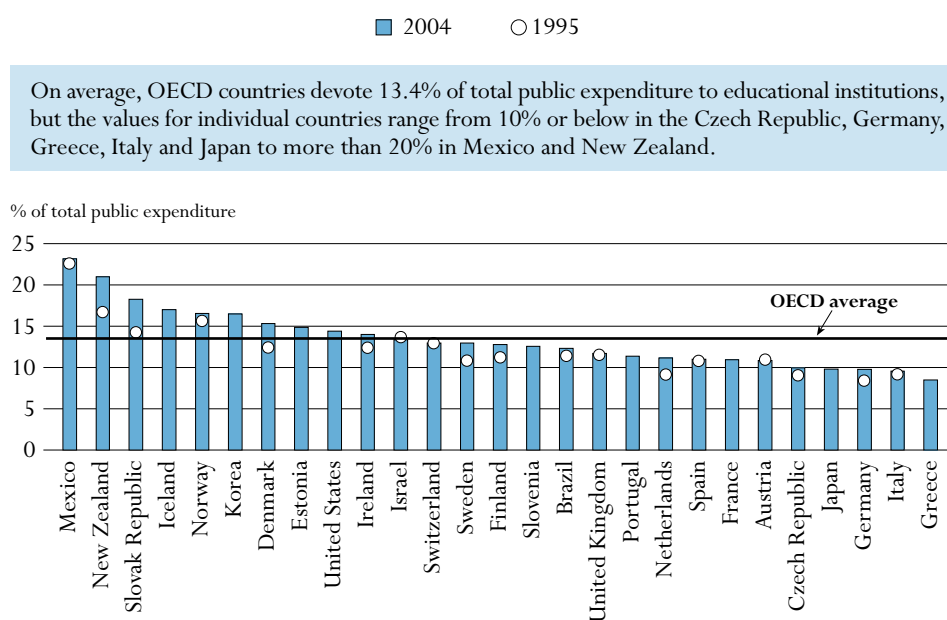
## WHAT IS THE TOTAL PUBLIC SPENDING ON EDUCATION?

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, 2004)**

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



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 2004.

Source: OECD, Table B4.1. See Annex 3 for notes ([www.oecd.org/edu/eag2007](http://www.oecd.org/edu/eag2007)).

StatLink <http://dx.doi.org/10.1787/068247218642>



### *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 about 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 Denmark, Finland, Greece and Norway to nearly six times in Korea. The latter figure is indicative of the relatively high proportion of private funds that go into tertiary education in Korea.
- Between 1995 and 2004, public budgets as a percentage of GDP tended to increase slightly. Education took a growing share of total public expenditure in most countries, and it did also on average grow as fast as GDP. In Denmark, the Netherlands, 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, 85% of public expenditure on education is transferred to public institutions. In two-thirds of the OECD countries, as well as in the partner economies Brazil, Estonia and Slovenia, 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 26% on average among OECD countries with available data.

## INDICATOR B4

## HOW MUCH DO TERTIARY STUDENTS PAY AND WHAT PUBLIC SUBSIDIES DO THEY RECEIVE?

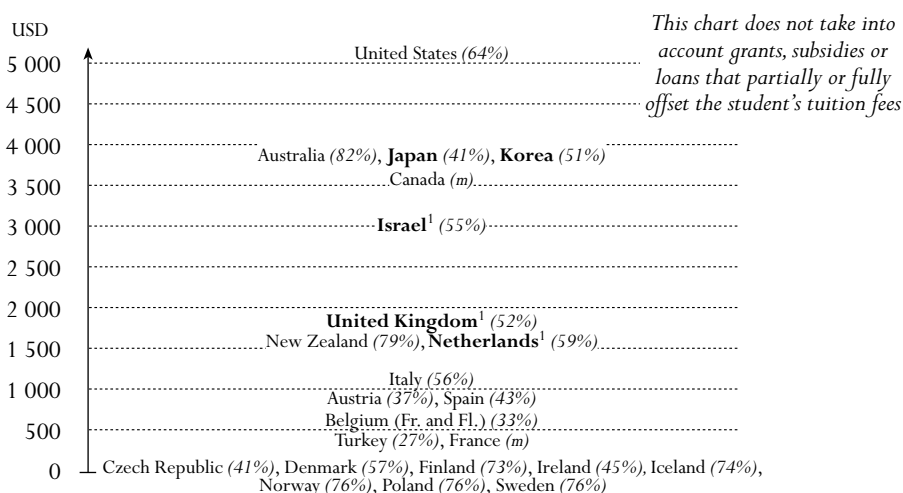
This indicator examines the relationships between annual tuition fees charged by institutions, direct and indirect public spending on educational institutions, and public subsidies to households for student living costs. It considers whether financial subsidies for households are provided in the form 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 fully answered here, this indicator presents information about 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 (academic year 2004–2005)

*This chart shows the annual tuition fees charged by tertiary-type A public institutions for full-time national students in equivalent USD converted using PPPs. Countries in bold indicate that tuition fees refer to public institutions but more than two-thirds of students are enrolled in private institutions. The net entry rate in tertiary-type A (in %) is added next to country names. For example, in the Netherlands, average tuition fees reach USD 1 646 in public tertiary-type A institutions and 59% of students enter this level of education.*

There are large differences between OECD countries and partner economies in the average tuition fees charged by tertiary-type A public institutions. There are no tuition fees charged by public institutions in one-third of OECD countries, whereas another third of countries have annual tuitions fees charged by public institutions that exceed USD 1 500. Among the EU19 countries, only the Netherlands and the United Kingdom have annual tuitions fees that represent more than USD 1 500 per full-time student; these relate to government-dependent institutions.



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

Source: OECD, Table B5.1a and C2.4. See Annex 3 for notes ([www.oecd.org/edu/eag2007](http://www.oecd.org/edu/eag2007)).

StatLink <http://dx.doi.org/10.1787/068348603526>

### *Other highlights of this indicator*

- An average of 18% of public spending on tertiary education is devoted to supporting students, households and other private entities. In Australia, Denmark, the Netherlands, New Zealand, Norway and Sweden, and the partner economy Chile, public subsidies to households account for about 27% or more of public tertiary education budgets.
- Low annual tuition fees charged by tertiary-type A institutions are not systematically associated with a low proportion of students that benefit from public subsidies. The tuition fees charged by public educational institutions for national students are negligible (Nordic countries and the Czech Republic) or low (Turkey) in tertiary-type A education but at the same time more than 55% of the students enrolled in tertiary-type A education in these countries can benefit from scholarships/grants and/or public loans. Moreover, Finland, Norway and Sweden are among the seven countries with the highest entry rate to tertiary-type A education.
- OECD countries where students are required to pay tuition fees and can benefit from particularly large public subsidies do not show lower levels of access to tertiary-type A education compared to the OECD average. For example, Australia (82%) and New Zealand (79%) have one of the highest entry rates to tertiary-type A education and the Netherlands (59%) and the United State (64%) are above the OECD average. The United Kingdom (51%) is just below the OECD average (54%), although entry to tertiary-type A education increased by 4 percentage points between 2000 and 2005.
- The cost for a government to provide public loans to a significant proportion of students is greater in countries where the average level tuition fees charged by institutions is higher or where the average amount of the public loans available to students is higher than the OECD average. The average amount of public loans is greater than the average tuition fees charged in public institutions in all of the OECD countries with available data, which is an indication that the public loans also serve to support the living expenses of students during their studies.

## ON WHAT RESOURCES AND SERVICES IS EDUCATION FUNDING SPENT?

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. It 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.

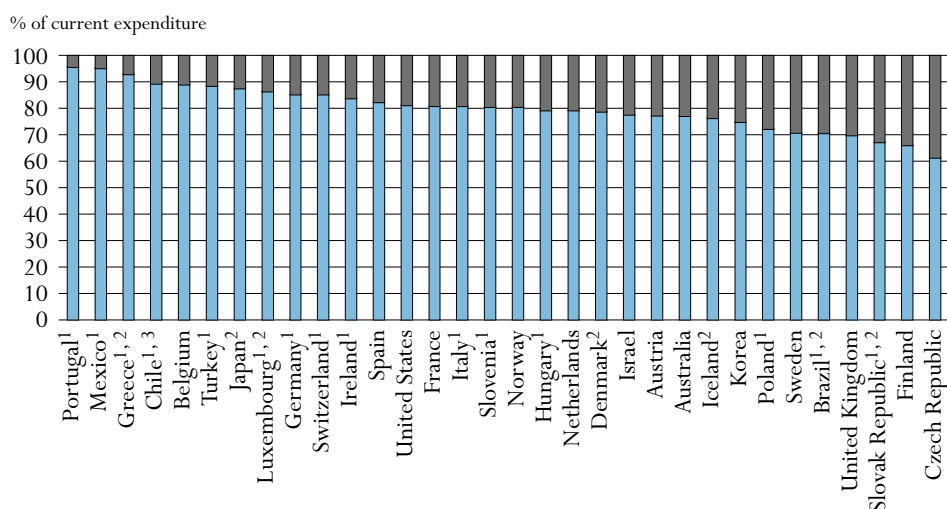
### Key results

#### Chart B6.1. Distribution of current expenditure on educational institutions for primary, secondary and post-secondary non-tertiary education (2004)

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 91% of total spending across OECD countries. In all but four OECD countries and partner economies, 70% or more of primary, secondary and post-secondary non-tertiary current expenditure is spent on staff salaries.



1. Public institutions only.

2. Some levels of education are included with others. Refer to "x" code in Table B1.1a for details.

3. Year of reference 2005.

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/eag2007](http://www.oecd.org/edu/eag2007)).

StatLink <http://dx.doi.org/10.1787/068352246561>

### *Other highlights of this indicator*

- OECD countries spend an average of 34% 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 6% of total spending. At the high end, Finland, France, 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 as well as the degree to which expansion in enrolments requires the construction of new buildings.

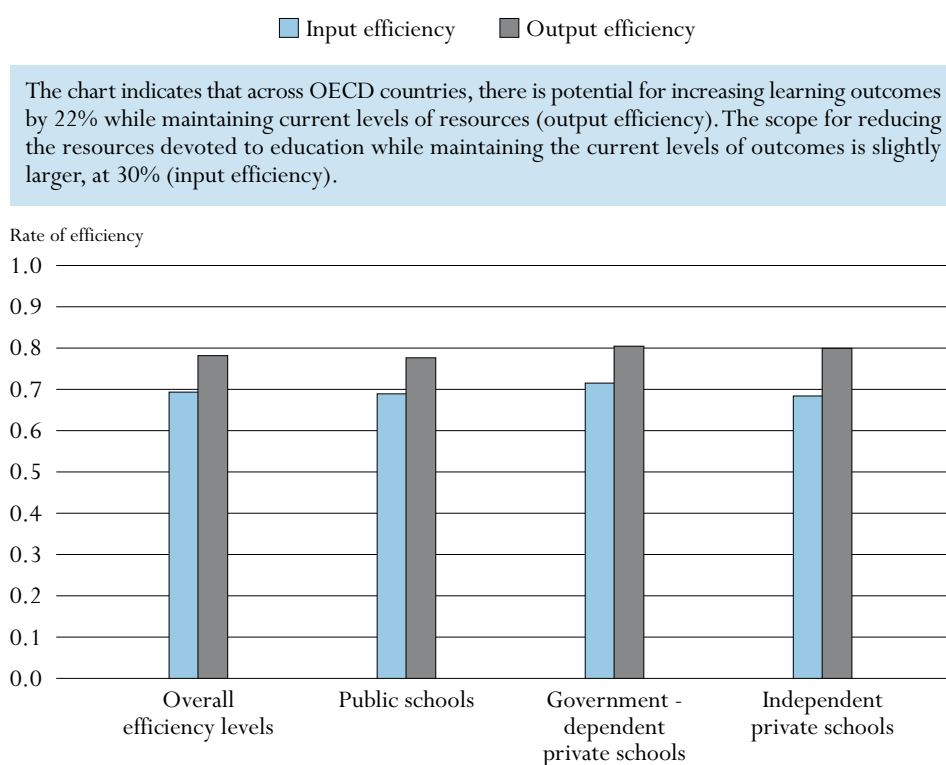
## HOW EFFICIENTLY ARE RESOURCES USED IN EDUCATION?

This indicator examines the relationship between resources invested and outcomes achieved in primary and lower secondary education across OECD countries and thus raises questions about the efficiency of their education systems.

### Key results

#### Chart B7.1. Efficiency levels in primary and lower secondary education

*This chart shows the potential for increasing learning outcomes at current levels of resources in primary and lower secondary education across OECD countries as a whole.*



Source: OECD. Table B7.1. See Annex 3 for notes ([www.oecd.org/edu/eag2007](http://www.oecd.org/edu/eag2007)).

StatLink <http://dx.doi.org/10.1787/068356028750>

### Other highlights of this indicator

- Differences in estimates of efficiency for different types of school (e.g. public and private) tend to be modest, when looking at the OECD as a whole, though efficiency savings are greater for smaller schools than for larger schools.

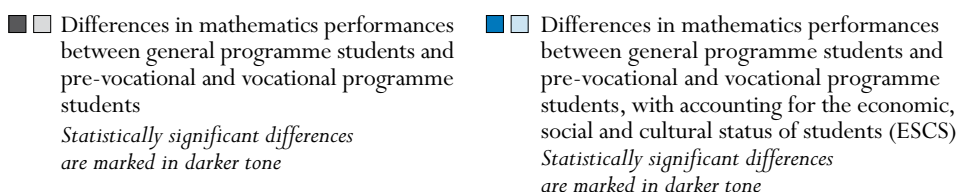


## HOW PREVALENT ARE VOCATIONAL PROGRAMMES?

This indicator shows the participation of students in vocational education and training (VET) at the upper secondary level of education and compares the levels of education expenditure per student for general programmes and VET. This indicator also compares the educational outcomes of 15-year-old students enrolled in general education and in vocational education.

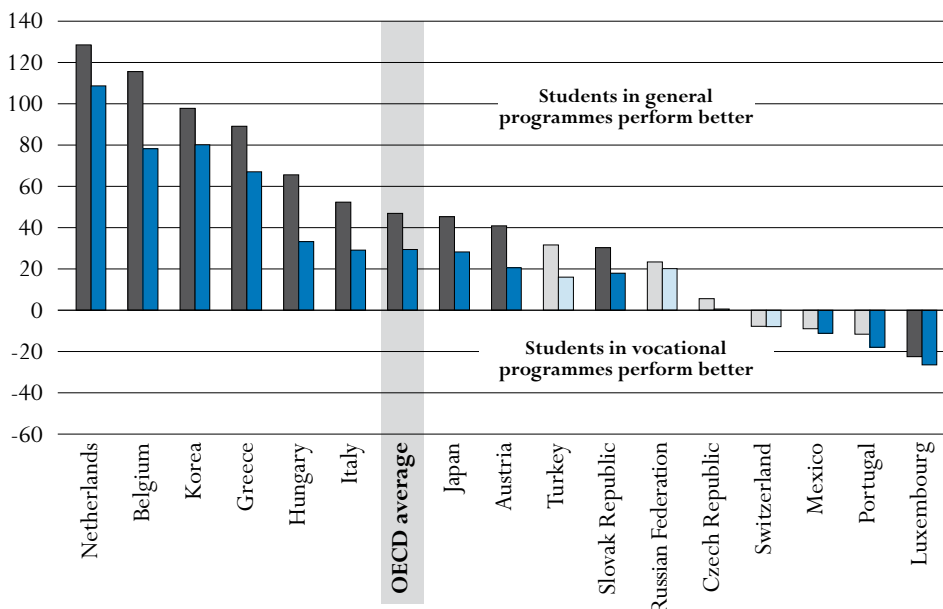
### Key results

**Chart C1.1. Difference in mathematics performance associated with students' programme orientation (2003)**



PISA 2003 shows that 15-year-olds in pre-vocational and vocational programmes have statistically significant lower performance in mathematics compared to students enrolled in general programmes in 9 out of the 10 OECD countries for which data are available. On average, across OECD countries, 15-year-olds enrolled in general programmes perform 45 score points higher and after adjusting for socio-economic factors the difference still remains, at 27 score points.

Performance on the PISA mathematics scale



Note: This figure shows data for countries with more than 3 % of students in the aggregated category of pre-vocational and vocational programmes.

Countries are ranked in descending order of performance advantage for students enrolled in general programmes versus students enrolled in vocational programmes.

Source: OECD PISA 2003 database, Table C1.3. See Annex 3 for notes ([www.oecd.org/edu/eag2007](http://www.oecd.org/edu/eag2007)).

StatLink <http://dx.doi.org/10.1787/068363750663>



### *Other highlights of this indicator*

- In 15 out of 28 OECD countries and the partner economy Slovenia, the majority of upper secondary students attend pre-vocational and vocational programmes. A significant proportion of vocational education in upper secondary is school-based in most OECD countries.
- The 14 OECD countries for which data are available spend, on average, USD 854 more per student in upper secondary vocational programmes than in general programmes.

INDICATOR C1

## WHO PARTICIPATES IN EDUCATION?

This indicator examines access to education and its evolution by using information on enrolment rates and trends in enrolments from 1995 to 2005. It also 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. For information on vocational education and training in secondary education, see Indicator C1.

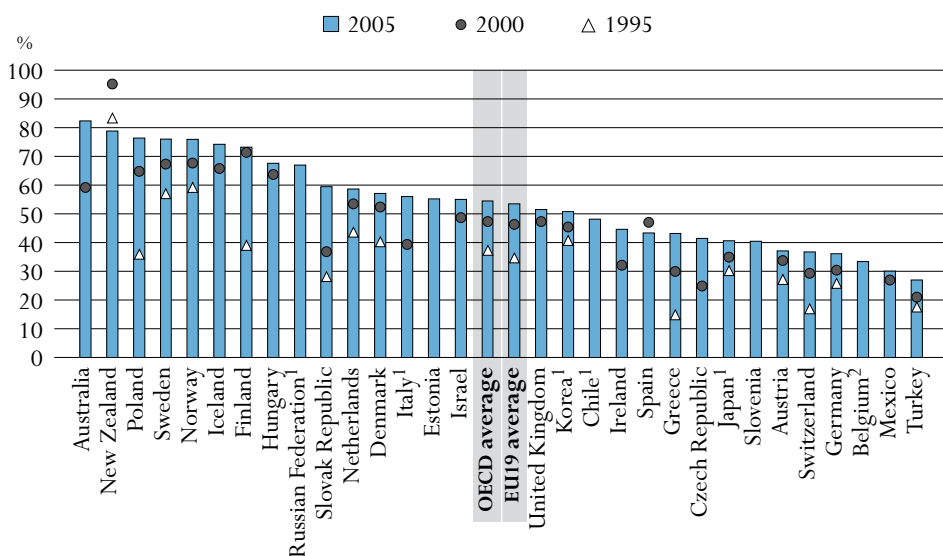
### Key points

#### Chart C2.1. Entry rates into tertiary-type A education (1995, 2000 and 2005)

*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 1995, 2000 and 2005. Entry rates measure the inflow to education at a particular time rather than the stock of students who are already enrolled.*

In Australia, Finland, Hungary, Iceland, New Zealand, Norway, Poland and Sweden, and the partner economy the Russian Federation, more than 60% of young people entered tertiary-type A programmes in 2005. Entry rates in tertiary-type A substantially increased between 1995 and 2005, by 18 percentage points on average in OECD countries. Between 2000 and 2005, the growth exceeds 10 percentage point in more than one-quarter of the 24 OECD countries with available data.



1. Entry rate for tertiary-type A programmes calculated as gross entry rate.

2. Excludes the German-speaking Community of Belgium.

Countries are ranked in descending order of the entry rates for tertiary-type A education in 2005.

Source: OECD, Table C2.5. See Annex 3 for notes ([www.oecd.org/edu/eqa2007](http://www.oecd.org/edu/eqa2007)).

StatLink <http://dx.doi.org/10.1787/068400866631>

### *Other highlights of this indicator*

## INDICATOR C2

- 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 range spanning 14 or more years in Belgium, the Czech Republic, France, Hungary, Iceland, Japan, Spain and Sweden. In contrast, Mexico and Turkey have enrolment rates exceeding 90% for a period of only nine and seven years, and eight and nine years only for partner economies Chile and the Russian Federation.
- In more than one-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 75.9% for the EU19 whereas the OECD average is 68.5%.
- Enrolment rates for the age 15 to 19 increased on average from 74 to 82% over the period 1995 to 2005 and in Belgium, the Czech Republic, Greece and Poland, and the partner economy Slovenia, reached 90% or more in 2005 (although Belgium had already reached 90% or more in 1995). A similar pattern is observed with enrolment rates for 20-to-29 year olds, an age group in which most students will be enrolled in tertiary education: between 1995 and 2005, the enrolment rates for 20-to-29-year-olds increased in all OECD countries.
- 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, 15% of young people, on average, will enter tertiary-type B programmes compared to 54% in tertiary-type A and 2% in advanced research programmes.
- In Belgium, and to a lesser extent in the partner economy Slovenia, wide access to tertiary-type B programmes counterbalances comparatively low rates of entry into tertiary-type A programmes. In contrast, Iceland, Norway, Poland, and Sweden have entry rates well 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.

## WHO STUDIES ABROAD AND WHERE?

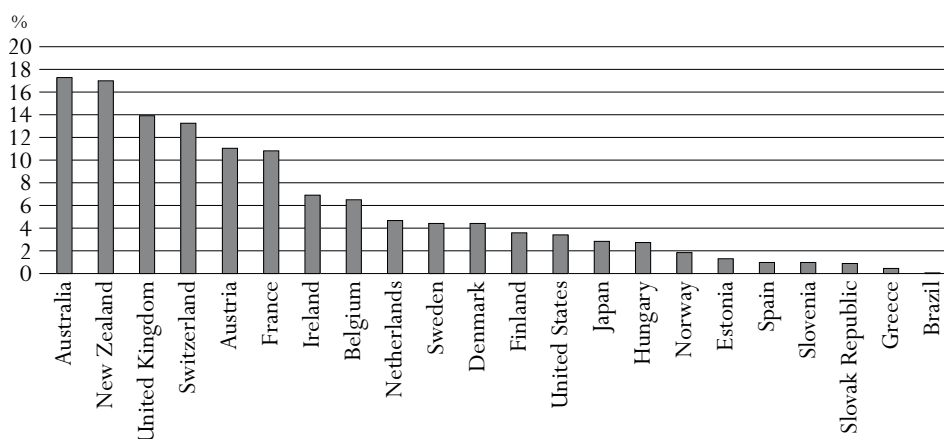
This indicator is providing a picture of student mobility and the extent of the internationalisation of tertiary education in OECD countries and partner economies. It shows global trends and highlights the major destinations of international students and trends in market shares of the international student pool. 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. Finally, 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 (2005)

*This chart shows the percentage of international students enrolled in tertiary education. According to country-specific immigration legislation 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.*

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 18% of tertiary enrolments. International students are most numerous in tertiary enrolments in Australia, Austria, France, New Zealand, Switzerland and the United Kingdom.



*Note:* The data on the mobility of international students presented below are not comparable with data on foreign students in tertiary education (defined on the basis of citizenship) presented in pre-2006 editions of *Education at a Glance* or elsewhere in this chapter.

*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/eag2007](http://www.oecd.org/edu/eag2007)).

**StatLink** <http://dx.doi.org/10.1787/068417017111>

### *Other highlights of this indicator*

- In 2005, over 2.7 million tertiary students were enrolled outside their country of citizenship. This represented a 5% increase in total foreign student intake reported to the OECD and the UNESCO Institute for Statistics from 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 economies.
- In Spain, Switzerland and the United States, and the partner economy Brazil, more than 15% of international students are enrolled in advanced research programmes.
- 30% or more of international students are enrolled in sciences, agriculture or engineering in Finland, Germany, Hungary, Sweden, Switzerland, the United Kingdom and the United States.
- International graduates contribute to 20% or more of the graduate output for tertiary-type A programmes in Australia and the United Kingdom. The same holds for foreigners graduating in Belgium. The contribution of international and foreign graduates to the tertiary graduate output is especially high for advanced research programmes in Belgium, Switzerland, the United Kingdom and the United States.

## HOW SUCCESSFUL ARE STUDENTS IN MOVING FROM EDUCATION TO WORK?

This indicator shows the number of 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 periods 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.

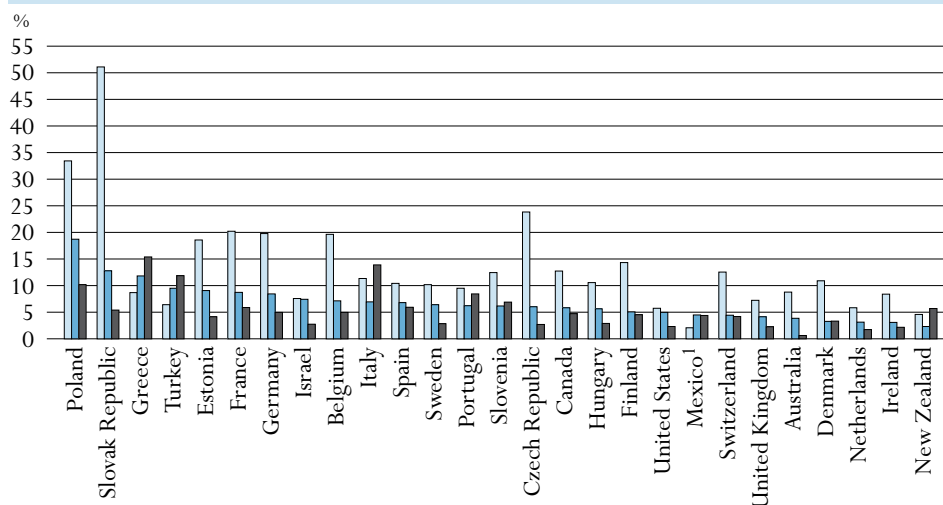
### Key results

#### Chart C4.1. Share of 25-to-29-year-olds who are unemployed and not in education, by level of educational attainment (2005)

*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 educational 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 (except in Greece, Italy and New Zealand).



1. Year of reference 2004.

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/eqg2007](http://www.oecd.org/edu/eqg2007)).

StatLink  <http://dx.doi.org/10.1787/068418024204>

### *Other highlights of this indicator*

- On average across OECD countries, a young person aged 15 in 2005 can expect to continue in formal education for about 6.7 years. In 20 of the 29 OECD countries and 3 partner economies for which data are available, this period ranges from 5 to 7.5. However, the range of this figure is wide, from 3.1 years (Turkey) to a high of 8.6 years (Iceland).
- Among the younger cohort (15-to-19-year-olds) the proportion of individuals in school has increased by 4 percentage points, from 80.5 to 84.5%, between 2000 and 2005 in the OECD countries. This growth has been greatest in the Czech Republic and the Slovak Republic where increases exceed 8 percentage points during the period.
- In addition to the expected number of years spent in education, a young person aged 15 can expect to hold a job for 6.1 of the 15 years to come, to be unemployed for a total of 0.8 years and to be out of the labour market (not employed, not in education and not looking for a job) for 1.3 years on average in OECD countries.
- On average, completing upper secondary education reduces unemployment among 20-to-24-year-olds by 7.3 percentage points and that of 25-to-29-year-olds by 7.0 percentage points. Not attaining an upper secondary qualification is clearly a serious impediment to entering employment, while obtaining a tertiary qualification increases the likelihood job seekers will find employment.

## DO ADULTS PARTICIPATE IN TRAINING AND EDUCATION AT WORK?

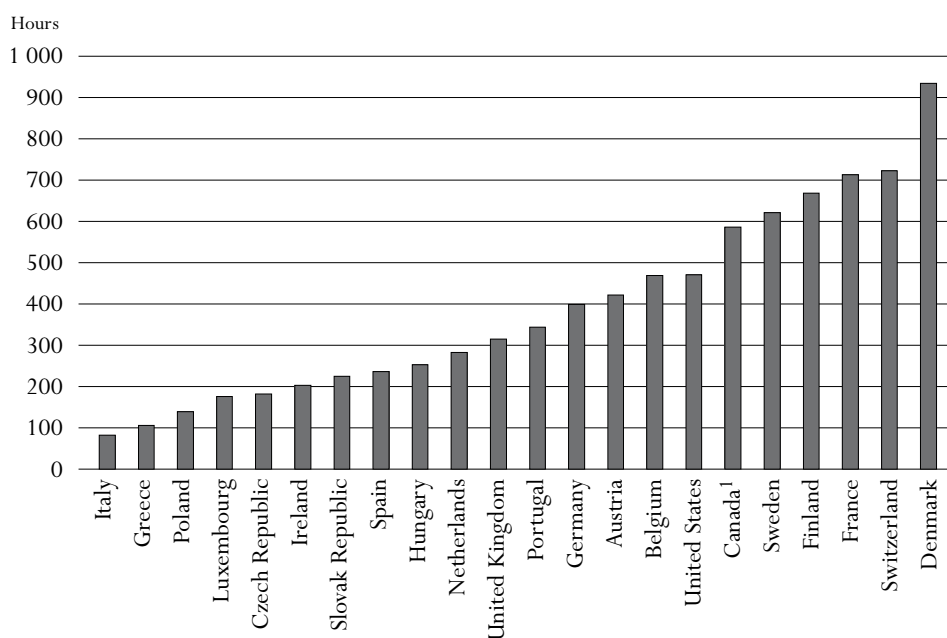
This indicator examines the participation of the adult population in non-formal job-related education and training by showing the expected number of hours in such education and training. A particular focus of this indicator is the time that a hypothetical individual (facing current conditions in terms of adult learning opportunities at different stages in life) is expected to spend in such education and training over a typical working life (a 40-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.*


Across countries, there are major differences 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/eag2007](http://www.oecd.org/edu/eag2007)).

StatLink  <http://dx.doi.org/10.1787/068423487063>



### *Other highlights of this indicator*

- Adults with higher levels of educational attainment are more likely to participate in non-formal job-related continuing education and training than adults with lower educational attainment.
- Across countries, 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.

INDICATOR C5

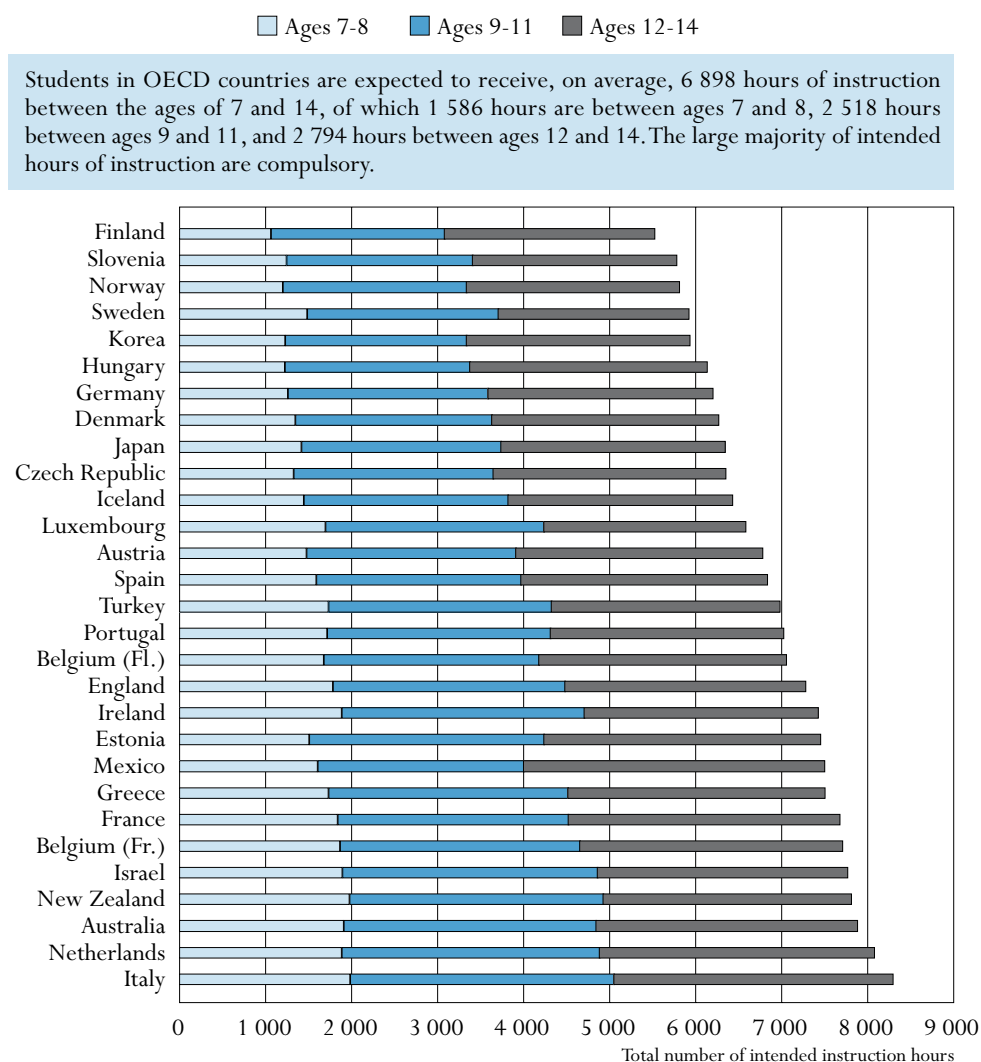
## HOW MUCH TIME DO STUDENTS SPEND IN THE CLASSROOM?

This indicator examines the amount of instruction time that students are expected 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. Total number of intended instruction hours in public institutions between the ages of 7 and 14 (2005)**



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/eqa2007](http://www.oecd.org/edu/eqa2007)).

StatLink <http://dx.doi.org/10.1787/068453733667>

### *Other highlights of this indicator*

- In OECD countries, students between the ages of 7 and 8 receive an average of 769 hours per year of compulsory instruction time and 793 hours per year of intended instruction time in the classroom. Students between the ages of 9 and 11 receive about 45 hours more per year (than those aged between 7 and 8 years) and those aged between 12 and 14 receive just over 90 hours more per year than those aged between 9 and 11.
- On average among OECD countries, the teaching of reading, writing and literature, mathematics and science comprises nearly 50% of the compulsory instruction time of students aged 9 to 11 and 40% 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 the partner economies Chile and Israel to 30% or more in France, Mexico and the Netherlands.

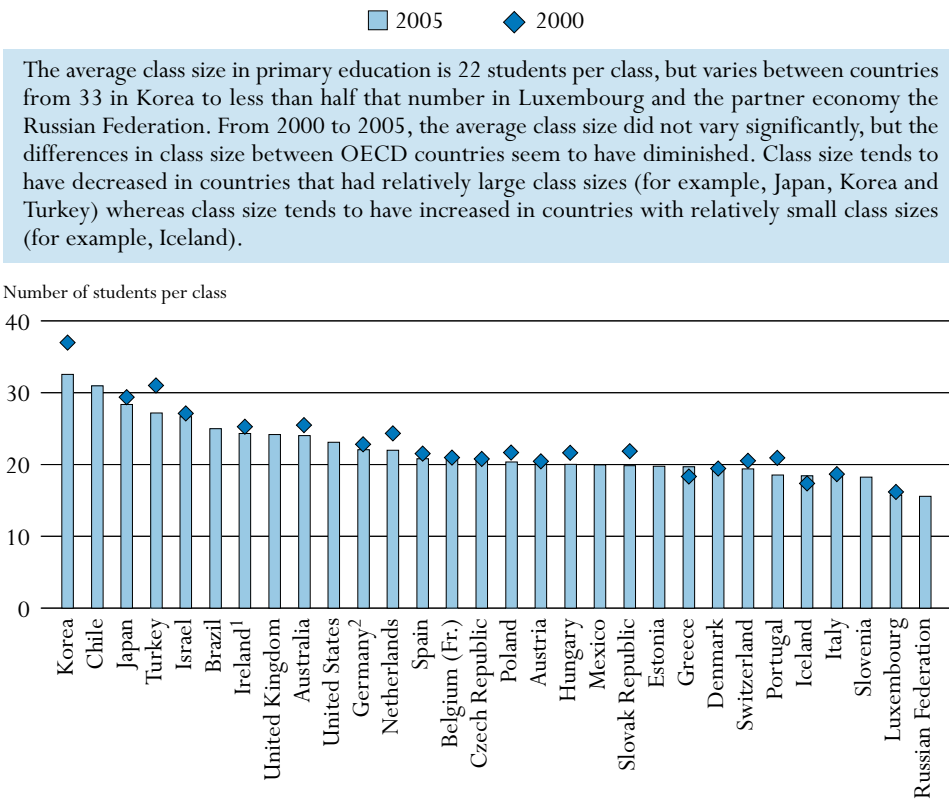
## INDICATOR D1

WHAT IS THE STUDENT-TEACHER RATIO AND HOW BIG ARE CLASSES?

This indicator examines the number of students per class at the primary and lower secondary levels, and the ratio of students to teaching staff at all levels; it distinguishes between public and private institutions. Class size and student-teacher ratios are much discussed aspects of the education students receive and – 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 – are among the determinants of the size of the teaching force within countries.

Key results

Chart D2.1. Average class size in primary education (2000, 2005)




1. Public institutions only.

2. Years of reference 2001 and 2005.

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

Source: OECD, 2005 data: Table D2.1, present edition, 2000 data: Table D2.1, *Education at a Glance 2002*.

See Annex 3 for notes ([www.oecd.org/edu/eqg2007](http://www.oecd.org/edu/eqg2007)).

StatLink  <http://dx.doi.org/10.1787/068464517374>

### *Other highlights of this indicator*

- The average class size in lower secondary education is 24 students per class, but varies from 30 or more in Japan, Korea and Mexico and the partner economies Brazil, Chile and Israel to 20 or less in Denmark, Iceland, Ireland (public institutions), Luxembourg and Switzerland, and the partner economy 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 14 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 across OECD countries in public institutions than in private institutions.

## INDICATOR D2

# HOW MUCH ARE TEACHERS PAID?

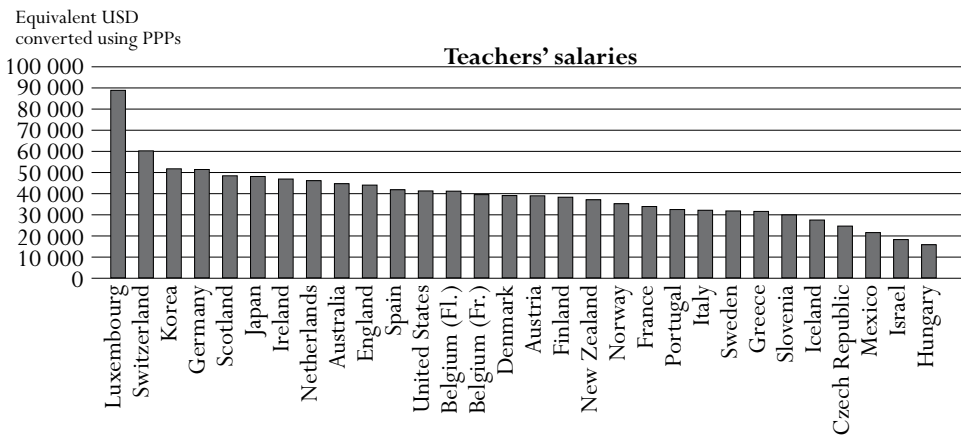
This indicator shows the starting, mid-career and maximum statutory salaries of teachers in public primary and secondary education, and various additional payments and incentive schemes used in teacher reward systems. It also presents information on aspects of teachers' contractual arrangements. Together 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

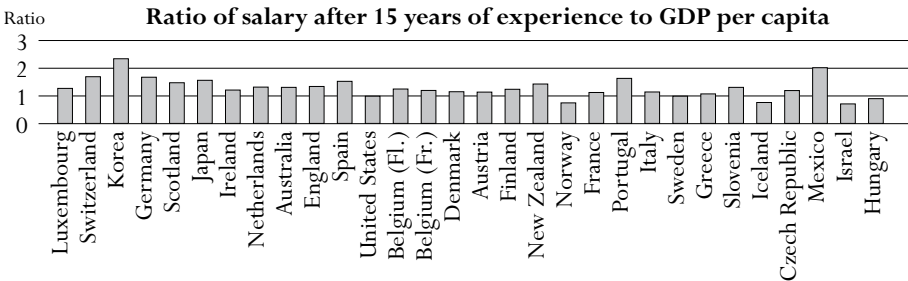
### Chart D3.1. Teachers' salaries in lower secondary education (2005)

*Annual statutory teachers' salaries in public institutions in lower secondary education, in equivalent USD 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 of experience at the lower secondary level range from less than USD 16 000 in Hungary to USD 51 000 or more in Germany, Korea and Switzerland, and exceed USD 88 000 in Luxembourg.




Salaries of teachers with at least 15 years of experience in lower secondary education are over twice the level of GDP per capita in Korea and Mexico, whereas in Iceland and Norway, and the partner economy Israel, salaries are 75% or less than 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 D3.1. See Annex 3 for notes ([www.oecd.org/edu/eag2007](http://www.oecd.org/edu/eag2007)).

StatLink  <http://dx.doi.org/10.1787/068520240747>

### *Other highlights of this indicator*

- Teachers' salaries have risen in real terms between 1996 and 2005 in virtually all countries, with the largest increases evident in Finland, Hungary and Mexico and in starting salaries in Australia. Salaries at the primary and upper secondary levels in Spain fell in real terms over the same period, even though they remain above the OECD average level.
- On average in OECD countries, upper secondary teachers' salary per teaching hour exceeds that of primary teachers by 42%, though the difference is minimal in New Zealand and Scotland and is equal to or greater than 75% in Hungary and the Netherlands.
- 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. Nevertheless, 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 the salary scale after 26 years of service. But it is important to consider that not all teachers will reach the top of the salary scale. For example, in the Netherlands in 2005, 13% of the teachers in secondary education were at the maximum salary level.
- On average in OECD countries, about one in six teachers in primary and lower secondary education that are working in public institutions are employed part-time. Part-time employment represents about one-third or more teachers in Germany, Norway and Sweden and about one-half of the teachers in the Netherlands.
- Fifteen OECD countries have mandatory probation periods for teachers. The average length of probation periods is 12 months. In seven OECD countries, teachers are granted tenure after successfully completing their probationary period. On average across OECD countries, teachers must be employed for 20 months until their tenure is reached.

## INDICATOR D3

## HOW MUCH TIME DO TEACHERS SPEND TEACHING?

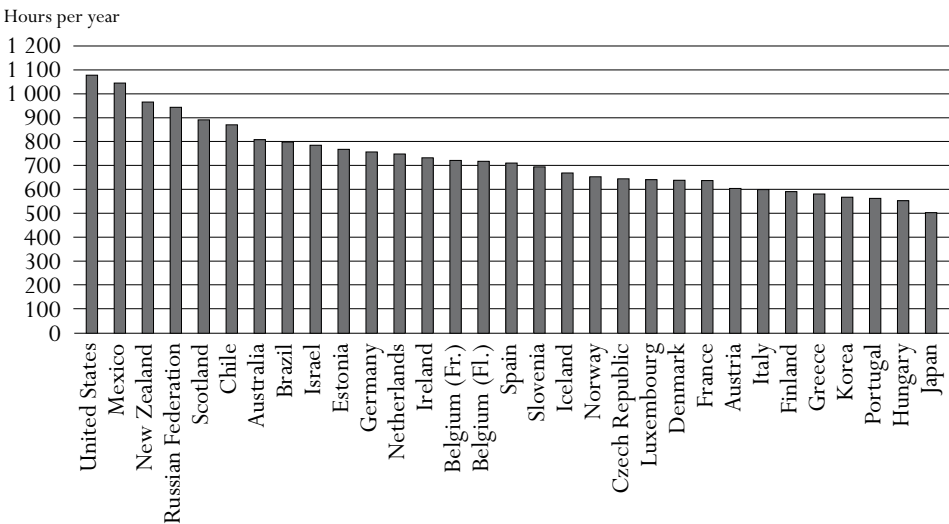
This indicator focuses on the statutory working time of teachers at different levels of education as well as their statutory teaching time. Although working time and teaching time only partly determine the actual workload of teachers, they do give some valuable insights into differences among countries 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 work lives of teachers.

### Key results


**Chart D4.1. Number of teaching hours per year in lower secondary education (2005)**

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

The number of teaching hours per year in public lower secondary schools averages 707 hours but ranges from 505 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/eag2007](http://www.oecd.org/edu/eag2007)).

StatLink  <http://dx.doi.org/10.1787/068521306487>



### *Other highlights of this indicator*

- The number of teaching hours per year in public primary schools averages 803 hours (2 less than in 2004), but ranges from less than 650 hours 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 664 hours, but ranges from less than 450 in Japan (429 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 (in primary and secondary education) compared with 35-36 weeks per year in Iceland, the total teaching time (in hours) for teachers in Iceland is greater than for teachers in Denmark (or equal for upper secondary education).
- Regulations concerning 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 and there may be assumptions made on the amount of non-teaching time required per lesson (at school or elsewhere). For example, in Belgium (Fr.), the additional non-teaching hours within the school are set at the school level and the government defines only the minimum and maximum number of teaching periods per week at each level of education.

## INDICATOR D4

## HOW DO EDUCATION SYSTEMS MONITOR SCHOOL PERFORMANCE?

This indicator focuses on the evaluation and accountability arrangements for lower secondary public schools that exist across countries. The focus is upon the collection, use and availability of student and school performance information. This indicator complements the quantitative information relating to teacher salaries and working and teaching time (Indicators D3 and D4), instruction time of students (Indicator D1), and the relationship between number of students and numbers of teachers (Indicator D2) by providing qualitative information on the type and use of particular school accountability and evaluation arrangements.

### Key results

- Student assessments in school accountability and evaluation arrangements are increasingly common across OECD countries. Just over half of OECD countries and the partner economy Israel have national examinations that are completed by lower-secondary school students. More common amongst OECD countries are periodic national assessments of students in compulsory education. These occur in two-thirds of OECD countries and the partner economy Israel. In some countries such as Australia, schools implement standardised tests as a requirement to obtain government funding.
- Two-thirds of OECD countries and the partner economy Israel have regulations that require lower-secondary schools to be inspected regularly. Slightly fewer countries (19 OECD countries) have regulatory requirements for schools to conduct periodic school self-evaluations.
- Only three OECD countries utilise school evaluation and accountability information to provide financial rewards (Korea and the United States) and/or sanctions to schools (Belgium [Fl.], Korea and the United States).