

# *Education at a Glance 2007*

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## *OECD Briefing Note For the United Kingdom*

Governments are paying increasing attention to international comparisons as they search for effective policies that enhance individuals' social and economic prospects, provide incentives for greater efficiency in schooling, and help to mobilise resources to meet rising demands.

In response to this need, the OECD Directorate for Education devotes a major effort to the development and analysis of quantitative, internationally comparable indicators, which are published annually in *Education at a Glance*. These indicators enable educational policy makers and practitioners alike to see their education systems in the light of other countries' performances and, together with OECD's country policy reviews, are designed to support and review the efforts that governments are making towards policy reform.

This note contrasts **key findings for the United Kingdom** (UK) with **global trends among OECD countries**, under the headings: quantity and quality challenges, equity challenges, and resource and efficiency challenges. The indicators show that, overall, educational performance in the United Kingdom remains strong, with significant progress in early childhood participation as well as an above-average graduate output in higher education, particularly in science, that accrues high labour-market returns. The UK has also increased its investment in education consistently and strategically, with more money directed to attracting better qualified teachers rather than solely into lowering class sizes. However, the data also show that progress has levelled off in recent years such that other countries now outperform the UK on a number of indicators.

*Education at a Glance 2007*, as well as its executive summary, all data and web-only tables, can be downloaded free of charge at [www.oecd.org/edu/eag2007](http://www.oecd.org/edu/eag2007).

*Questions can be directed to:*

Andreas Schleicher

Head of the Indicators and Analysis Division

OECD Directorate for Education

Tel: +33 1 4524 9366, email [Andreas.Schleicher@OECD.org](mailto:Andreas.Schleicher@OECD.org)

## ***QUANTITY AND QUALITY CHALLENGES***

*Previous editions of **Education at a Glance** have shown how demands for more and better education have driven a massive quantitative expansion of education systems in OECD countries, particularly at the tertiary level of education. What has been the impact of this on labour market returns? Has the increasing supply of well-educated labour been matched by the creation of an equivalent number of high-paying jobs? Or one day will everyone have a university degree and work for the minimum wage?*

*It is certainly conceivable that at least some new graduates will end up doing jobs that do not require graduate skills and that they will obtain these jobs at the expense of less highly qualified workers. Such a crowding-out effect may be associated with a relative rise in unemployment among people with low qualifications (as higher-qualified workers take their jobs), but also potentially with a reduction in the pay premium associated with tertiary qualifications (as a rise in graduate supply outstrips any rise in demand for graduate skills).*

***Education at a Glance 2007** examines this question and the results suggest that the expansion has had a positive impact for individuals and economies and that there are, as yet, no signs of an “inflation” of the labour-market value of qualifications.*

### ***Global trends***

***Education systems continue to expand at a rapid pace.***

- In most OECD countries, among adults aged 55 to 64 (who entered the workforce in the 1960s and early 1970s) between 7 and 27% have completed higher education, except in Canada and the United States where more than 30% have done so. Among younger adults aged 25 to 34, at least 30% have obtained tertiary qualifications in 19 countries and over 40% have in 6 countries (Indicator A1). On average, the proportion of the population with tertiary qualifications has risen from 19 to 32% of the population between these two groups.
- Although most countries have seen at least some growth in tertiary enrolments (Indicator C2) and in tertiary attainment, the rate of expansion has varied widely from one country to another and from one time period to another. Much of the growth has come from periods of rapid, policy-driven expansion in certain countries. Korea, Ireland and Spain, for example, more than doubled the proportion of tertiary graduates entering the workforce between the late 1970s and the late 1990s from initially low levels. In the United States and Germany, however, the proportion remained largely unchanged, with relatively high levels in the United States and comparatively low levels in Germany (Indicator A1).
- Current 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.

### ***Key results for the United Kingdom***

***In the UK, tertiary qualifications are now growing less rapidly.***

- The UK, too, has seen impressive growth in tertiary qualifications over past generations. With 39% of the typical age cohort completing a full-length, initial higher education course (tertiary-type A), it performs above the OECD average (36%) in 2005 (Table A3.1).
- However, many countries have now caught up. In 2000 the UK had, at 37%, the third highest graduation rates for tertiary-type A programmes, whereas the OECD average stood at 28% (Table A3.2). In 2005, the graduation rate in the UK had increased to 39%, but the OECD average was then 36% and the UK’s first-degree graduation rate was exceeded by nine countries: Australia, Denmark, Finland, Iceland, Italy, the Netherlands, New Zealand, Norway and Poland (Table A3.2).
- Rates of current participation suggest that more countries are likely to surpass UK graduation rates. The increase in tertiary enrolment between 1995 and 2004, which will influence future graduation rates, was, at 30%, considerably below the OECD average level of 41% (Table B1.5) and well below increases in the Czech Republic, Greece, Hungary, Korea, Mexico, Poland, Portugal, the Slovak Republic and Sweden, that ranged from 45% to 124% during the same period.
- An examination of today’s entry rates in universities underlines this trend. While the proportion of the UK’s age cohort entering tertiary-type A programmes was 48% in 1998 – significantly above the OECD average of then 40% (Table C3.1, Education at a Glance 2000) – in 2005 it was 51%, compared to an OECD average of 54% (Table C2.4). In Australia, Finland, Hungary, Iceland, New Zealand, Norway, Poland, Sweden and the United States more than 60% of young people will enter tertiary-type A programmes.

<ul style="list-style-type: none"> <li>On average across OECD countries, the graduation rate for shorter, vocationally oriented programmes represents 9% of the typical age cohort, and 1.3% for programmes leading to advanced research qualifications.</li> </ul>	<ul style="list-style-type: none"> <li>The UK has one of the highest entry rates for vocational tertiary education (tertiary-type B), with an entry rate of 28% for these programmes in 2005. This has changed over little the last five years. Only in Belgium (34%), Japan (30%), Korea (48%) and New Zealand (48%) are such programmes more prevalent. Note that due to the way in which these data are calculated, it is not appropriate to add tertiary-type A and tertiary-type B data together in order to derive an overall rate for tertiary education.</li> </ul>
<p><b><i>In most countries, the number of science graduates has increased faster than the overall number of graduates.</i></b></p> <ul style="list-style-type: none"> <li>The number of persons with a tertiary science degree per 100,000 employed persons ranges from below 700 in Hungary to above 2200 in Australia, Finland, France, Ireland, Korea, New Zealand and the United Kingdom (Table A3.4).</li> <li>The ratio of younger to older age groups with science as a field of study is 3.0, compared with a ratio for all fields of study of 2.3. In Austria and Canada, the ratio is larger than 4.0, in Hungary and Ireland larger than 6.0, and in Portugal and Spain larger than 8.0 (Table A1.5).</li> </ul>	<p><b><i>The UK continues to turn out a high proportion of science graduates.</i></b></p> <ul style="list-style-type: none"> <li>In the UK there are some 1 935 people with university-level or advanced research qualifications in science per 100,000 employed 25-34-year-olds, compared with an OECD average of 1 295 (Table A3.4).</li> <li>A comparatively large share of those with tertiary attainment in the UK studied science, 18% as compared with the OECD average of 11%. Only Ireland has a larger share, at 23% (Table A1.4). The relatively high percentage of international students in the UK who study science will have some influence on the UK rate (Table C3.5). In the remaining fields, the UK's performance is similar to the OECD average, except for health and welfare, where the share is slightly lower and in arts and the humanities where it is slightly higher.</li> <li>A comparison of younger to older age groups with science as a field of study shows the increase in science graduates over recent decades: the ratio of 25-to-34-year-olds with a university-level qualification plus 30-to-39-year-olds with an advanced research qualification to 55-to-64-year-olds with a university-level or advanced research qualification is 2.8 in the UK, compared with an OECD average of 3.0.</li> </ul>
<p><b><i>The effects of tertiary expansion: a high calibre workforce or the overqualified crowding out the lesser qualified?</i></b></p> <ul style="list-style-type: none"> <li>The labour-market and financial incentives for attaining tertiary qualifications continue to remain high for both men and women, despite the rapid growth in the number of those obtaining qualifications. This can be seen when contrasting the advantages of tertiary education for individuals in terms of higher average earnings, lower risks of unemployment and the public subsidies they receive during their studies, with the costs that individuals incur when studying, such as tuition fees, lost earnings during studies and higher tax rates later in life. In all countries with comparable data, the private rate of return for those who acquire tertiary degrees immediately following school is higher than</li> </ul>	<p><b><i>The labour-market benefits of tertiary education continue to be high in the UK.</i></b></p> <ul style="list-style-type: none"> <li>In the UK, the earnings advantage for university-level graduates aged 30-to-44 years over persons with an upper secondary qualification is 77%, a very high level. Only the Czech Republic, Hungary, Ireland, Portugal and the United States have higher earnings differentials. When including all tertiary qualifications for the same age group, the earnings advantage is lower, at 61%, but also higher than the OECD average. The figures for the Czech Republic (91%), Hungary (125%), Poland (69%), Portugal (79%), and the United States (75%) are higher than the UK rate (Table A9.1a). Tertiary graduates in the UK also have a much greater chance of finding jobs (Table A8.1a).</li> <li>Considering the available trend data, in the UK the</li> </ul>

real interest rates, and often significantly so, at least 9.8% in all eleven countries for which data are available – except for Denmark, New Zealand and Sweden (Table A9.6).

- The average unemployment rate among those only with lower secondary education is 5 percentage points higher than those whose highest level is upper secondary and 7 points higher than those with tertiary education (Indicator A8). The data show that while unemployment is substantially higher than the average among those with low qualifications, this situation has not worsened in those countries that have expanded tertiary education. However, in those countries that did not expand tertiary education, there has been a rise in the relative risk. Indeed, in these countries a failure to complete upper secondary education is now associated with an 80% greater probability of being unemployed, compared to less than 50% in those countries that have increased tertiary education the most.
- Countries expanding tertiary education attainment more in the late 1990s tended to have a greater fall (or smaller rise) in unemployment between 1995 and 2004 than countries with less tertiary expansion. For example, France, Ireland and Korea had the fastest growth in tertiary attainment and close to zero or negative growth in unemployment; Germany, the Czech Republic and the Slovak Republic had low or no growth in tertiary attainment but substantial growth in unemployment among the unqualified (Indicator A1).
- The indicators provide no evidence that the lesser qualified are crowded out from the labour market and there is much to point to the opposite: that the least educated individuals benefit in terms of better employment opportunities when more people enter higher education. In addition, an analysis of trends in the absolute level of unemployment for upper-secondary educated adults suggests that changes in the level of unemployment during the period 1995 to 2004 are unrelated to changes in tertiary attainment levels. In fact, for both upper and lower secondary unemployment, there is no statistically significant correlation between an expansion in tertiary attainment and movement in unemployment rates after controlling for growth in GDP. There is, however, a significant correlation between increases in tertiary and upper secondary attainments and the fall in relative unemployment for lower-secondary educated adults. All this suggests that employment prospects among the least well-educated are principally tied to growth in the economy and in general to productivity, to which an adequate supply of high-skilled labour can potentially contribute.
- Furthermore, higher qualifications do not create

earnings advantage of tertiary graduates in the 25-to-64-year-old population, relative to upper secondary graduates, was 53% in 1997 and after peaking at 62% by 2003, it has fallen back in the last two years, to 55% in 2005. (Table A9.2a). It is important to consider this when evaluating the relatively slow pace of expansion that has been evident in the UK and whether a more rapid rate of expansion is desirable.

- As in Australia, Austria, Canada, Ireland, Korea, the Netherlands, Norway, Spain, Switzerland, Turkey, tertiary education enhances earnings relative to upper secondary education more for females than for males in the UK. The reverse is true in the remaining countries, with the exception of Belgium and Germany where, relative to upper secondary education, the earnings of males and females are equally enhanced by tertiary education (Table A9.1a).
- Although both males and females with upper secondary, post-secondary non-tertiary or tertiary attainment have substantial earnings advantages compared with those of the same gender who do not complete upper secondary education, earnings differentials between males and females with the same educational attainment remain substantial. When all levels of education are taken together (*i.e.* total earnings are divided by the total number of income earners, by gender) the earnings of females between the ages of 30 and 44 range from 51% of those of males in Korea, to 84% of those of males in Luxembourg; in the UK it is 56%. The gap in earnings between males and females may be explained by many factors, including differences in the amount of time that males and females spend in the labour force, and the high incidence of part-time work among females. To some extent it may also be due to different career and occupational choices (Table A9.1b).

<p>unemployment among those with tertiary qualifications or a slump in their pay. Although this does not imply that tertiary graduates enter jobs in line with their qualifications, it still indicates that the benefits of higher education have not deteriorated as higher education has expanded. And while there have been some small rises in the relative risk of unemployment for graduates, this has been no worse where tertiary attainment has expanded fastest.</p> <ul style="list-style-type: none"> <li>• In all OECD countries graduates face much lower levels of unemployment than do other groups. In terms of pay, the data suggest some curbing of an increasing advantage for tertiary graduates where their supply has risen fastest, but not a general fall. This evidence corroborates similar results from cross-sectional studies, suggesting that lower-educated groups share in the benefit of more tertiary education and that the extra skills produced have largely been absorbed by the labour market. In tracking these phenomena over time, it is interesting to note that positive effects seem to be more pronounced in recent years, contradicting the notion that tertiary education, so far, is expanding too rapidly.</li> </ul>	
<p><b><i>The internationalisation of tertiary education is proceeding rapidly.</i></b></p> <ul style="list-style-type: none"> <li>• 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.</li> <li>• Student mobility – <i>i.e.</i> 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.</li> <li>• 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.</li> <li>• In Spain, Switzerland and the United States, and the partner economy Brazil, more than 15% of international students are enrolled in advanced research programmes.</li> <li>• 30% or more of international students are enrolled</li> </ul>	<p><b><i>The UK captures a relatively large section of this market.</i></b></p> <ul style="list-style-type: none"> <li>• The UK remains an attractive destination for international students, with 12% of foreign students worldwide enrolled in the country. This is less than in the United States (22%), but the UK stands ahead of Germany (10%), France (9%), Australia (6%) and Japan (5%) (Chart C3.2; Table C3.8 on the web).</li> <li>• Between 2000 and 2005, the UK saw its share on the international education market in decline by less than 1 percentage point and the share of the United States fell from 26% to 22% over the same period. The largest increases in market shares took place in Australia, France, Japan and New Zealand (Chart C3.3; Table C3.8 on the web).</li> <li>• The highly internationalised nature of tertiary education in the UK also translates into the composition of the tertiary graduate output. In tertiary-type A second degrees and advanced research programmes, more than one-third of the graduate output can be attributed to international graduates (35.4% for tertiary-type A second degrees and 38.9% for advanced research programmes). This massive contribution of international students to the tertiary graduate output needs to be borne in mind when interpreting human capital formation in the UK, as well as tertiary participation rates (Chart C3.5 and Table C3.7).</li> <li>• It is noteworthy that international students in the UK enrol in significant numbers in science and engineering</li> </ul>

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.

programmes (14.6% and 15.1% of the total respectively). Large numbers of international students also enrol in social sciences, business and law (40.1%) (Chart C3.4 and Table C3.5). This latter pattern may result from the fact that a number of countries in Asia and Africa have legal systems based on the British model.

- International students provide an important source of income for national universities and especially so in the UK where the fees charged to (non-EU/EEA) international students are not only higher than those charged to national students but relatively high compared with other OECD countries.
- Despite high fees, campuses in the UK are among the most internationalised of OECD countries, with 13.9% of international students in total enrolments at tertiary level. In this respect, the UK is third only to Australia (17.3%) and New Zealand (17.0%), and it is significantly above the OECD average (6.7%) (Chart C3.1 and Table C3.1).
- The extent of internationalisation is most pronounced in the UK in advanced research programmes, where international students represent 40.0% of enrolments in the UK, second to Switzerland (43.3%) and more than twice the level observed in the OECD on average (16.5%) (Table C3.1).

## ***EQUITY CHALLENGES***

*While individuals with high level qualifications continue to see strong labour-market returns, those without strong baseline qualifications, defined by the OECD as those who have not attained a qualification at the upper secondary level, have seen rapidly deteriorating labour-market prospects in most countries. It is therefore increasingly important for education and training systems to ensure that young adults leave schools with strong baseline qualifications or attain these subsequently.*

*Education at a Glance 2007 completes the data on the graduate output at the upper secondary level and the incidence and intensity of job-related non-formal education with new data on the relationship between social background and both learning outcomes at schools and participation in university-level education. The strength of the relationship between the socio-economic background of individuals and their educational outcomes provides one way of examining to what extent countries are using their potential in generating future human capital and allows for assessment of equity in the distribution of learning opportunities.*

### ***Global trends***

***In most OECD countries, upper secondary education is becoming universal, but in some countries a sizeable minority is left behind.***

- The proportion of individuals in the population who have successfully completed upper secondary education (see notes on definition at the end) has been rising in almost all OECD countries, and rapidly in some. In more than half of all OECD countries the proportion of 25-to-34-year-olds with upper secondary qualifications now exceeds 80%, and in Canada, the Czech Republic, Korea, the Slovak Republic and Sweden it exceeds 90% (Table A1.2a).
- Those who have attained at least upper secondary education enjoy substantial earnings advantages (Chart A9.4). For many countries, the earnings disadvantage of those without upper secondary qualifications has significantly worsened (Table A9.2a).
- Gender differences in employment and unemployment rates are largest among those without upper secondary education (Chart A8.1)

### ***Key results for the United Kingdom***

***In the adult population, a comparatively large share of individuals in the UK did not complete upper secondary education and face considerable and increasing penalties in the labour market...***

- Ranked by upper secondary educational attainment in the population, the UK occupies the 14th position among 55-to-64-year-olds in the 29 OECD countries with data (*i.e.* those who completed school some 40 years ago) but only the 22nd position among 25-to-34-year-olds, who completed school a decade ago. By contrast, Korea ranks 23rd among 55-to-64-year-olds but 1st among 25-to-34-year-olds (Table A1.2a). So, while upper secondary attainment rates have increased in the UK, the increase has been greater in many other countries. Note that the individuals (25-to-34-year-olds in 2005) in this analysis passed the age of sixteen in between 1985 and 1995.

***...but upper secondary completion rates are now above the OECD average***

- The upper secondary graduation rate in the UK is 86%, compared with an OECD average of 82%.

***Employment prospects for those who have no upper secondary qualification are particularly poor.***

- Employment rates among both university and upper secondary graduates in the UK are at or above the corresponding OECD averages. However, for those who have not completed the upper secondary level, employment rates are, at 60% for men and 45% for women, below the corresponding OECD averages of 73% and 49% (Table A8.1a). Differences in the employment probabilities accruing to different levels of educational attainment have grown over the last decade. For individuals with upper secondary education the employment rate in the UK increased between 1991 and 2005 from 78% to 80%, and for tertiary graduates it

	<p>grew from 86% to 88%. In contrast, for individuals without upper secondary education, it decreased from 61% in 1995 to 52% in 2004 (Table A8.3a).</p> <ul style="list-style-type: none"> <li>• The penalties from not completing upper secondary education are also visible in the distribution of earnings. The share of 25-to-64-year-olds with low incomes (defined here as half of the country median or less) is in most countries significantly higher among those without upper secondary qualifications than among upper secondary graduates. For the UK, this share is the third highest in the UK, behind Canada and the United States (Table A9.4a). Among 25-to-64-year-olds in the UK without upper secondary qualifications, 35% earn half or less than the national median (the OECD average is 26%), while only 1% (OECD average 2%) are in the group of top earners, whose average earnings exceed twice the country median (Table A9.4a).</li> </ul>
<p><i>Schools and societies face major challenges in integrating immigrants.</i></p> <ul style="list-style-type: none"> <li>• 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. OECD 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:</li> <li>• 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.</li> <li>• 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</li> </ul>	<ul style="list-style-type: none"> <li>• No internationally comparable data available for the UK.</li> </ul>

<p>Sweden, while in Germany and New Zealand second-generation students born in these countries perform worse than first-generation students.</p> <ul style="list-style-type: none"> <li>• 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.</li> <li>• 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.</li> </ul>	
<p><b><i>Countries vary greatly in how well they succeed in enabling students from blue-collar backgrounds to participate in higher education.</i></b></p> <ul style="list-style-type: none"> <li>• 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 (Indicator A7).</li> <li>• 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.</li> <li>• 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, as show by data collected in 2000 by OECD PISA.</li> </ul>	<p><b><i>In the UK, more than half of those in higher education have fathers with university qualifications.</i></b></p> <ul style="list-style-type: none"> <li>• 54% of higher education students' fathers in the UK also had a higher education qualification, while this was only the case for 27% of fathers of men in the same age group (Chart A7.2).</li> <li>• Among 11 OECD countries with comparable data, only Austria, Germany and Portugal had a socio-economically more uneven participation rate.</li> </ul>
<p><b><i>Initial education alone can no longer satisfy the rising and changing demand for skills, but job-related education and training is still least common among those who need it most.</i></b></p>	<p><b><i>The intensity of participation in non-formal job-related education and training is comparatively low in the UK.</i></b></p>

<ul style="list-style-type: none"> <li>• In many countries, non-formal continuing education and training now also plays a significant role in raising the stock of knowledge and skills. In Denmark, Finland, Sweden and the United States, more than 35% of employees take part in non-formal job-related education and training each year. At 27%, the corresponding participation rate in the United Kingdom is also still well above the OECD average of 18%. At the other end of the scale, Greece, Hungary, Italy, the Netherlands, Poland, Portugal and Spain provide such training to fewer than 10% of employees (Table C5.1a).</li> <li>• In OECD countries, on average, the participation rate in non-formal continuing education and training among employees who have not completed upper secondary education is less than half of the rate among those with upper secondary education and less than a quarter of the rate seen among those with tertiary education. In the United Kingdom these differences are significantly larger than in most OECD countries.</li> </ul>	<ul style="list-style-type: none"> <li>• In the UK, between the ages of 25 and 64, the total expected number of hours in non-formal job-related training per worker is 315, considerably below the OECD average of 389 hours (Table C5.1a). This indicates a lower overall volume of training provision than the participation rate alone would suggest.</li> <li>• For example, the intensity of participation is particularly low in the UK among: persons without upper secondary qualifications (103 hours as compared with an OECD average of 210 hours); among older individuals (28 hours among 55-to-64-year-olds as compared with an OECD average of 39 hours); and among the unemployed (14 hours as compared with an OECD average of 38 hours) (Tables C5.1a, C5.1b and C5.1c). These findings are important because they show continuing inequalities in terms of access to lifelong learning in the UK, as in other countries. They also suggest that continuing education and training currently do not succeed in making up for skill gaps emerging from initial education but, in first, tend to reinforce disparities that result from initial education.</li> </ul>
<p><b><i>In some countries, student's expectations for their own educational future are also closely related to their social background.</i></b></p> <ul style="list-style-type: none"> <li>• 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 OECD 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.</li> </ul>	<p><b><i>Fewer students in the UK expect to go to university than do students in other countries.</i></b></p> <ul style="list-style-type: none"> <li>• The percentage of 15-year olds in the UK who expect to go to a university-level programme is 32%, one of the lowest of OECD countries and well behind the highest aspirations held by students in countries such as Canada, Greece, Korea and Turkey (Table A4.1a).</li> <li>• More females than males expect to complete higher education, at 35%, and 27%, respectively (Table A4.3a).</li> <li>• Even among the UK's top performers, those who reached the highest levels 5 or 6 on the PISA 2003 mathematics scale, only 69% expect to attain a university-level education, compared with the OECD average of 78% (Table A4.2a). The socio-economically most advantaged quarter of students are 2.4 times more likely to expect to complete a university-level qualification (Table A4.4).</li> </ul>

## **RESOURCE AND EFFICIENCY CHALLENGES**

The expansion of education has been accompanied by massive financial investments. **Education at a Glance 2007** shows that between 1995 and 2004, and for all levels of education combined, expenditure on educational institutions increased by an average of 42% in OECD countries. The sustainability of the continued expansion will, however, depend on re-thinking how education is financed and how to ensure that it is more efficient. In some countries, spending per student has already begun to decline – most notably in the Czech Republic, Hungary, the United Kingdom and Poland – as enrolments rose faster than spending on tertiary education.

While significant additional investments in education will be important, it is equally clear that more money alone will not be enough. Investments in education will also need to become more efficient. The education sector has not yet re-invented itself in ways that other professions have done to improve outcomes and raise productivity. Indeed, the evidence suggests the reverse, namely that productivity in education has generally declined because the quality of schooling has broadly remained constant, while the price of the inputs has markedly increased. As the place and mode of educational provision have largely remained unchanged, the labour-intensiveness of education and the predominance of teachers' salaries in overall costs (with payscales based on qualifications and automatic increases) have made personnel costs rise over time.

<b>Global trends</b>	<b>Key results for the United Kingdom</b>
<p><b>OECD countries spend 6.2% of their collective GDP on educational institutions, but the increase in spending on education between 1995 and 2004 fell behind growth in national income. There is further scope for enhancing the efficiency of educational spending.</b></p> <ul style="list-style-type: none"> <li>• 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.</li> <li>• 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.</li> <li>• It is important to relate overall spending on education to the investment made per student. 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</li> </ul>	<p><b>The UK has shown consistent increases in educational investment, in terms of a rising share of GDP being devoted to education.</b></p> <ul style="list-style-type: none"> <li>• Starting from a comparatively low base by OECD standards, the UK has shown consistent rises in its investment in education, not just in absolute terms, where increases were observed in most countries over recent years, but also relative to national income: Spending on educational institutions in the UK increased from 4.3% of GDP in 1990 to 5.5% in 1995 and 6.1% in 2003, although in the latest figures it has fallen to 5.9%, slightly above the OECD average of 5.8%. In contrast, in one-third of the OECD countries with available data, spending on educational institutions did not match growth in national income, such that expenditure as a proportion of GDP actually declined (Chart B2.1, based on Table B2.1a).</li> </ul> <p><b>Education has received a growing share of the public budget, with most of the resources invested at the school level.</b></p> <ul style="list-style-type: none"> <li>• The share of public expenditure that is devoted to education has also increased in the UK, though at slower pace than in the OECD on average. There was increase in the public expenditure in the UK as a percentage of GDP between 1995 and 2004; at the same time, the share of all public spending devoted to educational institutions, or paid in the form of subsidies to households, increased in the UK from 11.4 to 11.7%, while the OECD average increased by 1.1 percentage points (Table B4.1).</li> <li>• Most of the additional (public and private) resources were invested in school education, where expenditure increased between 1995 and 2004 by 49% in absolute terms, while the OECD average increase was 39%.</li> </ul>

<p>at the tertiary level than at the primary level.</p> <ul style="list-style-type: none"> <li>• 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 OECD PISA 2003 survey.</li> <li>• 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.</li> <li>• 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</li> <li>• 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. Across OECD countries, preliminary analysis suggests that there is potential for increasing learning outcomes by 22% while maintaining current levels of resources (output efficiency). The analysis also suggests that the scope for reducing the resources devoted to education while maintaining the current levels of outcomes is slightly larger, at 30% (input efficiency). 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 whole, though efficiency savings are greater for smaller schools than for larger schools (Indicator B7).</li> </ul>	<p>Spending on tertiary institutions increased, at 22%, less than half as fast as the OECD average increase (55%) (Table B1.5).</p> <p><b><i>Spending per student in the UK is above the OECD average at the primary, secondary and tertiary levels.</i></b></p> <ul style="list-style-type: none"> <li>• To assess their potential impact on the quality of educational services, the resources invested in education need to be seen in relation to the number of students enrolled. On that measure, spending per student across all levels of education (excluding pre-primary education) in the UK is, at USD 7 270 (equivalent), above the OECD average of USD 7 061. While spending per student at the primary level (USD 5 941) is above the corresponding OECD average (USD 5 832), spending per student at the secondary level (USD 7 090) has once again fallen below the OECD average (USD 7 276). At USD 11 484, spending at the tertiary level also exceeds the OECD average of USD 11 100 (Table B1.1).</li> </ul> <p><b><i>The UK stands out with respect its high level of spending per child at the pre-primary level and increasing level of participation.</i></b></p> <ul style="list-style-type: none"> <li>• The UK invests more than any other country per child at the pre-primary level (at USD 7 924 considerably larger than the OECD average spending per child of USD 4 741) (Table B1.1a). This is all the more impressive given the fact that, while increasing spending levels since 1998, the rate of participation of 4-year-olds and under as a percentage of the 3-to-4-year-old population also increased from 51% in 1998 to 91% in 2005 (Table B1.2, Table C2.1 and corresponding tables in <i>Education at a Glance 2000</i>). Moreover, these levels of spending per child have been achieved despite a higher than average ratio of students to teaching staff at this level in the UK (Table D2.2).</li> <li>• Different supply and demand factors have influenced variation in spending per student across countries. In the UK, spending on primary and secondary education increased by 49% while enrolments rose by 24%, resulting in a spending increase per student of 20% between 1995 and 2004. That is significantly less than the OECD average increase of 38% in per-student spending (Table B1.5).</li> </ul>
<p><b><i>Instruction time, teachers' salaries, and student-teacher ratios vary widely among countries.</i></b></p> <ul style="list-style-type: none"> <li>• 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</li> </ul>	<p><b><i>Despite above average spending per student, class sizes in primary schools remain very large in the UK.</i></b></p> <ul style="list-style-type: none"> <li>• Despite above average spending per primary-level student, the UK has, with 24.2 students per class, one of the largest average class sizes at the primary level of education. Only Japan, Korea and Turkey have larger</li> </ul>

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:

- Students in OECD countries are expected to receive, on average, 6 898 hours of instruction between the ages of 7 and 14, of which: 1 586 hours are between ages 7 and 8; 2 518 hours between ages 9 and 11; and 2 794 hours between ages 12 and 14. The large majority of intended hours of instruction are compulsory.
- 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, and those aged between 12 and 14 receive just over 90 hours more per year than those aged between 9 and 11.
- 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, 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.
- The average class size in primary education is 22 students per class, but varies between countries from 33 in Korea to less than half that number in Luxembourg and the partner economy the Russian Federation. From 2000 to 2005, the average class size did not vary significantly, but the differences in class size between OECD countries seem to have diminished. Class size tends to have decreased in countries that had had relatively large class sizes (for example, in Japan, Korea and Turkey) whereas class size tends to have increased in countries with relatively small class sizes (for example, Iceland) (see 2000 data in Table D2.4 on the web only).
- 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.

classes and in all but eight countries there are between 16 and 21 students per primary-level class (the OECD average is 21.5) (Table D2.1).

***Annual instruction time is long.***

- This outcome is in part explained by the annual duration of instruction time. At 890 hours, England has the 8th longest annual intended instruction time for a 7-to-8-year-old among the 26 countries with comparable data (the OECD average is 793 hours) (Table D1.1).

***Teacher salaries are above-average.***

- Another explanatory factor is comparatively high teacher salaries. At USD 48 205 for a primary school teacher with minimum training and 15 years of experience, Scotland comes 5th among OECD countries, while England, at USD 43 835, comes 9th (Table D3.1). However, this advantage diminishes somewhat when comparing salaries to GDP per capita.

***Teacher salaries have risen less than in many other countries.***

- Between 1996 and 2005, primary teacher salary increases in the UK have, at 6% in England and 15% in Scotland, been below the average increase of 15% among the 20 OECD countries with comparable data (Table D3.2).

***The teaching load for teachers has remained comparatively high.***

- In addition, the net teaching time for Scottish primary school teachers is, at 893 hours per year, the fifth highest among the 26 OECD countries with comparable data (the OECD average is 803 hours) (Figures are not available for England) (Table D4.1).
- All of these relationships are similar at the secondary level of education, although differences between the UK and the OECD average tend to be smaller at the secondary level.

***Average class sizes in lower secondary education are below the OECD average level.***

- In lower secondary education, and considering public and private institutions together, there are on average 22.1 students per class in the UK, well below the OECD average of 24.1. Of the 21 countries for which comparable data are available, only six have a lower average class size at the lower secondary level: Denmark, Hungary, Iceland, Italy, Luxembourg and Switzerland (Table D2.1).

***In tertiary education, a below-average increase in spending in the UK did not match the below-average***

<ul style="list-style-type: none"> <li>• In primary and secondary education, OECD countries spend 91% on current expenditure of which 63.5% is for the compensation of teachers, 15.5% for the compensation of other staff, and 19.9% for other current expenditure. At the tertiary level of education, 89.3% is devoted to current expenditure, of which 42.7% is for the compensation of teachers, 23.6% for the compensation of other staff, and 33.8% for other current expenditure (Table B6.2).</li> </ul>	<p><b><i>increase in student enrolment.</i></b></p> <ul style="list-style-type: none"> <li>• At the tertiary level, a below-average increase in spending in the UK (22%) failed to match the below-average increase in student enrolment (30%), such that spending per student fell by 7% in real terms between 1995 and 2004. By contrast, average OECD spending per tertiary student rose by 9% over the same period (Table B1.5). However, there are also countries where spending per student has fallen by about 10% or more, as spending levels have not kept pace with expanding student numbers, such as in the Czech Republic, Hungary and Poland.</li> <li>• In the context of this increase in tertiary student numbers, the student to teacher ratio at this level in the UK increased from 16.7 in 1996 to 18.2 by 2005. Over the same time period the OECD average increased slightly from 15.7 to 15.8 (Education at a Glance 2007 Table D2.2 and Education at a Glance 1998 Table B7.1).</li> </ul> <p><b><i>The UK's share of capital spending in tertiary institutions is now among the lowest in the OECD.</i></b></p> <ul style="list-style-type: none"> <li>• Below the tertiary level, the proportion of spending on capital costs is, at 8.9%, very close to the OECD average level of 9.0%.</li> <li>• In contrast, the share of capital spending at the tertiary level is, at 5.0%, considerably below the OECD average of 10.7%, and is lower only in Belgium, Netherlands and Mexico (Table B6.2).</li> </ul> <p><b><i>Schools in the UK have above-average resources for non-staff goods and services.</i></b></p> <ul style="list-style-type: none"> <li>• With only 70% of current expenditure at the primary and secondary levels devoted to the compensation of staff, schools in the UK have greater capacity to purchase other goods and services than do OECD countries on average, where 80% of current expenditure is devoted to the compensation of staff (Table B6.2).</li> </ul>
<p><b><i>Private sources of funding for education are becoming increasingly important.</i></b></p> <ul style="list-style-type: none"> <li>• 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.</li> </ul>	<p><b><i>Private sources of funding provide an above-average share of educational spending in the UK</i></b></p> <ul style="list-style-type: none"> <li>• The UK's funding of primary and secondary levels of education was 86.6% public in 2004 compared to 88.5% public in 1995 – in both years this was one of the lowest public funding proportions among the 18 OECD members reporting data for both years (Table B3.2a). Note that private spending originates both in households and other private entities and can go to private as well as public institutions.</li> <li>• At all levels of education, private spending in the UK rose faster than public spending between 1995 and</li> </ul>

<ul style="list-style-type: none"> <li>• 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.</li> <li>• 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.</li> <li>• 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.</li> <li>• 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.</li> </ul>	<p>2004, with an increase of the private share from 11.5% to 13.4% at the primary and secondary level of education (the largest increase in percentage points after Australia, the Czech Republic, the Slovak Republic and Switzerland) (Table B3.2a) and an increase from 20% to 30.4% at the tertiary level of education (the largest increase after Australia, Italy, Portugal and the Slovak Republic) (Table B3.2b).</p> <ul style="list-style-type: none"> <li>• Public spending on tertiary education in the UK rose by only 6% (compared with a 85% increase in private spending) between 1995 and 2004 – the smallest rise after Australia, where public spending actually declined (Table B3.2b).</li> <li>• At the pre-primary level, where the relative proportions of public and private funding range from 100% public in Sweden to 37.9% public and 62.1% private in Korea, the public funding share in the UK was 94.6% in 2004, significantly above the OECD average of 80.0% (Table B3.2a).</li> </ul>
<p><i>OECD countries where students are required to pay tuition fees can nevertheless have also large access to tertiary education.</i></p> <ul style="list-style-type: none"> <li>• 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 full-length, theory-based bachelor and masters degree university-level programmes, 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.</li> </ul>	
<p style="text-align: center;"><b>NOTES</b></p> <ul style="list-style-type: none"> <li>• “Non-formal education” is defined as organised and sustained educational activities that are not typically provided in the system of schools, colleges, universities and other formal institutions that constitutes a continuous ladder of full-time education for children and young people. Non-formal education may take place both within and outside educational institutions, and cater to persons of all ages. For detailed definitions, see Indicator C5 in</li> </ul>	

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- “Tertiary-level education” is defined as higher education (HE). Indicators cover both the current performance of the HE system and the proportion of the adult population (25-to-64-year-olds) who have attained HE qualifications. There are splits by gender and type of course – divided into vocational courses like HND (Type B) and full-length (duration of more than three years) theory-based degrees (Type A), including bachelor and masters degrees. Graduation rate is defined as the ratio of tertiary graduates to the population at typical age of graduation.
- “Lower secondary education” is defined as schooling between the ages of 11 and 13.
- “Upper secondary education” identifies a level of attainment, not necessarily reached while the individual was actually participating in secondary education. In the United Kingdom it means attainment of at least Level 2: that is, a minimum of five GCSEs/SCSEs at grades A\* to C, or an equivalent vocational qualification such as NVQ2/SVQ2. However, the international “upper secondary” band also includes the United Kingdom Level 3: that is, A-levels or NVQ/SVQ3.
- “Statutory salaries”. The data on teacher pay are based on statutory pay (pay scales) in 2004 and do not attempt to capture actual average pay which will include discretionary allowances for extra duties as well as reflecting the age structure of the teacher labour force. Furthermore, the figures are for classroom teachers and so do not reflect the pay of teachers promoted to heads and deputy headships. They also do not include bonuses and supplementary payments, which are considerable in some countries. England and Scotland have separate systems of teacher pay and so, while the publication generally refers to the United Kingdom, the teacher pay figures are shown separately for England and Scotland. The pattern of the Scottish pay comparisons closely follows that for England although Scottish pay levels are slightly below those in England for starting salaries, but are above those for England after 15 years of experience or at the top of the scale.