

EDUCATION AT A GLANCE 2013

UNITED KINGDOM

Despite the economic crisis, public expenditure on education increased substantially between 2008 and 2010...

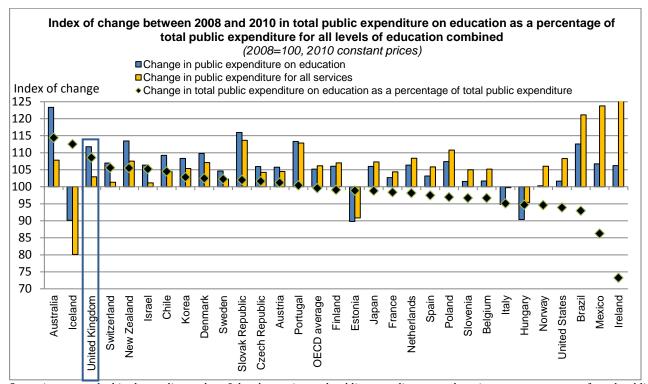
Public expenditure on all services in the United Kingdom grew by 3% between 2008 and 2010, the first years of the economic crisis – compared to 6% on average among OECD countries – while public expenditure on education increased by 12% (Table B4.2). As a result, the public expenditure on education as a percentage of total public expenditure grew by 9% – the third largest increase among OECD countries after Australia (14%) and Iceland (13%) – while on average among OECD countries, it remained essentially unchanged (Table B4.2). Indeed, between 2000 and 2010 the expenditure per student at primary, secondary and post-secondary non-tertiary levels increased by 74%, the 7th highest increase among 27 countries with available data, while the number of students decreased by 12% (Table B1.5a). At tertiary level, expenditure per student grew by 38% between 2000 and 2010 while the number of students increased of 18%, such that spending per student is now significantly higher than it was in 2000. However, while spending grew faster than student numbers between 2000 and 2005, the reverse occurred between 2005 and 2010 – such that expenditure per student decreased slightly by 3% between 2005 and 2010, whereas on average among OECD countries it grew by 8% over the same period (Table B1.5b).

...and the proportion of private funding for education is large and growing.

Compared to a decade ago, early education enjoys higher-than-average public support in the UK: 91.4% of pre-primary education is publicly funded, compared with an OECD average of 82.1% (Table B3.2a). In contrast, only a quarter (25.2%) of expenditure on tertiary education comes from public coffers – far below the OECD average of 68.4% Still, around one-third of the expenditure from private sources is subsidised at this level (Table B3.2b). The pattern of predominantly publicly financed early education and predominantly privately financed tertiary education stands in contrast to the approaches adopted by a number of other European countries – such as Austria with a rather low share of public funding in early education (72.2%) and a low share of private funding at tertiary level (12.2%). It is, however, consistent with what economic theory suggests as effective public spending, given that the returns to investment in early education are predominantly public, while the returns to investment in tertiary education are predominantly private. In total, 68.6% of expenditure on all levels of education comes from public sources – the third smallest share of public expenditure devoted to education among OECD countries, after Chile and Korea (Table B3.1).

Private funding in the UK for all levels of education has more than tripled – and nearly quadrupled for tertiary education – between 2000 and 2010 (Table B3.1). In 2010, the UK had the second smallest share of public expenditure on tertiary education (25.2%, down from 67.7% in 2000) after Chile (Table B3.3). Around two-thirds of public expenditure on tertiary education (67.7%) goes towards supporting private entities; about half of this support is devoted to financial aid to students. As a result, only 32.3% of public expenditure on tertiary education goes directly to tertiary institutions,

which makes the UK the sole country where less than half of the funding for these institutions comes directly from public sources (Table B5.4).



Countries are ranked in descending order of the change in total public expenditure on education as a percentage of total public expenditure.

Source: OECD. Table B4.2. See Annex 3 for notes (www.oecd.org/edu/eag.htm.

Private funding at the tertiary level also includes household spending on relatively high tuitions fees. On average during the academic year 2010-11, government-dependent private institutions charged USD 4 980 in tuition fees for a first degree (this figure does not encompass the important rise in fees during the following academic year). In the UK, public support for households and other private entities is distributed three ways almost equally: 32.3% on direct public expenditure for institutions; 33.8% on financial aid for students (e.g. scholarships, student loans and other grants to households); and 33.9% on transfers and payments to other private entities (Tables B5.1 and B5.4).

Investing in education pays off in the long run, both for individuals and for society

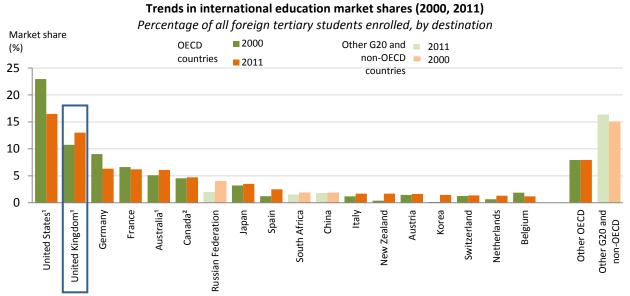
It would be conceivable that the rise in tuition fees from USD 4 496 to USD 4 980 between 2005 and 2011, might have led to a decline in student numbers and graduation rates. However, the data suggest the opposite. In the UK tertiary graduation rates (academic programmes) rose to 55% in 2011, the second highest after Poland, and way above the OECD average of 39%. This rate has increased over the past decade, from 42% in 2000 to 47% in 2005 and 51% in 2010 (Table A3.2).

In addition, the net gain (benefits minus costs) for obtaining a tertiary education in the UK in 2009 was USD 98 091 for a man and USD 93 333 for a woman. Over the course of his life, the net private return to a man with this level of education is USD 180 560, while the net public return is USD 98 091. On average among OECD countries, the net public return reaches USD 104 737, and it is even USD 251 155 in Hungary and USD 230 722 in the United States. Nonetheless, these figures do not take into

consideration the repayment of student loans, which may affect the data on returns, especially during the years immediately after leaving education (Indicator A7). In addition, in 2011, a tertiary graduate's earnings from employment were 57% higher than those of an individual with upper secondary education, and 129% higher than those with below upper secondary education. This trend has remained stable over the past decade. On average among OECD countries, the relative earnings clearly showed a growing gap – from 49% in 2000 to 64% in 2011 – in the earnings between upper secondary and tertiary graduates (Table A6.2a).

An attractive place in which to study and stay

The UK's share in the international student market grew from 10.8% in 2000 to 13.0% in 2011. The UK is the second preferred destination among international students after the United States (Table C4.4). These students contributed a total of EUR 2.6 billion in tuition fees and EUR 2.7 billion in living expenses in 2008-09 (European Commission, 2012) and in 2010, 21% of international students remained in the UK after they graduated (European Commission, 2012)



Note: Year of reference of data for countries other than OECD and G20 is 2010 (instead of 2011).

- 1. Data relate to international students defined on the basis of their country of residence. For the UK, data for 2011 is based on citizenship.
- 2. Year of reference 2010.

Countries are ranked in descending order of 2011 market shares.

Source: OECD and UNESCO Institute for Statistics for most data on non-OECD countries. Table C4.7, available on line. See Annex 3 for notes (www.oecd.org/edu/eag.htm).

Participation in education is on the rise...

As in most OECD countries, the proportion of people without upper secondary education in the UK has been shrinking while the proportion with a tertiary education has been growing over the past decade. The proportion of 15-19 year-olds enrolled in education increased by about 8 percentage points between 2006 (70%) and 2011 (78%) – more than twice the OECD average increase (81% to 84%) during the same period, although still behind by a considerable margin. This increase is also larger than those observed in other EU21 countries, although many of these countries have higher enrolment rates to begin with, such as France, which held its 84% enrolment rate stable during that period, and

Germany, whose enrolment rate increased by 3 percentage points, from 89% in 2006 to 92% in 2011. Other high performers are Belgium (94%), Hungary (92%), Ireland (93%), the Netherlands (93%), Poland (93%) and Slovenia (92%), all of them with enrolment rates above those in the UK by 14 percentage points or more (Tables C1.1a and C1.2).

...as are levels of educational attainment.

Tertiary attainment rates¹ in the UK increased by 4 percentage points since 2008 – a greater increase than the OECD average of 3 percentage points – and by 13 percentage points since 2000. At 39%, the UK's tertiary attainment rate is higher than that of France (30%), Germany (28%) and the OECD average (32%) (Table A1.4a).

A greater proportion of 25-64 year-olds in the UK have a tertiary education (39%) than have an upper secondary education (37%) as their highest level of attainment (Table A1.1a). Current patterns of entry suggest that 64% of young people in the UK will enter tertiary-type A education (largely theory-based programmes; in the UK these include first/bachelor degrees and masters) while 23% will enter tertiary-type B programmes (shorter, vocationally oriented programmes; in the UK sub-degrees including foundation degrees) over their lifetimes. Both proportions are above the OECD averages of 60% and 19%, respectively (Table C3.1a). These patterns suggest that the demand for tertiary education is likely to increase in the coming years.

25-34 year-olds have the highest educational attainment rates of any other age group in the UK, with 47% of young adults of this age having attained a tertiary education. Nearly half of all 30-34 year-olds in the UK – 46% of men and 50% of women of this age – have attained a tertiary education (Table A1.4b). This surpasses the EU target of at least 40% of 30-34 year-olds completing tertiary education by 2020.

The UK's 15-29 year-olds face tough transitions into both further education and the labour market.

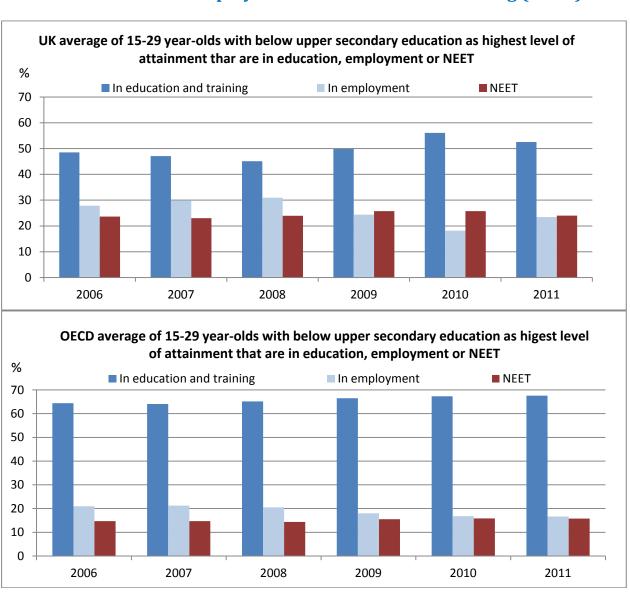
On average, in the UK, people between 15 and 29 years old are expected to spend more time in the labour market (8.8 years) than in education or training (6.2 years), based on patterns seen in 2011. However, they are also expected to spend 2.3 years on average either unemployed or out of the labour force entirely – more than the average seen in EU21 countries (2.2 years), and more than seen in other OECD countries, such as Australia (1.7 years), Germany (1.7 years), and the highest performing countries: Iceland (1.2 years), Luxembourg (1.1 years), the Netherlands (1.1 years), Norway (1.3%) and Switzerland (1.3 years) (Table C5.1a).

Between ages of 15 and 19 almost half of young people in the UK leave education. Given that the average graduation age at the upper secondary level of education in the UK is 16 years old (also the limit of compulsory education), virtually all 15-16 year olds are enrolled in education (the averages vary between 97% and 100%). Nonetheless, once compulsory schooling is over and youngsters reach 18 years of age, only 34% of them are enrolled in secondary education while 27% are enrolled in tertiary education. Taken together, these figures show a drop of nearly 40% in enrolment rates between 16 and 18 years old, i.e. within the two years following the end of compulsory education. Finally, among 19-year-olds, 51% are enrolled in education (4% in secondary education and 38% in tertiary education) (Table C1.1b).

¹ An attainment rate refers to the percentage of a population that has successfully completed a given level of education. Graduation rates measure the estimated percentage of people who are expected to graduate from a particular level of education during their lifetimes.

Indeed, the UK has one of the lowest percentages of 15-19 year-olds (78%) and 20-29 year-olds (19%) enrolled in education among OECD countries (Table C1.1a); it is also one of the few countries in which the proportions of enrolled students in these age groups have been consistently smaller than the OECD average in recent years (i.e. 2006-2011) (Table C1.2). These low proportions are the existence of national qualifications at age 16 that are recognised in the labour market as well as by the lowest average graduation age from tertiary education among OECD countries (24 years old vs. 27 years old on average across OECD countries) (Table A3.1). The proportions of the 15-19 and 20-29 age cohorts who are enrolled in education are higher in other OECD countries, including France (84% and 20%, respectively), Germany (92% and 32%, respectively) and the United States (80% and 27%, respectively) (Table C1.1b).

Nearly a quarter of those in the UK who do not have an upper secondary education are neither employed nor in education or training (NEET)...



Source: OECD. Table C5.4d. See Annex 3 for notes (www.oecd.org/edu/eag.htm).

The proportion of people in the UK who are neither employed nor in education or training (NEET) has been larger than the OECD average – by about 10 percentage points – among those without upper secondary education, since 2006 (Table C5.4d). The greatest increase in this population since 2000 has been among 20-24 year-olds: from 15.4% in 2000 to 19.1% in 2011, higher than the OECD average of 18.4% in 2011 (Table C5.4a).

Although boys have traditionally been more inclined than girls to drop out of school before completing secondary education, particularly in high-income countries, the proportion of 15-29 year-old women in the UK who are NEET (17.8%) is larger than that of young men of the same age (13.3%) (Table C5.2a).

...while the share of NEETs drops dramatically among those with an upper secondary education...

Among 15-29 year-olds who have an upper secondary or post-secondary non-tertiary education as their highest level of education, 14.4% are NEET; while among tertiary-educated young adults of the same age, only 8.4% are NEET (Table C5.5a).

...as does the likelihood of unemployment.

The worst economic crisis in recent history has reaffirmed the value of education: unemployment rates are considerably lower among tertiary-educated adults than among those with an upper secondary education as their highest level of attainment (Table A5.2a). Nonetheless, unemployment rates rose across the board between 2000 and 2011, and even if the baseline was a small proportion it almost doubled among tertiary-educated adults. In the UK, the unemployment rate among those with a tertiary education increased from 2.1% to 3.9% during that period, while among those with an upper secondary education, it rose from 4.0% to 5.9%, and among those with below upper secondary attainment, unemployment rates increased from 6.6% to 11%.

Part-time employment among 15-29 year-olds has grown in the UK in recent years. Some 27.9% of employed people of this age work part time – more than the OECD average (23.2%) and a larger proportion than in France (17.4%) and Germany (21.6%). Indeed, participation in part-time work among 15-29 year-olds has been growing among non-students, from 7.4% in 2006 to 8.2% in 2011. This proportion is not only larger than the OECD average of 5.0%, but it is one of the highest among OECD countries, after Australia (8.7%), Japan (9.4%) and the Netherlands (8.5%) (Table C5.7).

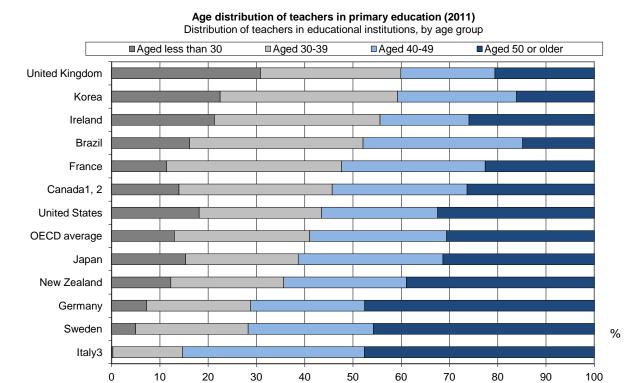
Regardless of their level of education, women in the UK earn significantly less than their male counterparts.

In the UK, the proportion of women that earn less than the median worker (nearly 65%) is significantly larger than that of men (38%) (Tables A6.4a and A6.4b). Indeed, women's earnings relative to those of men are below the OECD average at all levels of educational attainment. Women in the UK can expect to earn no more than 69% (the OECD average is 79%) of what similarly educated men earn.

The UK's teaching force is one of the youngest among OECD countries...

Some 60% of the UK's primary school teachers are under 40 – the highest proportion of this age range among primary teachers across OECD countries (the average is 41%); and 31% of primary teachers are even under 30 (the OECD average is 13%). The relatively young teaching force in the UK stands in

stark contrast to the situation in many European countries where inflexible employment conditions coupled with declining youth populations have led to ageing teacher populations: in 11 EU21 countries, 60% or more of primary school teachers (71% in Germany, 85% in Italy and 72% in Sweden) are 40 or older. At the secondary level, 51% of teachers in the UK are 40 or older compared with the OECD average of 64% (Table D5.2).



1. Primary education includes pre-primary education.

- 2. Year of reference 2010.
- 3. Public institutions only.

Countries are ranked in ascending order of the percentage of teachers aged 40 years or older at the primary level.

Source: OECD. Indonesia: UNESCO Institute for Statistics (World Education Indicators programme). Table D5.1. See Annex 3 for notes (www.oecd.org/edu/eag.htm).

... and teachers reach the top of the salary scale after only 10 years.

In England, the starting salary for a primary school teacher (USD 30 289) is slightly above the OECD average (USD 28 854), while the salary after 10 years of experience (USD 44 269) is far higher than the OECD average of USD 35 503. But in England, teachers' salaries at the top of the scale do not increase when a teacher has more than 10 years of experience, so teachers' salaries eventually fall behind the OECD average of USD 45 602.

The early increase on teacher salaries is, in part, the result of reforms implemented in the late 1990s, when the status of teaching as a profession was reconsidered and a recruitment campaign was launched that encouraged potential candidates to consider teaching as a "first career". In addition, the government offered new teachers a "golden hello" of up to GBP 4 000 (OECD, 2011).

Other findings:

- In 2011, 91% of 3- and 4-year-olds in the UK were enrolled in education a larger proportion than the OECD average (75%), but smaller than in other EU21 countries, such as France (99%) and Germany (93%). Nonetheless, virtually all 4-16 year-olds are in compulsory education (Table C1.1a).
- Tertiary-educated younger women earn 80% more than women of the same age who have an upper secondary education; among older women, tertiary-educated older women earn 75% more, on average. While this difference might be relative to increases in earnings among women with upper secondary education, the same pattern is not seen among men: their relative earnings increase with age (Table A6.3a).
- Some 32% of 15-24 year-old students have income from employment, a smaller proportion than the OECD average (45%), and marginally smaller than found in France (35%) and Germany (33%). While 15-24 year-old men who are non-students are more likely to work than women of the same age (67% and 63%, respectively), 15-24 year-old female students are more likely to work than male students of the same age (35% and 29%, respectively) (Table A6.5b).
- Some 64% of 25-29 year-old students have income from employment, smaller than the average share across OECD countries (67%) and in France (84%), but larger than in Germany (46%). The proportion of male students who have earnings from employment is marginally larger (64%) than that of female students (63%).

References

OECD (2013a), Education at a Glance 2013: OECD Indicators, OECD Publishing.

OECD (2013b), OECD Economic Surveys: United Kingdom 2013, OECD Publishing.

OECD (2011), Building a High-Quality Teaching Profession: Lessons from around the World, OECD Publishing.

European Commission (2012), Immigration of International Students to the UE, Europe Migration Network Study.

Please note: all Tables, Charts and Indicators are found in *Education at a Glance 2013* (www.oecd.org/edu/eag.htm)

Questions can be directed to:

Andreas Schleicher

Advisor to the Secretary-General on Education Policy, Deputy Director for Education and Skills

Email: Andreas.Schleicher@oecd.org

Telephone: +33 6 07 38 54 64

Country Note Authors:

Rodrigo CASTANEDA VALLE
Rodrigo.CastanedaValle@oecd.org
Joris RANCHIN
Joris.Ranchin@oecd.org

Key Facts for United Kingdom in Education at a Glance 2013

Table	Indicator	United Kingdom		OECD average		EU21 average		Rank among OECD countries and other G20 countries*
	Educational Access and Output							
	Enrolment rates	2011	2005	2011	2005	2011	2005	
	3-year-olds (in early childhood education)	86%	78%	67%	64%	77%	73%	13 of 36
C2.1	4-year-olds (in early childhood and primary education)	97%	92%	84%	79%	90%	84%	7 of 36
C1.1a	5-14 year-olds (all levels)	100%		99%		98%		7 of 38
	Percentage of population that has attained below upper secondary education	2011	2000	2011	2000	2011	2000	
A1.4a	25-64 year-olds	23%	37%	26%	34%	25%	34%	16 of 35
	Percentage of population that has attained upper secondary education	2011	2000	2011	2000	2011	2000	
A1.4a	25-64 year-olds	37%	37%	44%	44%	48%	46%	25 of 36
	Percentage of population that has attained tertiary education	2011	2000	2011	2000	2011	2000	
	25-64 year-olds	39%	26%	32%	22%	28%	20%	7 of 36
A1.3a	30-34 year-olds	48%		39%		37%		8 of 34
A1.4a	25-34 year-olds	47%	29%	39%	26%	36%	24%	6 of 36
	55-64 year-olds	31%	19%	24%	15%	21%	14%	7 of 36
	Entry rates into tertiary education	2011	2000	2011	2000	2011	2000	
C3.1a C3.2a	Vocational programmes (Tertiary-type B)	23%	29%	19%	16%	15%	11%	14 of 32
U3.2a	University programmes (Tertiary-type A)	64%	47%	60%	48%	59%	46%	15 of 36
	Graduation rates	2011	2000	2011	2000	2011	2000	
A2.1a	Percentage of today's young people expected to complete upper secondary education in their lifetime	93%	m	83%	76%	83%	77%	5 of 27
A3.1a	Percentage of today's young people expected to complete university education (tertiary-type A) in their lifetime	55%	42%	39%	28%	41%	27%	2 of 26
	Economic and Labour Market Outcomes							
	Unemployment rate of 25-64 year-olds - Men and Women	2011	2008	2011	2008	2011	2008	
	Below upper secondary	11.0%	7.5%	12.6%	8.8%	15.6%	10.4%	18 of 35
A5.4b	Upper secondary and post-secondary non-tertiary	5.9%	4.3%	7.3%	4.9%	8.5%	5.2%	19 of 36
	Tertiary	3.9%	2.8%	4.8%	3.3%	5.2%	3.2%	20 of 36
	Unemployment rate of 25-64 year-olds - Women	2011	2008	2011	2008	2011	2008	
	Below upper secondary	9.6%	6.6%	12.2%	9.5%	15.1%	11.0%	20 of 35
A5.4d	Upper secondary and post-secondary non-tertiary	6.0%	3.8%	8.0%	5.7%	9.1%	6.1%	22 of 35
	Tertiary	3.8%	2.5%	5.1%	3.6%	5.5%	3.6%	22 of 36
	Average earnings premium for 25-64 year-olds with tertiary education**		atest year lable	2011		2011		
A6.1	Men and women	157		157		158		15 of 33
	Men	151		162		164		21 of 33
	Women	182		161		161		5 of 33
	Average earnings penalty for 25-64 year-olds who have not attained upper secondary education**	2011 or latest year available		2011		2011		
A6.1	Men and women	69		76		77		26 of 33
	Men	67		77		78		29 of 33
	Women	69		74		75		25 of 33
	Percentage of people not in employment, education or training for 15-29 year-olds, by level of education attained	2011	2008	2011	2008	2011	2008	
	Below upper secondary	24.0%	24.0%	15.8%	14.4%	15.3%	13.5%	5 of 34
C5.4d	Upper secondary	14.4%	11.7%	16.2%	13.6%	15.1%	11.8%	18 of 34
	Tertiary	8.4%	6.8%	13.3%	10.6%	12.3%	9.6%	25 of 34

Key Facts for United Kingdom in Education at a Glance 2013

Table	Indicator	United Kingdom		OECD average		EU21 average		Rank among OECD countries and other G20 countries*
	Financial Investment in Education							
	Annual expenditure per student (in equivalent USD, using PPPs)	2010		2010		2010		
B1.1a	Pre-primary education	7047 USD		6762 USD		7085 USD		11 of 32
	Primary education	9369 USD		7974 USD		8277 USD		10 of 34
	Secondary education	10452 USD		9014 USD		9471 USD		11 of 34
	Tertiary education	15862 USD		13528 USD		12856 USD		11 of 33
	Total expenditure on educational institutions as a percentage of GDP	2010	2000	2010	2000	2010	2000	
B2.1	As a percentage of GDP	6.5%	4.9%	6.3%	5.4%	5.9%	5.2%	12 of 33
	Total public expenditure on education	2010	2000	2010	2000	2010	2000	
B4.1	As a percentage of total public expenditure	12.0%	11.0%	13.0%	12.6%	11.4%	11.4%	18 of 32
	Share of private expenditure on educational institutions	2010	2000	2010	2000	2010	2000	
B3.2a	Pre-primary education	8.6%		17.9%		11.3%		20 of 28
B3.2a	Primary, secondary and post-secondary non- tertiary education	21.1%	11.3%	8.5%	7.1%	6.1%	5.6%	3 of 31
B3.2b	Tertiary education	74.8%	32.3%	31.6%	22.6%	22.7%	14.3%	2 of 30
B3.1	All levels of education	31.4%	14.8%	16.4%	12.1%	10.7%	7.9%	3 of 29
	Schools and Teachers							
	Ratio of students to teaching staff	2011		2011		2011		
	Pre-primary education	17 students per teacher		14 students per teacher		13 students per teacher		8 of 31
D2.2	Primary education	20 students per teacher		15 students per teacher		14 students per teacher		7 of 35
	Secondary education	16 students per teacher		14 students per teacher		12 students per teacher		8 of 36
	Total intented instruction time for students (hours)	2011		2011		2011		
D1.1	Primary education	m		4717 hours		m		m
D1.1	Lower secondary education	m		3034 hours		m		m
	Number of hours of teaching time per year (for teachers in public institutions)	2011	2000	2011	2000	2011	2000	
	Pre-primary education	m		994 hours		977 hours		m
D4.2	Primary education	m	m	790 hours	780 hours	777 hours	776 hours	m
D4.2	Lower secondary education	m	m	709 hours	697 hours	669 hours	658 hours	m
	Upper secondary education	m	m	664 hours	628 hours	651 hours	635 hours	m
	Index of change in statutory teachers' salaries for teachers with 15 years of experience/minimum training (2000 = 100)	2011	2008	2011	2008	2011	2008	
	Primary school teachers	m	m	120	120	121	122	m
D3.4	Lower secondary school teachers	m	m	116	116	121	121	m
	Upper secondary school teachers	m	m	117	118	118	119	m
	Ratio of teachers' salaries to earnings for full- time, full-year adult workers with tertiary education	2011		2011		2011		
	Pre-primary school teachers	m		0.80		0.77		m
D3.2	Primary school teachers	m		0.82		0.80		m
	Lower secondary school teachers	m		0.85		0.84		m
	Upper secondary school teachers	m		0.89		0.89		m

^{*} Countries are ranked in descending order of values.

Note: Enrolment rates above 100% in the calculation are shown in italics.

'm': data is not available.

 $^{{\}it **} \ Compared \ to \ people \ with \ upper \ secondary \ education; \ upper \ secondary = 100.$



From:

Education at a Glance 2013 OECD Indicators

Access the complete publication at:

https://doi.org/10.1787/eag-2013-en

Please cite this chapter as:

OECD (2013), "United Kingdom", in Education at a Glance 2013: OECD Indicators, OECD Publishing, Paris.

DOI: https://doi.org/10.1787/eag-2013-76-en

This work is published under the responsibility of the Secretary-General of the OECD. The opinions expressed and arguments employed herein do not necessarily reflect the official views of OECD member countries.

This document and any map included herein are without prejudice to the status of or sovereignty over any territory, to the delimitation of international frontiers and boundaries and to the name of any territory, city or area.

You can copy, download or print OECD content for your own use, and you can include excerpts from OECD publications, databases and multimedia products in your own documents, presentations, blogs, websites and teaching materials, provided that suitable acknowledgment of OECD as source and copyright owner is given. All requests for public or commercial use and translation rights should be submitted to rights@oecd.org. Requests for permission to photocopy portions of this material for public or commercial use shall be addressed directly to the Copyright Clearance Center (CCC) at info@copyright.com or the Centre français d'exploitation du droit de copie (CFC) at contact@cfcopies.com.

