

# Measuring National Well-being - Education and skills

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## Abstract

This article on 'Education and skills' is the latest in a series which aims to explore in more detail the different aspects that have been considered as important for the measurement of National Well-being. It focuses on education and life-long learning including the stock of human capital in the labour market with some information about levels of educational achievement and skills.

## Introduction

A wide variety of studies have investigated the relationship between education and well-being. Some studies identify a positive relationship between education and well-being, while others find that middle-level education is related to the highest levels of well-being (Dolan et al 2008). Previous research has also shown that education and skills are vitally important to an individual's well-being and should be considered when making any assessment of National Well-being.

*"Learning encourages social interaction and increases self-esteem and feelings of competency. Behaviour directed by personal goals to achieve something new has been shown to increase reported life satisfaction. While there is often a much greater policy emphasis on learning in the early years of life, psychological research suggests it is a critical aspect of day-to-day living for all age groups. Therefore policies that encourage learning, even in the elderly, will enable individuals to develop new skills, strengthen social networks, and feel more able to deal with life's challenges"* (New Economics Foundation 2009).

This was highlighted during the Office for National Statistics (ONS) national debate on Measuring National Well-being. Many people said 'education and skills' were important for the measurement of National Well-being, in addition access to education and its quality were also considered important.

*"Underpinning all Government learning and skills policies is the firm conviction that learning is precious because it brings light to all kinds of lives. Whether the learner is a young apprentice looking to gain vocational skills as the basis for a fulfilling career or an older person wanting to remain physically and mentally active by taking part in adult education classes, we know that learning enriches individuals, strengthens communities, and feeds the common good. John Hayes, Minister of State for Further Education, Skills and Lifelong Learning" (BIS, 2012).*

This article starts by discussing funding for education services in the UK, followed by a section which gives some information about participation in education at all ages, from the early years to adulthood, and describes some of the formal qualifications obtained. It includes some discussion of disadvantaged groups, the relationship between both qualifications and lifelong learning and individual well-being and there is then a section which describes the value to the economy of the qualifications of those who are active in the labour market.

## Key points

- Estimated expenditure on education by central and local government in the UK in 2010–11 was 6.3 per cent of GDP, unchanged from 2009–10 but 1.6 percentage points higher than 1990–91 and higher than the EU-27 average of 5.7 per cent

## Children

- Approximately 97.3 per cent of three and four-year-olds were in early year's placements, 5.6 percentage points higher than the EU-27 average of 91.7 per cent
- Children who live in relatively poor households, those being looked-after by someone other than their parent or guardian and those with statements of special educational needs all have lower levels of outcome from their education
- International assessment of pupils aged 15 in the UK show that they achieve about the same standard as the average for all OECD countries in reading, slightly below the average in mathematics and above the average in science
- The proportion of pupils in the UK gaining the equivalent of five or more GCSEs at grades A\* to C, including English and mathematics, continues to increase reaching nearly 53 per cent in 2009/10

## Young people

- Between 2001 and 2011 there was an increase in the percentage of young people aged 16 to 24 in England who were not in employment, education or training, particularly for young men
- There was a decrease of 3.3 per cent between 2009/10 and 2010/11 in the total number of first year enrolments in higher education institutes in the UK, this was almost entirely because of the fall in the number of part time students

## Adults

- In 2011 employers reported that approximately 1.5 million employees had skills gaps, 3.6 million employees received job-related training with an estimated £49 billion spent by employers on training
- In the 2012 an estimated one fifth of adults in the UK reported that they were currently engaged in learning, and about two fifths had taken part in some form of learning in the previous three years.
- Adults with an impairment are considerably more likely than those without an impairment to have no formal qualifications

## Qualifications levels and human capital

- Between 1993 and 2011 the proportion of adults aged 16 to 64 without any formal educational qualifications has more than halved from 27 per cent to 11 per cent and the proportion with a degree or equivalent has more than doubled from 11 per cent to 24 per cent

- The estimated value of qualifications of those in employment was £17,250 billion in 2009 and went down to £17,120 billion in 2010 as the numbers in employment fell during the recession

### Education and subjective well-being

- Higher levels of qualifications and continued formal and informal learning have been found to be associated with greater individual subjective well-being

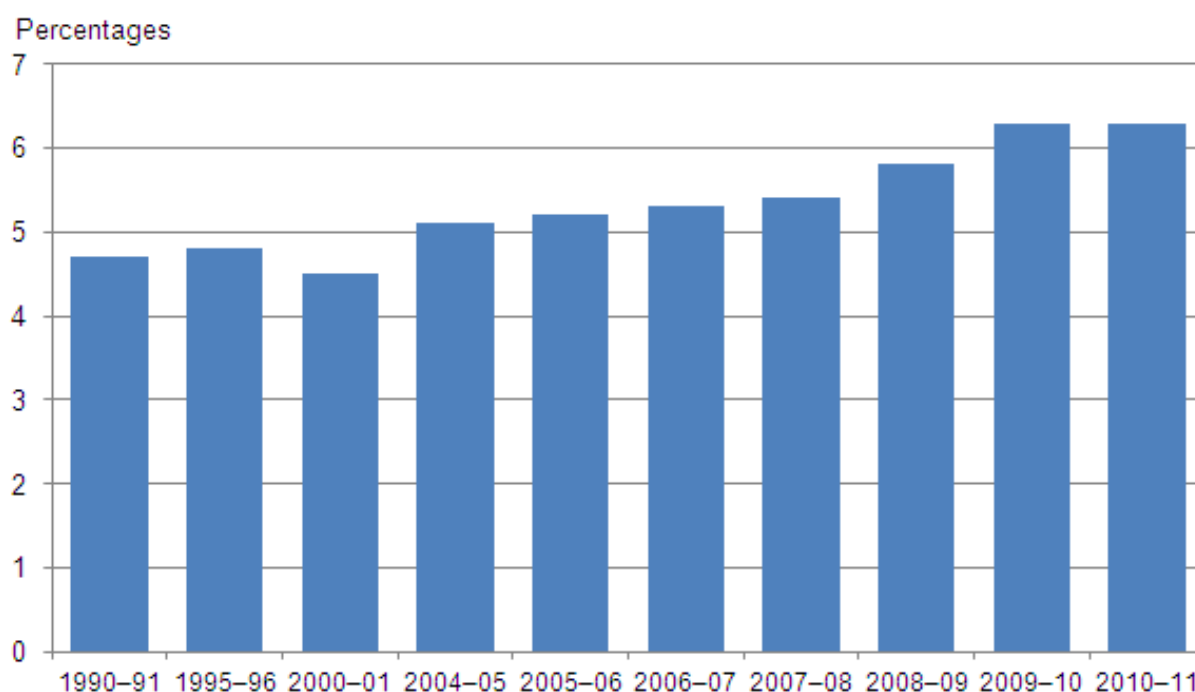
## Education expenditure

Most countries strive to ensure that young people are able to start their working lives with a minimum level of skill acquired through education. Public financing of provision has been the traditional means of encouraging education. Expenditure on educational services by central and local government in the UK relative to the output of the UK economy measured by Gross Domestic Product (GDP) is shown below (ONS 2012).

**Figure 1**

### Education expenditure as a proportion of GDP (1)

United Kingdom



**Notes:**

1. Data for periods 1995-96 to 2007-08 includes revised data.
2. Source: Department for Education (DfE 2011)

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In the UK in 2010–11 expenditure was estimated at £92.5 billion, of which; £4.9 billion was directly on under fives, £24.7 billion was on primary education, £40.2 billion was on secondary education and £15.7 billion was on tertiary education (further and higher education).

Estimated expenditure on education services by central and local government in the UK in 2010–11 was 6.3 per cent of GDP, unchanged from 2009–10 but 1.6 percentage points higher than 1990–91 when the estimated expenditure was 4.7 per cent of GDP (**Figure 1**).

There are considerable differences between public education expenditure as a proportion of GDP between the 27 European Union countries (EU-27). In 2009 education expenditure was 5.7 per cent of GDP in the UK, just above the EU-27 average of 5.5 per cent. On this measure education expenditure was highest in Denmark at 8.7 per cent, followed by Cyprus at 7.9 per cent and Sweden at 7.3 per cent. Slovakia and Romania had the lowest proportions of expenditure at 4.1 and 4.2 per cent respectively (EU 2012).

## Children

### Participation in education: early years

In order that individuals may gain the benefits to their well-being of education and learning, they must first participate in the education process. Information about participation levels in education is shown in this section starting with the early years and progressing to adults.

*‘We have found overwhelming evidence that children’s life chances are most heavily predicted on their development in the first five years of life. It is family background, parental education, good parenting and the opportunities for learning and development in those crucial years that together matter more to children than money, in determining whether their potential is realised in adult life.’* (National Archives 2010)

The foundation years, the first five years of a child’s life, are critical. Children’s experiences in these years have the biggest impact on how their brains develop. It is also when children grasp the fundamental skills needed to do well at school and develop as happy, confident individuals. For this reason participation in some form of early education can improve a child’s chances of achievement and well-being in later years.

Most three and four-year-olds in the UK benefit from early year’s placements in educational establishments. Data from Eurostat shows that in 2009 participation rates in early childhood education was universal in France (100 per cent) and nearly universal in the Netherlands (99.5 per cent), Belgium (99.3) per cent and Spain (99.3 per cent). The UK participation rate was 97.3 per cent, 5.6 percentage points higher than the EU-27 average of 91.7 per cent. Participation rates were lowest in Poland (70.9 per cent) and Finland (71.9 per cent) (EU 2012a).

### Table 1

## Proportion of three and four-year-olds benefiting from early education places: (1) by type of provider and local authority, 2011

England

Percentages

	Nursery schools and classes in primary schools <sup>2</sup>	Infant classes in primary schools <sup>3</sup>	State-funded secondary schools <sup>4</sup>	Other <sup>5</sup>	All providers <sup>6</sup>
England	26.6	31.0	0.2	39.3	97.1
North East	48.3	32.3	0.9	17.5	99.0
North West	31.2	32.2	0.2	34.7	98.3
Yorkshire and the Humber	36.7	32.4	0.2	30.0	99.3
East Midlands	23.8	32.8	0.6	41.6	98.7
West Midlands	31.8	31.7	0.1	33.5	97.2
East of England	20.2	30.0	0.0	47.2	97.5
London	34.8	28.1	0.5	28.8	92.2
South East	12.6	30.8	0.0	54.0	97.4
South West	11.2	31.8	0.2	56.2	99.3

### Table notes:

1. Pupils aged three and four at 31 December as a proportion of all the three and four-year-olds in each local authority.
2. Includes primary academies.
3. Includes reception and other classes not designated as nursery classes.
4. Includes maintained secondary schools and secondary academies.
5. Includes private and voluntary providers (including some Local Authority day nurseries registered to receive funding), independent schools and special schools (including general hospital schools and excluding pupils who are also registered elsewhere).
6. Any child attending more than one provider will have only been counted once.
7. Source: Department for Education (DfE 2011a)

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In England in January 2011, 97.1 per cent of all three and four -year-olds in England benefited from some free early education (**Table 1**). Over half of all three and four year olds (57.6 per cent) were in maintained nursery and state-funded primary schools and 31.0 per cent were in infant classes in

primary schools. Regionally, participation in education by three and four- year-olds varied between 92.2 per cent in London and 99.3 per cent in the South West.

### **Participation in education: Disadvantaged groups**

In 2010, the Joseph Rowntree Foundation published a report called “Poorer children’s educational attainment: how important are attitudes and behaviour” (Joseph Rowntree Foundation 2010). They reported that:

*“Children growing up in poorer families emerge from school with substantially lower levels of educational attainment. This is a major contributing factor to patterns of mobility and poverty”.*

The report found that there are big differences in cognitive development between children at the age of three from rich and poor backgrounds and that this gap had widened by the age of five. Differences in the home learning environment, particularly at the age of three, are shown to be an important explanatory factor with, for example, only 42 per cent of poorer children being read to every day compared to 79 per cent of children from the richest families.

While gaps in educational attainment between children from poor families and those from better-off backgrounds appear early, the report also highlights the gap in educational outcomes between young people from different socio-economic backgrounds at ages 11, 14 and 16. For example, at age 16 only 1 in 5 young people from the poorest families achieved five good GCSEs including English and mathematics compared with three-quarters of young people from the richest families.

Apart from those children from poorer backgrounds there are a number of other groups within the school population that can also be considered as disadvantaged by their personal circumstances. These include those who are looked-after by someone other than their parent or guardian and those with statements of special educational needs (SEN).

Children become looked-after when their parents/guardians are unable to provide on-going care in either a temporary or permanent capacity. This can be by voluntary agreement with their parents or guardians or as the result of a care order.

### **Table 2**

**Achievements of looked-after children: (1) by Key Stage, 2011**

England

Percentages

	Looked after children	Non looked after children
<b>Key Stage 1<sup>2</sup></b>		
Number eligible to sit Key Stage 1 tasks & tests	2,230	568,470
Percentage achieving level 2 or above in:		
Reading	65	85
Writing	57	81
Mathematics	71	90
<b>Key Stage 2<sup>3</sup></b>		
Number eligible to sit Key Stage 2 tests	2,640	552,430
Percentage achieving level 4+ in English & mathematics	43	74
<b>Key Stage 4<sup>4</sup></b>		
Number eligible to sit GCSEs	5,680	633,260
Percentage achieving:		
5+ GCSEs inc. A*-C in English & mathematics	13	58
A*-C in English & mathematics	14	59

**Table notes:**

1. Children looked-after for six months, excluding children in respite care.
2. Figures for KS1 are based on teacher assessment. Level 2 is the expected level for the age group.
3. Figures for KS2 are based on tests. Level 4 is the expected level for the age group.
4. Figures for KS4 include GCSEs and other equivalent qualifications approved for use pre 16.
5. Source: Department for Education (DfE 2011b)

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As can be seen in **Table 2**, the number of children who are looked- after at each Key Stage is relatively small however, the average outcome for these children at each of the assessed stages of their education is significantly lower than those for other children. For example, of the 2,230 children

looked-after continuously for six months during the year ending March 2011 and who were eligible to sit Key Stage 1<sup>1</sup> tasks and tests, 65 per cent achieved the expected level<sup>2</sup> in reading compared with 85 per cent of other children and a much smaller proportion also achieved the expected levels in writing and mathematics. This relatively low level of outcome for children who are looked-after continues at each Key Stage.

Pupils with special educational needs (SEN)<sup>3</sup> have learning difficulties or disabilities which mean that they need extra assistance in order to make the same progress as other pupils of the same age. In 2011 there were approximately 1.6 million pupils (19.0 per cent of pupils on roll) in England and Wales with statements of SEN. In 2011 boys were two and a half times more likely than girls to have statements at primary school and nearly three times more likely to have statements at secondary school compared with girls. Two per cent of boys (42,000 pupils) at primary schools had statements compared with 0.8 per cent of girls (16,000 pupils). At secondary school, 2.9 per cent of boys (47,400 pupils) had statements compared with 1.0 per cent of girls (16,300 pupils).

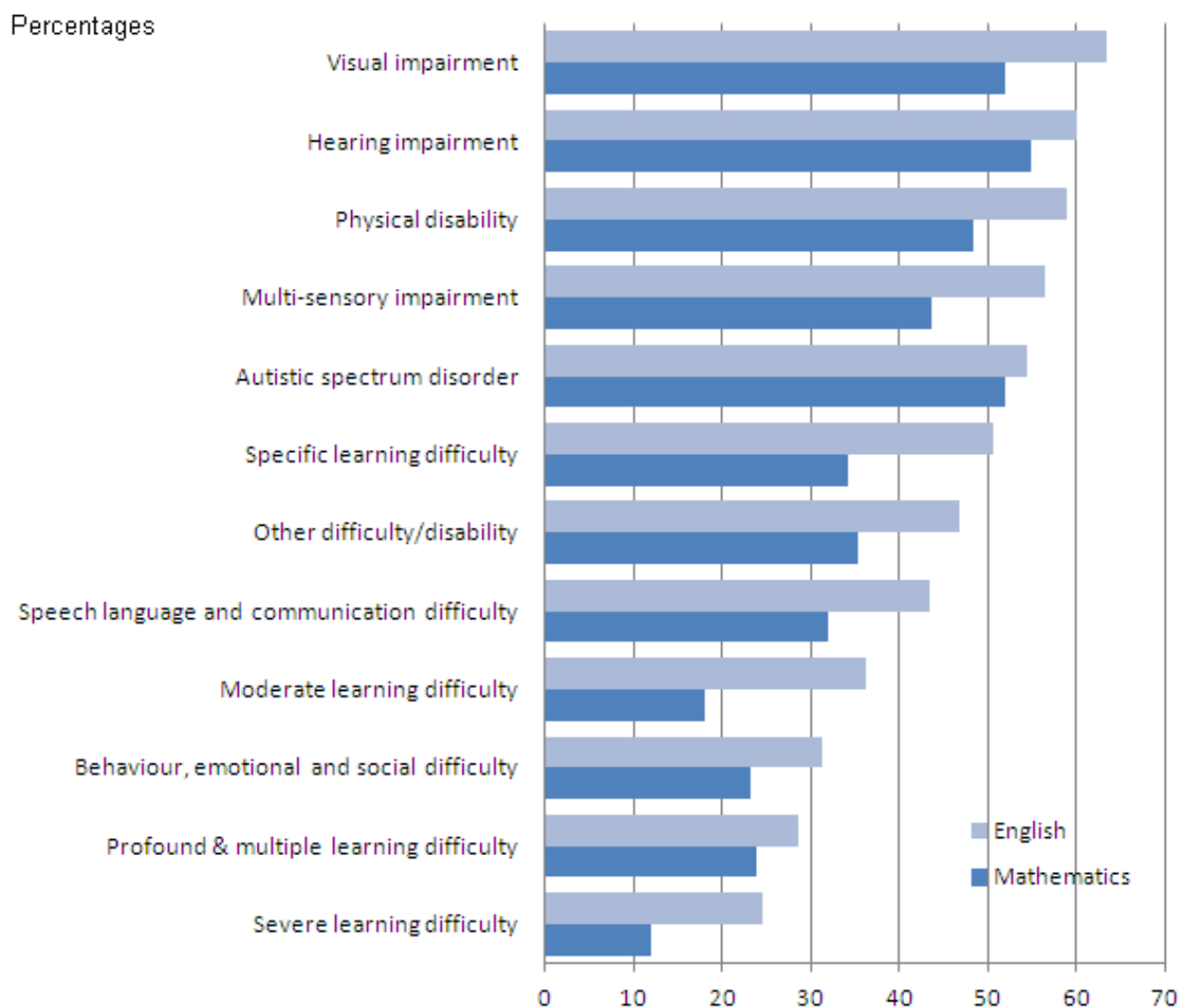
Pupils with special education needs (SEN) are more likely than others to experience poor outcomes which may affect their current and future well-being through middle childhood and adolescence. A report from the Centre for Research on Wider Benefits of Learning, Institute of Education (DCSF 2010) estimated that 70.4 per cent of pupils in maintained mainstream schools in England made the expected progress between Key Stages 2 and 4 in English and 62.9 per cent in mathematics. The percentage of pupils with School Action Plus or statements<sup>4</sup> making the expected progress between Key Stages 2 and 4 was generally lower and varied by their impairment.

## Figure 2



## Proportion of pupils with statements of special educational needs making expected progress in English and mathematics between Key Stage 2 and 4: (1,2) by impairment, 2009/10

England



### Notes:

1. Maintained mainstream schools only (including academies).
2. Pupils included are those at the end of Key Stage 4 who have valid matched Key Stage 2 result or teacher assessment. Pupils with no prior attainment record are excluded from the calculation unless they are ungraded or have achieved grade B or above at GCSE.
3. Source: Department for Education (DfE 2011c)

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Those with visual impairments (63.3 per cent) and hearing impairments (60.1 per cent) were most likely to achieve the expected progress in English (**Figure 2**). In mathematics, pupils with hearing

impairments (54.8 per cent) and autistic spectrum disorder (52.0 per cent) were most likely of all primary need groups to achieve the expected progress.

### Participation in education: achievements

The Programme for International Student Assessment ([PISA](#)) is a survey of the educational performance of 15-year-olds by the Organisation for Economic Co-operation and Development (OECD). The survey takes place every three years and assesses students in reading, mathematics and science. In each survey one of these is the main focus: in 2009 the main focus was on reading.

**Table 3**

#### Programme for International Student Assessment (PISA) in the UK, 2006 and 2009

United Kingdom

Average mean scores

	United Kingdom		OECD Average		
	2006	2009	2006	2009	
Reading	492	492	494	495	493
Science	515	515	514	500	501
Mathematics	495	495	492	498	496

**Table notes:**

1. Source: Organisation for Economic Co-operation and Development (OECD)

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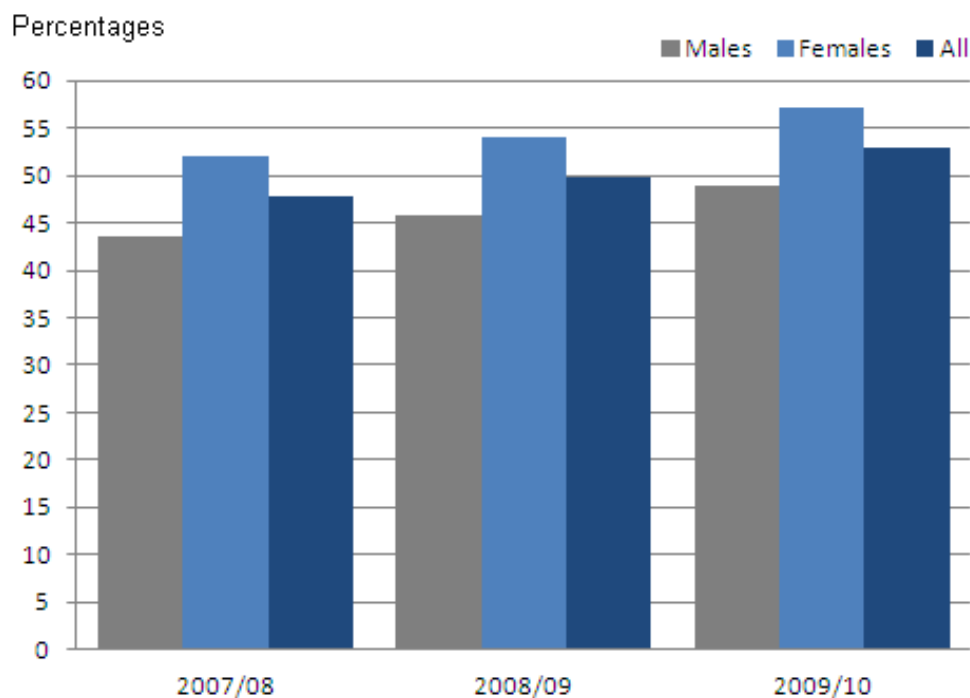
Overall there was very little change in the mathematics, reading and science PISA scores between 2006 and 2009 in the UK (**Table 3**). In this assessment of reading, students in the UK achieved an average score similar to the average for the OECD, while the average score for UK students in mathematics was below the OECD average in both 2006 and 2009. However, average science scores for 15-year-olds in the UK were significantly higher than the OECD average in 2006 and 2009.

Within the UK, achievement at age 16 is generally measured by General Certificate of Secondary Education (GCSE) and equivalent results. The aggregate results have improved in each year since these examinations were introduced in the late 1980s.

#### Figure 3

## Pupils achieving five or more GCSE or equivalent grades A\* to C: (1,2) by sex

United Kingdom



### Notes:

1. Including English and mathematics.
2. For pupils in their last year of compulsory education. Pupils aged 15 at the start of the academic year; pupils in year S4 in Scotland.
3. Source: Department for Education (DfE 2011)

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During the 1950s and 1960s a higher proportion of boys achieved five or more good O-level passes. This situation reversed in the early 1970s and girls have outperformed boys on these measures ever since (HC 2007).

**Figure 3** focuses on the combination of core skills with overall GCSE performance. It shows the proportion of pupils achieving at least five or more A\* to C grades at GCSE or equivalent including English and mathematics. In 2009/10 52.9 per cent of young people in the UK achieved five or more passes at this standard compared with 49.8 per cent in 2008/09. As in previous years a higher proportion of girls than boys achieved this outcome, with girls also showing a slightly larger increase in achievement between 2008/09 and 2009/10 with a 3.1 percentage point increase compared with 3.0 for boys.

Many students study Advanced Subsidiary (AS) and Advanced (A) level qualifications between the ages of 16 to 18 immediately after completing their GCSE's although adults can take them too. AS

and A level qualifications focus on traditional skills and normally take two years to complete full-time, although they are also available to study part-time. AS and A levels are at level 3 on the National Qualifications Framework. Such qualifications and their equivalents are usually a pre-requisite for entry into higher education.

In 2009/10 the number of GCE applied/VCE A/AS and double award passes in England, Wales and Northern Ireland decreased when compared with 2008/09. In 2009/10 there were 34,800 AS level passes, 8,800 (20 per cent lower) than 2008/09 and 33,300 A level passes in 2009/10, 2,500 (7 per cent) lower than 2008/09. The number of A level double awards also decreased from 11,100 in 2008/09 to 9,200 in 2009/10 and the number of AS double awards decreased from 8,600 to 5,800 over the same period.

## Notes

1. Key Stage 1 is the legal term for the two years of schooling in maintained schools in England and Wales. Normally known as year 1 and year 2, when pupils are aged between 5 and 7. This Key Stage normally covers pupils during infant school, although in some cases this might form part of a first or primary school. It is also the label used for the third and fourth years of primary education in Northern Ireland.
2. Expected level for age group based on teacher assessments at KS1 and test results at KS2 and KS4.
3. Pupils with special educational needs are currently classified into three distinct provisions of need: School Action, School Action Plus or with statements of special educational needs:

School Action – where extra or different help is given, from that provided as part of the school's usual curriculum.

School Action Plus – where the class teacher and the SENCO (Special Educational Needs Coordinator) receive advice or support from outside specialists (the specialist teacher, an educational psychologist, a speech and language therapist or other health professionals).

Statement – a pupil has a statement of special educational needs when a formal assessment has been made. A document setting out the child's needs and the extra help they should receive is in place.

4. Special educational needs: statements. A statement of special educational need (SEN) sets out a child's needs and the help they should have. It is reviewed annually to ensure that any extra support given continues to meet the child's needs.

## Young people

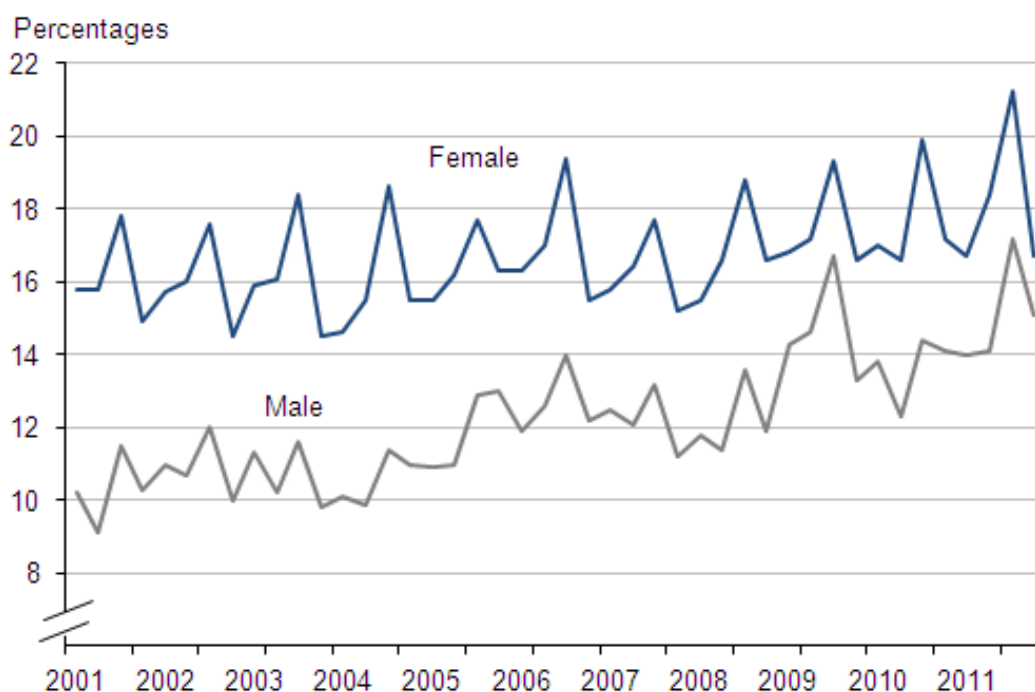
While children up to the age of 16 in the UK are required to be in education, after this age young people can either stay in full-time education at school or college or take employment with or without training. Over the last decade there have been a growing number of young people leaving compulsory education who are not continuing in education and who are also not in employment or training.

Not being in education, employment or training (NEET) can waste young persons potential and reduces their contribution to society. Research shows that disengagement at this age negatively impacts in social terms and those who are disengaged from education and training can cause problems in the community in the form of nuisance and crime. There is also a negative impact on the individual with a tendency towards early criminalisation, drug culture and dependency and teenage pregnancy (LSN, 2009).

Between 2001 and 2011 there was an increase in the number of young people aged 16 to 24 in England not in education, employment or training (NEET) and this was particularly so for young men. There are quarterly variations in the numbers, which peak in the third quarter (July to September) of each year as young people leave compulsory schooling. The total number of young people aged 16 to 24 in England who were NEET in the fourth quarter (October to December) of 2011 was 958,000, 19,000 (2.0 per cent) higher than the same period in the previous year.

**Figure 4**

**Proportion of 16 to 24-year-olds (1) not in employment, education or training (NEET): by sex**  
England



Source: Labour Force Survey - Office for National Statistics

**Notes:**

1. Age refers to academic age, which is the respondent's age at the preceding 31 August.

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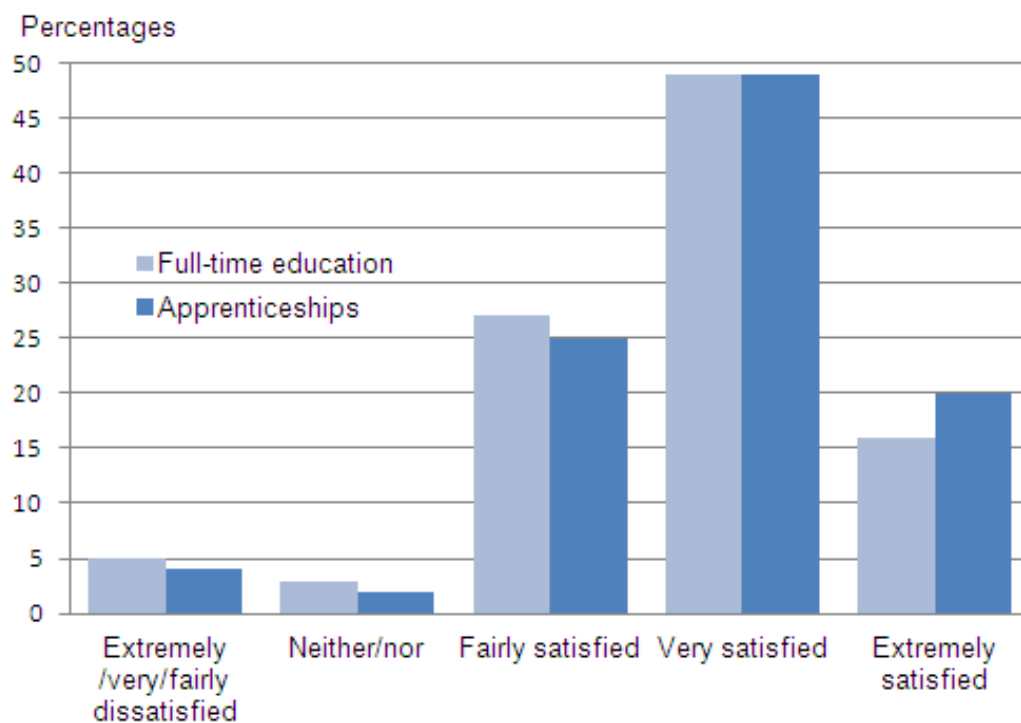
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Between 2001 and 2011 there has been a narrowing of the gap in the proportion of females and males who are NEET in any quarter. In the fourth quarter of 2011 the proportion of females aged 16 to 24 in England classed as NEET was 16.7 per cent and males 15.1 per cent (**Figure 4**). The gap between females and males aged 16 to 24 classed as NEET was at its lowest level in quarter 4 of 2011 with just 1.6 per cent more females being classed as NEET compared with males.

The National Learner Satisfaction Survey (BIS 2011) is the largest survey of the views of post-16 learners ever undertaken in England. It provides an invaluable insight into learners' perceptions of what is already working well in post-16 education and training and what might be improved.

**Figure 5****Young people's overall satisfaction with the learning experience (1,2), 2010**

England



Source: Business, Innovation and Skills

**Notes:**

1. Based on responses from full-time education and apprenticeship learners aged 16–18 in 2010.

2. Based on responses to the question "how satisfied are you with your current learning experience at college/provider?"

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When asked "how satisfied are you with your current learning experience?" the vast majority of young people aged 16 to 18 were satisfied, with over 90 per cent being fairly, very or extremely satisfied (**Figure 5**). Apprentices were 25 per cent more likely than those in full-time education to be extremely satisfied.

### Participation in education: higher and further education

One relatively common response to the National Debate (ONS 2011) was that job security was important to an individual's well-being. According to a report from Statistics Canada, workers with a higher education were more likely to have secure, high-wage, high-benefit jobs. Employees with less than high-school education were more likely to have insecure work, low wages and no benefits (OECD 2007).

### Table 4

#### First year student enrolments on Higher Education (HE) courses: by location and mode of study

United Kingdom

	Percentages				
	2006/07	2007/08	2008/09	2009/10	2010/11
<b>England</b>					
Full-time	56.2	57.6	58.0	59.7	62.0
Part-Time	43.8	42.4	42.0	40.3	38.0
Total (=100%) (thousands)	877	891	960	996	965
<b>Wales</b>					
Full-time	53.6	54.1	55.3	61.5	61.9
Part-time	46.4	45.9	44.7	38.5	38.1
Total (=100%) (thousands)	63	64	66	66	66
<b>Scotland</b>					
Full-time	64.0	64.7	66.4	68.4	69.6
Part-time	36.0	35.3	33.6	31.6	30.4

	2006/07	2007/08	2008/09	2009/10	2010/11
Total (=100%) (thousands)	96	93	98	100	92
<b>Northern Ireland</b>					
Full-time	57.4	59.7	60.8	60.8	59.0
Part-time	42.6	40.3	39.2	39.2	41.1
Total (=100%) (thousands)	21	21	21	23	22
<b>UK</b>					
Full-time	56.8	58.1	58.6	60.5	62.5
Part-time	43.2	41.9	41.4	39.5	37.5
Total (=100%) (thousands)	1,057	1,069	1,144	1,185	1,146

**Table notes:**

1. Source: Higher Education Statistics Agency

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The total number of first year enrolments in HE institutions in the UK was approximately 1.1 million in 2010/11, a decrease of 3.3 per cent compared with 2009/10. The number of full-time enrolments showed little change between 2009/10 and 2010/11, while part-time first year enrolments decreased by 8.2 per cent over the same period (**Table 3**). The number of applicants in 2010/11 have decreased from all the UK countries; England (9.9 per cent), Northern Ireland (4.4 per cent), Wales (1.9 per cent) and Scotland (1.5 per cent).

Initial data for university and college applications in 2012 shows that the total number of applications by the January deadline (540,000) was approximately 44,000 (7.4 per cent) lower than at the same point in 2011 (584,000). The number of applicants from the UK has decreased by 8.7 per cent overall. The number of applications decreased in England (9.9 per cent), Northern Ireland (4.4 per cent) and Wales (1.9 per cent). Applicants from EU countries have also decreased by 11.2 per cent but there has been an increase of 13.7 per cent in applications from outside the EU.

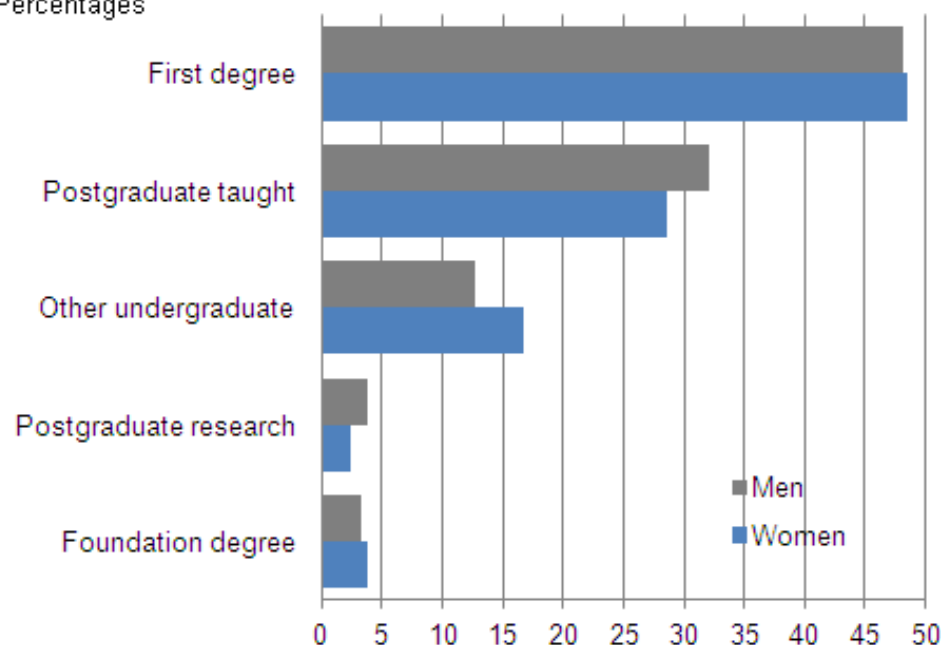
**Figure 6**



## Qualifications obtained by students at Higher Educational (HE) institutions in the UK: by sex and level of qualification, 2010/11

United Kingdom

Percentages



### Notes:

1. Source: Higher Education Statistics Agency

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In 2010/11, there were 762,540 HE qualifications obtained in the UK compared with 716,940 in 2009/10 an increase of 6 per cent. Of these 369,010 were at first degree level, compared with 350,860 in 2009/10, showing an increase of 5 per cent. First degree qualifications accounted for 48 per cent of all HE qualifications obtained in 2010/11 and other undergraduate qualifications (including foundation degrees and excluding undergraduate PGCE<sup>1</sup>) accounted for 19 per cent (**Figure 6**). Postgraduate qualifications (excluding postgraduate PGCE) accounted for 30 per cent and PGCE qualifications (at postgraduate and undergraduate level) accounted for the remaining 4 per cent.

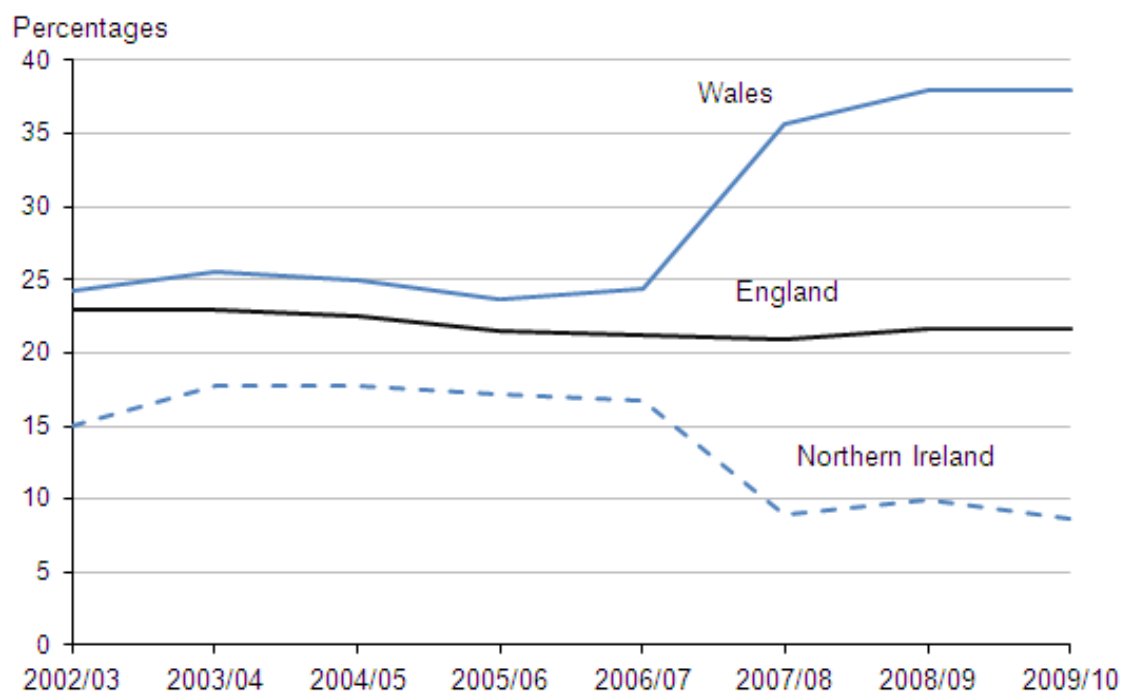
Over the last 15 years there has been a drive to increase the proportion of learners who progress to higher education from under-represented sections of the population, particularly those from lower socio-economic groups. This is thought to not only bring private benefits to individuals but also wider socio-economic benefits by promoting social mobility and ensuring employers have the largest possible pool of highly qualified and skilled graduates.

There were approximately 288,800 first degree entrants from under-represented groups in 2010/11. This was an increase of 27,600 (10.6 per cent) compared with 2005/06 when there were approximately 261,000 entrants.

## Figure 7

### Mature full-time undergraduate entrants: by country (1)

England, Wales & Northern Ireland



#### Notes:

1. See note 2.
2. Source: Higher Education Statistics Agency

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Not all entrants to higher education are those who have just left school. In 2010/11 nearly a third (32 per cent) of first degree UK resident undergraduate students were over the age of 21.

In 2009/10, there were approximately 73,000 mature full-time first degree entrants in England, Wales and Northern Ireland, 22 per cent of all full-time first degree entrants (**Figure 7**). This was approximately 3,000 higher than in 2008/09 when there were around 70,000 mature full-time first degree entrants. The proportion of undergraduates entering their first year was slightly higher in Wales at 22.8 per cent (approximately 5,125 students), compared with England at 21.7 per cent (nearly 66,000 students). The Northern Ireland figure was 17.7 per cent, just over 1,700 students.

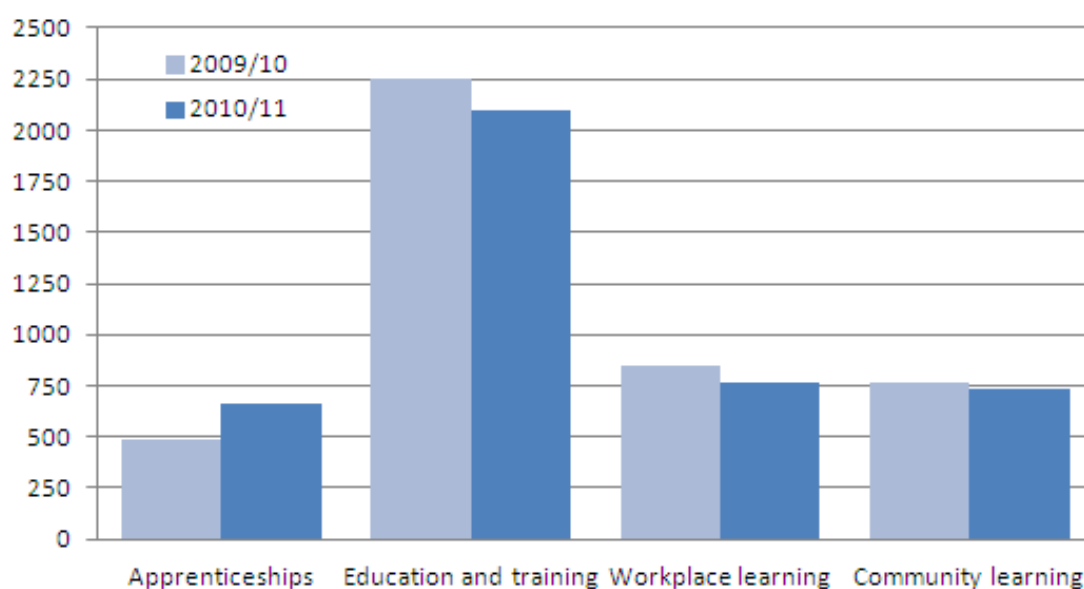
Apart from those entering higher education there are many adult learners<sup>3</sup> who are still involved in education and training after the end of compulsory education. Gaining new skills or keeping skills up to date is vital to our economy and society. These improvements help businesses succeed and enable individuals to realise their potential.

**Figure 8**

### Summary of further education (FE) and skills participation (1)

England

Thousands



#### Notes:

1. Item includes apprenticeships, workplace learning, community learning and education and training provision taken at general further education colleges (including tertiary), sixth form colleges (agricultural and horticultural colleges and art and design colleges), specialist colleges and external institutions.
2. Source: The Data Service

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Data from the January 2012 Post-16 Education and Skills: Learner Participation, Outcomes and Level of Highest Qualification report (BIS, 2012), shows that 4.3 million learners participated in some form of government-funded further education (excluding schools) in the 2010/11 academic year. This was a decrease in learner participation of 370,600 (8.0 per cent) compared with 2009/10 (**Figure 8**). Of the 4.3 million learners in 2010/11, nearly half (2.1 million) were participating in further education and training with the remainder learning in the workplace, community or through an apprenticeship.

The report also shows that there was a steady increase in apprenticeship starts between 2006/07 and 2009/10, followed by a large increase between 2009/10 and 2010/11. The total number of learners participating in apprenticeship programs in 2010/11 was 665,900, an increase of 174,600 (36 per cent) compared with 2009/10. Of these there were 415,200 learners in intermediate level apprenticeships, 247,200 learners in advanced level apprenticeships and 3,500 learners in higher apprenticeships<sup>4</sup>.

## Notes

1. Post grad is Post Graduate Certificate in Education and the undergraduate is Professional Graduate Certificate in Education.
2. The low participation measure used in the figure is based on a UK wide classification of areas into participation bands. The relatively high (in UK terms) participation rate in Scotland coupled with the very high proportion of higher education that occurs in further education colleges means that the figures for Scottish institutions could, when viewed in isolation, misrepresent their contribution to widening participation. Low participation data has therefore not been produced for institutions in Scotland and for students Scottish domiciled.
3. Learning policy tends to treat 'adults' as anyone aged 19 or over and 'learning' includes formal education or training leading to a qualification.
4. There are 3 levels of Apprenticeship for those aged 16 or above:

Intermediate Level Apprenticeships – Apprentices work towards work-based learning qualifications such as a Level 2 Competence, Functional Skills, and, in most cases, a relevant knowledge based qualification.

Advanced Level Qualification – Apprentices work towards work-based learning such as Level 3 Competence Qualification, Functional Skills, and, in most cases, a relevant knowledge based qualification.

Higher Apprentices - Apprentices work towards work-based learning such as Level 4 Competence Qualification, Functional Skills, and, in most cases, a relevant knowledge based qualification.

## Adults

### Participation in education: training and skills

The importance of training to gain skills while in employment is emphasised in the UK Employer Skills Survey 2011 (UKCES 2011). This is the key UK data source on employer demand for and investment in skills. One of the main findings was that although the majority of establishments have

the skills they require, almost 1.5 million employees (5 per cent of all employees) are deemed not fully proficient as they have a skills gap. While skills challenges may not be common, where they do exist their impact can be significant. More than three in five businesses which reported skills gaps (61 per cent) also reported them as impacting on performance. In almost all cases, proficiency problems and skills deficiencies have the effect of increasing the workload of other more proficient staff and they also commonly impact directly on meeting business objectives.

**Figure 9**

### Skills gaps: by occupation, 2011

United Kingdom



**Notes:**

1. Rounded to the nearest 50.
2. Source: UK Commission for Employment and Skills (UKCES 2011)

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**Figure 9** illustrates where skills gaps lie within the existing workforce in the UK. Skills gaps are more commonly reported for elementary staff, 305,000 (8 per cent of all elementary staff) and sales and customer service staff, 289,000 (8 per cent of all sales and customer service staff). Reports of skill gaps were less common for skilled trade occupations, 101,000 (5 per cent of all those in skilled trade occupations) and associate professionals, 90,000 (5 per cent of all associate professionals).

The most common causes of skills gaps are that the employee(s) in question are new to the role (47 per cent) and/or that any training being conducted is currently only partially completed (46 per cent).

Other reasons include, staff lacking motivation (32 per cent), staff having been on training but their performance not improving sufficiently (29 per cent), difficulties meeting the quality standards (25 per cent), the introduction of new working practices (23 per cent), and difficulties introducing new working practices (23 per cent).

*“Learning can mean practicing, studying or reading about something. It can also mean being taught, instructed or coached. This is so you can develop skills, knowledge, abilities or understanding of something. Learning can also be called education or training. You can do it regularly (each day or month) or you can do it for a short period of time. It can be full time, or part time, done at home, at work, or in another place like a college. Learning does not have to lead to a qualification. We are interested in any learning you have done, whether or not it was finished” (NIACE 2012).*

In the 2012 National Institute of Adult Continuing Education (NIACE) Adult Participation in Learning Survey (NIACE 2012), 19 per cent of adults, aged 17 and over, say that they are currently engaged in learning, with around two fifths of the adult population in the UK saying that they have taken part in some form of learning in the previous three years. Neither of these figures has varied greatly since 2010, from 43 per cent of adults who reported learning in the previous three years, down to 38 per cent in 2012. Around a third (36 per cent) of adults say they have not participated in learning since leaving full-time education.

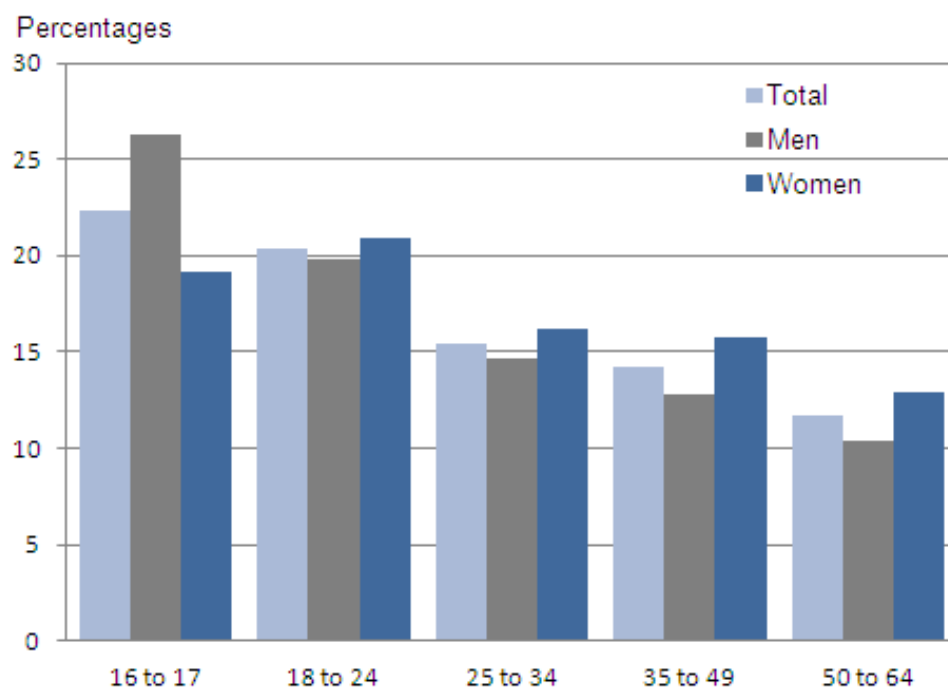
Data from the 2012 NIACE Adult Participation in Learning Survey (NIACE, 2012) estimates that 41 per cent of adults are likely to take up learning in the next three years but 56 per cent are unlikely to learn. Compared to 2011 intentions to learn have increased four percentage points from 37 per cent to 41 per cent, though they remain far short of the record high of 47 per cent in 2010. As in previous years, current participation in learning is a key indicator of future intentions to learn. In the 2012 survey, 80 per cent of current learners say that they are likely to take up learning in the next three years compared with just 17 per cent of those who have done no learning since leaving full-time education.

Formal qualifications are often achieved before entering employment but workers also acquire qualifications once they are working. There is also investment by employers in improving the skills of their employees which may or may not lead to a qualification.

## Figure 10

## Employees receiving job-related training: by age group (1)

United Kingdom



Source: Labour Force Survey - Office for National Statistics

### Notes:

1. Men and women aged 16 to 64.

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In 2011 in the UK there were 3.6 million employees receiving job-related training, 90,000 (3 per cent) more than in 2010. Of the 3.6 million employees receiving training in 2011 over half, 1.9 million (53 per cent), were women and 1.7 million (47 per cent) were men. **Figure 10** shows that the majority (44 per cent) of employees receiving job-related training were aged 16 to 24 and nearly a third (30 per cent) were aged between 25 and 49. A further 12 per cent were aged between 50 and 64.

Across the UK, total employer expenditure on training in 2011 was an estimated £49 billion<sup>1</sup>, split relatively evenly between training on the job (£25.8 billion) and off the job (£23.2 billion). The bulk of the outlay 'on off the job' training is related to courses taken by the individual (£19.3 billion), with seminars, workshops and open and distance learning forming a far smaller component (£3.9 billion).

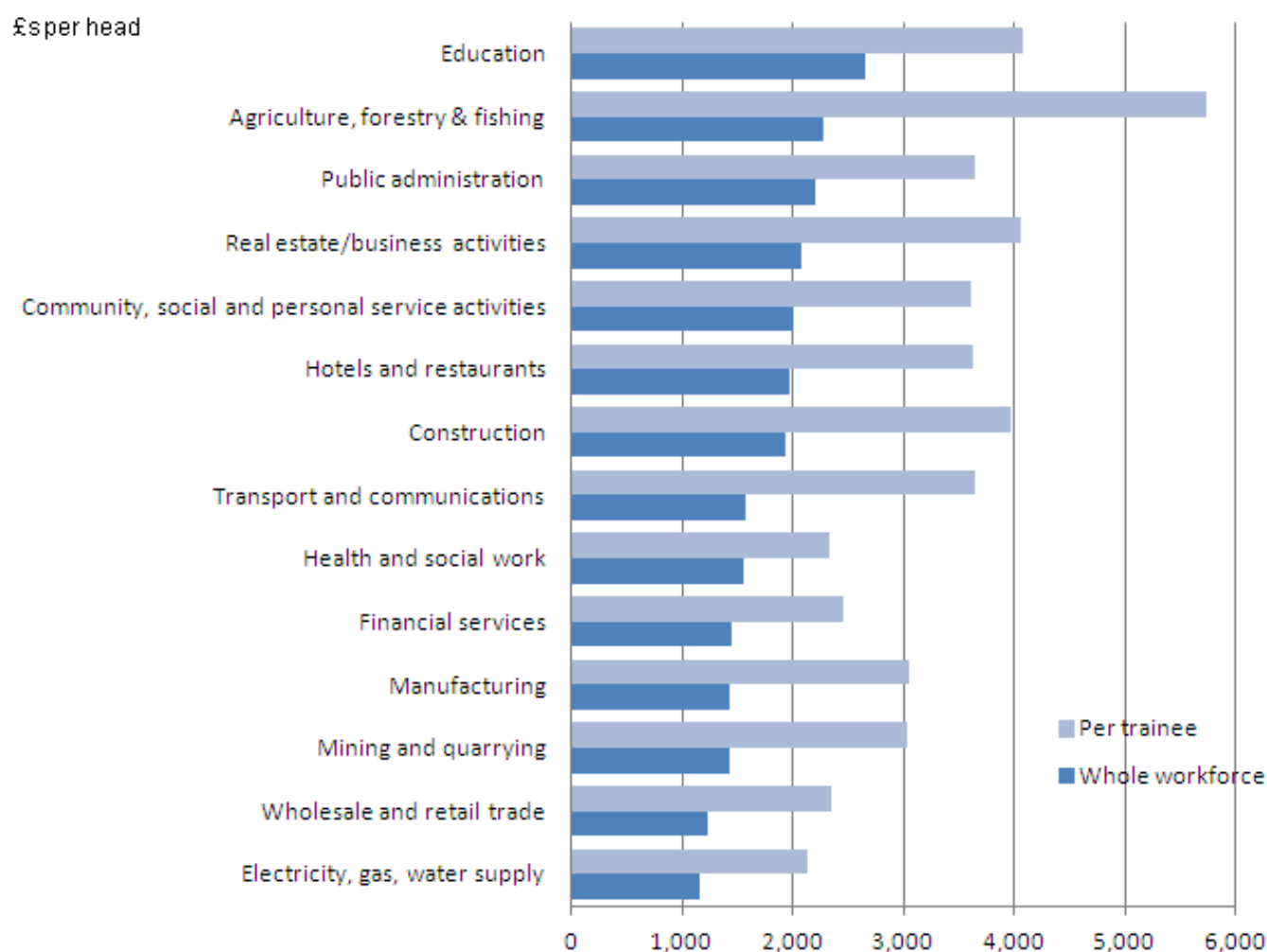
Expenditure on training varies by the employment sector. Data from the UK Commission for Employment and Skills shows that the real estate and business activities sector spent the most on

training in absolute terms in 2011 at £9.5 million and also spent more than average per trainee at £4,050.

**Figure 11**

**Training expenditure: by sector, 2011**

United Kingdom



**Notes:**

1. Source: UK Commission for Employment and Skills (UKCES 2011)

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Per trainee, the agriculture, forestry and fishing sector makes the largest investment per trainee (£5,725), followed by real estate and business activities (£4,050) and public administration (£3,650) (**Figure 11**). Conversely, the electricity, gas and water supply sector, and mining and quarrying sector make the smallest investment per trainee (£2,125 and £3,025 respectively).



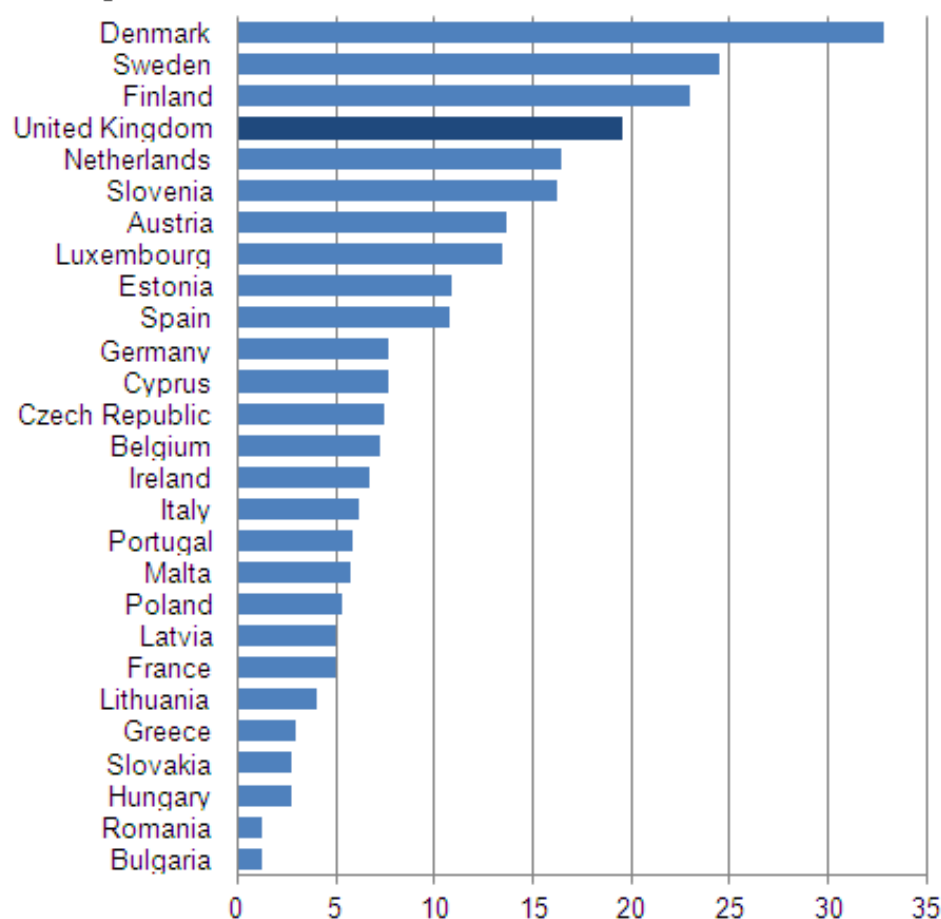
The education sector makes the largest investment per head of its total workforce (£2,650) followed by agriculture, forestry and fishing (£2,275) and public administration (£2,200). Wholesale and retail, and health and social work on the other hand, both account for a large proportion of the total training expenditure (£5.5 million and £5.4 million respectively) but, because of the relatively large size of their workforce their spend per head is much lower (£1,225 and £1,550 respectively).

**Figure 12**

**Proportion of the population aged 25 to 64 participating in education and training, 2010**

EU-27

Percentages



Source: Eurostat

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In 2010, the proportion of persons aged 25 to 64 in the EU-27 receiving some form of education or training in the four weeks preceding the labour force survey was 9.1 per cent; a share that was 0.7 percentage points lower than the corresponding share for 2005.

It is noticeable that Denmark, Sweden and Finland have considerably higher proportions of their respective populations who have received education or training in the four weeks before the survey at 32.8 per cent, 24.5 per cent and 23.0 per cent respectively (**Figure 12**). The UK with 19.0 per cent, the Netherlands with 16.5 per cent and Slovenia with 16.2 per cent were the only other Member States where the participation rate in 2010 already exceeded the 15 per cent target. In contrast, Romania (1.3 per cent) and Bulgaria (1.2 per cent) had learning participation rates of less than 2 per cent.

There are many barriers to learning opportunities for adults. Data from the Life Opportunities Survey 2009/11 (ONS 2012a) show that 11 per cent of all adults in Great Britain reported that they did not have access to all the learning opportunities they wanted. The most common reason given was financial, reported by 55 per cent of those without impairment and 48 per cent of those with impairment. Difficulty with transport, too busy/not enough time and reasons related to health were also cited as barriers to learning opportunities.

**Table 5****Adult educational attainment: (2) by impairment status, 2010/11**

Great Britain

	Percentages		
	Without impairment	With impairment	All
Degree level qualification (or equivalent)	26	15	23
Higher educational qualification below degree level	9	8	9
A level or highsers	12	7	11
ONC/National level B/ Tec	5	5	5
O level or GCSE equivalent <sup>3</sup>	19	18	18
GCSE <sup>4</sup> or standard grade <sup>5</sup>	5	6	6
Other <sup>6</sup>	11	15	12
No formal qualifications	12	26	16

**Table source:** Office for National Statistics

**Table notes:**

1. Life Opportunities Survey (ONS 2012)
2. Results are for adults aged between 16 and 69.
3. Grade A to C or O grade/CSE equivalent (grade 1) or standard grade level 1 to 3.

4. Grade D to G or CSE grades 2 to 5.
5. Level 4 to 6.
6. Including foreign qualifications below degree level.

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**Table 5** shows a breakdown of educational attainment by impairment status<sup>2</sup>. The table summarises the highest level of qualification that adults have received from school, college or since leaving education. Adults without impairment were more likely to have a degree level qualification compared with adults with impairment (26 per cent and 15 per cent respectively). Twenty-six per cent of adults with impairments stated they had no formal qualifications compared with 12 per cent of adults without impairments.

### Notes

1. Please note this figure has been collected across the UK for the first time in this survey and cannot therefore be compared to figures coming out of earlier surveys in the constituent nations.
2. Impairment relates to the loss of physiological functions of the body such as loss of sight, hearing, mobility or learning capacity. Impairment should be distinguished from medical conditions or loss of bodily structure. For example, glaucoma is a medical condition; loss of vision is the impairment it causes. Activity limitations are restrictions an individual may have in executing physical or mental tasks or actions as a result of their impairment, for example, being unable to read newsprint at arms length without glasses or other aids and adaptations.

### Qualification levels and human capital

*“The well-being of modern society is dependent not only on traditional capital and labour but also on the knowledge and ideas possessed and generated by individual workers. Education is the primary source of this human capital.”* (Crocker 2002)

The Organisation for Economic Cooperation and Development (OECD), defines human capital as the knowledge, skills, competencies and attributes embodied in individuals that facilitate the creation of personal, social and economic well-being (OECD 2001). This is a broad definition, encompassing a range of attributes such as the knowledge, skills, competencies and health conditions of individuals. The measurement of human capital has several potential policy applications. First, it can be used as a measure of an economy’s future well-being as the empirical work on economic growth suggests that countries with higher levels of human capital, other things being equal, have greater potential output and income in the future. The measures can also be used in the assessment of the impact of an ageing population, changes in retirement ages and in the evolution of the economic benefits of different levels of education. Recent OECD work confirmed the importance of investment in education not just as a determinant of economic growth and also found education to be associated with various non-economic benefits (OECD, 2011).

The qualifications described earlier contribute to the education levels in the workforce within the UK. The level of highest qualification of those aged 16 to 64, the age within which individuals are most likely to be in the workforce, have increased over time.

**Table 6****Population aged 16 to 64 with different levels of qualification (1)**

United Kingdom

	Millions						
	1993	1996	1999	2002	2005	2008	2011
Degree or equivalent	3.7	4.2	5.0	5.7	6.6	7.8	9.5
Higher education	2.6	2.9	3.0	3.0	3.2	3.4	3.7
A Level or equivalent	7.5	8.0	8.3	8.8	8.8	8.9	8.7
GCSEs grades A*-C or equivalent	6.6	7.5	7.8	8.0	8.6	8.8	9.3
Other qualifications	4.2	4.9	5.1	5.0	4.7	5.1	4.2
No qualification	9.0	7.7	6.3	5.9	5.4	5.4	4.3
Dont know	0.0	0.2	0.3	0.2	0.3	0.3	0.3
<b>Total<sup>2</sup></b>	<b>24.5</b>	<b>27.5</b>	<b>29.3</b>	<b>30.5</b>	<b>31.9</b>	<b>33.9</b>	<b>35.4</b>

**Table source:** Office for National Statistics

**Table notes:**

1. Highest level of qualification for those aged 16-64 using UN ISCED levels for international comparison as returned to Eurostat.
2. Excludes those without qualifications and those who answered 'Don't know'.

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**Table 6** shows that of the 40 million adults aged 16 to 64 in the UK in 2011, 35.4 million (88 per cent) had some kind of formal educational qualification<sup>1</sup>. Also, 31.2 million (78 per cent) were qualified to GCSE grade A\* to C (or equivalent) or above.

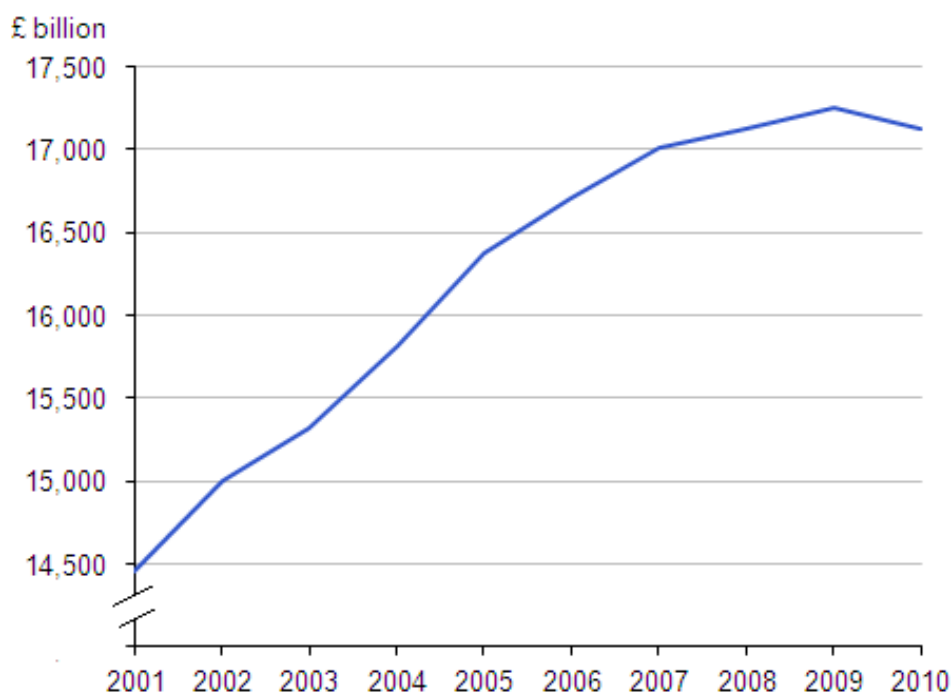
Over the last 18 years, the number of adults aged 16 to 64 without any formal educational qualifications has more than halved, decreasing from 9.0 million (27 per cent of all adults of this age) in 1993 to 4.3 million (11 per cent of all adults of this age) in 2011. Over the same time period, the number of adults aged 16 to 64 with a degree or equivalent level qualification has more than doubled. In 1993 there were 3.7 million adults (11 per cent of all adults of this age) in the UK with a degree or equivalent level qualification compared with 9.5 million (24 per cent of all adults of this age) in 2011.

In the UK, the stock of human capital is measured as the value of the qualifications of those in the labour market, so that the qualification levels shown above contribute to human capital for those individuals in employment. Data from ONS shows the estimated value of human capital in the UK has increased from £14,460 billion in 2001 and peaked at £17,250 billion in 2009 before falling to £17,120 billion in 2010.

**Figure 13**

### Human capital stock (1)

United Kingdom



Source: Office for National Statistics

**Notes:**

1. Figures in 2010 prices, labour productivity growth rate = 2% and discount rate = 3.5%.
2. (ONS 2011a)

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**Figure 13** illustrates the effect of the economic downturn on the UK's human capital stock as the total number of people employed decreased. The value of the UK's human capital stock increased steadily between 2001 and 2007, averaging annual growth of 2.8 per cent (£425 billion). By 2009 the annual rate of growth had slowed to 0.8 per cent (£130 billion) and its value fell by 0.75 per cent (£130 billion) in 2010.

## Notes

1. For further details of the qualifications included in each grouping table:

### Degree or equivalent

1. Higher degree
2. NVQ level 5
3. First degree/foundation degree
4. Other degree

### Higher education

5. NVQ level 4
6. Diploma in higher education
7. HNC/HND/BTEC higher etc.
8. Teaching – further education
9. Teaching – secondary education
10. Teaching – primary education
11. Teaching – foundation stage
12. Teaching – level not stated
13. Nursing etc.
14. RSA higher diploma
15. Other higher education below degree

### A level or equivalent

16. NVQ level 3
17. Advanced Welsh Baccalaureate
18. International Baccalaureate
19. GNVQ/GSVQ advanced
20. A level or equivalent
21. RSA advanced diploma

22. OND/ONC/BTEC/SCOTVEC National etc.
23. City & Guilds Advanced Craft/Part 1
24. Scottish 6 year certificate/CSYS
25. SCE higher or equivalent
26. Access qualification
27. AS-level or equivalent
28. Trade apprenticeship

### **GCSEs grades A\*-C or equivalent**

29. NVQ level 2 or equivalent
30. Intermediate Welsh Baccalaureate
31. GNVQ/GSVQ intermediate
32. RSA diploma
33. City & Guilds Craft/Part 2
34. BTEC/SCOTVEC First or General diploma etc.
35. O-level, GCSE grade A\*-C or equivalent

### **Other qualifications**

36. NVQ level 1 or equivalent
37. Foundation Welsh Baccalaureate
38. GNVQ/GSVQ foundation level
39. CSE below grade 1, GCSE below grade C
40. BTEC/SCOTVEC First or General certificate
41. SCOTVEC modules
42. City & Guilds foundation/Part 1
43. RSA other
44. YT/YTP certificated
45. Key skills qualification
46. Basic skills qualification
47. Entry level qualification
48. Other qualifications

### **No qualification**

## 49. No qualification

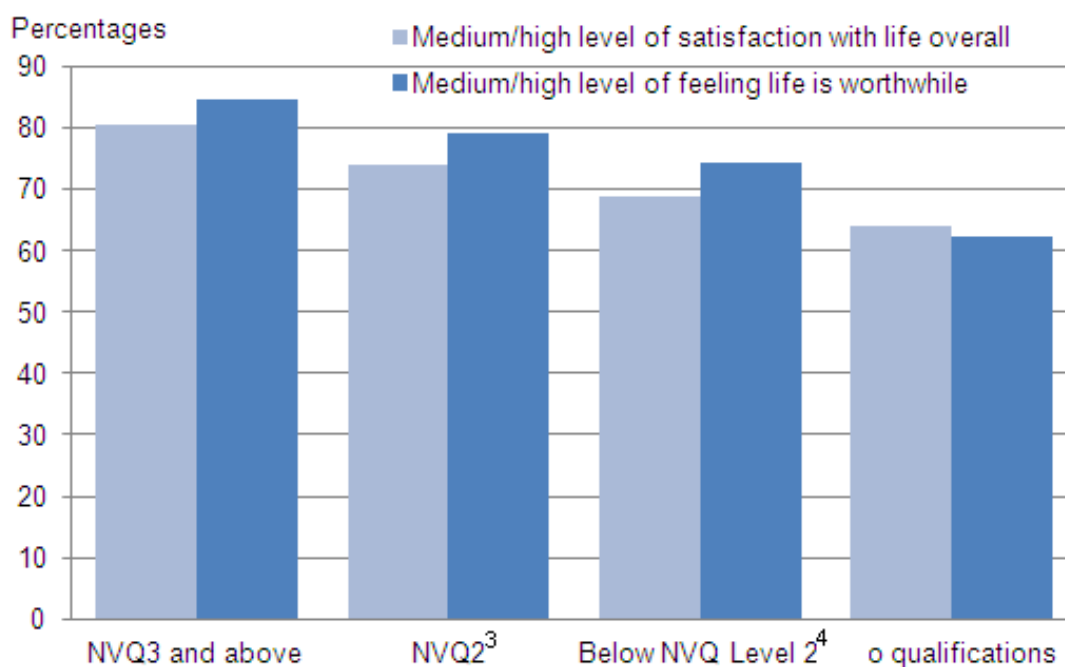
## Education and subjective well-being

Analysis of experimental subjective well-being data collected by ONS between April and October 2011 (ONS 2011) suggests that adults aged 16 and over with higher levels of qualifications are more likely to report having medium or high satisfaction with their lives overall and also to report finding the things they do in their lives to be more worthwhile. It must be remembered that there are also other variables which may affect these results, such as age, income, type of employment, employment status and the individual's health.

**Figure 14**

### Life satisfaction (1) and feeling life is worthwhile (2): by educational attainment

United Kingdom



Source: Office for National Statistics

**Notes:**

1. Adults aged 16 and over were asked 'Overall how satisfied are you with your life?' where 0 was not at all satisfied and 10 was completely satisfied.
2. Adults aged 16 and over were asked 'Overall to what extent do you think the things you do in your life are worthwhile?' where 0 was not at all satisfied and 10 was completely satisfied.
3. Includes those with trade apprenticeships.
4. Includes those with other qualifications.



## Download chart

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Of those adults whose highest qualification was a National Vocational Qualification (NVQ) level 3 or above, 81 per cent reported a level of 7 or more when asked about their overall satisfaction with life nowadays (**Figure 14**). Eighty-five per cent reported a medium/high level (7 to 10 out of 10) when asked how worthwhile the things they did in their lives were (on a scale of 0 to 10 where 0 was not at all worthwhile and 10 was completely worthwhile).

A smaller proportion of those with less than NVQ level 3 qualifications reported medium/ high levels of satisfaction and feelings of the things they do in their lives being worthwhile. For example 64 per cent of those with no qualifications reported a medium/high life satisfaction and 62 per cent reported a medium/high level of when responding to the question about how worthwhile the things they did in their lives were.

Continuing to learn throughout life can also have an effect on individuals' well-being. A study of the British Household Panel Survey used the General Health Questionnaire to analyse well-being of those undertaking and not undertaking lifelong learning. It showed that those in either formal or informal part-time education or who had undertaken part-time education at some point in the previous year reported a greater level of well-being than those who are either not in part-time education or have not recently undertaken part-time education<sup>1</sup>. The study also looked at qualifications and found that those who had a qualification, particularly when it had been obtained at the conventional age (i.e. school leaving age), had greater well-being than those who did not.

## Notes

1. Please note this figure has been collected across the UK for the first time in this survey and cannot therefore be compared to figures coming out of earlier surveys in the constituent nations.

## About the ONS Measuring National Well-being Programme

### NWB logo 2



This article is published as part of the ONS Measuring National Well-being Programme.

The programme aims to produce accepted and trusted measures of the well-being of the nation - how the UK as a whole is doing. It is about looking at 'GDP and beyond' and includes:

- greater analysis of the national economic accounts, especially to understand household income, expenditure and wealth
- further accounts linked to the national accounts, including the UK Environmental Accounts and valuing household production and 'human capital'
- quality of life measures, looking at different areas of national well-being such as health, relationships, job satisfaction, economic security, education environmental conditions
- working with others to include the measurement of the well-being of children and young people as part of national well-being
- measures of 'subjective well-being' - individuals' assessment of their own well-being
- headline indicators to summarise national well-being and the progress we are making as a society

The programme is underpinned by a communication and engagement workstream, providing links with Cabinet Office and policy departments, international developments, the public and other stakeholders. The programme is working closely with Defra on the measurement of 'sustainable development' to provide a complete picture of national well-being, progress and sustainable development.

Find out more on the [Measuring National Well-being](#) web site pages.

## Background notes

1. Details of the policy governing the release of new data are available by visiting [www.statisticsauthority.gov.uk/assessment/code-of-practice/index.html](http://www.statisticsauthority.gov.uk/assessment/code-of-practice/index.html) or from the Media Relations Office email: [media.relations@ons.gsi.gov.uk](mailto:media.relations@ons.gsi.gov.uk)

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This document is also available on our website at [www.ons.gov.uk](http://www.ons.gov.uk).

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