UK COMMISSION FOR EMPLOYMENT AND SKILLS

The Labour Market Story: The State of UK Skills

Briefing Paper
July 2014

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The Labour Market Story is based on research undertaken by the Institute of Employment Studies, the Warwick Institute for Employment Research, Cambridge Econometrics and UKCES. We would also like to acknowledge the assistance of expert reviewers who provided comments on early drafts.

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Executive Summary

- Skills are a key driver of productivity and source of competitive advantage. However, other developed countries are outperforming the UK on measures of skills (especially among younger people), which could threaten our ability to compete internationally.
- Individuals with higher skill levels are better able to negotiate a secure position in the labour market. However, the UK has a relatively polarised skills base compared to other nations, and this may limit progression into higher skilled roles.
- Overall state and individual investment in education is high relative to competitor countries and increasing. There are shifts in patterns of state investment in education and training, from Higher Education to vocational training, and individuals in England are now required to invest more in HE.
- In contrast, overall levels of investment by employers in training, while substantial, have been falling over time. While this could mean that employers are training 'smarter', the evidence is mixed. Smaller businesses still pay more per head to develop the skills of their staff.
- The UK economy is characterised by persistent pockets of skills deficiency. Skills shortages are accounting for a greater share of hard to fill vacancies since 2009, and typically occur in higher skilled occupations. The consequences for productivity and UK business performance are profound: over a quarter of firms face additional costs, delayed business expansion and lost business.
- Skills gaps are often found in lower skilled staff, across a range of sectors, suggesting a need for ongoing training. Employers also face recruitment challenges in some key occupations and sectors, and need to reflect on how to structure job content, working conditions and progression opportunities to attract and retain staff.
- Employers reporting barriers to training suggest that available training is not always relevant, which suggests greater employer involvement in designing and commissioning training is required.
- Skills mismatches do not solely take the form of gaps or shortages. Almost half of employers have staff with skills and qualifications beyond those required to do their job, equating to 4.3 million workers. This can result in demotivation, low job satisfaction and skill attrition for the individual; lower than optimal productivity for the employer; and limit returns on state investment in education.
- Raising employer demand for skills and ensuring skills are used effectively is a significant challenge for the UK.

1 Skills in the UK

1.1 Why skills are important to the economy

Skills are important to the UK economy in a number of ways, but most obviously in determining the quality of the workforce. They are a key driver of labour productivity (output per worker or per hour worked). UK Commission research shows that 'the stock of skills, however measured … has a strong link with national economic performance, wealth and prosperity' (UKCES/Garrett *et al*, 2010, p22). Raising skill levels through increased investment in education improves a country's economic potential and workforce training also generates substantial benefits for the wider economy through increased productivity (UKCES/Garrett *et al*, 2010).

However, skills need to be used if they are to contribute to the economy. If the skills available in the labour market are not well matched to employer need, or employers are not ambitious enough, there will be lost opportunities for growth. This briefing paper therefore considers the extent of skills supply in the UK, variations by geography, occupation and qualifications held, whether supply is well-matched to employer need, and whether employer demand for skills is sufficient to maximise growth.

1.2 How the UK compares to other nations

Defining skill can tricky, and there are different kinds of measures that can be used (Green, 2011). Occupational classification and qualification attainment are used as widely accepted proxy measures of skill. While neither necessarily measures the totality of skills held by an individual, they are readily available and allow comparisons between countries and over time.

In 2006, the UK was ranked 17th of 30 OECD countries for low skills, 18th for intermediate skills and 12th for high skills (UKCES, 2009). In 2011, of 33 OECD countries, the UK was ranked 19th for low skills, 24th for intermediate skills, and 11th for high skills – behind the US, Canada, Japan, South Korea, Finland and Norway (UKCES, forthcoming). Compared to international competitors, we are falling behind on intermediate skills. This is a concerning trend, and suggests that other countries are investing more effectively in intermediate level skills.

UK skill levels, in terms of literacy and numeracy and problem-solving, are not as high as those in competitor nations. Table 1.1 shows that England and Northern Ireland have a slightly below average performance on numeracy and an average performance on literacy and problem-solving based on international comparative assessments of adult competence.

Table 1.1 Summary of literacy, numeracy and IT skills (selected countries)

Countries	Literacy (mean score)	Numeracy (mean score)	Problem solving in technology-rich environments (% at level 2 or 3)
Australia	280	268	38
Austria	269	275	32
Finland	288	282	42
France	262	254	M
Germany	270	272	36
Ireland	267	256	25
Japan	296	288	35
Korea	273	263	30
Netherlands	284	280	42
Norway	278	278	41
Sweden	279	279	44
United States	270	253	31
Sub-national entities			
Flanders (Belgium)	275	280	35
England/N. Ireland (UK)	272	262	35
Average	**273**	**269**	**34**

Key:

	Significantly above the average
	Not significantly different from the average
	Significantly below the average

Notes: Cyprus, France, Italy and Spain did not field the problem solving in technology-rich environments assessment.

Source: OECD (2013a) Survey of Adult Skills, Tables A2.4, A2.8 and A2.10a

This data shows that England and Northern Ireland rank 13th on literacy and 16th on numeracy out of 22 developed OECD countries (OECD, 2013a). Young people aged 16-24 rank 21st out of 23 developed OECD countries for literacy and 20th out of 23 countries for numeracy. Literacy and numeracy capability is usually lower for older age groups (who on average left formal education at an earlier age), but in the UK young people aged 16-24 have literacy scores which are no better than those aged 55-64 (OECD, 2013a). The likely consequence is that literacy, numeracy and problem-solving proficiency will not grow as fast in the UK as in other countries, unless steps are taken to reinforce these skills in adulthood.

Other international evidence, based on tests of 15 year olds who are still at school, confirms that literacy, numeracy and science performance among young people is relatively strong in science but at best average in mathematics and reading (Table 1.2).

Overall, this evidence implies that the talent pipeline entering the labour market in many competitor countries is better equipped in functional skills such as literacy and numeracy. In addition, people's skills decline if they are not used (Krahn, 1997). This suggests that the current cohort of young people will need to have opportunities to use their skills at work if they are to retain the skills that they have, as well as if they are to progress in their careers. Effective skills use at work will also contribute to firm-level productivity.

Table 1.2 Snapshot of performance in maths, reading and science in selected countries based on Programme of International Student Assessment scores (PISA) (selected countries)

	Maths				Reading		Science	
	Mean score in PISA 2012	Share of low-achievers (Below Level 2)	Share of top-performers in maths (Level 5 or 6)	Annualised change	Mean score in PISA 2012	Annualised change	Mean score in PISA 2012	Annualised change
OECD average	494	23.1	12.6	**-0.3**	496	**0.3**	501	**0.5**
Shanghai – China	613	3.8	55.4	**4.2**	570	**4.6**	580	1.8
Singapore	573	8.3	40.0	**3.8**	542	**5.4**	551	**3.3**
Hong Kong – China	561	8.5	33.7	**1.3**	545	**2.3**	555	**2.1**
Korea	554	9.1	30.9	1.1	536	**0.9**	538	**2.6**
Japan	536	11.1	23.7	0.4	538	**1.5**	547	**2.6**
Switzerland	531	12.4	21.4	0.6	509	**1.0**	515	0.6
Netherlands	523	14.8	19.3	**-1.6**	511	-0.1	522	-0.5
Finland	519	12.3	15.3	**-2.8**	524	**-1.7**	545	**-3.0**
Germany	514	17.7	17.5	**1.4**	508	**1.8**	524	**1.4**
Austria	506	18.7	14.3	0.0	490	-0.2	506	-0.8
Australia	504	19.7	14.8	**-2.2**	512	**-1.4**	521	-0.9
Ireland	501	16.9	10.7	-0.6	523	**-0.9**	522	**2.3**
France	495	22.4	12.9	**-1.5**	505	0.0	499	0.6
United Kingdom	*494*	*21.8*	*11.8*	*-0.3*	*499*	*0.7*	*514*	*-0.1*
Norway	489	22.3	9.4	-0.3	504	0.1	495	1.3
United States	481	25.8	8.8	0.3	498	-0.3	497	1.4

Key:

	Countries/economies with a mean performance/share of top-performers above the OECD average or a share of low-achievers below the OECD average
	Countries/economies with a mean performance/share of low-achievers/share of top-performers not statistically different from the OECD average
	Countries/economies with a mean performance/share of top-performers below the OECD average or a share of low-achievers above the OECD average
Bold	Countries/economies in which annualised performance change is statistically significant

Note: countries are listed in descending order based on their mathematics performance score

Source: Selected countries from OECD (2013b) United Kingdom – Country Note – Results From PISA 2012, Paris, OECD.

2 Skills distribution

The distribution of skills is relatively polarised in the UK, both in terms of qualifications and geographical variation. Compared to an OECD average of 44 per cent or an EU average of 48 per cent in 2011, only 37 per cent of UK adults finish education at a level equivalent to A-level (Table 2.1). This means the UK skills supply base is more polarised than many other competitor nations. However, the UK has one of the fastest shrinking shares of people completing education below GCSE level, as well as a notable increase in the share of people completing degree level.

Table 2.1 Educational attainment by age group, selected countries (%)

		25-64 year olds			25-34 year olds		
	Educational attainment	**2000** (1)	**2011** (8)	**2000-11 av. annual growth rate** (9)	**2000** (10)	**2011** (17)	**2000-11 av. annual growth rate** (18)
Australia	Below GCSE equivalent	41	26	-4.1	32	16	-6.3
	GCSE, A-level, HE access course equivalent	31	36	1.2	37	40	0.7
	HNC, HND, foundation degree, bachelor degrees, masters, post grad courses, doctorates equivalent	27	38	3.1	31	45	3.3
Finland	Below GCSE equivalent	27	16	-4.4	14	10	-3.0
	GCSE, A-level, HE access courses equivalent	41	44	0.8	48	51	0.6
	HNC, HND, foundation degree, bachelor degrees, masters, post grad courses, doctorates equivalent	33	39	1.7	39	39	0.2
France	Below GCSE equivalent	38	28	-2.6	24	17	-3.1
	GCSE, A-level, HE access courses equivalent	41	42	0.3	45	40	-1.0
	HNC, HND, foundation degree, bachelor degrees, masters, post grad courses, doctorates equivalent	22	30	3.0	31	43	2.9
Germany	Below GCSE equivalent	18	14	-2.6	15	13	-1.2
	GCSE, A-level, HE access courses equivalent	58	59	0.1	63	59	-0.5
	HNC, HND, foundation degree, bachelor degrees, masters, post grad courses, doctorates equivalent	23	28	1.5	22	28	2.0
Korea	Below GCSE equivalent	32	19	-4.7	7	2	-10.4
	GCSE, A-level, HE access courses equivalent	44	41	-0.7	56	34	-4.4
	HNC, HND, foundation degree, bachelor degrees, masters, post grad courses, doctorates equivalent	24	40	4.9	37	64	5.1
Sweden	Below GCSE equivalent	22	13	-4.9	13	9	-3.0
	GCSE, A-level, HE access courses equivalent	47	52	0.8	54	48	-1.0

		25-64 year olds			25-34 year olds		
	Educational attainment	**2000** (1)	**2011** (8)	**2000-11 av. annual growth rate** (9)	**2000** (10)	**2011** (17)	**2000-11 av. annual growth rate** (18)
	HNC, HND, foundation degree, bachelor degrees, masters, post grad courses, doctorates equivalent	30	35	1.4	34	43	2.2
US	Below GCSE	13	11	-1.4	12	11	-0.7
	GCSE, A-level, HE access courses	51	47	-0.8	50	46	-0.8
	HNC, HND, foundation degree, bachelor degrees, masters, post grad courses, doctorates	36	42	1.4	38	43	1.1
UK	Below GCSE	37	23	-4.3	33	16	-6.6
	GCSE, A-level, HE access courses	37	37	0.1	38	37	-0.1
	HNC, HND, foundation degree, bachelor degrees, masters, post grad courses, doctorates	26	39	4.0	29	47	4.5
OECD	Below GCSE equivalent	**34**	**25**	**-2.7**	**24**	**18**	**-2.8**
average	GCSE, A-level, HE access courses equivalent	**44**	**44**	**0.1**	**49**	**44**	**-1.0**
	HNC, HND, foundation degree, bachelor degrees, masters, post grad courses, doctorates equivalent	**22**	**32**	**3.3**	**26**	**39**	**3.5**
EU21	Below GCSE equivalent	**34**	**24**	**-3.2**	**23**	**16**	**-3.2**
average	GCSE, A-level, HE access courses equivalent	**46**	**48**	**0.3**	**53**	**48**	**-0.9**
	HNC, HND, foundation degree, bachelor degrees, masters, post grad courses, doctorates equivalent	**20**	**29**	**3.4**	**24**	**36**	**3.8**

Source: adapted from OECD (2013c) Education at a Glance 2013, page 38, table A1.4a

2.1 Regional differences in skills levels

There are also potential challenges to ensuring a high quality supply of labour to employers across the UK because of geographically uneven patterns of skills. These patterns are largely a reflection of employer demand for skills: people with higher level qualifications tend to migrate to areas with high-level jobs and associated high wages. The Local Enterprise Partnership (LEP) areas with the most and least highly qualified populations are shown in Table 2.2. LEPs with the highest proportions of adults with Level 4 qualifications had over twice the share of highly qualified workers compared to LEPs with lowest shares. Conversely, the LEPs with highest shares of workers with no qualifications had double the share of poorly qualified people compared to the LEPs with lowest shares.

Table 2.2 Distribution of qualifications across adults aged 16-64 across LEP areas

LEPs with most highly qualified working age populations	% with Level 4+	% with Level 3	% with Level 2	% with Level 1	% with other quals	% with no quals
London	49.1	14.9	11.6	8.6	8.0	7.8
Oxfordshire	46.0	20.2	13.0	9.5	5.9	5.5
Buckinghamshire Thames Valley	43.9	18.9	15.2	11.0	4.9	6.0
Thames Valley Berkshire	43.1	19.2	15.9	10.4	5.7	5.7
Enterprise M3	42.4	20.3	17.1	11.1	4.5	4.5
LEPs with lowest qualified working age population	**% with Level 4+**	**% with Level 3**	**% with Level 2**	**% with Level 1**	**% with other quals**	**% with no quals**
Tees Valley	27.2	25.4	18.5	12.6	5.3	11.0
Stoke-on-Trent and Staffordshire	25.7	23.6	19.6	12.2	6.9	12.1
Humber	25.6	22.3	20.2	14.9	7.0	10.0
Greater Lincolnshire	25.5	23.2	19.5	15.2	7.3	9.3
Black Country	22.1	19.8	18.6	14.2	8.0	17.3

Source: Annual Population Survey, Jan – December 2013, NOMIS

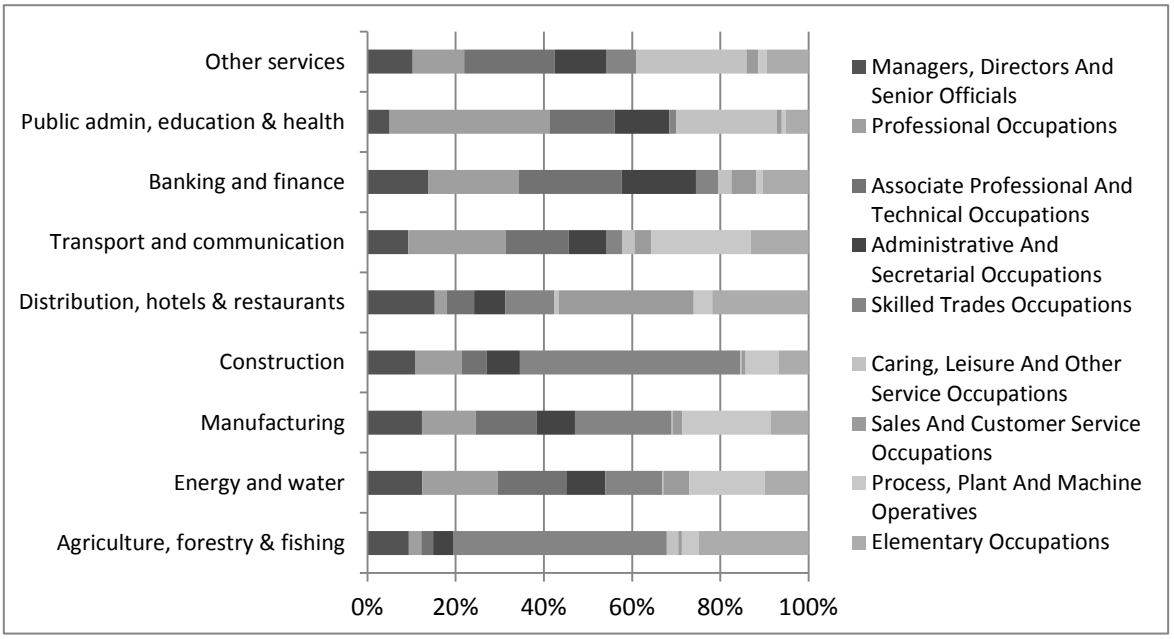
Only two of the 15 top performing LEP regions in terms of high level skills are located north of the Midlands, and again only two of the 15 poorest performing LEP regions are located south of the Midlands. The labour supply available to individual employers is also dependent on wages and how far people may be willing and able to travel to work (which is influenced by the price and quality of transport options, housing and education provision).

All areas saw an improvement in their qualification profile between 2004 and 2013, reflecting national trends. The greatest increase in the proportion of residents with at least a Level 4 qualification was in London (up 17.1 percentage points), and the smallest in Greater Birmingham and Solihull (up 3.8 percentage points). The areas with the highest skills levels in 2004 tended to see greater proportional increases. As a result, the pattern of skills attainment by LEP area has remained reasonably stable over time: the five LEPs with the highest proportions of people qualified to Level 4 and above in 2004 (Oxfordshire, Buckinghamshire Thames Valley, Thames Valley Berkshire, Enterprise M3 and London) were all in the top five in 2013. Of the seven LEP areas with the lowest proportions of people qualified to Level 4 and above in 2004 (Black Country, Humber, Greater Lincolnshire, Liverpool City Region, Sheffield City Region, Tees Valley and Stoke-on-Trent and Staffordshire), all remained in the bottom eight (lowest proportion of people with Level 4 qualifications) in 2013.

2.2 Occupations impacted by polarisation

There are over 30 million people in employment in the UK (LFS, 2014). The public administration, education and health sectors employ over 30 per cent of the workforce; distribution, hotels and restaurants 19 per cent; and manufacturing 10 per cent. The occupational split of employment by sector is shown in Figure 2.1. Higher-level occupational groups (managers, professionals and associate professionals) account for 44 per cent of employment.

Figure 2.1 Share of employment by occupational group for each sector (%)



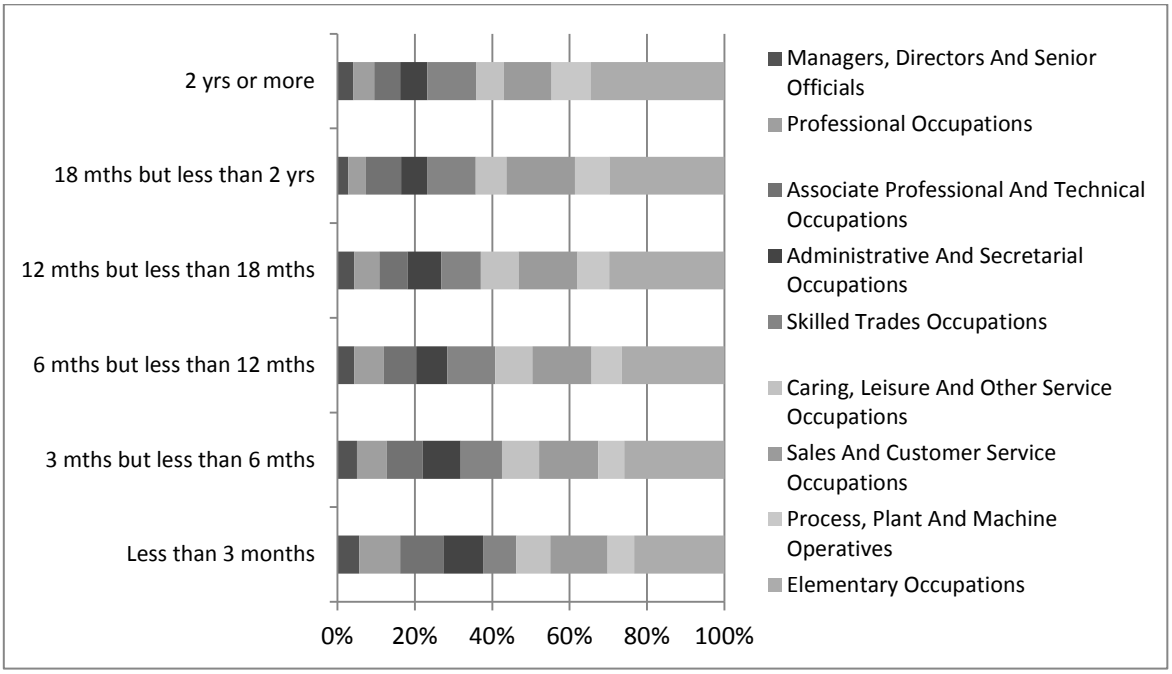
Source: LFS data Jan 2013-Dec 2013

Since 2007, the sectoral profile of the workforce has shifted, with widespread growth in numbers of people employed in financial services, banking and insurance and decline in volumes working in those sectors hit hard by recession including manufacturing, construction, agriculture, forestry and fishing, and transport/communications. Administrative and secretarial employment is facing a long-term decline across many industries as many traditional administrative functions become automated. Volumes of higher skilled roles in management and (associate) professional occupations have expanded, often substantially, in sectors which have experienced broad employment growth. These changes have contributed to employment polarisation over the period covered by the recession. Tables A.1, A.2, A.3 and A.4 in Appendix A show the changes in employment patterns since 2007.

2.3 Polarisation and unemployment

Unemployment in the UK is around seven per cent (as at March 2014), which equates to about 2.3 million people. The long term unemployed are more likely than other groups to have last worked in lower skill occupations, again reflecting another stark divide in the labour market. Analysis of the previous occupations and qualifications that people out of work hold, illustrated in Figures 2.2 and 2.3, shows that they may require both upskilling and reskilling to be able to move into growing areas of employment. While 44 per cent of those in employment are in the three highest occupational groups, just 22 per cent of unemployed people last worked in one of these occupations. Three in ten (27 per cent) unemployed people last worked in an elementary occupation, but only one in ten people currently in employment (11 per cent) work in an elementary occupation.

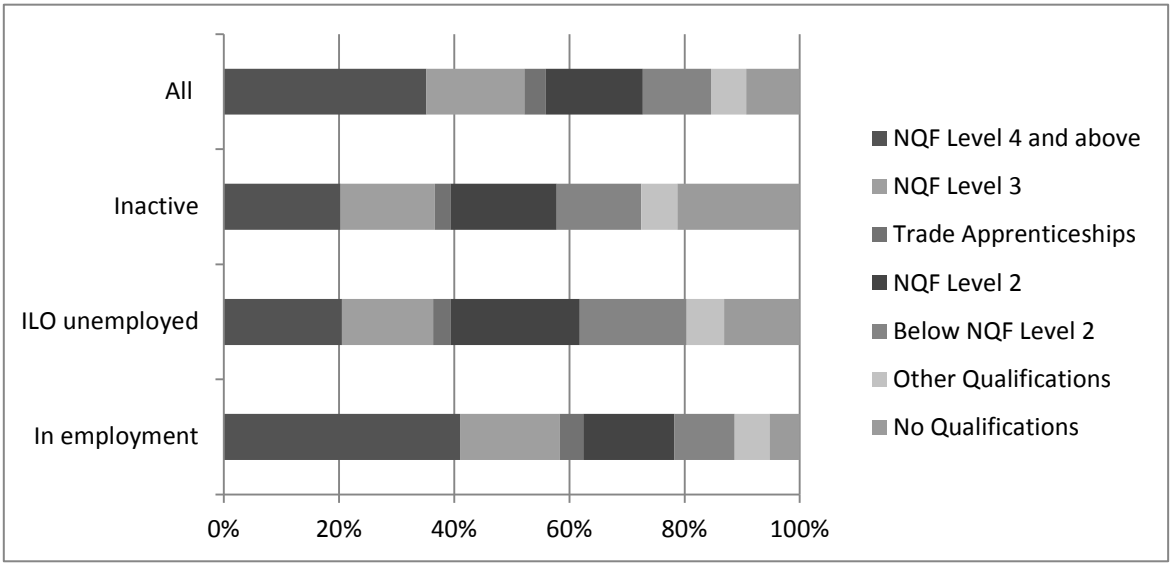
Figure 2.2 Previous occupation of unemployed adults (16-64) by duration of unemployment



Source: LFS data Jan 2013-Dec 2013

Mapping qualification levels onto the employment status of working age adults is revealing (Figure 2.3). Substantial shares of those who are long-term unemployed or economically inactive have no qualifications (this is at least partly because of the age profile of those groups, with relatively large shares of older people). But in all the categories of unemployment, a significant proportion of people have good school leaving qualifications at GCSE or equivalent. So, unemployment is not just an issue for those with low skills, but can affect people holding all levels of qualification.

Figure 2.3 Highest level of qualification of active and inactive adults (16-64



Source: Labour Force Survey, January 2013 – December 2013

2.4 Migration

Another important source of labour for the UK comes from migration (Table 2.3). Approximately 16 per cent of people in employment were born outside the UK, and migrants occupy both high skilled and low skilled jobs in the UK. Migrants also tend to be more highly-qualified than the UK-born population (Table 2.4).

Table 2.3 UK Working-age population (16-64)

	Born in the UK	A8, Bulgaria and Romania [1]	Other EU	Other migrants	Total
In employment	24,584,214	815,870	784,495	2,685,293	28,869,872
ILO unemployed	2,010,686	64,945	57,000	290,431	2,423,062
Inactive	7,370,554	163,909	197,013	1,211,140	8,942,616
Total	33,965,454	1,044,724	1,038,508	4,186,864	40,235,550

Source: LFS data Jan 2013-Dec 2013

[1] The A8 countries are the EU member states of Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovakia and Slovenia

Table 2.4 Qualification levels of working-age population (16-64) (%)

	Born in the UK	A8, Bulgaria and Romania	Other EU	Other migrants	Total
NQF Level 4+	33	32	53	48	35
NQF Level 3	18	10	13	11	17
Trade Apprenticeships	4	2	2	1	4
NQF Level 2	18	8	9	9	17
Below NQF Level 2	13	3	5	6	12
Other Qualifications	4	32	11	13	6
No Qualifications	9	13	8	12	9

Source: LFS data Jan 2013-Dec 2013

This suggests that migration is an important contributor to the improving qualification profile of the UK workforce, and may be masking mismatches in the supply of training and demand for skills.

3 Investment in skills

3.1 State and individual investment

So what has been done to tackle the declining competitiveness of UK skills compared to other major economies, and to address labour market inequalities? Major reforms to the education system at all levels have taken place since the year 2000. The table below shows the changes in investment in education institutions between 2000 and 2010 as a proportion of GDP in the UK and selected competitor nations. The UK makes amongst the highest levels of investment in educational institutions delivering GCSEs, A-Levels and HE access courses as a proportion of GDP, but its spending on HE-level institutions is below average (Table 3.1).

Table 3.1 Expenditure on educational institutions as a percentage of GDP in selected countries, by level of education from public and private sources

	GCSE, A-level, HE access courses (or international equivalents)		Change	HNC, HND, foundation degree, bachelor degrees, masters, post grad courses, doctorates (or international equivalents)		Change	Total for all levels of education		Change
	2000	2010		2000	2010		2000	2010	
Australia	3.6	4.3	0.7	1.6	1.4	-0.2	5.2	6.1	0.9
Denmark	4.1	4.8	0.7	1.9	1.6	-0.3	6.6	8.0	1.4
Finland	3.6	4.1	0.5	1.9	1.7	-0.2	5.6	6.5	0.9
France	4.3	4.1	-0.2	1.5	1.3	-0.2	6.4	6.3	-0.1
Germany	3.3	M		M	1.1		4.9	M	
Korea	3.5	4.2	0.7	2.6	2.2	-0.4	6.1	7.6	1.5
Norway[1]	5.0	5.1	-0.1	1.7	1.6	-0.1	6.8	7.6	0.8
Sweden	4.2	4.0	-0.2	1.8	1.6	-0.2	6.3	6.5	0.2
US	3.7	4.0	0.3	2.8	2.2	-0.6	6.2	7.3	1.1
UK	3.6	4.8	1.2	1.4	1.0	-0.4	4.9	6.5	1.6
OECD average	**3.6**	**3.9**	**0.3**	**1.6**	**1.3**	**-0.3**	**5.4**	**6.3**	**0.9**
EU21 average	**3.5**	**3.8**	**0.3**	**1.4**	**1.1**	**-0.3**	**5.2**	**5.9**	**0.7**

1. Public expenditure only (for Norway, in primary, secondary and post-secondary non-tertiary (equivalent to GCSE, A-level, HE access courses).

Source: OECD (2013c) Education at a Glance, page 191, table B2.1.

Public spending volumes on education in the UK have shifted in absolute terms since 2007, with an overall decline in investment in R&D and Higher Education, and increased investment in post-secondary vocational education and training (Table 3.2).

Table 3.2 Change in volume of UK government spending on education types from 2007-2012

Type of education spend	2007/2008 (£ million)	2011/2012 (£ million)	Change
Pre-primary and primary education	25,912	30,241	4,329
of which: under fives	4,450	5,167	717
of which: primary education	21,462	25,073	3,611
Secondary education	33,164	42,173	9,009
Post-secondary non-tertiary education (i.e. GCSE, A-level, HE access courses)	318	558	240
HNC, HND, foundation degree, bachelor degrees, masters, post grad courses, doctorates (i.e. Higher Education)	11,791	11,391	-400
Education not definable by level	664	719	55
Subsidiary services to education	3,518	4,072	554
R&D education	34	11	-23
Education not elsewhere classified	3,253	2,484	-769
Total education	**78,654**	**91,649**	**12,995**

Source: HMT Public Expenditure Statistical Analyses 2012, Table 5.2 Public sector expenditure on services by sub-function, 2007-08 to 2011-12, page 75.

Following reform of higher education funding mechanisms, individuals have taken an increasing share of responsibility for investing in their own skills. There are considerable wage returns for most people who hold a degree (UKCES, 2009; UKCES/Garrett *et al*., 2010). Recent evidence estimates that the additional lifetime earnings gained by people holding a degree compared to those with at least two A levels ranges between £105,000 and over £250,000, depending on gender and type of subject studied (BIS, 2013a). However, there is growing disparity in the returns to graduates by degree subject, such that some graduates do not receive an earnings premium.

3.2 Employer investment in skills

The scale of public sector financial deficit following recession led to a need to scale back and prioritise government funding across all policy areas, including education and training. The coalition government has sought to reform the skills system by being explicit about the responsibilities that employers should take in terms of workforce development, while protecting disadvantaged groups from market failure (BIS, 2010). Individuals and employers are expected to make larger contributions to education and training in a wider context of public austerity.

Evidence from several major sources, including the UK Commission's Employer Skills Survey (UKCESS), shows a sustained decline in training volumes and duration since 2003, despite evidence that over 40 per cent of employers would like to train more (UKCES/Winterbotham *et al.*, 2014). This is coupled with more recent efforts by employers to 'train smarter' and an increase in training lasting fewer than 10 days reported by workers (Green *et al*., 2013a). This may reflect a desire simply to reduce training spend, but survey evidence suggests that it is a deliberate strategy on the part of employers to 'do more with less', and involves more emphasis on getting value for money from training spend through using bespoke, tailored training, sometimes delivered internally, and increased use of e-learning (Green *et al*., 2013a).

Table 3.3 compares employer investment in training between 2011 and 2013, and shows that over this period investment in training has been relatively stable, but with some changes to the proportion of employees being trained and the length of their training.

Table 3.3 Recent changes in UK employer investment in training

	2011	2013
% of employers that train	65	66
% of employers that train off-the-job	47	49
% that only train on-the-job	19	17
% of staff trained over the last 12 months	55	62
Days per person trained	7.8 days	6.7 days
Total number of training days provided	115m days	113m
Total spend on training	£45.3bn	£42.9bn

Source: UK Commission's Employer Skills Survey 2013, Winterbotham et al. (2014)

Larger proportions of staff received training in 2013 than in 2011, and this increase was concentrated in organisations with more than 250 staff. Table 3.3 also shows shortened training duration associated with an overall decline of £2.4 billion in the total volume of employer investment in staff development. This trend for shortened training length is supported by evidence from the Skills and Employment Survey (SES). Employers therefore seem to be changing the mix of training offered, with shorter periods of provision, which may be more closely targeted. The drop in training investment occurs mostly in on-the-job training and is concentrated among workplaces with at least 100 staff.

Employee views suggest that changing the mix of training and shortening its length has in some cases led to a decrease in satisfaction with training. While there is no reported change in the impact of training on job performance in the Skills and Employment Survey, fewer employees report being satisfied with their training (60 per cent in 2006 compared to 57 per cent in 2012) and employees are also less likely to state that training has increased their job enjoyment (44 per cent in 2006 compared to 39 per cent in 2012) (Green *et al*., 2013b).

Employer choice in targeting of training may have implications for access to training among different workforce groups. Recent analysis confirms longstanding evidence that higher skilled occupations such as managers, professionals and associate professionals, as well as those with higher levels of education, are most likely to receive training (Green *et al*., 2013b). Younger people receive most training, as they are comparatively newer entrants to the workforce and are more likely to require further development to attain proficiency. There is also a longer period over which to accrue the benefits of training and so recoup investment for both employers and employees. Women are more likely to take part in training than men, although people working part-time generally participate less than full-time workers. Lower skilled workers as well as those working part-time may therefore be disadvantaged in gaining access to continuing development which enables them to progress through the labour market and change jobs.

3.3 UK employer investment compared to other world economies

From a comparative perspective, UK performance is again falling behind many other European Union Member States in terms of the incidence of employers providing training (Eurostat, 2011), as shown in Table 3.4. Although the UK has a very high share of firms which train, this fell from 90 per cent on 2005 to 80 percent in 2010. In contrast, some emerging competitor countries have made substantial increases in the volume of organisations providing workforce development. However, comparisons should be made with caution as different countries may define training in slightly different ways (for example, some may include H&S training and others not).

Table 3.4 Enterprises providing training to workers (%)

	2005	2010	Percentage point change
European Union (28 countries)	**60**	**66**	**6**
Austria	81	87	6
Belgium	63	78	15
Bulgaria	29	31	2
Croatia	:	57	
Cyprus	51	72	21
Czech Republic	72	72	0
Denmark	85	:	
Estonia	67	68	1
Finland	77	74	-3
France	74	76	2
Germany	69	73	4
Greece	21	28	7
Hungary	49	49	0
Ireland	67	:	
Italy	32	56	24
Latvia	36	40	4
Lithuania	46	52	6
Luxembourg	72	71	-1
Malta	46	54	8
Netherlands	75	79	4
Norway	86	:	
Poland	35	22	-13
Portugal	44	65	21
Romania	40	24	-16
Slovakia	60	69	9
Slovenia	73	68	-5
Spain	47	75	28
Sweden	78	87	9
United Kingdom	90	80	-10

Source: Eurostat (2014)

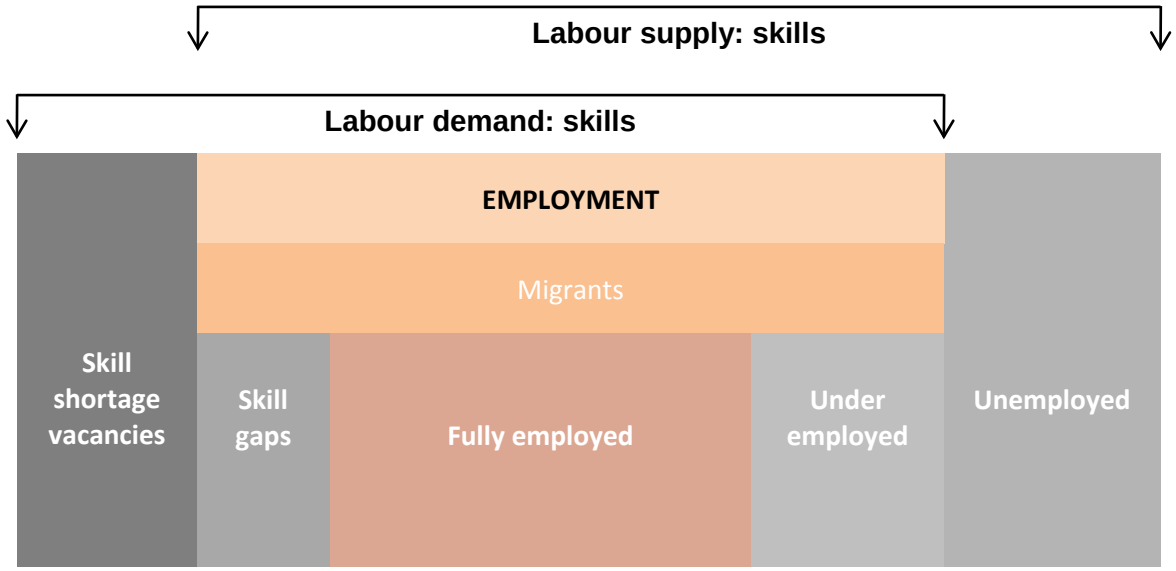
In further analysis of the UK data from the Continuing Vocational Training Survey, it is unsurprising to find that larger organisations account for heavier recent investment in training (BIS, 2013b). This reflects longstanding features of the learning market whereby small firms pay proportionately more per trainee. Organisations with between 10 and 49 staff pay an average of £950 for each person they trained compared with an average of £620 for each person trained in an organisation employing 500 or more people (BIS, 2013b). This is usually because SMEs are training fewer people and so do not benefit from economies of scale (BIS, 2013b; UKCES/Stanfield *et al*., 2009; UKCES/Cox *et al*., 2009). So small firms wishing to train their staff face greater relative costs.

As we have seen, the mix of training being offered is changing in the UK. However, do these changes matter? If employers are indeed ‘training smarter’, they could be making more cost-effective investments. We can investigate this further through analysis of the extent to which skills supply matches employer demand for skills, and the scale of mismatches.

4 Mismatches between skills and jobs

Mismatches between skills and jobs exist where the demand for skills and their supply are not fully aligned. While some degree of mismatch is inevitable, and reflects a well-functioning labour market, in some areas of the economy mismatches are more persistent and may reflect structural problems. Figure 4.1 identifies how labour supply and demand interact. Demand for skills is expressed through employment, as well as skills shortage vacancies. The supply of skills comprises the stock of skills held by those in employment, as well as people who are unemployed.

Figure 4.1 Skills supply and demand mismatches



Source: UKCES (2010)

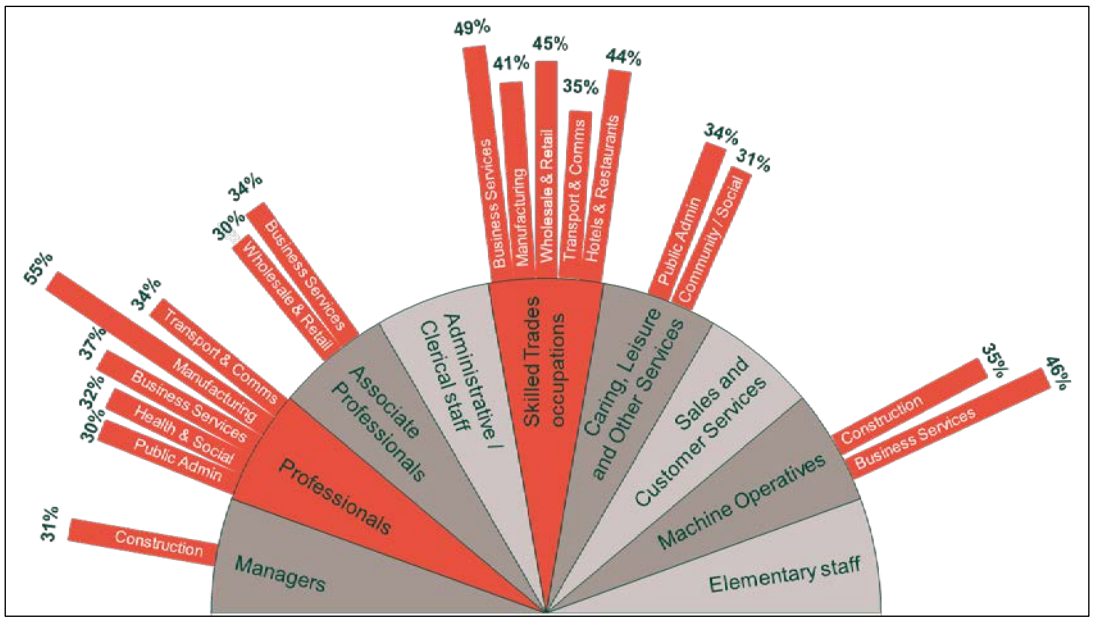
Skills shortages can be measured in two main ways in the economy. External labour market 'skill-shortage vacancies' are vacancies attributed to applicants not having the right skills, qualifications or experience for a role. 'Skills gaps', on the other hand, are when an existing employee is not fully proficient at their role. The recruitment practices of an employer will determine whether they decide to fill a vacancy with the best candidate available, even if they are not fully suited to a role thus registering a skills gap, or instead keep a vacancy until someone with the right skills, qualifications and experience comes along, therefore registering a skills shortage vacancy. Skills shortages in the UK population may also be masked by migration, as employers recruit from outside the UK to fill specific roles.

4.1 Skills shortage vacancies

Despite ongoing challenging economic conditions, UKCESS shows that the proportion of employers experiencing unfilled vacancies caused by skill shortages increased by one percentage point (from three per cent to four per cent) between 2011 and 2013. Skills shortage vacancies make up 2.5 per cent of the total volume of jobs in the UK but, more worryingly, the share of vacancies which are caused by skills shortages increased from 16 per cent to 22 per cent across the UK between 2011 and 2013 (UKCES/Winterbotham *et al*., 2014). This may reflect the return to economic growth and increasing competition for skilled workers in the labour market.

As illustrated in Figure 4.2 below, skill shortage vacancies affect some occupations and sectors more acutely than others, meaning that there are pockets of skills deficiencies in key parts of the economy and in specific places (also see Table A.5 and Table A.6).

Figure 4.2 Density of skills shortage vacancies, by occupation and sector



Source: UK Commission's Employer Skills Survey 2013. Base: All establishments with vacancies in each occupation in each sector. Figures only shown where base size greater than 50

Jobs with intermediate skills demands tend to have high shares of skills shortages. These include skilled trades roles in manufacturing, construction, wholesale and retail, and hotels/restaurants. This partly reflects longstanding shortages of skilled construction trades workers such as plumbers, electricians and carpenters, and skilled chefs within the hotel/catering industries. Elsewhere, shortages of staff in caring occupations are evident within health/social work and community/social activities, and for elementary staff in hotels/restaurants and agriculture. Employers experiencing shortages of higher skilled workers are likely to be larger organisations, while skills shortages among intermediate and lower skilled workers are more likely to be suffered by SMEs.

At higher skill levels, there are shortages of associate professionals in financial/business services and mining/quarrying, and for professional staff in education, social work, transport/communications, mining/quarrying and utilities. Research has shown shortages of staff in the business services sector covering digital and IT industries, particularly for systems architects, developers and analysts with expertise in cyber security, cloud computing green IT and mobile technologies, and for staff with 'big data' analytics capability (UKCES/Hollingworth *et al*., 2013).

A substantial amount of research has been undertaken on mismatches between the supply and demand of higher skilled workers who are graduates with Science, Technology, Engineering and Maths (STEM) skills. While the volumes taking A levels and graduate level courses in some of these subjects have risen in the past decade (UKCES/Hogarth *et al*., 2010), recent analysis of graduate destinations show that an increasingly large share (up to 60 per cent) of STEM graduates immediately enter non-STEM roles, with implications for skills atrophy (UKCES/Bosworth *et al*., 2013). This implies that employers may need to work hard on developing initial job opportunities and careers which will attract and retain these key staff.

4.2 Geographic variation in skills shortages

London acts as a magnet for graduate recruitment making it difficult for employers located elsewhere in the UK to source graduates with high level skills (UKCES/Bosworth *et al*., 2013). In addition, outside London, the public sector attracts a larger proportion of the graduate workforce. This creates a challenge for policy makers at national and local levels to ensure that areas across the UK are able to offer an attractive living environment to key professional groups. UKCESS 2013 also shows that a higher share of firms facing difficulties in recruiting professionals and associate professionals are trying to compete in international rather than national product markets. Ensuring an adequate supply of suitably skilled people for these roles is important to increase international competitiveness.

Table 4.1 Skills found difficult to obtain from applicants

	Average incidence across all occupations	Managers	Professionals	Associate professionals	Administrative/clerical staff	Skilled trades occupations	Caring, leisure and other services staff	Sales and customer services staff	Machine operatives	Elementary staff	Unclassified staff
Total		4,706	28,780	25,357	8,931	19,825	27,001	10,077	7,408	10,700	3,402
Technical, practical or job specific skills	63%	59%	67%	72%	65%	72%	46%	56%	69%	51%	91%
Planning and Organisation skills	41%	53%	26%	43%	58%	41%	39%	56%	30%	56%	43%
Oral communication skills	41%	33%	29%	43%	46%	35%	43%	57%	28%	65%	46%
Customer handling skills	40%	40%	27%	44%	49%	30%	44%	62%	41%	52%	12%
Written communication skills	38%	31%	25%	40%	49%	37%	45%	46%	32%	36%	44%
Problem solving skills	37%	47%	23%	34%	51%	40%	39%	50%	31%	43%	39%
Literacy skills	34%	21%	23%	31%	46%	35%	42%	42%	33%	40%	42%
Team working skills	33%	34%	22%	31%	40%	29%	37%	44%	30%	52%	7%
Strategic Management skills	30%	48%	35%	33%	44%	28%	21%	34%	24%	22%	38%
Numeracy skills	26%	26%	14%	25%	45%	28%	28%	36%	33%	31%	7%
Advanced IT or software skills	22%	32%	31%	22%	39%	18%	14%	19%	12%	7%	40%
Foreign language skills	17%	19%	14%	17%	16%	19%	18%	21%	15%	22%	2%
Basic computer literacy / using IT	16%	22%	10%	15%	23%	17%	19%	26%	19%	13%	7%
Don't know	6%	13%	9%	4%	6%	6%	7%	5%	9%	3%	2%
Experience/lack of product knowledge*	4%	3%	2%	3%	2%	5%	10%	5%	2%	3%	4%
No particular skills difficulties	4%	1%	4%	3%	2%	3%	9%	2%	6%	4%	2%
Other	1%	3%	1%	*%	1%	1%	1%	1%	*%	1%	0%
Not job specific or technical/practical	37%	41%	33%	28%	35%	28%	54%	44%	31%	49%	9%

Base: All employers with skills shortage vacancies Source: UK Commission's Employer Skills Survey 2013

4.3 Skills shortages and impacts

Table 4.1 provides an insight into the types of skills shortages that employers face. The most common types of skills shortages across all occupations are technical, practical or job specific skills. These skills are best gained, and can sometimes only be gained, in a workplace setting, illustrating the critical role that employers have to play in overcoming skills shortages and building the pipeline of skilled labour. Generic problem-solving, planning and organisational skills and customer handling skills are also in short supply across a wide range of occupations and skill levels and these are can be best developed and applied in a workplace setting. This raises questions about the relevance and quality of vocational pathways, which should be preparing people to meet employer needs, and highlights the importance of embedding work experience in initial vocational education to help build these generic skills for work. Skills shortages among sales/customer service staff focus on communication and planning/organisation, and there are skills shortages in strategic management, planning/organisation and problem-solving for management roles. Despite shrinking shares of people employed in administrative and clerical roles, skills shortages persist among this group, typically in various forms of communication, teamworking, problem-solving and literacy/numeracy. However, it should be remembered that just four per cent of establishments report skills shortage vacancies.

Wider evidence typically shows increasing employer demand for 'hybrid' skills sets, involving a mixture of technical skills, sometimes from different disciplines, combined with generic skills (UKCES, 2009; UKCES/Bosworth *et al*., 2013; UKCES/Hollingworth *et al*., 2013). The implication for meeting these needs is that education and training provision needs to blend knowledge and skills from different disciplines, with learning providers and employers working together in the skills system. Evidence from the UK Commission's Employer Perspectives Survey 2012 shows that perceived problems in the coverage of vocational training provision may have been hindering supply for employers in some sectors, although employer satisfaction with tailoring of training provision and delivery which minimises disruption to work has notably increased (UKCES/Shury *et al*., 2012).

Hard-to-fill vacancies can have significant impacts for businesses (Table 4.2). Increased workload is the most commonly reported impact of hard-to-fill vacancies, but this is not merely an inconvenience with a potentially negative and costly impact on staff wellbeing. It brings with it opportunity costs for businesses which suffer consequent delays in developing new products and services in at least one third of the firms surveyed, and more fundamental problems such as difficulty meeting customer needs and lost business in a similar proportion.

Table 4.2 Implications of hard to fill vacancies (prompted responses)

	Managers	Professionals	Associate professionals	Administrative/clerical staff	Skilled trades occupations	Caring, leisure and other services staff	Sales and customer services staff	Machine operatives	Elementary staff	Unclassified staff
Total	5,351	14,736	16,353	8,308	16,781	12,771	8,181	5,001	10,844	1,101
Increase workload for other staff	83%	84%	81%	89%	88%	82%	86%	74%	85%	85%
Have difficulties meeting customer services objectives	45%	44%	47%	49%	55%	42%	46%	51%	50%	38%
Delay developing new products or services	45%	44%	46%	49%	45%	38%	34%	41%	37%	39%
Lose business or orders to competitors	37%	34%	45%	38%	48%	38%	44%	57%	33%	32%
Experience increased operating costs	38%	39%	32%	44%	51%	42%	27%	52%	45%	31%
Have difficulties introducing new working practices	47%	31%	34%	45%	37%	37%	29%	34%	40%	35%
Have difficulties meeting quality standards	41%	31%	25%	35%	37%	34%	35%	31%	43%	30%
Outsource work	18%	34%	26%	28%	37%	23%	16%	41%	25%	26%
Withdraw from offering certain products or services altogether	20%	20%	21%	28%	31%	27%	13%	22%	26%	17%
Have difficulties introducing technological change	26%	22%	20%	22%	24%	18%	18%	19%	17%	17%
None	8%	6%	6%	5%	4%	7%	7%	5%	4%	9%
Don't know	0%	*%	*%	*%	*%	*%	0%	*%	*%	0%

Base: All employers with hard to fill vacancies

Source: UK Commission's Employer Skills Survey 2013

4.4 Skills gaps

In addition to the problems caused by lack of suitable recruits for vacancies, businesses also experience problems as a result of existing staff not being fully proficient. Table 4.3 shows the distribution of skills gaps across occupations and sectors. Skills gaps are a far more common problem than skills shortages: across the UK, 15 per cent of employers report skills gaps, compared to four per cent which report skills shortage vacancies. Skills gaps affect five per cent of all employees. Public sector industries including education, public administration, and health have the highest shares of employers reporting skills gaps, but there are also higher than average levels in hotels/restaurants, financial services, utilities, wholesale/retail and manufacturing. With the exception of public administration, skills gaps are concentrated in lower skilled roles.

Skills gaps may occur for a variety of reasons so it is important to understand how far lack of investment in staff with skills gaps is a contributory factor to lack of staff proficiency. The main reasons for skills gaps are staff being new to the role and/or training only being partially completed, followed by lack of motivation.

A substantial proportion of employers state that staff have not received appropriate training or that their performance has not sufficiently improved after training (see Figure 4.3). For example, at least a quarter of employers with skills gaps in the manufacturing, construction, wholesale/retail, transport/communications, real estate, health/social work, and community/social/personal services sectors reported that staff had not received suitable training (see Table A.7 in Appendix A). Similarly, at least a third of employers in public administration, education, financial services and hotels/restaurants report that staff skills remain inadequate after training. This raises questions about whether the training offered was fit for purpose, whether the staff recruited were suitable for the role, and how capable managers are in defining the content of training required and in recruiting and selecting staff. In some sectors such as education and hotels/restaurants which also have problems with staff motivation, management practices and capability may not be adequate to motivate staff sufficiently.

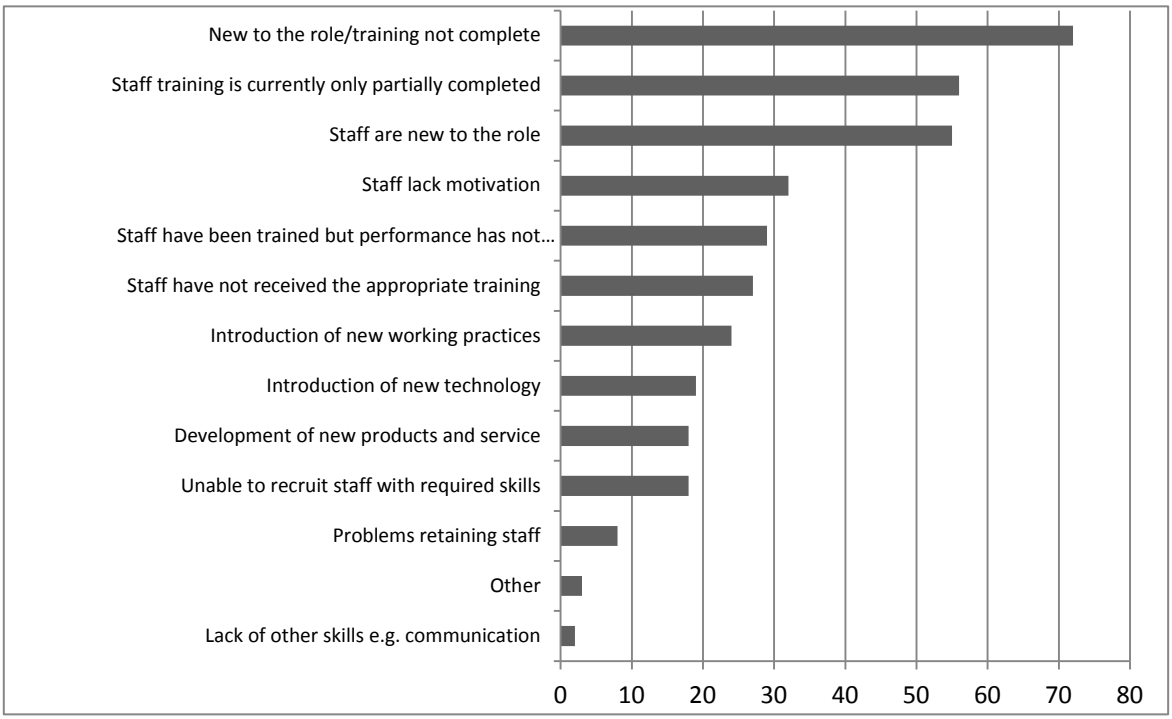
Table 4.3 Proportion of establishments reporting staff with skills gaps by occupation

	Total	Agriculture	Mining and quarrying	Manufacturing	Electricity, Gas and Water	Construction	Wholesale and Retail	Hotels and restaurants	Transport, Storage and Comms	Financial services	Real/estate/ business services	Public admin.	Education	Health and social work	Community, social and other activities
Managers	3	2	6	4	4	2	4	5	3	3	3	6	4	3	2
Professionals	1	*	1	1	2	*	*	*	2	2	2	3	7	2	*
Associate professionals	1	*	2	2	2	*	1	*	2	2	2	3	2	1	1
Administrative/clerical staff	3	1	6	4	6	3	2	2	3	9	4	10	5	5	3
Skilled trades occupations	2	2	5	6	4	5	2	4	3	*	1	1	1	1	2
Caring, leisure and other services staff	2	*	0	*	0	*	*	1	*	*	*	5	7	10	4
Sales and customer services staff	4	*	1	3	3	1	11	3	3	9	3	2	1	1	2
Machine operatives	1	2	9	5	5	1	1	*	1	0	1	*	*	*	1
Elementary staff	3	3	2	4	5	2	3	15	1	*	1	2	5	3	2
All staff	15	9	14	18	18	11	17	21	13	17	13	20	18	19	14

Base: All employers with skills gaps

Source: UK Commission's Employer Skills Survey 2013

Figure 4.3 Major causes of skills gaps (prompted) (% of establishments with skills gaps)



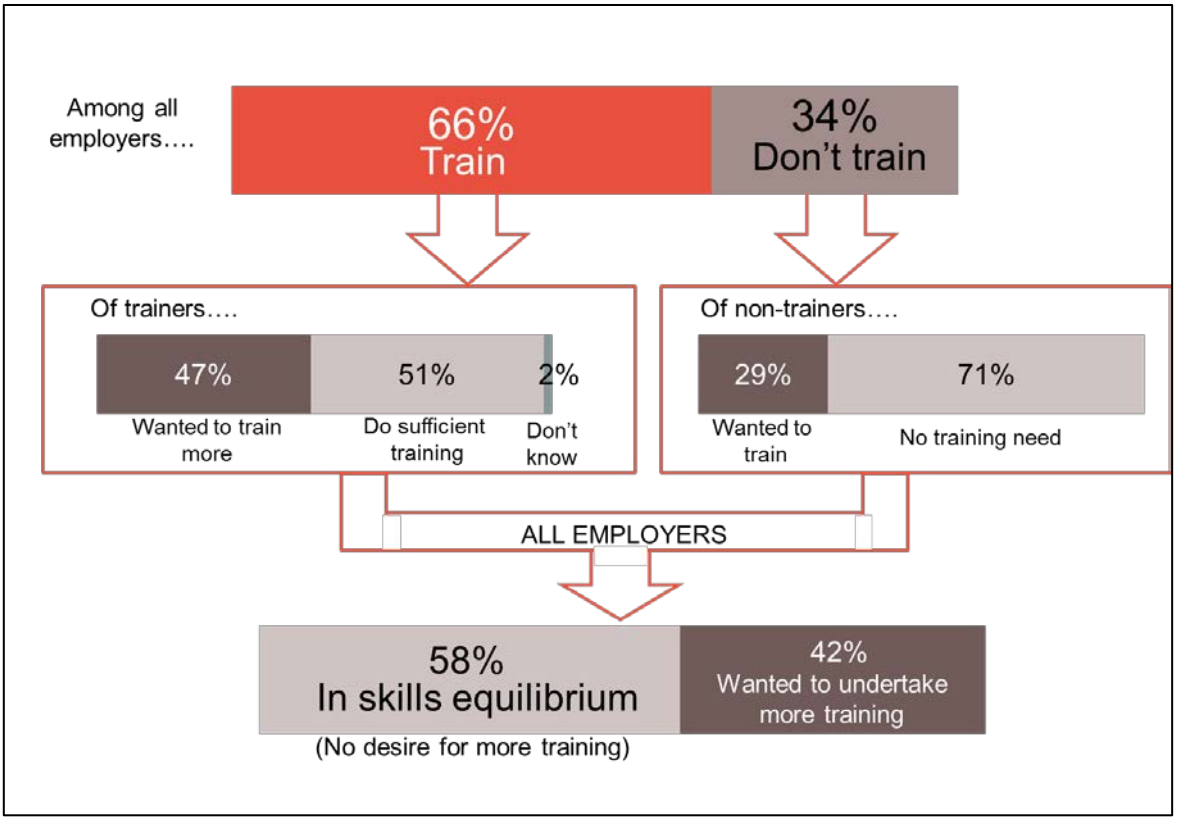
Source: UK Commission's Employer Skills Survey 2013

Reasons for persistent skills gaps may include a lack of relevant training available in the market, as well as barriers to accessing training. The UK Commission's Employer Perspectives Survey (UKCEPS) found that relevance of course provision was the primary factor affecting employer decisions to use training provision (UKCES/Shury *et al*., 2012). For some employers in business and other services sector (23 per cent), manufacturing (22 per cent) and primary sector and utilities (21 per cent), the most common barrier to training is that they cannot identify relevant qualifications for their staff to take.

5 Employer ambition and training

There is strong evidence of unmet appetite from employers for training, as illustrated in Figure 5.1. While two-thirds of employers provide training, nearly half (47 per cent) of employers in this group wanted to train more. Of those employers that did not provide training, 29 per cent wanted to train. Overall, more than four in ten (42 percent) employers wanted to undertake more training.

Figure 5.1 Employer training behaviour in the UK



Source: UKCES/Winterbotham et al., 2014

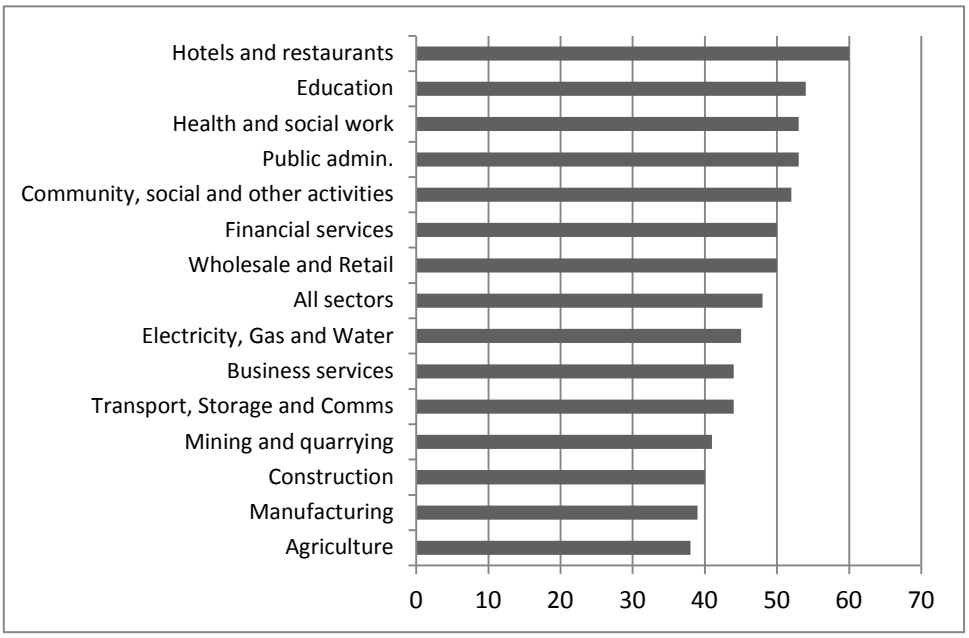
Figure 5.1 shows that some employers remain unconvinced about the need for and benefits of training, a view which may mask lack of management knowledge about training and its benefits, or suggest that managers do not see the benefits as worth the costs. Others would like to do more but encountered a range of obstacles in their path .including short-termist business planning processes, difficulty in accessing suitable training of a high quality, lack of funds and high costs. The result of these barriers may be that employers find it very challenging to move their business models towards high value products and services due to a lack of expertise, skills and technical knowledge. At a macro-level, this creates a vicious cycle for parts of the economy as the aggregate demand for skills remains low and as a result productivity and growth are limited.

5.1 Widespread under-use of skills

Another dimension of the UK skills market that illustrates inefficiency, mismatch and in some cases limited employer ambition is the extent of under-use of skills by those in work, suggesting deficiencies in the demand for skills. While skills shortages create a range of pressing problems due to their impact on business performance, doing a job that does not use a worker's skills and talents fully is damaging for the individual, their employer and the UK overall. It can lead to boredom, demotivation, low job satisfaction and skill attrition for the individual, as well as being an inefficient use of human capital across the economy. Failure to harness the skills and talents of workers means that employers may not be reaping the benefits of investment made in staff, individuals may not be gaining the returns expected from investment in education, and state investment in initial education through public funding is not receiving the appropriate level of return. For example, at graduate level, individuals earning less than a minimum amount will not be paying back any student loans they hold. Ultimately this means that the UK is not getting the maximum return on its investment in education, and employers are not making best use of the productive capacity of their staff. (Potential solutions are explored in 'The Labour Market Story: Skills Use at Work').

The levels of under-use of skills reported by employers are shown in Figures 5.2 and 5.3. UKCESS asked employers whether any of the staff at their site had both skills and qualifications higher than those required for their current job role. Compared to the share of employers reporting skills shortages (four per cent) and skills gaps (15 per cent), a large proportion (48 per cent) of employers across the UK reported that at least one employee had qualifications and skills which exceeded those required for his or her role (UKCES, 2013). This varied by sector, with businesses in the hotels and restaurant sector most likely to report under-use of skills. Across the economy as a whole, 16 per of employees (equating to 4.3 million people) had skills and qualifications that were not being used fully at work.

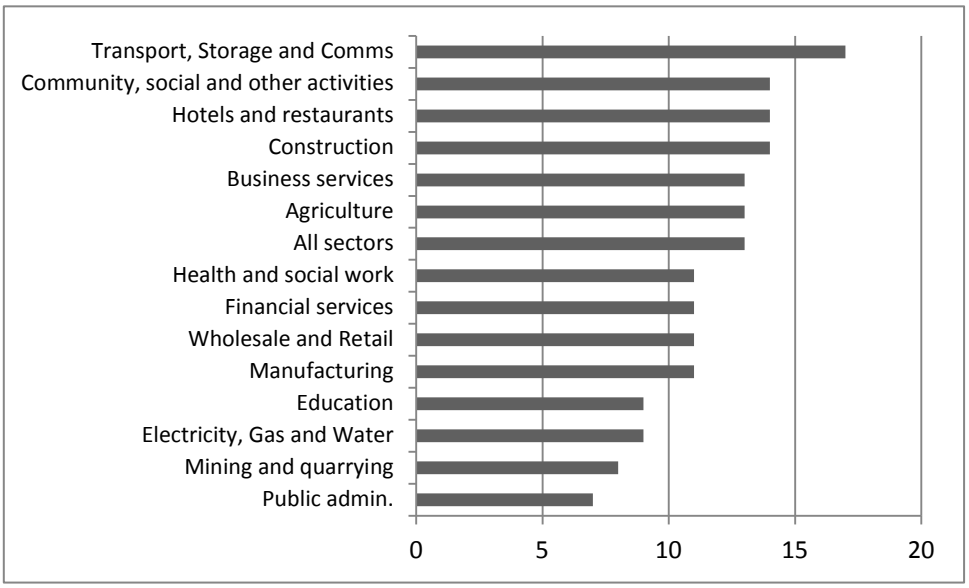
Figure 5.2 Proportion of establishments reporting staff members with under-used skills and qualifications



Source: UK Commission's Employer Skills Survey 2013

Relatively high proportions of employers (13 per cent across the economy as a whole) reported that all their members of staff had skills and qualifications that were not required for their role. This ranged from 17 per cent of employers in the transport, storage and communications sector to seven per cent in the public administration sector. In five sectors (community/leisure/personal service, real estate, transport/communications, hotels/restaurants, and construction), at least a third of employers report that the majority of their staff have skills and qualifications higher than those required for their current job role; and in a further six sectors (agriculture/forestry/fishing, manufacturing, wholesale/retail, financial services, public administration, social work), at least a quarter of employers report the same.

Figure 5.3 Proportion of establishments reporting all staff members had under-used skills and qualifications



Source: UK Commission's Employer Skills Survey 2013

At an aggregate level, this under-use of skills has a significant impact on overall levels of productivity. However, is under-use of skills always a bad thing? In some instances it may reflect individual choice to change career direction or fit their work requirements around other aspects of their lives. It may also reflect employers recruiting people with specific skills in advance of business expansion into new markets, products or services.

Nonetheless, evidence of under-use of skills permeates large parts of the UK economy, and compared to other developed nations the UK is lagging behind (this is explored in more detail in 'The Labour Market Story: Skills Use at Work'). In addition, current levels of migration may be masking the full scale of skills mismatches within the UK-born population, and therefore the degree of misalignment between the skills provided by the education system and the skills needed by employers. The mismatch between the skills possessed by individuals and those required by businesses points to the need for employers to play a full role in developing the content of training programmes and qualifications to help workers acquire the skills that businesses need to stay competitive. This would also help ensure that employers consider training and skills a key component in their drive for productivity and better performance.

6 Policy implications

Competitor nations are improving their educational performance at a faster rate than the UK, especially among young people. The UK, meanwhile, also has a more polarised skills base compared to other nations which have higher shares of people with intermediate qualifications. Overall levels of investment in education have been increasing, and individuals are making a greater contribution to education and training, yet employer investment in training, though substantial, has been falling over time. While employers may be training 'smarter', smaller businesses are paying disproportionately more to develop their staff.

Survey evidence suggests that investment in education and training is not well aligned with employer needs. There is strong evidence of unmet appetite from employers for training, with more than four in ten (42 percent) employers wanting to undertake more training but facing barriers, including short-termist business planning processes, difficulty in accessing suitable training, lack of funds and high costs. Employers reporting barriers to training suggest that available training is not always relevant, which suggests greater employer involvement in designing and commissioning training is required.

At the same time, employers are concerned about skills shortages, reporting direct and damaging impact of skills gaps and hard-to-fill vacancies caused by skills shortages. There are shortages of technical and associate professional staff, skilled trades and caring occupations. Skills gaps are also relatively common, particularly in lower skilled occupations and areas with high staff turnover. In addition, under-use of skills is widespread: 48 per cent of employers report that at least one employee had qualifications and skills which exceeded those required for his or her role (UKCES, 2013). Across the economy as a whole, 16 per of employees (equating to 4.3 million people) had skills and qualifications that were not being used fully at work. In combination, these factors suggest a demand deficiency for skills.

Employer demand for skills is low in the UK relative to other countries, and employers are not creating the intermediate- and high-level skilled jobs needed to shift the UK economy to a high-value road. Raising employer demand for skills and ensuring skills are used effectively is a significant challenge for the UK. In order to move forward, the UK needs to ensure that employers are at the heart of the provision of skills and training so that the mismatch between skills supply and demand is limited. Encouraging employers to take ownership for the provision of training is crucial in raising productivity and moving the economy towards a high value, high skill path to growth.

Appendix A

Table A.1 Changes in numbers of people employed (2007- 2013)

	Agriculture/ fishing	Energy & water	Manufacturing	Construction	Distribution, hotels & restaurants	Transport/ Comms	Banking finance & insurance	Public admin education & health	Other services	Total
Managers, Directors and Senior Officials	-7,200	15,400	-59,700	-6,900	14,600	-9,200	206,900	-14,600	23,400	162,700
Professional Occupations	-4,200	9,700	-81,600	-13,200	12,000	73,100	167,400	407,900	23,700	594,800
Associate Prof & Tech Occupations	-1,300	26,900	-43,600	-50,200	-4,900	-9,900	184,800	148,300	62,900	313,000
Administrative /secretarial occupations	4,400	-5,600	-62,000	-54,700	-64,200	-44,400	-129,500	-72,600	1,600	-427,000
Skilled Trades Occupations	39,700	6,000	-166,400	-217,200	32,400	-45,000	91,300	4,800	-37,100	-291,500
Caring, Leisure and Other Service Occupations	-12,000	-2,500	-4,300	-13,200	13,500	-2,400	24,500	237,700	27,100	268,400
Sales and Customer Service Occupations	-1,800	5,200	-9,000	-9,800	-2,100	-45,000	19,500	-14,900	3,900	-54,000
Process, Plant and Machine Operatives	400	9,600	-187,100	-48,900	-5,300	-17,200	1,300	-8,300	-2,300	-257,800
Elementary occupations	14,600	-3,600	-41,800	-42,300	75,900	-25,600	84,700	-50,400	-50,000	-38,500
Total	32,600	61,100	-655,500	-456,400	71,900	-125,600	650,900	637,900	53,200	270,100

Source: Labour Force Survey 2012/13 and 2006/7, quarters averaged from Apr 2006-Mar 2007 and Apr 2012-Mar 2013

Table A.2 Growth in numbers of people employed (2007- 2013) (%)

	Agriculture/ fishing	Energy & water	Manufacturing	Construction	Distribution, hotels & restaurants	Transport/ Comms	Banking finance & insurance	Public admin education & health	Other services
Managers, Directors and Senior Officials	-20	39	-15	-3	2	-4	46	-3	18
Professional Occupations	-53	13	-19	-6	9	15	21	15	15
Associate Prof & Tech Occupations	-17	56	-10	-31	-1	-3	20	13	22
Administrative /secretarial occupations	30	-11	-20	-27	-14	-18	-14	-6	1
Skilled Trades Occupations	34	12	-21	-17	6	-34	62	4	-23
Caring, Leisure and Other Service Occupations	-57	-58	-43	-73	34	-3	22	14	7
Sales and Customer Service Occupations	-39	16	-11	-36	0	-30	8	-14	9
Process, Plant and Machine Operatives	3	12	-24	-25	-2	-3	2	-10	-10
Elementary occupations	20	-6	-14	-23	7	-7	22	-9	-25

Source: Labour Force Survey 2012/13 and 2006/7, quarters averaged from Apr 2006-Mar 2007 and Apr 2012-Mar 2013

Table A.3 Changes in numbers of people employed (2004- 2007)

	Agriculture & fishing	Energy & water	Manufacturing	Construction	Distribution, hotels & restaurants	Transport & Communication	Banking finance & insurance etc.	Public admin education & health	Other services	Total
Managers, Directors and Senior Officials	2,600	4,100	900	38,900	-55,400	-1,200	30,000	32,000	3,700	55,600
Professional Occupations	2,400	11,800	31,700	8,700	2,800	39,100	44,300	148,600	12,100	301,500
Associate Prof & Tech Occupations	2,300	1,200	-100	15,200	20,500	-2,200	67,400	41,800	19,900	166,000
Administrative and Secretarial Occupations	3,200	7,400	-12,700	-4,300	-15,600	-29,000	-12,700	12,800	-3,800	-54,700
Skilled Trades Occupations	7,200	8,400	-64,100	54,600	-16,000	-1,800	18,900	-13,300	1,300	-4,800
Caring, Leisure and Other Service Occupations	3,100	1,300	1,100	3,100	-3,300	4,800	-6,400	124,900	21,100	149,700
Sales and Customer Service Occupations	1,800	300	300	2,000	10,100	5,600	200	19,100	5,600	45,000
Process, Plant and Machine Operatives	2,300	9,700	-85,200	2,000	6,500	2,800	8,600	6,900	4,600	-41,800
Elementary occupations	2,800	8,300	-28,000	23,000	49,400	-17,200	900	9,200	8,000	56,400
All occupations	27,700	52,500	-156,100	143,200	-1,000	900	151,200	382,000	72,500	672,900

Source: Labour Force Survey 2003/04 and 2006/7, quarters averaged from Apr 2006-Mar 2007 and Apr 2003-Mar 2004

Table A.4 Growth in numbers of people employed 2004 to 2007 (%)

	Agriculture & fishing	Energy & water	Manufacturing	Construction	Distribution, hotels & restaurants	Transport & Communication	Banking finance & insurance etc.	Public admin education & health	Other services	Total
Managers, Directors and Senior Officials	7.7	11.6	0.2	19.5	-6.5	-0.5	7.2	7.7	2.8	2.0
Professional Occupations	43.6	19.5	8.0	4.3	2.3	8.5	5.8	5.7	8.3	6.3
Associate Prof & Tech Occupations	42.6	2.6	0.0	10.4	6.3	-0.6	7.9	3.7	7.4	4.6
Administrative and Secretarial Occupations	28.3	17.5	-3.9	-2.1	-3.4	-10.3	-1.3	1.1	-2.1	-1.5
Skilled Trades Occupations	6.6	19.9	-7.5	4.5	-2.7	-1.4	14.7	-9.1	0.8	-0.1
Caring, Leisure and Other Service Occupations	17.3	43.3	12.4	20.8	-7.6	6.8	-5.5	7.9	6.2	6.8
Sales and Customer Service Occupations	64.3	0.9	0.4	8.0	0.6	3.9	0.1	22.7	14.1	1.9
Process, Plant and Machine Operatives	19.0	14.2	-10.0	1.0	2.8	0.5	14.8	9.0	24.3	-2.0
Elementary occupations	3.9	15.9	-8.8	14.4	4.6	-4.6	0.2	1.7	4.1	1.8
All occupations	10.3	13.7	-4.2	6.0	0.0	0.0	3.8	4.9	4.9	2.4

Source: Labour Force Survey 2003/04 and 2006/7, quarters averaged from Apr 2006-Mar 2007 and Apr 2003-Mar 2004

Table A.5 Volume of skills shortage vacancies by occupation

	Agriculture	Mining/quarrying	manufacturing	Electricity, gas, water	Construction	Wholesale/retail	Hotels/restaurants	Transport/storage/ communication	Financial services	Business services	Public admin	Education	Health and social work	Community, social and other activities
Total	1,299	54	5,023	480	3,190	10,140	7,544	6,134	1,642	18,324	1,299	3,262	6,707	5,406
Managers	67	0	251	30	224	1,087	468	158	147	1,011	123	46	391	195
Professionals	58	16	816	141	305	193	6	1,907	139	4,549	288	1,678	2,182	236
Associate Professionals	18	22	1,002	106	307	1,396	82	1,401	681	6,661	261	400	688	722
Administrative/ clerical staff	35	0	281	46	220	692	478	355	589	2,489	150	281	386	383
Skilled trades	306	0	2,013	94	1,885	2,612	3,102	921	0	2,419	0	84	217	138
Caring/leisure/other services	36	0	35	0	0	45	259	10	34	772	511	690	3,389	3,548
Sales and customer services	0	0	275	9	71	3,892	143	699	153	718	0	36	26	117
Machine operatives	199	16	797	100	294	449	122	898	0	535	0	14	42	122
Elementary staff	572	0	73	24	193	571	3,727	246	13	644	39	120	116	99
Unclassified staff	39	15	32	6	67	42	25	222	0	213	0	29	15	52

Base: All employers with skills shortage vacancies

Source: UK Commission's Employer Skills Survey 2013

Table A.6 Proportion of vacancies that are skills shortage vacancies, by occupation (%)

	Total	Agriculture	Mining and quarrying	Manufacturing	Electricity, Gas and Water	Construction	Wholesale and Retail	Hotels and restaurants	Transport, Storage and Comms	Financial services	Business services	Public admin.	Education	Health and social work	Community, social and other activities
Managers	6	5	0	5	6	7	11	6	3	9	6	9	1	6	4
Professionals	18	4	29	16	29	10	2	*	31	8	25	22	51	33	4
Associate professionals	19	1	42	20	22	10	14	1	23	41	36	20	12	10	13
Administrative/clerical staff	9	3	0	6	10	7	7	6	6	36	14	12	9	6	7
Skilled trades occupations	20	24	0	40	20	59	26	41	15	0	13	0	3	3	3
Caring, leisure and other services staff	13	3	0	1	0	0	*	3	*	2	4	39	21	51	66
Sales and customer services staff	9	0	0	5	2	2	38	2	11	9	4	0	1	*	2
Machine operatives	5	15	30	16	21	9	4	2	15	0	3	0	*	1	2
Elementary staff	9	44	0	1	5	6	6	49	4	1	4	3	4	2	2
Unclassified staff	1	3	27	1	1	2	*	*	4	0	1	0	1	*	1

Base: All employers with skills shortage vacancies

Source: UK Commission's Employer Skills Survey 2013

Table A.7 Major causes of skills gaps in occupations followed (prompted unless*)

	Total	Agriculture, hunting, forestry and fishing	Mining and quarrying	Manufacturing	Electricity, gas and water supply	Construction	Wholesale and retail trade	Hotels and restaurants	Transport, storage and communications	Financial services	Real estate, renting and business activities	Public admin. and defence compulsory social security	Education	Health and social work	Community, social and personal service activities
Staff training is currently only partially completed	56%	55%	**	59%	59%	62%	54%	54%	51%	58%	58%	58%	49%	56%	59%
Staff are new to the role	55%	38%	**	58%	56%	52%	55%	62%	55%	66%	57%	58%	48%	55%	49%
Staff lack motivation	32%	37%	**	27%	36%	24%	37%	39%	28%	29%	27%	32%	40%	32%	33%
Staff have been trained but performance has not improved sufficiently	29%	20%	**	23%	30%	19%	31%	36%	24%	34%	25%	34%	40%	30%	29%
Staff have not received the appropriate training	27%	26%	**	32%	27%	29%	26%	24%	27%	19%	28%	26%	24%	27%	29%
Introduction of new working practices	24%	16%	**	22%	34%	18%	23%	26%	24%	26%	24%	36%	33%	29%	26%
Introduction of new technology	19%	22%	**	21%	20%	17%	19%	13%	26%	18%	22%	22%	22%	17%	21%
Unable to recruit staff with required skills	18%	16%	**	21%	20%	17%	18%	24%	20%	10%	18%	17%	15%	16%	18%
Development of new products and service	18%	20%	**	19%	11%	14%	19%	17%	20%	17%	18%	20%	15%	14%	19%
Problems retaining staff	8%	7%	**	6%	10%	4%	9%	15%	7%	4%	6%	8%	8%	8%	9%
Lack of other skills e.g. communication, interpersonal*	2%	4%	**	2%	3%	3%	2%	2%	2%	1%	2%	3%	3%	2%	3%
Other	3%	9%	**	2%	2%	2%	3%	2%	3%	2%	3%	1%	3%	4%	2%
New to the role/training not complete	72%	65%	**	74%	71%	77%	71%	74%	72%	76%	73%	76%	62%	73%	72%

Base: All employers with skills gaps; Source: UK Commission's Employer Skills Survey 2013

Bibliography

BIS (2010) *Skills for Sustainable Growth: Strategy Document.* BIS, London

BIS (2013a) *The Benefits of Higher Education Participation for Individuals and Society: key findings and reports 'The Quadrants'.* BIS Research Paper No. 146. Department for Business, Innovation and Skills, London.

BIS (2013b) *Continuing Vocational Training Survey – CVTS4*. BIS Research Paper Number 102. Department for Business, Innovation and Skills, London.

Eurostat (2014) *Interactive training statistics*. http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=trng_cvts02&lang=en

Felstead, A., Gallie, D., Green, F. and Inanc, H. (2013) *Skills At Work In Britain: First Findings from the Skills and Employment Survey 2012.* Centre for Learning and Life Chances in Knowledge Economies and Societies, Institute of Education, London.

Green, F. (2011) *What is Skill? An Inter-Disciplinary Synthesis.* Centre for Learning and Life Chances in Knowledge Economies and Societies, London.

Green, F., Felstead, A., Gallie, D., Inanc, H. and Jewson, N. (2013a) *What Has Been Happening to the Training of British Workers?.* Centre for Learning and Life Chances in Knowledge Economies and Societies, Institute of Education, London.

Green, F., Felstead, A., Gallie, D. and Inanc, H. (2013b) *Training in Britain: First Findings from the Skills and Employment Survey 2012*. Centre for Learning and Life Chances in Knowledge Economies and Societies, Institute of Education, London.

HM Treasury (2012) *Public Expenditure: Statistical Analyses 2012.* HMT Cm 8376. HM Treasury, London.

House of Commons Library (2012) *Student loan statistics - Commons Library.* Standard Note. SN/SG/1079. House of Commons Library, London.

Krahn, H. (1997) 'On the Permanence of Human Capital: Use It or Lose It', in *Policy Options* (July/Aug), pp 17-21.

OECD (2013a) *OECD Skills Outlook 2013: First Results from the Survey of Adult Skills*. OECD Publishing, Paris.

OECD (2013b) *United Kingdom – Country Note – Results From PISA 2012.* OECD, Paris.

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

UKCES (2009) *Ambition 2020: World Class Skills and Jobs for the UK*. UK Commission for Employment and Skills, Wath-upon-Dearne.

UKCES (2010) *Skills for Jobs: Today and Tomorrow – The National Strategic Skills Aiudit for England 2010 – Volume 1: Key findings*. UK Commission for Employment and Skills, Wath-upon-Dearne.

UKCES (2012), *Big Challenges Bring Big Rewards: The Big Picture Narrative*. Wath-UK Commission for Employment and Skills, Wath-upon-Dearne.

UKCES (2013) *UK Employer Skills Survey 2013* Data Tables. UK Commission for Employment and Skills, Wath-upon-Dearne. https://www.gov.uk/government/publications/ukces-employer-skills-survey-2013-supplementary-documents

UKCES (forthcoming) *UK Skill Levels and International Competitiveness: an update*. UK Commission for Employment and Skills, Wath-upon-Dearne.

UKCES / Belt, V., Campbell, M. and Giles, L. (2010) *Skills for Jobs: Today and Tomorrow - The National Strategic Skills Audit for England 2010.* UK Commission for Employment and Skills, Wath-upon-Dearne.

UKCES / Bosworth, D., Lyonette, C., and Wilson, R., Fathers, S. and Bayliss, M. (2013) *The Supply of and Demand for High Level STEM Skills*. UKCES Evidence Report 77. UK Commission for Employment and Skills, Wath-upon-Dearne.

UKCES / Cox, A., Sumption, F., Hillage, J. and Sloan, J. (2009) *Review of Employer Collective Measures: Policy Review.* UKCES Evidence Report 8. UK Commission for Employment and Skills, Wath-upon-Dearne.

UKCES / Garrett, R., Campbell, M., Mason, G. (2010) *The Value of Skills: An Evidence Review*. UKCES Evidence Report 22. UK Commission for Employment and Skills, Wath-upon-Dearne.

UKCES / Hogarth, T., Bosworth, D., Davis, C., Price, S. and Garrett, R. (2010) *Strategic Skills Needs in the Bio-medical Sector: A report for the National*

Strategic Skills Audit for England 2010. UKCES Evidence Report 14. UK Commission for Employment and Skills, Wath-upon-Dearne.

UKCES / Hollingworth, L., Harvey-Price, A., Bayliss, M. and Pinto, R. (2013) *Technology and Skills in the Digital Industries*. UKCES Evidence Report 73. UK Commission for Employment and Skills, Wath-upon-Dearne.

UKCES / Shury, J., Vivian, D., Gore, K., Huckle, C., and Belt, V. (2012), *UK Commission's Employer Perspectives Survey 2012.* Evidence Report 64. UK Commission for Employment and Skills, Wath-upon-Dearne.

UKCES / Stanfield, C. Cox, A., Stone, I. (2009) *Review of Employer Collective Measures*. UKCES Evidence Report 10. UK Commission for Employment and Skills, Wath-upon-Dearne.

UKCES / Winterbotham M., Vivian D., Shury, J., Davies, B. and Kik, G. (2014) *The UK Commission's. Employer Skills Survey 2013: UK Results*. UKCES Evidence Report 81. UK Commission for Employment and Skills, Wath-upon-Dearne.

The UK Commission for Employment and Skills is a social partnership, led by Commissioners from large and small employers, trade unions and the voluntary sector. Our mission is to raise skill levels to help drive enterprise, create more and better jobs and economic growth.

UKCES
Renaissance House
Adwick Park
Wath-upon-Dearne
Rotherham
S63 5NB
T +44 (0)1709 774 800
F +44 (0)1709 774 801

UKCES
Sanctuary Buildings
Great Smith St.
Westminster
London
SW1P 3BT
T +44 (0)20 7227 7800