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Qualifications and Skills Unit

Learning and Skills Improvement Service

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Foreword

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 ambition is to transform the UK's approach to investing in the skills of people as an intrinsic part of securing jobs and growth. Our strategic objectives are to:

- Maximise the impact of employment and skills policies and employer behaviour to support jobs and growth and secure an internationally competitive skills base;
- Work with businesses to develop the best market solutions which leverage greater investment in skills;
- Provide outstanding labour market intelligence which helps businesses and people make the best choices for them.

The third objective, relating to intelligence, reflects an increasing outward focus to the UK Commission's research activities, as it seeks to facilitate a better informed labour market, in which decisions about careers and skills are based on sound and accessible evidence. Relatedly, impartial research evidence is used to underpin compelling messages that promote a call to action to increase employers' investment in the skills of their people.

Intelligence is also integral to the two other strategic objectives. In seeking to lever greater investment in skills, the intelligence function serves to identify opportunities where our investments can bring the greatest leverage and economic return. The UK Commission's third strategic objective, to maximise the impact of policy and employer behaviour to achieve an internationally competitive skills base, is supported by the development of an evidence base on best practice: "what works?" in a policy context.

Our research programme provides a robust evidence base for our insights and actions, drawing on good practice and the most innovative thinking. The research programme is underpinned by a number of core principles including the importance of: ensuring 'relevance' to our most pressing strategic priorities; 'salience' and effectively translating and sharing the key insights we find; international benchmarking and drawing insights from good practice abroad; high quality analysis which is leading edge, robust and action orientated; being responsive to immediate needs as well as taking a longer term perspective. We also work closely with key partners to ensure a co-ordinated approach to research.

Sector Skills Assessments (SSAs) are key sources of authoritative and focused sectoral labour market intelligence (LMI), designed to inform the development of skills policy across the UK. They combine "top-down" analysis of official data with bottom-up intelligence to provide a consistent, comparable and rich understanding of the skills priorities within different sectors of the economy, across the four UK nations.

This SSA, produced by the Learning and Skills Improvement Service (LSIS), provides a strategic perspective for the education sector for workforce planning and development and influences and shapes relevant policies across the four UK nations. The Learning and Skills Improvement Service (LSIS) is the sector-owned body that aims to accelerate the drive for excellence in the learning and skills sector, building the sector's own capacity to design, commission and deliver improvement and strategic change.

Sharing the findings of our research and engaging with our audience is important to further develop the evidence on which we base our work. Evidence Reports are our chief means of reporting our detailed analytical work. Each Evidence Report is accompanied by an executive summary. All of our outputs can be accessed on the UK Commission's website at www.ukces.org.uk

But these outputs are only the beginning of the process and we are engaged in other mechanisms to share our findings, debate the issues they raise and extend their reach and impact. These mechanisms include our *Changing Behaviour in Skills Investment* seminar series and the use of a range of online media to communicate key research results.

We hope you find this report useful and informative. If you would like to provide any feedback or comments, or have any queries please e-mail info@ukces.org.uk, quoting the report title or series number.

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Executive Summary

Introduction

This report provides labour market intelligence (LMI) for the education sector. This includes information on the current performance of the sector, its workforce and the demand and value of skills. In doing so, it provides an overview of the extent of skills mismatch, the drivers of change and its skills implications, and the future skills needs of the education sector. It also identifies areas to be prioritised for action in the short, medium and long term.

This report has been compiled by the Qualifications and Skills (Q&S) team within the Learning and Skills Improvement Service (LSIS).

The SSA for the education sector is one of the 15 SSAs produced by Sector Skills Councils[1]. The reports have been produced to a common specification, (UKCES, 2011) developed by the UK Commission for Employment and Skills in consultation with the four UK governments and follow a consistent structure.

In addition to this main UK report, executive summaries have been produced for Northern Ireland, Scotland and Wales. Education is a devolved policy area within the UK and can have an important influence on the demand for skills in the sector.

The education sector is categorised by the SIC code 85, which covers all aspects of education from pre-primary, primary and secondary schools to areas of post-16 education that previously fell within the remit of the Sector Skills Council (SSC) for lifelong learning[2]. The latter includes further and higher education, work based learning, and community learning and development (including sub sectors, such as family learning; working with parents; youth work; community development and adult and community learning).

This report combines top-down data with bottom-up intelligence to provide a rich assessment of sectoral skills priorities that is consistent and comparable with assessments produced for other sectors of the economy. It is based on data from core national sources as well as information from an extensive literature review.

[1] Please note that LSIS is a Standard Setting Organisation (SSO), not a Sector Skills Council (SSC)
[2] Please note, libraries, archives, records and information management services that were a part of lifelong learning are not included in this SSA.

Current performance of the sector

- The UK spends approximately six per cent of its Gross Domestic Product (GDP) on education (2010/11).
- Based on OECD data (2008), the recorded annual public expenditure on educational institutions per student was $6,789 in the UK, compared to the OECD average of $7,069.
- Education sector represents six per cent of UK Gross Value Added (GVA), which is an indication of the impact of the sector on the wider economy.
- The GVA per job employed within the education sector ranks alongside Health and Care, the two other (largely public funded) service sectors.

In the years leading up to the recent financial slow down, the education sector experienced a long period of increasing government expenditure on education, with budgets in recent years doubling in real terms in some areas. Since May 2010, however, public expenditure growth has been severely restrained, with implications for the education sector across the four nations.

Employment in the sector has grown by 34 per cent since 2002 and in 2010 three million people were employed in education across the UK, 11 per cent of total employment. There are some 67,000 education establishments in the UK and they are larger than average workplaces, with two-thirds employing at least 10 people.

The provision of education by UK institutions now extends outside the UK, with 196,640 students studying entirely overseas for qualifications at Higher Education Institutions (HEI) during 2007/08, and 66,500 students from overseas studying in colleges in England..

The workforce

Most people in the sector are employed in either a professional, associate professional or personal service (caring) jobs. Nearly half the workforce occupy a professional role including teachers in both the compulsory and post-16 education sectors, trainers in workbased and community learning and tutors and lecturers in higher education..

Three of the top ten occupations (in terms of numbers in employment) in the UK economy are within the education sector, namely primary education teaching professionals; secondary education teaching professionals and educational assistants.

Educational assistants have been one of the fastest growing occupations in the whole economy over the past decade, growing 91 per cent between 2001 and 2009 in England alone. However, this occupational group is not forecast to increase as substantially between 2010 and 2020.

The multi-tasking professional is very common in the sector, with teachers, lecturers, tutors and trainers regularly called upon to have managerial and administrative skills.

Employees in the education sector are more likely to work part-time and on temporary contracts than in other sectors, but are less likely than average to be self-employed. Some 40 per cent are part-time (compared with an average of 27 per cent), six per cent are self-employed, (compared with 14 per cent overall) and 11 per cent work on temporary contracts (higher than the six per cent average across the economy).

The majority of people in the education sector are female and white. The sector has an older workforce than the rest of the economy but the average age of the workforce is falling, with 44 per cent of employers in the sector actively recruiting young people in the UK. The employment of people from black and ethnic minority groups is below average.

Demand for, and value of, skills

The education workforce is highly qualified, with 63 per cent holding S/NVQ Level 4 or higher qualification, compared to 37 per cent across the whole economy.

Skills that are required for professional and associate professional occupations are teaching and learning related skills, including blended learning, priority sector subjects; cultural awareness and language and interpersonal skills. Those in managerial positions need skills for managing change, including keeping pace with emerging technologies, leadership, problem solving and general business skills; and partnership and collaboration skills.

The education sector ranks third among all sectors in terms of employees reporting that they have received training. Eighty-six per cent of employers in the education sector are likely to provide training to staff compared to 59 per cent employers across the whole economy. However, the percentage of employees in the education sector who report that they have received training in the last 4 or 13 weeks has fallen steadily since 2002, faster than in other sectors.

Improving the quality of teaching is a challenge facing the education sector and that improvement is needed at all levels. The variable quality of learning provision is placing additional pressure on all levels of the sector across the UK to ensure that standards are being met and that training programmes are effective. The values of strong leadership, a readiness to improve, effective self-assessment, and the use of feedback from learners have been cited as the main catalysts that have resulted in the improvement of teaching quality.

Extent of skills mismatch

The education sector accounts for 11 per cent of all in employment across the UK, it accounts for just five per cent of all vacancies across all sectors. There are fewer than 35,000 vacancies in the education sector and of these vacancies, 14 per cent are hard-to-fill and of these 11 per cent are skills shortage vacancies.

The levels of skills shortages reported in the education sector are generally lower than the skills shortages reported for the economy as a whole. Hard-to-fill vacancies (HTF) in the education sector account for just four per cent of all HTF vacancies across all sectors. Education sector skills shortage vacancies (SSV) as a percentage of all SSVs across all sectors is also just four per cent. Hard-to-fill vacancies and skills shortage vacancies are reported more frequently in England and Northern Ireland than in Scotland and Wales.

The most frequently cited shortages were in job specific skills followed by planning and organisation skills, oral and written communication skills, strategic management skills, and technical or practical skills. Other skills shortages include IT skills, customer handling skills, team working and problem solving, as well as basic numeracy and literacy. Two teaching occupations feature on the UK Border Agency's Migration Advisory Committee' list of skill jobs: secondary education teaching professionals in maths or pure sciences (physics and / or chemistry) and special needs education teaching professionals in all teaching posts in special schools (UKBA,2012).

Only four per cent of staff is reported as having skills gaps in the education sector, slightly less than the average across the whole economy. Reasons for skills gaps include lack of experience in recently recruited staff, lack of staff motivation, failure to train and develop staff, and the failure to keep staff up-to-date with changes in their subject areas.

The education sector ranks in the top half of average hourly wages paid in the UK at £15.71 per hour, as compared to £14.60 average hourly wage for the economy as a whole, reflecting the higher than average qualifications levels.

Skills deficiencies are not having a major impact on the education sector with the sector ranked 26 out of 27 for skills deficits across all sectors (UKCES, 2010c). There are issues of skills development for existing staff. Moreover, the shortages in the sector are for qualified individuals to fill existing positions and to replace workers who are retiring from the field.

Projected changes in population indicate that demand for qualified workers for the education sector will continue to grow for the foreseeable future, making the sector an attractive and stable employment option during tough economic times.

Drivers of change and their skills implications

Within the education sector, the most important driver of change is government policy and regulation. The government decides the “direction of travel” for the sector and encourages that travel using regulation or funding. In this way, the primary driver that impacts upon all the others is “regulation and governance”. This is even more important in this sector as education is a devolved matter leading to significant policy differences relating to education and skills among the four nations, reflecting the different political contexts and funding priorities within which the sector operates in each nation.

The demographic and population changes which affect the education sector include the ageing population, rising birth rates and the effects of inward migration in the UK.

Environmental drivers have an impact on the education sector, insofar that the workforce needs knowledge and awareness of environmental sustainability. Moreover, there are agendas in the nations to ensure that people develop the knowledge, values and skills to participate in decisions that will improve the quality of life now without damaging the planet for the future.

The relationship of the education sector to society and industry is increasingly complex, with the sector being affected by marketisation in recent years. Education is also affected by issues of increased tuition fees in HE, FE loans, demands from international students and international operations of UK education providers.

Technological advancements have a direct impact on the requirement for education professionals to have relevant skills to use digital technology effectively in order to help deliver creative and inspiring learning experiences and engage with learners in the classroom, in employment or at home.

Changes in the makeup of the population over the years have resulted in changing values and identity of the workforce in general, including - a more mature workforce, increased female participation, increased number of volunteers – all have different requirements and expectations from education and learning providers.

Language is also an important aspect of changing values in society, with the demand for language skills increasing in the devolved nations. In recent years, Northern Ireland has seen steady growth in the number of children and young people educated in the Irish-medium sector. The Scottish Government is promoting the use of Gaelic and Scots and stimulating demand for these language skills as an integral part of Scotland's heritage, national identity and current cultural life. In Wales, the creation of a bilingual nation has long been a government priority and there has been an increase in the use of Welsh-medium across the education sector in the last decade.

Changes in the population and a decreasing jobs market indicate an agenda for wider participation in education as non-traditional learners seek new or better qualifications as well as a personalised educational experience. Such rapid changes in consumer requirements mean that the education workforce needs to be flexible in order to respond to demand. This required flexibility will probably stimulate demand for blended learning delivery skills (via traditional and 'new'/online routes); communications skills and customer service skills. Such skills will be vital for the education workforce to respond to changing consumer demands in an appropriate manner.

The effects of the drivers of change across the four nations are not uniform. The devolved administrations have set out strategies and policies to govern the skills issues for their economies and the impacts of the drivers on the education sector in each nation.

Future skills needs

The UK population is forecast to grow by 4.9 million people between 2010 and 2020, with an estimated net growth of just over 1.5 million people employed in the UK over the same period.

Employment in the education sector is predicted to fall by 39,000 (1.5 per cent) by 2020, masking a large projected growth in the number of staff in professional occupations (which includes teaching staff),of 134,000..The increase in the numbers of professionals and a smaller increase in the numbers of caring staff is offset by a fall in the numbers employed in administrative and elementary occupations.

Future skills needs of teachers include the basic skills of literacy and numeracy in order to join the sector workforce; pedagogic skills to deliver learning effectively and certain specific subjects such as STEM. Teachers also need communication and interpersonal skills to respond to a diverse range of learners from different international countries, with high levels of e-learning and varied personalised demands.

Educational assistants (part of associate professionals), although a fast growing occupation up to 2009, is forecast to fall from a 7.3 per cent share of the whole education sector to 6.9 per cent between 2010 and 2020.

The occupational group of managers is not projected to increase in the education sector; however their multi-skilling capabilities, management, leadership, business, communications and inter personal skills will need to increase so that they can understand the current policy context and plan for the future to ensure that their organisations remain competitive and in the forefront of their sectors.

Immediate skill needs in the sector will be for job specific skills required for specific roles; literacy, numeracy; pedagogical skills; communication and interpersonal skills and ability to deliver personalised service; and continuous skills needs will be for managerial and leadership skills to effectively lead the sector through the changes of the future.

Priority areas for action

Teaching staff, tutors and trainers form the greatest component of the professional occupational category and are, by far, the priority occupational area in the education sector.

Whilst the occupational groups of associate professionals and technical staff in the education sector is not forecast to increase between 2010 and 2020, their skills must be honed in the future as a support service to the growing teaching workforce, by ensuring they keep pace with growing technological complexity and changing skill mixes in many subject areas.

The skills of managers in the education sector need to increase as well, as these are the individuals that will lead their organisations through the changes related to the current economic circumstances. Current level of skills gaps among managers in the education sector is only four per cent. However, continuous training of managers is essential so that they can be versatile and efficient in initiating and implementing change – relating to the Governmental agenda, the digital economy, the diverse consumer base and changing consumer demands among others.

Cross border movement among the four nations is seen an a way to fill the sector vacancies in education, although there is only a small percentage of these within the sector, with low levels of hard-to-fill and skills shortage vacancies and skills gaps as a whole. Transferability of professionals within the sector and across borders will lead to rationalisation of qualifications and standards. UK-wide standards have been achieved in Higher Education and may not be difficult to achieve for schools that are already well-regulated in each nation. The challenge will most likely be faced in further education and vocational education which are more fluid in their requirements.

Providing on-going continuous professional development to the whole workforce is important to maintain and expand current skills levels, as well as develop the multi-tasking and flexibility that may be skills needed for the future. Even though a younger age group is attracted to the sector, they will need to be appropriately qualified to replace the older workers, as they retire.

In terms of strategic priorities in the in the education sector, those areas which are viewed critical are categorised as follows:

- those where immediate action is **critical**, for example pedagogic skills in teachers; STEM and special needs education teachers; management skills to ensure that the workforce is appropriately trained and qualified; business acumen to attracted the growing internationalised learning community and as well as other learners from diverse background demanding a personalised learning delivery and;
- other critical areas, for example - strategic leadership skills; skills of digital pedagogy; continuous training of the older workforce – for which there are no short term solutions – these will benefit from more continual actions so that the change is embedded, structural and long-term.

Priority areas that are **medium to low risk** include cultural awareness and language skills and knowledge of green practices in the workforce.

1 Introduction

1.1 Purpose of report

The aim of this report is to provide authoritative labour market intelligence (LMI) for the education sector to inform the strategic decision making of national governments in the development of employment and skills policy. It is one of 15 UK Sector Skills Assessment (SSA) reports produced by Sector Skills Councils[3] and the UK Commission for Employment and Skills.

SSAs combine top-down data from official sources with bottom-up sectoral intelligence to provide a consistent, comparable and rich understanding of the skills priorities within sectors across the four UK nations. The reports have been produced to a common specification, (UKCES, 2011) developed by the UK Commission in consultation with the four UK governments and follow a consistent structure.

Reports have been produced for the following sectors of the economy:

- Agriculture, forestry and fishing;
- Energy production and utilities;
- Manufacturing;
- Construction building services, engineering and planning;
- Wholesale and retail trade;
- Transportation and storage;
- Hospitality, tourism and sport;
- Information and communication technologies;
- Creative media and entertainment;
- Financial, insurance & other professional services;
- Real estate and facilities management;
- Government;
- Education;
- Health;

[3] Please note, the Education report was produced by LSIS who are not a licensed Sector Skills Council

- Care.

The reports contain intelligence on sectors and sub-sectors of particular interest to the four UK governments. As each nation has different 'key sectors', that are defined in different ways, it has not been possible define the SSA sectors in a way that matches precisely the key sectors identified by each nation government. Therefore, as far as possible, data has been reported in such a way that it can be aggregated to produce an overall picture for key sectors of interest. In some cases this will involve gathering information from more than one SSA report.

In addition to the main UK reports, executive summaries have been produced for Scotland, Wales and Northern Ireland. The UK report contains information on key variations among the four UK nations and regional variation within England where appropriate. This is of particular importance in the Education SSA as education is a devolved matter and education policy is different in each of the four nations. In Wales and Northern Ireland, education policy was devolved in the 1990s. However, education has always been fully devolved in Scotland, where education policy is distinct from the rest of the UK and is legislated for separately by the Scottish Parliament.

The reports are designed to provide sectoral intelligence at a relatively broad level for strategic decision making purposes. Whilst they do contain some sub-sectoral and occupational intelligence, further intelligence at a more granular level may be available from individual Sector Skills Councils or LSIS.

1.2 Defining the sector

The sectoral scope of all the 15 SSAs is defined in terms of two-digit Standard Industrial Classification (SIC) codes., A single SIC code (SIC 85 – Education) is used to cover all aspects of the education sector from pre-primary, primary and secondary schools to areas of post-16 education that previously fell within the remit of the Sector Skills Council (SSC) of lifelong learning[4].

This SSA therefore covers:

- Pre-primary education;
- Primary education;
- General secondary education;

[4] Please note, libraries, archives, records and information management services that were a part of lifelong learning are not included in this SSA.

- Technical and vocational secondary education (includes further education colleges);
- Post-secondary, non-tertiary education (includes higher education delivered within further education);
- First degree level higher education;
- Post graduate level higher education;
- Sports and recreation education;
- Cultural education;
- Driving school activities;
- Educational support services;
- Other education not elsewhere classified.

The final grouping is a broad category which covers the following elements of the education, lifelong learning and skills workforce which do not have a SIC code, including:

- Community learning and development (CLD) which has slightly different definitions across the four nations, but covers adult and community learning, community development, community education, development education, employability initiatives, working with parents and youth work. These may be delivered in a formal, informal or non-formal manner.
- Work based learning (WBL) which covers public, private and third sector trainers providing any and all work-related learning. These trainers are often classified within the other sectors specific to their vocational speciality.
- Career guidance, which includes all national and regional publicly funded agencies providing career guidance along with career guidance provision in each university and college across the UK. There are also many private sector providers of career development services.

For a more detailed definition of the SIC codes, please see Table A.2 in Annex 3.

The education sector (defined as the workforce which delivers or supports the delivery of all learning to all age groups) encompasses elements of other sector's workforces as well. This includes training staff from specific disciplines (such as driving school instructors or sports instructors) and staff who may also be in the non-residential social work or care workforce (such as child minders and play-workers). The skills issues that are identified in this report are likely to affect anyone whose role involves the delivery of learning of any sort to any age group.

Responsibility for developing National Occupational Standards (NOS) and qualifications for the education sector rests with a number of organisations. Development of NOS and qualifications for school teachers are the responsibility of the Training and Development Agency for Schools (TDA). The Learning and Skills Improvement Service (LSIS) is responsible for NOS and qualifications for further education in the UK, while the Higher Education Academy oversees UK wide standards and qualifications for higher education. For staff who have specific disciplines or who may be employed in the social work or care workforce, responsibility for the NOS and qualifications rests with their respective Sector Skills Councils, including Skills for Care and Development (child minders); Skills for Logistics (driving instructors) and SkillsActive (sports and recreation instructors and play workers).

The education sector in Northern Ireland is primarily the responsibility of the Department of Education. Quality and improvement within Further Education and the Work Based Learning sector lies with the Department for Employment & Learning. The main areas of responsibility within the Department of Education are in pre-school, primary, post-primary and special education; the youth service; the promotion of community relations within and between schools; and teacher education and salaries. Its primary statutory duty is to promote the education of the people of Northern Ireland and to ensure the effective implementation of education policy.

In Scotland, quality in the education sector is now the responsibility of Education Scotland, the Scottish Government's new integrated national development and improvement agency for education, charged with providing support and challenge to Scotland's education system, right through from the early years to adult learning. Scotland's Colleges performs a similar role to support, represent and promote the Scottish college sector.

Qualifications are the remit of the various awarding bodies in Scotland, most of which are represented on the Federation of Awarding Bodies Scotland Advisory Group. The Scottish Qualifications Authority (SQA) has a largely dominant position within all sectors of qualifications within Scotland. SQA's qualifications are not protected by statute, and other awarding organisations also offer qualifications relevant to the sector, such as City and Guilds' Chartered Teacher Programme.

Education in Wales is primarily the responsibility of the Welsh Government department of Education and Skills. The Welsh Government is currently consulting on proposals to widen the current requirement for teachers to register with a professional body to cover more of the education sector, including further education, work-based learning and teaching assistants. The consultation documents also includes other members within the education sector who contribute to the development of children and young people such as youth workers and other support staff.

1.3 Report Authors

This report has been compiled by the Qualifications and Skills (Q&S) team within the Learning and Skills Improvement Service (LSIS).

The other 14 SSAs are being undertaken by Sector Skills Councils (SSCs). However, due to the lack of a specific SSC for the education sector, LSIS have undertaken the SSA for the education sector. LSIS are the UK wide standard setting organisation for further education, community learning and development, youth work, work based learning, career guidance and libraries, archives, records management and information services, with the Q&S team undertaking activities relating to standards and qualifications and research in the aforementioned sectors.

The Q&S team currently produce sector specific research and data collection in areas of standards and qualifications and workforce profiling. More details about this team's experience, specialisms and current projects can be viewed at http://www.excellencegateway.org.uk/page.aspx?o=320141.

1.4 Summary of methodology

This document has been produced based on the core methodology specified in the UKCES SSA specification. It combines top-down data with bottom-up intelligence to provide a rich assessment of sectoral skills priorities that is consistent and comparable with assessments produced for other sectors of the economy.

The main types of information that have been drawn on in the preparation of this report are:

- Economy-wide quantitative data from core labour market information sources (such as the Labour Force Survey (LFS) and the UK Employer Skills Survey (ESS));
- Sectoral, sub-sectoral and occupational specific quantitative data generated by SSCs / sector bodies and others (including Government departments and agencies, academics and professional associations);
- A literature review of documents from sector bodies, Government departments, professional and academic organisations.

To ensure consistency and comparability across all 15 SSA reports, data from core labour market information sources was centrally collected, processed and formatted. It was then distributed by the UK Commission to Sector Skills Councils / sector bodies for inclusion within the reports. This data was quality assured by contractors, the UK Commission and by Sector Skills Councils.

To meet consistency requirements, sub-sector analysis of data from core sources has primarily been undertaken at a 2-digit Standard Industrial Classification (SIC) code level (or by combining 2-digit SIC code where appropriate). For this reason, the sectoral focus of this report is on the education sector as a whole. The SSA specification requires that, for the purpose of consistency, sub-sectoral analysis is undertaken at a two-digit SIC code level only. Since the education sector does not comprise any two-digit SIC at a sub-sectoral level, the analysis will focus at the broadest level of education only. However, key and relevant issues and differences between the sub sectors of education, especially within Devolved Administrations, are highlighted where appropriate.

Data from core sources has been supplemented within the report with data from sector specific sources, where appropriate. Data is used to highlight similarities and differences between the education sector and the wider 'whole economy', keeping in mind specific national perspectives. Where possible, sub sectors within the education sector are commented upon.

The report is also informed by an extensive literature and website review of policy documents; Government agendas; academic and professional reports and sector research.

The report synthesises and contextualises information from the sources identified above and, by undertaking a rigorous analysis of it, turns the information into intelligence.

Further information

Further methodological information is provided within the Technical Annex at the end of the report which includes descriptions of the main quantitative sources used within the report. The Bibliography at the end of the report provides a detailed list of all the secondary sources of information that were undertaken as part of an extensive literature review.

Note on qualification levels: This report uses research findings from UK-wide data sources, such as the Labour Force Survey, which use Scottish or National Vocational Qualifications (S/NVQ) Levels to categorise qualification level. International sources, such as the Organisation for Economic Co-operation and Development, use Qualification and Credit Framework (QCF) Levels. In Scotland, qualifications levels are defined using the Scottish Credit and Qualification Framework (SCQF). The levels are defined in the text when comparison is required. For a detailed comparison of the qualifications levels between the different frameworks mentioned above, please see http://www.qaa.ac.uk/Publications/InformationAndGuidance/Documents/Quals_cross_boundaries.pdf.

2 Current performance of sector

Chapter Summary

- Expenditure in the sector equates to investment in the human resources of the UK which fuels the country's competitiveness in the international arena. For this reason, there is little assessment of the actual economic performance of the education sector based on private sector definitions.
- UK expenditure on education in 2010/11 was six per cent of Gross Domestic Product (GDP), which is one of the methods of determining economic significance of the sector, having grown from five per cent in 2002/03.
- The education sector also contributes six per cent of UK Gross Value Added (GVA). GVA per employee job within the education sector ranks alongside Health and Care, the two other (largely public funded) service sectors..
- Based on OECD data (2008), the recorded annual public expenditure on educational institutions per student was $6,789 in the UK, compared to the OECD average of $7,069.
- Employment in the sector has grown by 34 per cent overall between 2002 and 2010 to three million, 11 per cent of total UK employment. This is a higher proportion than nearly any other European Union country.
- The education sector accounts for three per cent of establishments across the economy, with 21 per cent of those establishments employing 50 – 250 people, compared to four per cent across the whole economy.
- The provision of education by UK institutions now extends outside the UK, with 196,640 students studying entirely overseas for qualifications at HEIs during 2007/08, and 66,500 students from overseas studying in colleges in England alone.

2.1 Economic performance

The education sector makes a significant contribution to the sustainable long-term economic growth of the UK by helping to develop the supply of skills and knowledge to the labour market (UKCES 2012b). It is also a significant sector in its own right, contributing six per cent to Gross Domestic Product (GDP) and employing 11 per cent of the nations workforce.

Gross domestic product (GDP)

Public spending on education and training can be expressed as a proportion of economic output measured by GDP. Following the generally upward trend in the late 1980s, spending on education in the UK fell as a proportion of GDP for most of the 1990s before increasing again in the 2000s. The level increased from 5.0 per cent of GDP in 2002/03 to 6.3 per cent in 2009/10, the highest level in the period covered. Planned UK expenditure on education and training in 2010/11 was slightly lower at 6.0 per cent of GDP (ONS, 2011a).

One method of measuring the sector's performance internationally is by comparing spending levels and GDP with other countries. For example, in 2008, the recorded annual public expenditure on educational institutions per student was $6,789 in the UK, compared to the OECD average of $7,069. There are considerable differences between public expenditure on education as a percentage of GDP across the OECD nations. In 2008 in the UK it was 5.7 per cent of GDP, just below the OECD average of 5.9 per cent. On this measure education expenditure was highest in Iceland at 7.9 per cent, followed by Korea at 7.6 per cent and Israel and Norway at 7.3 per cent. The Czech and Slovak Republics had the lowest proportions of expenditure at 4.5 per cent and 4.0 per cent, respectively (OECD, 2011).

A full breakdown of expenditure on education (as a percentage of GDP) is shown in Table A.1 in Annex 2, which includes a ranking of all OECD nations.

Gross value added (GVA)

Another measure of economic performance is Gross Value Added (GVA). Although GVA does not measure the performance of the education sector specifically, it does provide an indication of the impact of the sector on the wider economy. GVA per head is a standard measure of regional economic success and prosperity and is expressed as an index calculated on the UK value of 100. National variations of GVA since 2008, based on UKCES data, are shown in Table 2.1 below:

Table 2.1: National variations in GVA index (2008 - 2010)

Nation (UK Index 100)	2008	2009	2010
England	102	102.2	102.4
Northern Ireland	81	79.1	76.4
Scotland	96	98.8	98.7
Wales	86	74.3	74.0

Source: Office for National Statistics, Regional Gross Value Added (Income Approach), 2009, 2010, 2011

GVA is also measured in current basic prices and the following tables show the GVA for a number of sectors by nation. The education sector represents six per cent of the total GVA of the UK ahead of several sectors, including hotels and restaurants and public administration.

The education sector is proportionally larger in Northern Ireland, Scotland and Wales than in England. Table 2.2 shows The data also show that 15.7 per cent of the UK total GVA for the education sector comes from Northern Ireland, Scotland and Wales, whereas for all sectors the equivalent figure is 14.2 per cent.

Table 2.2: GVA by nation (£m in current basic prices) (2008)

	UK	England	Scotland	Wales	Northern Ireland
	£m	£m	£m	£m	£m
Agriculture, hunting, forestry & fishing	9,715	7,982	1,180	145	407
Mining and quarrying of energy producing materials	2,661	1,298	1,277	60	27
Other mining and quarrying	2,365	1,777	282	134	173
Manufacturing	150,298	124,860	13,555	7,734	4,149
Electricity, gas and water supply	21,342	17,414	2,653	729	545
Construction	80,756	68,247	7,328	2,924	2,256
Wholesale and retail trade (including motor trade)	147,158	127,900	10,441	5,166	3,651
Hotels and restaurants	36,428	30,938	3,297	1,424	770
Transport, storage and communication	91,347	80,262	7,065	2,529	1,491
Financial intermediation	116,801	104,574	8,501	2,305	1,422
Real estate, renting and business activities	303,179	268,770	20,829	8,380	5,200
Public administration and defence	63,281	51,275	6,148	3,275	2,583
Education	76,493	64,478	6,322	3,502	2,191
Health and social work	93,775	76,336	9,851	4,788	2,800
Other services	65,563	57,177	4,804	2,420	1,162
All sectors	1,261,162	1,083,288	103,533	45,515	28,827

Source: Regional Accounts (ONS, 2010a)

NB: Data is not organised by SSA sectors. This is because data are not available at a 2-digit (division) level. Therefore, the list of sectors presented in this table are those used in Regional accounts. The education sector is not affected

There is some variation in the proportion of regional economies in England devoted to education. Education forms a larger element of the smaller regional economies, for example in the North East the proportion of total GVA devoted to education is 7.7 per cent, compared with only 4.8 per cent in London (Table 2.3).

Table 2.3: GVA by English region (£m in current basic prices) (2008)

	North East	North West	Yorkshire and The Humber	East Midlands	West Midlands	East	London	South East	South West
	£m	£m	£m	£m	£m	£m	£m	£m	£m
Agriculture, hunting, forestry & fishing	303	777	966	996	915	1,387	86	1,168	1,383
Mining and quarrying of energy producing materials	81	90	140	130	82	164	280	270	61
Other mining and quarrying	178	142	156	379	84	132	60	202	442
Manufacturing	6,706	19,336	14,332	13,299	13,974	13,518	13,651	18,084	11,961
Electricity, gas and water supply	979	1,622	1,511	1,952	1,920	1,948	1,823	3,061	2,598
Construction	2,990	8,236	6,266	5,835	6,588	8,946	10,262	12,482	6,643
Wholesale and retail trade (including motor trade)	4,424	14,906	11,348	10,850	12,313	15,933	22,016	24,588	11,522
Hotels and restaurants	1,123	3,527	2,383	2,012	2,905	3,041	7,717	5,063	3,166
Transport, storage and communication	2,668	8,846	6,518	5,866	6,596	9,871	17,509	16,218	6,170
Financial intermediation	2,195	8,356	6,641	3,702	5,260	9,352	48,190	13,828	7,050
Real estate, renting and business activities	7,842	26,072	17,146	16,325	20,405	29,769	74,039	55,440	21,733
Public administration and defence	2,623	5,843	4,753	3,919	4,376	5,634	7,642	10,218	6,267
Education	3,156	8,008	6,302	4,877	6,541	6,725	11,972	10,861	6,036
Health and social work	4,004	10,080	7,552	5,894	7,215	8,201	13,719	11,975	7,696
Other services	1,715	5,174	3,459	3,314	4,583	5,577	18,190	10,551	4,615
All sectors	40,987	121,015	89,473	79,350	93,757	120,198	247,156	194,009	97,343

Source: Regional Accounts (ONS, 2010a)
NB: Data are not organised by SSA sectors. This is because data are not available at a 2-digit (division) level. Therefore, the list of sectors presented in this table are those used in Regional accounts. The education sector is not affected.

Table 2.4 below shows that the education sector showed consistent and strong growth in GVA in the ten years preceding 2008, faster than the economy as a whole. Education GVA rose by 70 per cent over the period, while the all-sector GVA rose by 56 per cent.

Table 2.4: UK GVA by Sector (£m in current basic prices) (1999-2008)

	1999 £m	2000 £m	2001 £m	2002 £m	2003 £m	2004 £m	2005 £m	2006 £m	2007 £m	2008 £m
Agriculture, hunting, forestry & fishing	9,022	8,532	8,333	9,007	9,807	10,670	7,530	7,792	8,632	9,715
Mining and quarrying of energy producing materials	2,059	1,998	1,874	1,661	1,456	1,643	2,055	2,297	1,861	2,661
Other mining and quarrying	1,700	1,784	1,750	1,469	1,519	1,848	2,115	2,145	2,291	2,365
Manufacturing	151,157	150,009	149,223	146,308	144,845	145,689	148,110	151,455	154,726	150,298
Electricity, gas and water supply	15,703	15,798	15,660	16,052	16,405	16,106	16,685	20,279	21,884	21,342
Construction	42,236	45,626	50,526	54,684	59,522	66,029	69,868	74,619	80,675	80,756
Wholesale and retail trade (including motor trade)	99,509	103,410	110,249	113,777	120,520	127,367	129,810	135,366	141,735	147,158
Hotels and restaurants	24,146	25,605	26,928	28,639	30,120	31,870	32,902	34,594	35,962	36,428
Transport, storage and communication	64,961	69,201	70,502	73,064	76,587	79,020	80,889	83,655	88,280	91,347
Financial intermediation	48,545	44,989	48,202	63,367	71,530	75,117	79,553	90,807	103,731	116,801
Real estate, renting and business activities	173,329	188,361	204,041	214,849	232,204	248,677	260,116	276,108	296,955	303,179
Public administration and defence	39,891	41,645	43,855	46,212	49,768	53,779	58,229	60,385	61,503	63,281
Education	44,914	48,111	51,675	55,099	58,328	61,934	65,739	68,926	72,766	76,493
Health and social work	51,577	55,282	59,549	64,492	70,593	75,154	79,965	85,965	89,381	93,775
Other services	39,821	42,085	44,560	48,311	51,804	54,947	57,961	60,166	62,824	65,563
All sectors	808,570	842,436	886,927	936,991	995,008	1,049,850	1,091,527	1,154,559	1,223,206	1,261,162

Source: Regional Accounts (ONS, 2010a)
NB: Data is not organised by SSA sectors. This is because data is not available at a 2-digit (division) level. Therefore, the list of sectors presented in this table are those used in Regional accounts. The education sector is not affected.

The level of gross value added (GVA) per job is often used as a measure of productivity. Table 2.5, below, shows that the GVA per employee job within the education sector ranks slightly above Health and Care, two other (largely public funded) service sectors, but below Government services. These sectors generally fall below the all-sectors average for GVA. Across the economy as a whole, GVA per job is estimated to be £46,000, whereas in Education the estimated figure is £33,000.

Table 2.5: Estimated workplace gross value added (GVA) per employee job at current basic prices, 2009

SSA Sector	UK £000s	England £000s	Wales £000s	Scotland £000s	Northern Ireland £000s
Agriculture, forestry and fishing	35	41	11	21	25
Energy production and utilities	131	134	118	127	107
Manufacturing	52	51	49	61	53
Construction, building services, engineering and planning	65	66	54	60	56
Wholesale and retail trade	33	33	27	29	27
Transportation and storage	50	51	44	50	41
Hospitality, tourism and sport	23	23	21	22	20
Information and communication technologies	83	84	72	77	63
Creative media and entertainment	45	49	30	12	38
Financial, insurance & other professional services	86	89	57	69	63
Real estate and facilities management	85	86	103	67	98
Government services	39	40	33	35	40
Education	**33**	**33**	**32**	**36**	**33**
Health	27	27	26	25	23
Care	30	30	28	31	26
Not within scope	32	33	27	35	30
All sectors	46	47	38	43	38

Source: UK Commission estimates based on Regional Accounts; Annual Business Survey; Business Register and Employment Survey (BRES). See technical appendix for basis for estimates.

Notes: Figures for Real estate and facilities management sector include contribution from owner-occupier imputed rental. All figures exclude Extra-Regio element. Estimates will tend to overstate the level of GVA per job in those sectors with high levels of self-employment.

The *Working Futures* model (Wilson and Homenidou, 2011) provides historic estimates of productivity (output per job) by sector on a constant price (chained volume measure) basis. This analysis indicates that productivity in the Education sector fell by an average of 1.5 per cent per annum during the first half of the last decade (2000-2005) and continued to fall by an average of 1.4 per cent in the second half of the decade. This contrasts with the average rates for the wider UK economy of 1.4 per cent and 0.7 per cent for the respective periods.

The authors of *Working Futures* connect the fall in output per job in the sector to the fact that more teachers were employed during this period and class sizes declined, as well as more class room assistants, etc, being deployed. This brings into focus the issue of how best to measure productivity in this sector in a meaningful way.

Financial measures such as GVA do not take into consideration the benefits to the individual, the skills gained from the education sector and the contribution that individuals go on to make in society. Indeed it can be argued that the highly productive sectors, such as energy production and utilities, information and communication, and construction all rely completely on the skilled individuals who are the primary "product" of the education sector - be they school-leavers, apprentices, graduates or staff learning on the job.

Net Present Value (NPV)

Other measures exist to assess the economic impact of the education sector.. For example, recent research undertaken in England on behalf of the Department for Business, Innovation and Skills (BIS) has led to the development of a model to measure the economic value of the post-19 further education sector in terms of Net Present Value (NPV), which is "*calculated by estimating the discounted benefits from achieving a qualification over the working life of the learner, and subtracting the costs associated with undertaking the qualification" (BIS, 2011a). According to the report*". The NPV of qualifications started in 2008/09 is estimated to be £75bn over the years in which successful learners remain in the workforce. Apprenticeships deliver the highest NPV per qualification started (ibid.)

Expenditure on education in the devolved nations

In the years leading up to the current financial slow down, the education sector enjoyed a long period of increasing government expenditure on education with budgets in recent years doubling in real terms in some areas. In May 2010, however, the Coalition Government in Westminster spelled out the need for immediate action to cut the UK fiscal deficit, with impacts in the education sector across the four nations. Expenditure on education is therefore unlikely to rise as fast over the coming years as it has in the preceding decade.

In the 2010 Spending Review, the Government made it clear that education strategy in **England** is to ring fence spending on the mandatory schools sector, whilst expecting the further (FE) and higher education (HE) sectors to become more self-reliant. In real terms, this resulted in a 40 per cent reduction in the HE budget; a 25 per cent reduction in the FE resource budget from £4.3billion to £3.2billion by 2015, and a call to remove funding for all QCF or NVQ Level 2 and 3 qualifications for those over the age of 24. This is supported by increased funding to apprenticeships for adults, which is to rise by £250million per annum by 2014-15. The main focus of the Coalition Government is on raising standards in core compulsory education services with per pupil funding.

In **Northern Ireland**, the amount available in 2012-13 to schools' delegated budgets under the Local Management of Schools (LMS) arrangements is £1.09 million compared to £1.12 million in 2011-12. This represents, in real terms, a decrease in funding in 2012-13 of some £60 million when compared to 2011-12. Indicative allocation for schools in 2013-14 and 2014-15 is £1.09 million and £1.06 million, respectively (NI Executive, 2012).

The Budget 2011-15 outcome for education has produced major challenges as the level of funding available has decreased over the period 2011-12 to 2014-15. The shortfall between the Department's anticipated spending requirements and the Budget 2011-15 outcome is some £101 million; £177 million; £214 million; and £291 million, respectively, across the four year Budget period. A Savings Delivery Plan has been developed to address this gap in funding.

In **Scotland**, the overall investment in the Education and Lifelong Learning sector will increase slightly each year from £2.67 billion in 2012-13 to a planned budget of £2.96 billion for 2014-2015. Current levels of investment include £2 billion investment in colleges, universities and national training programmes for a wide range of client groups - young unemployed people and young people at risk of unemployment identified as a priority group in guidance to both the Scottish Funding Council and Skills Development Scotland; £31.6 million for Education Maintenance Allowances; £2.8 million to ensure delivery of 16+ Learning Choices as a universal offer to all young people (up to age 19) whenever they leave post-16 learning; £4 million to local authorities as part of a national roll out to deliver Activity Agreements on the back of the successful pilots; and £4 million to Inspiring Scotland's 14-19 Fund to support organisations delivering programmes for young people at risk of disengaging or who have disengaged from learning (Scottish Government, 2011).

The budget allocation to **Wales** was termed by Welsh Government as 'the most challenging since devolution.' In 2011-12 the total budget fell by £860 million from the budget set in the previous year. By 2014-15 the overall budget reduction will be £1.8 billion, in addition to the UK reductions to non-devolved budget lines. However, the 2012-13 budget underlines the Assembly Government's commitment to protecting schools and skills. The budget allocated to education and skills reflects the positive commitment to protect funding for schools and skills, and to protect those front line services which impact directly on children. The Assembly Government is committed to an investment in schools by 1 per cent above overall changes to the Welsh budget as a whole, resulting in an additional £27 million for schools in 2014-15 (Welsh Government, 2011a).

Employer profile (number of employers, size, start-ups and closures)

There are 67,125 educational establishments in the UK, accounting for three per cent of establishments across the whole economy. This does not vary greatly across four nations, as shown in Table 2.6 below.

Table 2.6: Number of establishments by sector and nation

	UK		England		Scotland		Wales		Northern Ireland	
	Number	%	Number	%	Number	%	Number	%	Number	%
Agriculture, forestry and fishing	144,895	6%	96,770	4%	17,625	9%	14,210	13%	16,290	19%
Energy production and utilities	13,290	1%	10,365	0%	1,495	1%	865	1%	565	1%
Manufacturing	144,115	6%	124,235	6%	9,395	5%	6,040	5%	4,445	5%
Construction, building services, engineering and planning	358,455	14%	303,300	14%	27,845	14%	14,280	13%	13,030	15%
Wholesale and retail trade	509,215	20%	431,330	20%	38,165	20%	23,000	20%	16,720	20%
Transportation and storage	83,825	3%	70,685	3%	6,370	3%	3,925	3%	2,845	3%
Hospitality, tourism and sport	223,370	9%	185,390	8%	20,515	11%	11,580	10%	5,885	7%
Information and communication technologies	131,065	5%	120,095	5%	6,610	3%	3,130	3%	1,230	1%
Creative media and entertainment	134,115	5%	121,900	6%	6,830	4%	3,640	3%	1,745	2%
Financial, insurance & other professional services	255,000	10%	228,725	10%	14,770	8%	7,160	6%	4,345	5%
Real estate and facilities management	149,325	6%	129,340	6%	10,610	5%	5,730	5%	3,645	4%
Government services	52,210	2%	40,870	2%	5,625	3%	2,985	3%	2,730	3%
Education	67,125	3%	55,020	3%	5,535	3%	3,250	3%	3,320	4%
Health	55,135	2%	46,925	2%	3,895	2%	2,515	2%	1,800	2%
Care	85,935	3%	70,460	3%	7,810	4%	4,710	4%	2,955	4%
All economy	2,574,230	100%	2,183,845	100%	193,305	100%	112,810	100%	84,270	100%

Source: Inter-departmental Business Register (IDBR), ONS

The distribution of education sector establishments across the regions of England follows the same pattern as all sectors (see Table 2.7 below), but the differences between the regions are less pronounced, similar to the pattern observed in Table 2.3.

Table 2.7: Number of establishments by sector and English region

	North East	North West	Yorkshire and The Humber	East Midlands	West Midlands	East of England	Greater London	South East	South West
Agriculture, forestry and fishing	3,870	11,305	11,205	10,770	11,880	12,170	935	11,785	22,850
Energy production and utilities	475	1,460	1,155	1,025	1,065	1,320	950	1,605	1,310
Manufacturing	4,650	15,950	13,100	12,915	15,930	15,235	13,350	20,025	13,080
Construction, building services, engineering and planning	10,845	35,520	26,035	24,975	28,750	41,485	42,520	58,785	34,385
Wholesale and retail trade	16,630	55,955	41,975	36,895	45,695	48,635	67,620	71,850	46,075
Transportation and storage	2,610	8,775	7,270	6,830	7,930	9,305	9,190	11,570	7,205
Hospitality, tourism and sport	8,395	23,095	17,600	14,030	16,700	19,290	32,470	31,885	21,925
Information and communication technologies	2,325	10,885	6,685	6,900	9,260	14,735	29,655	28,805	10,845
Creative media and entertainment	2,660	10,035	6,735	6,215	7,425	12,210	43,255	22,760	10,605
Financial, insurance & other professional services	5,440	23,475	14,900	14,950	18,300	23,850	61,915	45,495	20,400
Real estate and facilities management	4,185	14,800	10,225	9,390	11,925	15,045	27,475	22,980	13,315
Government services	1,815	4,810	4,260	4,270	4,040	4,215	6,495	6,340	4,625
Education	2,495	6,890	4,965	4,810	5,465	6,330	8,215	9,925	5,925
Health	2,010	6,255	4,265	3,830	4,570	4,850	8,045	8,280	4,820
Care	3,575	9,340	6,950	6,110	6,940	7,210	10,725	11,700	7,910
All economy	75,975	255,705	187,810	174,700	210,065	253,120	392,540	394,505	239,425

Source: Inter-departmental Business Register (IDBR), ONS

Table 2.8, below, shows the change in number of establishments in recent years. Although the number of education sector establishments has risen, the overall percentage change is hugely influenced by the large increase in numbers between 2007 and 2008, when the estimate more than doubles. This is likely that this increase is at least partially due to the change from SIC 2003 to SIC 2007, when extra establishments (not previously included in the education sector) were included for the first time. For more details see the Table A.2 in Annex 3.

Table 2.8: Number of establishments by sector 2006-2010 (UK)

	2006	2007	2008	2009	2010	% Change 2006-2010
Agriculture, forestry and fishing	146,485	158,080	163,715	146,620	144,895	-1%
Energy production and utilities	18,170	18,260	11,435	12,980	13,290	-27%
Manufacturing	165,675	163,525	167,335	151,165	144,115	-13%
Construction, building services engineering and planning	230,610	240,535	258,055	374,320	358,455	55%
Wholesale and retail trade	533,105	532,905	532,060	520,070	509,215	-4%
Transportation and storage	70,425	70,750	71,665	86,680	83,825	19%
Hospitality, tourism and sport	219,770	222,920	227,430	229,690	223,370	2%
Information and communication technologies	136,395	140,505	144,080	134,805	131,065	-4%
Creative media and entertainment	125,100	130,185	131,180	132,225	134,115	7%
Financial, insurance & other professional services	271,310	283,920	287,015	256,915	255,000	-6%
Real estate and facilities management	180,305	191,195	201,915	155,855	149,325	-17%
Government services	159,395	164,690	54,875	52,060	52,210	-67%
Education	28,935	28,880	66,055	66,725	67,125	132%
Health	25,860	25,810	53,300	53,900	55,135	113%
Care	40,150	40,075	82,755	83,675	85,935	114%
All economy	2,533,855	2,600,065	2,643,215	2,634,790	2,574,230	2%

Source: Inter-departmental Business Register (IDBR), ONS
Note: Data for 2006-2008 is based on SIC 2003 whereas data beyond this use SIC 2007. Some of the data for 2006-2008 is based on estimates. For full details please see technical appendix. Please note that data from 2006-2008 are based on SIC 2003 whereas data beyond this use SIC 2007. The raw data was not available in detail beyond the 2-digit level. This made it impossible to accurately map SIC2003 to SSA sectors based on SIC2007. This means that some figures for SSA sectors from 2006-2008 are estimates.

Table 2.9 shows the number of business start-ups and closures in 2009. The number of education establishments that opened and closed in a year are modest in comparison to other sectors, showing that the education sector has comparatively slower “churn” or turnover. Overall a slightly larger number of establishments have started up than have closed, in contrast to the overall picture for the whole economy, again indicating that there has been a slight increase in the overall number of workplaces.

Table 2.9: Business (enterprise) start-ups and closures 2009 (UK)

Sector	Start-ups	Closures	Net change
	Number	Number	Number
Agriculture, forestry and fishing (SIC 75 only)	285	190	95
Energy production and utilities	1,270	408	862
Manufacturing	10,570	15,445	-4,875
Construction, building services engineering and planning	35,835	51,040	-15,205
Wholesale and retail trade	38,760	47,090	-8,330
Transportation and storage	6,980	10,805	-3,825
Hospitality, tourism and sport	23,345	28,030	-4,685
Information and communication technologies	16,120	19,935	-3,815
Creative media and entertainment	24,290	20,805	3,485
Financial, insurance & other professional services	25,640	25,765	-125
Real estate and facilities management	12,805	16,275	-3,470
Government services (SIC 94 only)	1,010	1,260	-250
Education	3,485	3,160	325
Health	4,135	3,110	1,025
Care	2,745	2,165	580
Other sectors	28,750	32,135	-3,385
All economy	236,025	277,618	-41,593

Source: Business Demography - Enterprise Births, Deaths and Survivals 2009 (ONS)

Workplaces in the education sector are larger (in terms of employee numbers) than average. Two-thirds of education establishments (66 per cent) have at least 10 employees, compared with 26 per cent of all establishments (Table 2.10). Some 21 per cent of education establishments have 50-250 employees, a greater proportion than any other sector. There are few very small education establishments and the sector has the lowest proportion of establishments with only 2-4 employees.

Table 2.10: Size of establishments by sector (UK)

	Number of employees						
	2-4	5-9	10-24	25-49	50-250	251+	All
	%	%	%	%	%	%	Number
Agriculture, forestry and fishing	80	14	5	1	0	0	97,910
Energy production and utilities	36	22	20	10	10	2	10,265
Manufacturing	43	22	18	8	8	1	108,050
Construction	67	18	10	3	2	0	211,710
Wholesale and retail trade	49	27	16	4	3	1	385,760
Transportation and storage	48	20	16	7	8	1	52,620
Hospitality, tourism and sport	42	30	19	6	3	0	198,630
Information and communication technologies	68	15	10	4	3	1	56,710
Creative media and entertainment	66	17	10	4	3	0	62,305
Financial, insurance & other professional services	57	21	14	4	3	1	134,900
Real estate and facilities management	62	21	11	3	3	1	95,270
Government services	34	21	20	10	12	4	41,505
Education	20	14	20	23	21	2	56,740
Health	31	24	25	10	7	2	47,570
Care	26	24	28	13	8	0	75,725
All economy	52	22	15	6	4	1	1,742,370

Source: Inter-departmental Business Register (IDBR), ONS

Education establishments tend to be smaller in Scotland, Wales and Northern Ireland than in England. Table 2.11 shows that in the smaller devolved nations, there is a greater proportion of establishments in the 10-24 employee size band compared to England, and a smaller proportion of establishments with 50 or more employees. This difference between England and the devolved nations is not as pronounced across the whole economy (see Tables 2.12 and 2.13).

Table 2.11: Size of establishments within the education sector by nation

	England		Scotland		Wales		Northern Ireland	
Number of Employees	Number	%	Number	%	Number	%	Number	%
2-4	9,565	21	860	18	485	17	605	19
5-9	6,145	13	870	18	390	13	735	23
10-24	8,355	18	1,350	28	795	27	970	31
25-49	10,610	23	995	20	705	24	505	16
50-250	10,320	23	710	15	495	17	315	10
251+	840	2	75	2	40	1	5	0
Total	45,835	100	4,860	100	2,910	100	3,135	100

Source: Inter-departmental Business Register (IDBR), ONS

Table 2.12: Size of establishments (UK) (Whole economy)

Number of employees	UK	England	Scotland	Wales	Northern Ireland
5-9	388,990	323,815	33,775	18,005	13,395
10-24	259,470	215,295	23,090	11,910	9,175
25-49	97,820	82,055	8,330	4,170	3,265
50-99	49,505	41,835	4,140	2,055	1,475
100-199	21,905	18,505	1,905	925	570
200-250	4,135	3,525	360	150	100
251-499	7,605	6,440	655	330	180
500+	4,115	3,475	375	175	90
Total	1,742,370	1,462,360	139,190	82,395	58,425

Source: Inter-departmental Business Register (IDBR), ONS

Table 2.13: Size of establishments by nation (Whole economy)

	England		Scotland		Wales		Northern Ireland	
Number of employees	Number	%	Number	%	Number	%	Number	%
2-4	767,415	52	66,560	48	44,675	54	30,175	52
5-9	323,815	22	33,775	24	18,005	22	13,395	23
10-24	215,295	15	23,090	17	11,910	14	9,175	16
25-49	82,055	6	8,330	6	4,170	5	3,265	6
50-250	63,865	4	6,405	5	3,130	4	2,145	4
251+	9,915	1	1,030	1	505	1	270	0
Total	1,462,360	100	139,190	100	82,395	100	58,425	100

Source: Inter-departmental Business Register (IDBR), ONS

Extent to which sector employers compete internationally

The provision of education by UK institutions now extends outside the UK and data are becoming available on the number of students studying entirely outside the UK for qualifications awarded by UK higher education institutions. Data from HESA (HESA, 2009) show that during 2007/08, 196,640 students were studying entirely overseas for qualifications at higher education level from 112 UK higher education institutions. Distance learning courses accounted for over half of this 'offshore provision' of UK higher education (equivalent to 100,360 students) while 7,090 students were studying at overseas campuses which were directly run by UK higher education institutions. The majority of the remaining 89,190 students were studying for awards offered by UK institutions in collaboration with overseas partners.

Students in four countries, Hong Kong, Singapore, Malaysia and China, accounted for 37 per cent of this 'offshore' UK education provision and overall Asia accounted for 45 per cent. Almost a quarter (23 per cent) of offshore students were studying in other European Union countries.

The UK's further education colleges also compete on the international stage. There are over 66,500 students from overseas studying in colleges in England, contributing £42 million to college budgets from fees alone (157 Group, 2010). There are almost 6,000 non EU/UK students in Scotland's colleges from 117 countries (Scotland's Colleges, 2011). International students are also important in Northern Ireland and Wales (for example, Cardiff College International alone has 300 international students who come from over 50 different countries). Colleges are increasingly active outside the UK, delivering UK qualifications overseas, often in partnership with the British Council and the governments and educational institutions of the countries concerned. They provide research and consultancy skills related to educational and economic development abroad.

It is important that international provision is regularly monitored in order to ensure that the workforce have the relevant subject knowledge and cultural awareness and language skills to support students studying outside the UK and increase international delivery.

2.2 Employment

Level and distribution of employment

According to the latest figures from the Office for National Statistics (ONS), the UK workforce across all sectors was just over 29.1 million people between August and October 2011 (ONS, 2011b). During this period, the employment rate for the working age population (aged between 16 and 64) was 70.3 per cent. Within the public sector, employment has declined from 6.35 million in August to October 2009 to 5.99 million in August to October 2011, with 27 per cent of public sector employees now employed in the education sector. Public sector employment in the education has decreased to 1.6 million, a fall of 62,000 people since October 2009 (ibid).

Almost three million people are employed in the education sector as a whole, 11 per cent of the UK workforce (Table 2.14). Only the wholesale and retail trade sector employs more people across the UK. This is the also case in each of the nations except Northern Ireland, where the manufacturing, government services and the wholesale and retail trade sectors each employ more people than education.

Table 2.14: Total employment by sector and nation ('000s)

	UK		England		Scotland		Wales		Northern Ireland	
	000s	%	000s	%	000s	%	000s	%	000s	%
Agriculture, forestry and fishing	406	1	296	1	51	2	31	2	27	4
Energy production and utilities	473	2	346	1	88	4	25	2	14	2
Manufacturing	2,970	10	2,542	10	199	8	138	11	91	12
Construction, building services, engineering and planning	2,697	9	2,270	9	244	10	113	9	71	9
Wholesale and retail trade	4,140	14	3,471	14	353	14	205	16	112	15
Transportation and storage	1,448	5	1,252	5	117	5	46	3	33	4
Hospitality, tourism and sport	2,046	7	1,704	7	198	8	100	8	44	6
Information and communication technologies	761	3	675	3	56	2	18	1	13	2
Creative media and entertainment	987	3	876	4	65	3	32	2	14	2
Financial, insurance & other professional services	2,001	7	1,768	7	138	6	53	4	41	5
Real estate and facilities management	978	3	848	3	75	3	38	3	18	2
Government services	2,209	8	1,835	8	173	7	111	8	89	12
Education	3,088	11	2,625	11	235	10	154	12	75	10
Health	2,087	7	1,713	7	199	8	111	8	64	8
Care	1,729	6	1,409	6	183	7	97	7	40	5
Whole Economy	28,855	100	24,331	100	2,446	100	1,312	100	766	100
Unweighted bases	*194.448*		*161.501*		*17.022*		*8.693*		*7.232*	

Source: Labour Force Survey 2010, ONS
** Sample size too small for reliable estimate.*

Table 2.15, below, shows that the proportion of all in employment in the education sector does not vary as much across the nine English regions as across the four nations. The proportion of the workforce employed within the education sector ranges between 10 and 11 per cent.

Table 2.15: Total employment by sector and English region, % share within region

	London	South East	East of England	South West	West Midlands	East Midlands	Yorkshire and the Humber	North West	North East
Agriculture, forestry and fishing	0	1	1	3	2	2	1	1	1
Energy production and utilities	1	2	1	2	2	2	1	2	2
Manufacturing	4	9	11	11	14	15	12	12	11
Construction, building services, engineering and planning	9	10	10	9	9	9	9	9	9
Wholesale and retail trade	12	14	14	14	14	16	16	16	15
Transportation and storage	5	5	5	4	5	6	5	5	4
Hospitality, tourism and sport	8	7	6	7	7	7	7	7	7
Information and communication technologies	3	4	3	3	2	2	2	2	2
Creative media and entertainment	8	4	3	3	2	2	2	2	2
Financial, insurance & other professional services	13	8	8	6	6	5	6	6	4
Real estate and facilities management	5	4	3	4	3	3	3	4	3
Government services	8	8	7	7	7	7	8	8	9
Education	10	11	11	11	11	11	11	10	11
Health	6	7	6	7	7	7	8	8	8
Care	5	5	5	6	6	5	6	6	8
Whole Economy	100	100	100	100	100	100	100	100	100
Weighted base	*3,726*	*4,147*	*2,779*	*2,515*	*2,413*	*2,099*	*2,382*	*3,126*	*1,145*
Unweighted bases	*18.925*	*26.614*	*18.998*	*17.015*	*16.534*	*15.044*	*17.467*	*22.418*	*8.486*

Source: Labour Force Survey 2010, ONS
** Sample size too small for reliable estimate.*

Across Europe, the education sector holds a smaller employment share. The European Union average of the education sector employment share is seven per cent. The 11 per cent employment share represented by the education sector within the UK is similar to the education sector employment share in Lithuania and Sweden. These three countries are second only to Iceland, where the education sector has a 12 per cent share of employment (According to Eurostat, 2008).

Changes in employment patterns

As shown in Table 2.16, the Employment in the education sector has grown overall by 34 per cent in the period 2002 to 2010. Only the care sector has grown at a faster rate., The sector grew steadily between 2002 and 2004 (from 2.3 million to 2.5 million individuals). The growth levelled off slightly between 2005 and 2008 (only increasing to 2.7 million) before a sharp increase since 2008 (to over 3 million). While employment in the sector rose between 2008 and 2010, overall employment levels fell by back down to almost 2005 levels of employment.

Table 2.16: Total employment by sector 2002-2010 (UK)

	2002	2003	2004	2005	2006	2007	2008	2009	2010
	000s	000s	000s	000s	000s	000s	000s	000s	000s
Agriculture, forestry and fishing	394	389	396	421	417	422	448	364	406
Energy production and utilities	434	389	407	422	436	479	486	483	473
Manufacturing	4,153	3,870	3,687	3,615	3,562	3,575	3,368	2,915	2,970
Construction, building services, engineering and planning	2,223	2,333	2,434	2,500	2,560	2,615	2,639	2,875	2,697
Wholesale and retail trade	4,368	4,545	4,536	4,489	4,404	4,349	4,446	4,143	4,140
Transportation and storage	1,486	1,485	1,461	1,511	1,501	1,490	1,517	1,489	1,448
Hospitality, tourism and sport	1,718	1,720	1,730	1,714	1,773	1,807	1,799	1,991	2,046
Information and communication technologies	813	813	839	832	835	851	871	784	761
Creative media and entertainment	1,102	1,139	1,108	1,111	1,138	1,142	1,156	975	987
Financial, insurance & other professional services	1,671	1,662	1,623	1,677	1,696	1,744	1,736	2,038	2,001
Real estate and facilities management	898	869	924	946	984	1,036	1,028	948	978
Government services	2,115	2,166	2,194	2,251	2,282	2,285	2,323	2,265	2,209
Education	2,295	2,414	2,543	2,580	2,642	2,636	2,664	2,939	3,088
Health	1,811	1,881	1,980	2,048	2,079	2,033	2,118	2,038	2,087
Care	1,288	1,338	1,408	1,456	1,479	1,446	1,506	1,721	1,729
Whole Economy	27,908	28,172	28,456	28,740	28,987	29,164	29,382	28,811	28,855
Unweighted base	*247.273*	*238.005*	*230.951*	*227.794*	*222.196*	*221.046*	*217.000*	*203.221*	*194.448*

Source: Labour Force Survey 2010, ONS
** Sample size too small for reliable estimate.*

3 The workforce

Chapter Summary

- Most people in the sector are employed in either a professional, associate professionals or personal service (caring) role. Nearly half the workforce occupy a professional job including teachers in both the compulsory and post-16 education sectors, along with trainers and tutors who comprise most of the workforce in the education sector.
- Three of the top ten occupations (in terms of numbers in employment) across all sectors are part of the education sector, namely primary education teaching professionals; secondary education teaching professionals and educational assistants.
- Educational assistants has been one of the fastest growing occupations in the whole economy over the past decade, growing 91 per cent between 2001 and 2009 in England alone. However, future projections suggest that this rate of growth may not continue.
- The multi-tasking professional is very common in the sector, with teachers, lecturers, tutors and trainers regularly called upon to have managerial and administrative skills.
- The sector has a high proportion of part-time workers, only 60 per cent of the education workforce work full-time, compared to 73 per cent of the UK workforce.
- Only six per cent of the education sector workforce are self-employed, which is a smaller proportion than in all sectors of the economy (14 per cent). In addition, the sector has more staff on temporary contracts than any other sector.
- Majority of people in the education sector are female and white. The sector has an older workforce than the rest of the economy but the average age of the workforce is falling, with 44 per cent of employers in the sector actively recruiting young people in the UK. The employment of people from black and ethnic minority groups is below average.

3.1 The jobs people do

Occupation structure

Nearly half the people (1,465,000) employed in the education sector, work in professional occupations including teachers in both the compulsory and post-16 education sectors, lecturers in higher education tutors and workplace learning trainers. By contrast, in the economy as a whole, only 14 per cent of people are employed in professional roles (Table 3.1). There are also a relatively high proportion of personal service occupations, 21 per cent in education, compared with nine per cent overall, while the sector employs a relatively low proportion of managers (four per cent), although many professionals also have a managerial role.

Table 3.1: Employment by occupation in the education sector, 2010 (UK)

	Education		All economy	
	000s	%	000s	%
Managers and Senior Officials	122	4	4,455	15
Professional Occupations	1,465	47	4,028	14
Associate Professional and Technical	279	9	4,265	15
Administrative and Secretarial	225	7	3,181	11
Skilled Trades Occupations	43	1	3,061	11
Personal Service Occupations	650	21	2,544	9
Sales and Customer Service Occupations	7	0	2,146	7
Process, Plant and Machine Operatives	47	2	1,907	7
Elementary Occupations	251	8	3,257	11
All occupations	3,088	100	28,842	100
Unweighted base	*21.543*		*194.372*	

Source: Labour Force Survey 2010, ONS

The UK's occupational profile varies little across the four UK nations (Table 3.2). The occupational breakdown is not available for the education sector for the UK nations (data suppressed because of low numbers), although it is possible to say that the proportion of professional occupations is similarly high in each individual nation.

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Table 3.2: Employment by occupation across whole economy, 2010 (UK)

	UK		England		Scotland		Wales		Northern Ireland	
	000s	%	000s	%	000s	%	000s	%	000s	%
Managers and Senior Officials	4,455	15	3,866	16	331	14	173	13	85	11
Professional Occupations	4,028	14	3,454	14	299	12	176	13	100	13
Associate Professional and Technical	4,265	15	3,638	15	353	14	186	14	88	12
Administrative and Secretarial	3,181	11	2,670	11	270	11	135	10	106	14
Skilled Trades Occupations	3,061	11	2,502	10	285	12	149	11	125	16
Personal Service Occupations	2,544	9	2,123	9	226	9	131	10	64	8
Sales and Customer Service Occupations	2,146	7	1,772	7	209	9	111	8	54	7
Process, Plant and Machine Operatives	1,907	7	1,570	6	174	7	99	8	63	8
Elementary Occupations	3,257	11	2,724	11	300	12	153	12	81	11
All occupations	28,842	100	24,319	100	2,446	100	1,311	100	765	100
Unweighted base	*194.372*		*161.438*		*17.020*		*8.690*		*7.224*	

Source: Labour Force Survey 2010, ONS

Three of the top ten occupations (in terms of numbers in employment) across all sectors are within the education sector, namely primary education teaching professionals; secondary education teaching professionals and educational assistants (Table 3.3). This last occupational category has been one of the fastest growing in the whole economy over the past decade growing 91 per cent between 2001 and 2009 in England alone. (UKCES, 2010c) This trend reflects the introduction of new roles, such as ‘learning mentor’ and ‘higher level teaching assistant’ (HLTA) in England and Wales. “To a large extent, this increase has happened because funds have been made available through specific government funding streams across the UK” (Open University, 2012). However, future projections suggest that this rate of growth may not continue for this occupational group (please see Chapter 7, Table 7.2 for more details).

Table 3.3: Largest occupational groups across all sectors (whole economy), UK

Rank	Occupation	000s	% workforce
1	7111 Sales and retail assistants	1,233	4
2	6115 Care assistants and home carers	741	3
3	4150 General office assistants or clerks	656	2
4	9233 Cleaners, domestics	588	2
5	1132 Marketing and sales managers	532	2
6	4122 Accnts wages clerk, bookkeeper	523	2
7	6124 Educational assistants	513	2
8	3211 Nurses	509	2
9	2314 Secondary eductn teaching prfsnals	445	2
10	2315 Prim & nurs eductn teaching profs	432	1
11	1121 Prod. works & maintenance managers	414	1
12	9223 Kitchen and catering assistants	411	1
13	1163 Retail and wholesale managers	394	1
14	9149 Oth good hndlng & storage occup nec	382	1
15	2132 Software professionals	327	1
	Other occupations	20,742	72
	Total workforce	28,842	100
	Unweighted base (000s)	*194.372*	

Source: Labour Force Survey 2010, ONS

The 'multi-tasking multi-role professional' is very common in the education sector. Teachers, lecturers, tutors and trainers are regularly called upon to have managerial and administrative skills. Administrators in the education sector often need quite specialised interpersonal skills such as oral and written communications and team working and sometimes even pedagogical skills. It is also the case that for many learning providers in the education sector, specific skills are required from other sectors; often these are the skills that the learning provider is passing on, as in the case of vocational trainers and sports coaches.

Occupations requiring skills from other sectors

Over a third of individuals within sport and fitness occupations (43,910 across the UK) deliver services within the SIC 85 Education sector, almost as many as are found in SIC 93 "Sports activities and amusement and recreation activities". The largest occupations are:

- SOC code 3442, Sports coaches, instructors and officials (70 per cent of whom work in the education sector);
- SOC code 3443, Fitness instructors (20 per cent of whom work in the education sector); and
- SOC code 3449, Sports and fitness occupations n.e.c., outdoors instructors (10 per cent of whom work in the education).

Of these staff who work within the education sector, almost three quarters are within SIC 85.51, Sport and recreation education.

Sports coach UK estimate that there are 1,109,000 practising coaches in the UK[5]; 2.2 per cent of the adult population, but less than a quarter (24 per cent) receive payment for their coaching. This means that three quarters (approximately 841,716 coaches) are volunteers – 21 per cent are part-time paid coaches and just three per cent are working as a full-time paid coach.

[5] Sports Coaching in the UK, 2011. This is based on an omnibus survey of 10,363 UK residents conducted by BMRB between September and December 2008 The definition of practicing is that they must have coached at least 12 times in the last 12 months.

The Childcare and Early Years Providers survey (DFE, 2011) identifies 155,400 paid and volunteer play-workers working in approximately 17,300 after school clubs, holiday play schemes and adventure playgrounds in England. By contrast, the Labour Force Survey only identifies 56,800 workers in 6123 playgroup leaders and assistants, which may be explained by the fact that the title of this SOC (2000) mainly designates pre-primary provision. The new SOC (2010) description of play-worker may help to broaden this.

Without a dedicated SIC code, the Labour Force Survey currently aligns 25,800 play-workers to SIC 87 and 88 within the Skills for Care SSC footprint where they are the tenth largest occupation. A similar number of play-workers (24,700) (figures derived by SkillsActive, Labour Force Survey 2010, four quarter average) work within SIC 85 Education, but do not feature as a key occupation because of the large relative the size of the education sector.

Core jobs in the sector

Table 3.4 shows the occupations within the education sector ranked by number of individuals. The largest group is educational assistants, which accounts for the high proportion of personal service occupations in the sector. This category includes teaching assistants, classroom assistants and pupil support workers in schools, and learning support staff in further and higher education and, as has been mentioned previously, this has been one of the fastest growing occupations across the whole economy.

The next five positions in the ranking are the professional teachers and learning providers in each of the major learning delivery sub-sectors within the education sector. Collectively these teaching professionals account for 40 per cent of the workforce.

Table 3.4: Largest occupational groups within the education sector, UK

Rank	Occupation	000s	% workforce
1	6124 Educational assistants	479	16
2	2314 Secondary eductn teaching prfsnals	440	14
3	2315 Prim & nurs eductn teaching profs	426	14
4	2319 Teaching professionals n.e.c.	135	4
5	2311 Higher education teaching prfsnals	131	4
6	2312 Further education teaching prfsnals	124	4
7	9244 School mid-day assistants	83	3
8	6121 Nursery nurses	77	3
9	9223 Kitchen and catering assistants	71	2
10	9233 Cleaners, domestics	71	2
11	2316 Spec needs education teaching profs	65	2
12	4213 School secretaries	62	2
13	4150 General office assistants or clerks	61	2
14	3563 Vocatn & indust trainrs & instrctrs	58	2
15	2317 Registrs & sen admins ed establish	40	1
	Other occupations	765	25
	Total workforce	3,088	100
	Unweighted base (000s)	*21.543*	

Source: Labour Force Survey 2010, ONS

In addition to individuals employed within the education sector itself, learning providers are also found in other industries or sectors. According to Skills Third Sector, civil society is "*people acting together, independently of the state or the market, to make a positive difference to their lives/and or the lives of others*" (NCVO, 2010, pg 4). Civil society organisations share common characteristics such as having a formal legal identity, operating independently of the state, and seeking to maximise community benefit rather than stakeholder value. Universities and independent schools fall within the definition of civil society and account for around 175,000 and 148,000 paid staff, respectively. (NCVO, 2010).

In Scotland those working for community learning and development (CLD) may be employed through local authorities, through civil society or through voluntary sector organisations.

The definition of the voluntary sector is more restrictive than civil society and focuses upon a core of organisations which meet the general charities definition of "*private, non-profit making bodies serving persons*". According to figures from 2010 (Skills - Third Sector, 2011; NCVO 2010), there were 97,000 voluntary sector employees working in education. By occupation, the voluntary sector includes 40,000 teaching professionals, as well as 25,000 youth and community workers. Nearly one third (31 per cent) of volunteers participate in activities which relate to education, and a further 18 per cent participate in activities which relate to children and young people.

3.2 Working patterns

Full-time and part-time employment

Due to the nature of services provided across the sector and school calendars, the percentages of those in full-time and part-time employment within the education sector differ from the UK workforce generally. Table 3.5 shows that a greater proportion of the education sector workforce works part-time than the workforce across all sectors of the economy. Seventy-three per cent of the UK workforce are employed full-time, compared to only 61 per cent in the education sector.

The percentage of the education sector workforce who are employed full-time is slightly higher in the devolved nations as can be seen in Table 3.6, from 65 per cent in Scotland to 68 per cent in Wales.

Within the parts of the education sector, there are some variations in patterns of full-time and part-time employment. Primary and pre-primary education have an equal proportion of full-time and part-time staff, whereas between 30 and 40 per cent of the staff who work in secondary, further and higher education are part-time (ONS 2010b).

Table 3.5: Working hours by sector, 2010 (UK)

	Full-time 000s	Part-time 000s	Full-time %	Part-time %	Weighted base 000s	Unweighted base 000s
Agriculture, forestry and fishing	326	79	80	20	406	2.976
Energy production and utilities	435	38	92	8	473	3.244
Manufacturing	2,688	281	91	9	2,969	20.400
Construction, building services, enginee	2,435	260	90	10	2,695	17.917
Wholesale and retail trade	2,549	1,590	62	38	4,139	27.571
Transportation and storage	1,218	229	84	16	1,447	9.729
Hospitality, tourism and sport	1,127	920	55	45	2,046	13.183
Information and communication techno	682	79	90	10	761	4.875
Creative media and entertainment	737	249	75	25	986	6.186
Financial, insurance & other professiona	1,623	377	81	19	2,001	12.804
Real estate and facilities management	643	334	66	34	977	6.561
Government services	1,800	408	82	18	2,208	15.098
Education	1,872	1,215	61	39	3,087	21.537
Health	1,344	742	64	36	2,086	14.742
Care	1,056	672	61	39	1,728	12.001
All economy	21,083	7,760	73	27	28,843	194.363

Source: Labour Force Survey 2010, ONS

Table 3.6: Working hours by sector and nation, 2010 (%)

	England				Scotland				Wales				Northern Ireland			
	Full-time %	Part-time %	Weighted base 000s	Unweighted base 000s	Full-time %	Part-time %	Weighted base 000s	Unweighted base 000s	Full-time %	Part-time %	Weighted base 000s	Unweighted base 000s	Full-time %	Part-time %	Weighted base 000s	Unweighted base 000s
Agriculture, forestry and fishing	79	21	296	2.112	83	17	51	0.385	85	*	31	0.198	88	*	27	0.281
Energy production and utilities	92	8	346	2.336	91	9	88	0.620	96	*	25	0.157	92	*	14	0.131
Manufacturing	90	10	2,541	17.233	92	8	199	1.431	93	7	138	0.905	93	*	91	0.831
Construction, building services, engineering and planning	90	10	2,268	14.834	93	7	244	1.702	93	7	112	0.717	93	*	71	0.664
Wholesale and retail trade	62	38	3,469	22.822	58	42	352	2.369	57	43	205	1.325	63	37	112	1.055
Transportation and storage	84	16	1,251	8.292	83	17	117	0.822	80	20	46	0.308	87	*	33	0.307
Hospitality, tourism and sport	55	45	1,704	10.849	52	48	198	1.295	51	49	100	0.636	62	38	44	0.403
Information and communication technologies	90	10	675	4.269	89	11	56	0.377	88	*	18	0.114	88	*	13	0.115
Creative media and entertainment	75	25	875	5.406	68	32	64	0.436	70	30	32	0.214	72	*	14	0.130
Financial, insurance & other professional services	82	18	1,768	11.123	78	22	138	0.948	77	23	53	0.358	81	19	41	0.375
Real estate and facilities management	65	35	847	5.623	73	27	75	0.519	63	37	38	0.254	74	*	18	0.165
Government services	81	19	1,835	12.302	84	16	173	1.210	81	19	111	0.744	84	16	89	0.842
Education	60	40	2,624	18.075	64	36	234	1.677	66	34	154	1.059	67	33	75	0.726
Health	64	36	1,712	11.931	65	35	198	1.409	67	33	111	0.771	71	29	64	0.631
Care	61	39	1,409	9.629	60	40	183	1.308	61	39	97	0.665	62	38	40	0.399
All economy	73	27	24,321	161.435	73	27	2,444	17.008	72	28	1,311	8.689	77	23	766	7.231

Source: Labour Force Survey 2010, ONS
** Sample size too small for reliable estimate.*
Weighted & unweighted bases also include unpaid family workers

Self-employment

Table 3.7 below shows that only six per cent of the education sector workforce are self-employed, which is a smaller proportion than in all sectors of the economy (14 per cent), with a similar pattern repeated across England, Wales and Scotland (Table 3.8). Numbers in Northern Ireland are too small to publish. The education sector, which is primarily publicly funded, traditionally has fewer self employed (as opposed to employed) staff.

Table 3.7: Employment status by sector (UK, 2010)

	Employee	Self-employed	Employee	Self-employed	Weighted base	Unweighted base
	000s	000s	%	%	000s	000s
Agriculture, forestry and fishing	189	202	47	50	*405.218*	*2.973*
Energy production and utilities	446	25	95	5	*472.057*	*3.240*
Manufacturing	2,776	184	94	6	*2,968.293*	*20.397*
Construction, building services, engineering and planning	1,716	964	64	36	*2,692.310*	*17.897*
Wholesale and retail trade	3,731	390	90	9	*4,132.984*	*27.534*
Transportation and storage	1,194	250	83	17	*1,446.892*	*9.729*
Hospitality, tourism and sport	1,817	219	89	11	*2,043.795*	*13.168*
Information and communication technologies	635	124	84	16	*760.583*	*4.871*
Creative media and entertainment	672	310	68	31	*986.919*	*6.191*
Financial, insurance & other professional services	1,706	291	85	15	*2,000.828*	*12.804*
Real estate and facilities management	744	229	76	23	*977.456*	*6.561*
Government services	2,145	58	97	3	*2,207.124*	*15.091*
Education	2,891	188	94	6	*3,081.899*	*21.507*
Health	1,928	155	92	7	*2,085.233*	*14.740*
Care	1,577	140	92	8	*1,722.886*	*11.971*
All economy	24,774	3,952	86	14	*28,816.816*	*194.200*

Source: Labour Force Survey 2010, ONS

Table 3.8: Employment status by sector and nation, 2010 (%)

	England				Scotland				Wales				Northern Ireland			
	Employee	Self-employed	Weighted base	Unweighted base	Employee	Self-employed	Weighted base	Unweighted base	Employee	Self-employed	Weighted base	Unweighted base	Employee	Self-employed	Weighted base	Unweighted base
	%	%	000s	000s	%	%	000s	000s	%	%	000s	000s	%	%	000s	000s
Agriculture, forestry and fishing	50	46	*295*	*2.110*	49	50	*51*	*0.385*	33	62	*31*	*0.197*	*	75	*27*	*0.281*
Energy production and utilities	94	6	*346*	*2.334*	95	*	*87*	*0.619*	99	*	*25*	*0.157*	95	*	*14*	*0.130*
Manufacturing	93	6	*2,540*	*17.229*	95	5	*199*	*1.432*	94	6	*138*	*0.905*	93	7	*91*	*0.831*
Construction, building services, engineering and planning	63	37	*2,266*	*14.822*	77	23	*244*	*1.701*	65	35	*112*	*0.717*	55	45	*70*	*0.657*
Wholesale and retail trade	91	9	*3,466*	*22.800*	91	9	*351*	*2.359*	86	14	*204*	*1.323*	84	16	*112*	*1.052*
Transportation and storage	83	17	*1,252*	*8.294*	85	15	*117*	*0.820*	76	23	*46*	*0.308*	77	23	*33*	*0.307*
Hospitality, tourism and sport	89	10	*1,702*	*10.836*	89	11	*198*	*1.295*	87	12	*100*	*0.634*	82	17	*44*	*0.403*
Information and communication technologies	84	16	*674*	*4.266*	82	18	*56*	*0.377*	77	*	*18*	*0.113*	87	*	*13*	*0.115*
Creative media and entertainment	68	32	*875*	*5.409*	76	24	*65*	*0.438*	60	39	*32*	*0.214*	75	*	*14*	*0.130*
Financial, insurance & other professional services	85	15	*1,768*	*11.122*	90	10	*138*	*0.948*	81	19	*53*	*0.359*	92	*	*41*	*0.375*
Real estate and facilities management	75	24	*847*	*5.624*	85	15	*75*	*0.520*	78	21	*37*	*0.252*	67	*	*18*	*0.165*
Government services	97	3	*1,834*	*12.298*	97	3	*173*	*1.209*	97	*	*111*	*0.742*	99	*	*89*	*0.842*
Education	94	6	*2,619*	*18.049*	95	5	*234*	*1.676*	96	4	*153*	*1.056*	95	*	*75*	*0.726*
Health	92	8	*1,712*	*11.930*	94	6	*199*	*1.410*	92	8	*111*	*0.769*	95	*	*64*	*0.631*
Care	91	9	*1,404*	*9.601*	93	6	*183*	*1.306*	95	*	*97*	*0.665*	90	*	*40*	*0.399*
All economy	86	14	*24,301*	*161.314*	89	11	*2,442*	*16.995*	85	14	*1,309*	*8.674*	84	16	*765*	*7.217*

Source: Labour Force Survey 2010, ONS
** Sample size too small for reliable estimate.*

The education sector workforce has more staff on temporary contracts than any other sector (Table 3.9). This may be due to Governmental policies which have reduced funding, leading to more short term/fixed terms contracts as opposed to permanent ones in the sector.

Table 3.9: Employment type by sector, UK, 2010 ('000s and %)

	Permanent	Temporary	Permanent	Temporary	Weighted base	Unweighted base
	000s	000s	%	%	000s	000s
Agriculture, forestry and fishing	181	8	96	4	*189*	*1.306*
Energy production and utilities	430	16	96	4	*446*	*3.06*
Manufacturing	2,652	123	96	4	*2,775*	*18.984*
Construction, building services, engineering and planning	1,648	66	96	4	*1,714*	*11.317*
Wholesale and retail trade	3,573	156	96	4	*3,728*	*24.614*
Transportation and storage	1,132	62	95	5	*1,194*	*7.97*
Hospitality, tourism and sport	1,631	183	90	10	*1,814*	*11.563*
Information and communication technologies	612	22	97	3	*635*	*4.048*
Creative media and entertainment	615	56	92	8	*671*	*4.181*
Financial, insurance & other professional services	1,651	55	97	3	*1,706*	*10.835*
Real estate and facilities management	704	39	95	5	*743*	*4.957*
Government services	2,028	117	95	5	*2,145*	*14.642*
Education	2,563	327	89	11	*2,890*	*20.195*
Health	1,825	103	95	5	*1,928*	*13.639*
Care	1,474	103	93	7	*1,576*	*10.953*
All economy	23,247	1,513	94	6	*24,760*	*166.2*

Source: Labour Force Survey 2010, ONS
** Sample size too small for reliable estimate.*

3.3 Workforce characteristics

In general, the majority of people working in the sector are female, older than average and white. The key characteristics of workforce, in terms of gender, age, ethnicity and disability, are reviewed in this section.

Gender

The education sector has a far greater percentage of female staff compared to the workforce in all sectors (Tables 3.10 and 3.11). Across the UK, 72 per cent of the education sector workforce are women, compared with an average of 46 per cent in all sectors. The difference is particularly apparent in Scotland, where 75 per cent of the workforce are female.

Table 3.10: Employment by gender and nation in the education sector

	Male 000s	Female 000s	Total 000s	Male %	Female %	Total %	*Unweighted base* *000s*
UK	859	2,229	3,088	28	72	100	*21.545*
England	733	1,891	2,625	28	72	100	*18.08*
Scotland	60	175	235	25	75	100	*1.68*
Wales	45	108	154	29	71	100	*1.059*
Northern Ireland	21	54	75	28	72	100	*0.726*

Source: Labour Force Survey 2010, ONS

Table 3.11: Employment by gender and nation in whole economy

	Male 000s	Female 000s	Total 000s	Male %	Female %	Total %	*Unweighted base* *000s*
UK	15,439	13,416	28,855	54	46	100	*194.448*
England	13,081	11,250	24,331	54	46	100	*161.501*
Scotland	1,257	1,189	2,446	51	49	100	*17.022*
Wales	692	620	1,312	53	47	100	*8.693*
Northern Ireland	409	358	766	53	47	100	*7.232*

Source: Labour Force Survey 2010, ONS

The gender imbalance in the education sector is less pronounced at managerial level. Only among skilled trades and machine operatives do male staff outnumber female staff in the education sector (Table 3.12).

Table 3.12: Gender profile by broad occupational group (UK)

	Education			All economy		
	Male	Female	Total	Male	Female	Total
	%	%	000s	%	%	000s
1 Managers and Senior Officials	44	56	122	65	35	4,455
2 Professional occupations	33	67	1,465	56	44	4,028
3 Associate Professional and Technical	43	57	279	50	50	4,265
4 Administrative and Secretarial	13	87	225	22	78	3,181
5 Skilled Trades Occupations	54	46	43	92	8	3,061
6 Personal Service Occupations	12	88	650	16	84	2,544
7 Sales and Customer Service Occupations	*	*	7	34	66	2,146
8 Process, Plant and Machine Operatives	78	22	47	88	12	1,907
9 Elementary Occupations	13	87	251	55	45	3,257
All occupations	28	72	3,088	54	46	28,842

Source: Labour Force Survey 2010, ONS
** Sample size too small for reliable estimate.*

Age profile

Tables 3.13 and 3.14 below show that the education sector workforce is overall an older workforce than the average. Three quarters (74 per cent) of those working in education are 35 or older, compared with a UK average of 65 per cent The relatively older workforce is particularly noticeable in Scotland, where 50 per cent of the education sector workforce is over the age of 44 (compared with 42 per cent of Scotland's workforce as a whole).

Table 3.13: Age profile of education sector workforce by nation

	UK		England		Scotland		Wales		Northern Ireland	
	000s	%	000s	%	000s	%	000s	%	000s	%
Under 25	209	7	178	7	16	7	11	7	3	5
25-34	611	20	526	20	40	17	29	19	17	22
35-44	827	27	700	27	60	26	43	28	24	32
45-59	1,173	38	993	38	96	41	55	36	28	37
60+	269	9	229	9	22	9	15	10	3	4
Total	3,088	100	2,625	100	235	100	154	100	75	100
Unweighted base	*21.545*		*18.080*		*1.680*		*1.059*		*0.726*	

Source: Labour Force Survey 2010, ONS
** Sample size too small for reliable estimate.*

Table 3.14: Age profile of workforce by nation (Whole economy, 2010)

	UK		England		Scotland		Wales		Northern Ireland	
	Number	%	Number	%	Number	%	Number	%	Number	%
Under 25	3,709	13	3,111	13	332	14	171	13	95	12
25-34	6,324	22	5,365	22	500	20	267	20	192	25
35-44	7,029	24	5,932	24	589	24	311	24	197	26
45-59	9,331	32	7,826	32	834	34	434	33	236	31
60+	2,462	9	2,096	9	191	8	128	10	46	6
Total	28,855	100	24,331	100	2,446	100	1,312	100	766	100
Unweighted base	*194.448*		*161.501*		*17.022*		*8.693*		*7.232*	

Source: Labour Force Survey 2010, ONS

While the sector has an older workforce than the rest of the economy there is evidence that it is getting younger as new recruits join the education service. The proportion of the education sector workforce that is aged over 45 has decreased from 48.1 per cent to 46.7 per cent since 2002 (Table 3.15) while Table 3.16 shows that across the whole economy the proportion in the same age range has increased from 36.0 per cent to 40.9 per cent in the same time period (Table 3.16). Later in the report (in Section 5), data are reported that show that 44 per cent of employers in the sector have actively been recruiting young people in the UK. The presence of the older workforce, on the other hand, is reflective of the fact that many people join FE and HE as their later career option and are in a slightly older age group.

Table 3.15: Age profile of education sector workforce 2002-2010 (UK)

	2002	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**
	000s	000s	000s	000s	000s	000s	000s	000s	000s
Under 25	125	125	144	150	160	151	165	184	209
25-34	413	467	494	481	490	496	508	565	611
35-44	654	666	709	716	715	732	705	776	827
45-59	966	1,010	1,044	1,075	1,099	1,059	1,068	1,161	1,173
60+	138	147	152	158	177	199	217	254	269
Total	2,295	2,414	2,543	2,580	2,642	2,636	2,664	2,939	3,088
Unweighted base	*20.882*	*20.995*	*21.356*	*21.171*	*21.035*	*20.860*	*20.421*	*21.442*	*21.545*

Source: Labour Force Survey 2010, ONS

Table 3.16: Age profile of workforce 2002-2010 (Whole economy, UK)

	2002	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**
	000s	000s	000s	000s	000s	000s	000s	000s	000s
Under 19	1,078	1,076	1,077	1,028	976	938	925	765	673
19-24	2,948	2,973	3,072	3,097	3,179	3,224	3,221	3,048	3,037
25-34	6,505	6,361	6,279	6,289	6,250	6,242	6,279	6,186	6,324
35-44	7,317	7,416	7,490	7,525	7,533	7,528	7,442	7,241	7,029
45-59	8,474	8,638	8,748	8,915	9,017	9,046	9,171	9,182	9,331
60-64	1,107	1,186	1,252	1,306	1,405	1,545	1,652	1,650	1,631
65 +	479	522	538	580	625	641	693	739	831
Total	27,908	28,172	28,456	28,740	28,987	29,164	29,382	28,811	28,855
Unweighted base	*247.273*	*238.005*	*230.951*	*227.794*	*222.196*	*221.046*	*217.000*	*203.221*	*194.448*

Source: Labour Force Survey 2010, ONS

Ethnicity

Table 3.17 below show that the education sector workforce is slightly less representative of individuals who come from a Black, Asian and Ethnic Minority (BAME) background than the workforce across the whole economy. Table 3.18 below shows that there are considerably fewer BAME individuals as a proportion of the whole workforce within the devolved nations.

Table 3.17: Ethnicity of workforce within sectors, UK

	White '000	BAME '000	Total '000	White %	BAME %	Total %
Agriculture, forestry and fishing	402	*	402	100	*	100
Energy production and utilities	453	20	472	96	4	100
Manufacturing	2,769	199	2,968	93	7	100
Construction, building services, engineering and planning	2,567	130	2,697	95	5	100
Wholesale and retail trade	3,722	416	4,139	90	10	100
Transportation and storage	1,266	180	1,445	88	12	100
Hospitality, tourism and sport	1,766	280	2,045	86	14	100
Information and communication technologies	660	100	760	87	13	100
Creative media and entertainment	913	73	986	93	7	100
Financial, insurance & other professional services	1,776	224	2,000	89	11	100
Real estate and facilities management	852	125	977	87	13	100
Government services	2,037	171	2,208	92	8	100
Education	2,875	210	3,085	93	7	100
Health	1,814	272	2,086	87	13	100
Care	1,526	200	1,726	88	12	100
All economy	26,151	2,686	28,837	91	9	100

Source: Labour Force Survey 2010, ONS
** Sample size too small for reliable estimate.*

Table 3.18: Ethnicity of workforce across whole economy, four nations

	White 000s	BAME 000s	Total 000s	White %	BAME %	Total %	*Unweighted base 000s*
UK	26,151	2,686	28,837	91	9	100	*194.336*
England	21,755	2,558	24,313	89	11	100	*161.395*
Scotland	2,370	76	2,445	97	3	100	*17.019*
Wales	1,272	40	1,312	97	3	100	*8.691*
Northern Ireland	754	12	766	98	2	100	*7.231*

Source: Labour Force Survey 2010, ONS

The education sector also has a slightly higher proportion of workers who were born in the UK (90 per cent), when compared to the whole economy (87 per cent). (Table 3.19).

Table 3.19: Employment by country of birth and sector, UK

	UK	Rest of Europe (EU 27)	Rest of world	Total	UK	Rest of Europe (EU 27)	Rest of world	Total
	'000	'000	'000	'000	%	%	%	%
Agriculture, forestry and fishing	377	21	8	406	93	5	2	100
Energy production and utilities	431	15	26	472	91	3	6	100
Manufacturing	2,567	210	193	2,969	86	7	6	100
Construction, building services, engineering and planning	2,446	124	126	2,696	91	5	5	100
Wholesale and retail trade	3,644	177	318	4,140	88	4	8	100
Transportation and storage	1,213	77	158	1,448	84	5	11	100
Hospitality, tourism and sport	1,630	156	260	2,046	80	8	13	100
Information and communication technologies	640	33	88	761	84	4	12	100
Creative media and entertainment	850	51	87	987	86	5	9	100
Financial, insurance & other professional services	1,719	79	202	2,001	86	4	10	100
Real estate and facilities management	808	55	114	978	83	6	12	100
Government services	2,011	46	152	2,208	91	2	7	100
Education	2,769	106	213	3,088	90	3	7	100
Health	1,737	83	266	2,086	83	4	13	100
Care	1,490	65	174	1,729	86	4	10	100
Other sectors	722	43	71	836	86	5	9	100
All economy	25,054	1,340	2,457	28,851	87	5	9	100

Source: Labour Force Survey 2010, ONS

Disability

Data about the disabilities of those working in the education sector appears to be incomplete. It is not possible to say whether this is due to under-representation or under-reporting.

According to the Labour Force Survey (ONS, 2010b) 15.8 per cent of the education sector workforce has a disability. Most staff records return much lower estimates than this with regard to disabled staff. The Staff Individualised Record for FE colleges in England and the Higher Education Statistics Agency staff record for higher education staff across the UK both indicate three per cent of staff with a disability during the academic year 2009-2010, suggesting a high rate of non-disclosure.

The Commission for Disabled Staff in Lifelong Learning reported in 2008 that disclosure is crucial if improvements for disabled staff are to be secured on an anticipatory basis. The Commission investigated disability in the FE and HE sectors in England and Wales, finding a number of examples of staff disclosing for positive reasons – such as to challenge stigma – although widespread unease and anxiety still existed about disclosing other-than-obvious impairments. Some respondents reported that fear of discrimination prevented them from disclosing. Others felt their impairments were simply irrelevant (NAICE, 2008).

The General Teaching Council for England has also noted that reported disability is comparatively low, and that disclosure is an issue for many teachers (GTCE, 2011). The GTC for Scotland also notes high levels of non-disclosure.

Research carried out in 2008 with the National Union of Teachers’ e-network of disabled staff found that 80 per cent of respondents considered themselves disabled. The disabilities mentioned were primarily mobility (40 per cent) or sensory (37 per cent) related. Others mentioned included diabetes, chronic pain, asthma, and heart conditions. (Reiser, 2008)

The largest number of disabled teachers was in the plus 50 age group with a substantial number between 35 to 50 years of age. Most impairment mentioned appears to have been acquired rather than being from childhood or birth. This is underlined by the small number of respondents under 35 years of age, indicating that few disabled individuals enter teaching. 63 per cent of respondents had had reasonable adjustments made in their working environment to deal with their disability, with a wide range of adjustments illustrated. In spite of this support, 63 per cent of respondents believed that they had suffered disability discrimination in their work. This discrimination usually occurred in doing their job and from management when seeking promotion (ibid.).

Legislation, such as the Disability Discrimination Act, has improved working arrangements for individuals with disabilities, but there appears to be more work to be done, especially in attracting people with disabilities into education.

4 Demand for, and value of, skills

Chapter Summary

- The education sector workforce is highly qualified, with 63 per cent holding S/NVQ Level 4 or higher qualification, compared to 37 per cent across the whole economy.
- Skills that are required in the education sector for professional and associate professional occupations are teaching and learning related skills, including blended learning, priority sector subjects; cultural awareness and language and interpersonal skills.
- Skills that are required in the education sector for managerial occupations include skills for managing change, including keeping pace with emerging technologies, leadership, problem solving and general business skills; and partnership and collaboration skills
- High Performance Working (HPW) is seen as a factor in maximising skills utilisation; implementing HPW is a reflection of good strategic management and leadership. The education sector has an important role to play in achieving HPW across the UK workforce. HPW is also needed within the sector to enhance skills and performance.
- The education sector ranks third among all sectors in terms of employees reporting that they have received training. However, the percentage of employees in the education sector who report that they have received training in the last 4 or 13 weeks has fallen steadily since 2002. This is in line with the trend across the whole economy, but the decline has been greater within the education sector.
- Improving the quality of teaching is a challenge facing the education sector with improvement needed at all levels. The value of strong leadership is seen as a catalyst for improving the quality and skills of teaching.

4.1 The nature of skills used in the sector

Balance between basic, employability, intermediate and higher skills

Qualification levels for the broad occupational categories are very wide ranging. For example, a teacher in an FE institution (included in the professional SOC) is typically qualified to Level 6; whereas an assessor (also included in the professional SOC) is typically qualified to Level 3. Moreover, large parts of the sector do not have any statutory minimum qualification requirements. For this reason, information on “minimum qualification level typically required” has not been included in Table 4.1, which summarises the nature and type of skills used within the sector for various occupational groups.

Table 4.1: The nature of skills within the sector

Broad occupational group (based on SOC codes)	Sector occupations	Predominate level of skill required	Predominate type of skill required
Managers, senior officials and managers in services	Senior management; CEOs; director level positions (including Chair of governors, principals, chancellors and vice chancellors); Head teachers; school business managers; site managers; financial managers; chartered secretaries; marketing and sales managers; heads of training; ICT managers; R&D managers; heads of departments	Higher skills, basic skills	IT; interpersonal; planning and organisation; general business; strategy development; assessment; problem solving; customer/communications; partnership and collaboration; cultural knowledge; resource and change management skills These are ongoing skills requirements
Professionals	All professionally qualified staff such as teachers; lecturers; tutors; trainers; assessors and verifiers; community learning and development practitioners; professional youth and community workers; careers guidance specialists and advisors	Higher skills, basic skills	Pedagogical skills along with the appropriate qualifications; subject knowledge; assessment, e-teaching; ICT; cultural knowledge; language; problem solving; interpersonal and communication skills Subject knowledge along with cultural knowledge and e-teaching and ICT are short term requirements. The rest are ongoing skills requirements
Associate professional and technical occupations	Education support staff; classroom assistants; any technicians employed by schools, colleges or universities – including lab, electrical, building, engineering technicians; information officers; IT user support technicians; youth and community workers;; buyers; marketing; care advisors ; personnel and industrial relations officers; personal assistants	Higher skills, basic skills	Job specific technical skills especially for technicians; subject knowledge; problem solving; and interpersonal skills Job specific technical skills is a short term requirement; the rest are ongoing skills requirements
Administrative and secretarial occupations	Accounts and wage clerks; book keepers; general office assistants; stock control clerks; PAs; receptionists	Employability skills, basic skills	Literacy, numeracy skills; IT skills and interpersonal skills, which includes transferable communication / customer service skills These are ongoing skills requirements

Broad occupational group (based on SOC codes)	Sector occupations	Predominate level of skill required	Predominate type of skill required
Skilled trade occupations	Electricians; computer engineers; chefs; buildings and estates maintenance	Intermediate skills, basic skills, employability skills	Literacy, numeracy skills and job specific technical skills and communication/customer service skills These are ongoing skills requirements
Personal service occupations	Caretakers; cleaning managers or supervisors; security staff	Intermediate skills, basic skills, employability skills	Literacy, numeracy skills and job specific technical skills and transferable communication / customer service skills These are ongoing skills requirements
Sales and customer service occupations	Sales assistants; call centre staff; customer service staff or supervisors	Intermediate skills, basic skills, employability skills	Literacy, numeracy skills and job specific technical skills and transferable communication / customer service skills These are ongoing skills requirements
Machine and transport operatives	Drivers; grounds staff	Intermediate skills, basic skills, employability skills	Literacy, numeracy skills and job specific technical skills These are ongoing skills requirements
Elementary occupations	Cleaners; janitors; caretakers; kitchen and catering staff	Employability skills, basic skills	Literacy, numeracy skills and job specific technical skills and transferable communication / customer service skills These are ongoing skills requirements

Source: Analysis of information from a number of sources, including Sector Skills Assessments (2009 and 2010); sectoral and Governmental reports. For a full list, please look at the Bibliography.

The education workforce is highly qualified compared to the rest of UK workforce, reflecting the large number of professionals working in the sector. Some 63 per cent of the education workforce hold a S/NVQ Level 4 or higher qualification, compared to 37 per cent across the whole economy. (S/NVQ Level 4 is equivalent to QCF level 5 or SCQF level 8),and a higher proportion than in any other sector, see Table 4.2.

Table 4.2: Qualification profile of workforces by sector, UK

	No qualifications	Level 1	Level 2	Level 3	Level 4 +	Total	Unweighted base
	%	%	%	%	%	'000s	'000s
Agriculture, forestry and fishing	18	21	22	15	24	406	*2.978*
Energy production and utilities	6	16	22	22	33	473	*3.244*
Manufacturing	9	19	21	22	29	2,969	*20.404*
Construction, building services, engineering and planning	7	16	23	28	27	2,697	*17.927*
Wholesale and retail trade	11	22	26	22	19	4,140	*27.582*
Transportation and storage	11	26	29	19	16	1,447	*9.732*
Hospitality, tourism and sport	10	20	27	22	20	2,046	*13.183*
Information and communication technologies	2	10	15	18	55	761	*4.874*
Creative media and entertainment	3	10	14	14	59	987	*6.193*
Financial, insurance & other professional services	2	12	18	17	52	2,001	*12.805*
Real estate and facilities management	14	23	22	17	23	978	*6.565*
Government services	2	12	19	20	46	2,209	*15.100*
Education	3	9	12	13	63	3,088	*21.544*
Health	3	10	14	12	61	2,087	*14.749*
Care	5	12	23	24	36	1,729	*12.006*
All economy	7	16	21	20	37	28,854	*194.437*

Source: Labour Force Survey 2010 (ONS)
Note: All qualifications levels are S/NVQ.

Table 4.3: Qualification levels within whole economy by nation

	UK %	England %	Scotland %	Wales %	Northern Ireland %
Level 4 +	37	37	40	37	35
Level 3	20	20	22	19	19
Level 2	21	21	18	22	20
Level 1 and below	23	23	20	22	25
Total	100	100	100	100	100
Weighted base	*1,729*	*1,409*	*183*	*97*	*40*
Unweighted base	*194.437*	*161.490*	*17.022*	*8.693*	*7.232*

Source: Labour Force Survey 2010 (ONS)
Note: All qualifications levels are S/NVQ.

Generally the workforce in Scotland is more highly qualified than in the rest of the UK. For instance, a greater proportion of the workforce has S/NVQ Level 4 or higher qualifications in Scotland than in the other nations (Table 4.3). The distribution of qualification levels in the education sector (Table 4.4) differs from the general UK pattern. The overall proportion of the workforce qualified to S/NVQ Level 4 or higher is significantly higher across the UK, but the most highly qualified workforce is in Wales. Northern Ireland also has a notably high proportion of education sector staff qualified to this level, with a significant gap between qualifications level of the education sector compared to the whole economy.

Table 4.4: Qualification levels within education sector by nation

	UK %	England %	Scotland %	Wales %	Northern Ireland %
Level 4 +	63	62	65	72	70
Level 3	13	13	13	12	12
Level 2	12	12	9	9	*
Level 1 and below	12	12	13	7	11
Total	100	100	100	100	100
Weighted base (000s)	*3,088*	*2,625*	*235*	*154*	*75*
Unweighted base (000s)	*21.544*	*18.079*	*1.680*	*1.059*	*0.726*

Source: Labour Force Survey 2010 (ONS)
Note: All qualifications levels are S/NVQ.

** Sample size too small for reliable estimate*

The gap between the qualifications level of the education workforce and the workforce across all sectors has narrowed since 2002. While in both workforces the proportion of individuals who are qualified to S/NVQ Level 4 and above has increased year on year, the overall increase is greater across the whole economy (Tables 4.5 and 4.6).

Table 4.5: Qualification levels within whole economy, UK (2002-2010)

	2002 %	2003 %	2004 %	2005 %	2006 %	2007 %	2008 %	2009 %	2010 %
Level 4 +	28	29	30	31	32	33	33	35	37
Level 3	20	20	20	20	19	19	20	19	20
Level 2	22	22	21	20	22	22	21	21	21
Level 1 and below	30	29	29	29	27	27	26	24	23
Total	100	100	100	100	100	100	100	100	100
Weighted base	*27,905*	*28,165*	*28,455*	*28,741*	*28,986*	*29,163*	*29,380*	*28,810*	*28,854*
Unweighted base	*247.232*	*237.919*	*172.402*	*210.643*	*222.190*	*221.039*	*216.986*	*203.217*	*194.437*

Source: Labour Force Survey 2010 (ONS)
Note: All qualifications levels are S/NVQ.

Table 4.6: Qualification levels within education sector, UK (2002-2010)

	2002	2003	2004	2005	2006	2007	2008	2009	2010
	%	%	%	%	%	%	%	%	%
Level 4 +	59	60	60	61	60	60	60	62	63
Level 3	10	10	11	11	12	11	12	13	13
Level 2	12	12	12	11	12	13	13	12	12
Level 1 and below	18	18	17	17	16	16	15	13	12
Total	100	100	100	100	100	100	100	100	100
Weighted base (000s)	*2,295*	*2,414*	*2,543*	*2,579*	*2,642*	*2,636*	*2,664*	*2,939*	*3,088*
Unweighted base (000s)	*20.880*	*20.990*	*15.927*	*19.617*	*21.035*	*20.860*	*20.419*	*21.442*	*21.544*

Source: Labour Force Survey 2010 (ONS)
Note: All qualifications levels are S/NVQ.

Specific skills required across the sector and in different occupations

Skills that are required across the education sector are:

- For managerial occupations: Skills for managing change, including keeping pace with emerging technologies, leadership, planning for and responding to the implications of policy changes for organisations, problem solving; general business skills, including project management, marketing, public relations, advocacy, budget planning and financial management and partnership and collaboration skills
- For professional and associate professional occupations: Teaching and learning related skills, including blended learning, priority sector subjects; cultural awareness and language and interpersonal skills.

The exact skills required vary from position to position, for example, with learning providers requiring appropriate pedagogical and classroom management skills and administrators requiring a higher level of business skills and skills for managing change.

4.2 Value of skills

The value of skills is highlighted widely in Ofsted's annual report (Ofsted, 2011) on the Education, Children's Services and Skills sectors in England. One of the biggest challenges outlined in the report relates to the quality of teaching and pedagogic skills, with very few schools, colleges and adult training providers being categorised as 'outstanding' or 'good'. "*Satisfactory teaching does not deliver good enough progress for pupils in the most challenging circumstances*" (ibid.). When teaching quality is compared between primary and secondary education and post 16 education, the latter shows bigger problems'. No colleges or adult and community learning providers received an overall outstanding judgement for the quality of teaching. The 15 organisations recognised as outstanding were all independent work based learning or employer providers. Initial teacher education, on the other hand, has been of a high quality across the board.

Within the 15 outstanding training providers, the values of strong leadership, a readiness to improve, effective self-assessment, and the use of feedback from learners are highlighted as the main catalysts that have resulted in the improvement of teaching quality and skills. In order for such improvement to happen across the learning and skills sector, the Government has announced the formation of an independent commission on adult education and vocational pedagogy in England to "*ensure there is a clear sector-owned policy to support outstanding teaching and learning in FE, including making full use of the potential of technology*" (BIS, 2011b). One of the main objectives of this commission will be to "*set out the standard expected of a good learning opportunity for an adult and an apprenticeship, and define a range of effective pedagogical approaches*" (ibid.). Moreover, in order to ensure that there is a professional workforce, bursaries and development funds are being looked at in relation to delivering Initial Teacher Education, and a network of expert FE practitioners in specific vocational fields is being created, both in conjunction with LSIS.

High performance working

Skills utilisation is concerned with maximising the contribution that people can make in the work place, and therefore how well people's abilities have been deployed, harnessed and developed to optimise organisational performance and how UK organisations can successfully achieve High Performance Working (HPW) (UKCES, 2010a).

HPW requires the implementation of a number of practices in a holistic way to manage an organisation effectively. It provides a means to stimulate businesses to review their business strategies; move up the value chain (i.e. by delivering higher value goods and services); raise their demand for high skills; reorganise their work; and by so doing improve skills utilisation in the workplace and, hence, firm performance (ibid).

The education sector has an important role to play in achieving HPW throughout the UK by ensuring that the population has the appropriate skills foundation on which to build productive and successful lives for individuals at all levels of the workforce. HPW is also needed within the education sector to enhance skills and performance. Managers and leaders, who are a key occupational group in the education sector, can make use of HPW by ensuring their implementation across the organisation (Please see sub - section on Management and Leadership later in this chapter for more details).

The UK Commission's Employers Skills Survey (ESS) examined some aspects of HPW and the results present a mixed picture for the education sector. For example, 66 per cent of employers in the education sector have processes in place to identify high potential or talented individuals, although only 32 per cent of these are formal processes (Table 4.7). This is the highest figure amongst all the sectors and more than twice the proportion of establishments across the whole economy.

Table 4.7: Whether establishment has formal processes in place to identify 'high potential' or talented individuals, UK

	Formal process for identifying 'high potential' individuals									
	Yes, formally documented		Yes, informally		No		Don't know		*Unweighted base*	*Weighted base*
	Number	%	Number	%	Number	%	Number	%		
Agriculture, forestry and fishing	5,652	5	30,105	27	72,671	64	4,348	4	*820*	*112,776*
Energy production and utilities	2,191	17	4,077	31	6,385	49	486	4	*866*	*13,138*
Manufacturing	15,955	12	41,908	31	72,179	54	3,456	3	*4,001*	*133,498*
Construction	21,136	7	89,742	29	185,426	61	8,056	3	*4,570*	*304,360*
Wholesale and retail trade	79,322	17	144,464	31	229,455	49	18,075	4	*8,093*	*471,317*
Transportation and storage	12,217	10	30,841	26	73,328	61	4,419	4	*2,400*	*120,805*
Accommodation, food and tourism activities	32,190	15	69,719	32	109,728	50	7,234	3	*5,819*	*218,871*
Information and communication	5,976	8	23,608	32	42,403	58	1,136	2	*1,261*	*73,123*
Creative media and entertainment	11,873	8	48,322	33	83,861	57	3,495	2	*1,959*	*147,551*
Financial, insurance & other professional services	31,220	18	56,823	33	80,911	47	3,669	2	*2,680*	*172,623*
Real estate and facilities management	20,259	13	48,382	30	83,504	52	9,000	6	*1,745*	*161,145*
Government	11,426	21	16,967	31	25,307	46	1,600	3	*1,379*	*55,300*
Education	18,653	32	20,236	34	18,789	32	1,231	2	*2,780*	*58,909*
Health	10,508	20	15,684	30	24,879	47	1,427	3	*1,739*	*52,498*
Care	25,788	28	26,675	29	32,817	36	6,485	7	*2,455*	*91,765*
All economy	320,952	14	702,866	31	1,198,876	52	77,227	3	*44,691*	*2,299,921*

Source: UK Commission's Employer Skills Survey 2011 (Davies et al, 2012)
Base: All establishments in Module 1 and Scotland

In Table 4.8 it can be seen that 65 per cent of education sector establishments state that employees have variety in their work to a large extent (a greater proportion than the equivalent of 55 per cent across the whole economy).

Table 4.8: Extent to which employees have variety in their work, UK

	Extent to which employees have variety in their work											
	To a large extent		To some extent		Not much		Not at all		Don't know		*Unweighted base*	*Weighted base*
	Number	%	Number	%	Number	%	Number	%	Number	%		
Agriculture, forestry and fishing	76,675	68	24,469	22	7,742	7	2,816	2	1,074	1	*820*	*112,776*
Energy production and utilities	5,929	45	4,909	37	1,795	14	406	3	100	1	*866*	*13,138*
Manufacturing	67,095	50	48,484	36	12,899	10	3,756	3	1,262	1	*4,001*	*133,498*
Construction	179,144	59	88,851	29	24,047	8	9,313	3	3,003	1	*4,570*	*304,360*
Wholesale and retail trade	238,562	51	168,884	36	48,318	10	11,692	2	3,861	1	*8,093*	*471,317*
Transportation and storage	53,146	44	35,613	29	17,947	15	13,259	11	840	1	*2,400*	*120,805*
Accommodation, food and tourism activities	86,140	39	83,543	38	37,117	17	9,289	4	2,782	1	*5,819*	*218,871*
Information and communication	46,346	63	21,687	30	3,293	5	417	1	1,381	2	*1,261*	*73,123*
Creative media and entertainment	99,587	67	37,290	25	7,267	5	2,237	2	1,170	1	*1,959*	*147,551*
Financial, insurance & other professional services	94,803	55	60,363	35	12,493	7	3,148	2	1,816	1	*2,680*	*172,623*
Real estate and facilities management	92,156	57	51,012	32	15,579	10	1,561	1	837	1	*1,745*	*161,145*
Government	33,925	61	17,273	31	2,855	5	391	1	856	2	*1,379*	*55,300*
Education	38,306	65	17,346	29	2,187	4	619	1	452	1	*2,780*	*58,909*
Health	26,622	51	19,718	38	5,203	10	694	1	260	**	*1,739*	*52,498*
Care	54,001	59	31,224	34	4,410	5	972	1	1,159	1	*2,455*	*91,765*
All economy	1,256,316	55	745,134	32	212,192	9	64,300	3	21,979	1	*44,691*	*2,299,921*

Source: UK Commission's Employer Skills Survey 2011 (Davies et al, 2012)
Base: All establishments in Module 1 and Scotland
*** denotes a figure greater than 0 per cent but less than 0.5 per cent*

However on other aspects of HPW, the sector is below average. For example, 47 per cent of employees state that they have discretion over how their work is carried out “to a large extent”, which is slightly lower than the figure of 52 per cent for the whole economy (Table 4.9). Only the accommodation sector, health sector and the energy production sector had a lower percentage than the education sector. Health and energy both having strict standard operating procedures and guidelines, while in the education sector the national curriculum and other guidelines limit the extent of discretion that employees have in some parts of the sector.

Table 4.9: Extent to which employees have discretion over how they do their work, UK

	Extent to which employees have discretion over how they do their work											
	To a large extent		To some extent		Not much		Not at all		Don't know		*Unweighted base*	*Weighted base*
	Number	%	Number	%	Number	%	Number	%	Number	%		
Agriculture, forestry and fishing	61,757	55	39,087	35	6,625	6	2,485	2	2,821	3	*820*	*112,776*
Energy production and utilities	5,809	44	4,957	38	1,467	11	557	4	348	3	*866*	*13,138*
Manufacturing	63,859	48	49,442	37	11,926	9	5,326	4	2,945	2	*4,001*	*133,498*
Construction	167,066	55	103,337	34	18,624	6	10,627	3	4,706	2	*4,570*	*304,360*
Wholesale and retail trade	222,298	47	182,574	39	44,174	9	13,608	3	8,663	2	*8,093*	*471,317*
Transportation and storage	60,073	50	38,390	32	12,736	11	8,160	7	1,446	1	*2,400*	*120,805*
Accommodation, food and tourism activities	88,190	40	87,712	40	28,331	13	9,926	5	4,712	2	*5,819*	*218,871*
Information and communication	48,851	67	20,130	28	3,082	4	614	1	446	1	*1,261*	*73,123*
Creative media and entertainment	94,306	64	39,623	27	5,912	4	3,212	2	4,498	3	*1,959*	*147,551*
Financial, insurance & other professional services	88,150	51	62,426	36	15,688	9	5,292	3	1,068	1	*2,680*	*172,623*
Real estate and facilities management	95,298	59	48,171	30	11,255	7	4,656	3	1,765	1	*1,745*	*161,145*
Government	32,235	58	17,718	32	3,674	7	810	1	863	2	*1,379*	*55,300*
Education	27,530	47	26,592	45	3,231	5	660	1	897	2	*2,780*	*58,909*
Health	22,195	42	21,678	41	6,472	12	1,544	3	608	1	*1,739*	*52,498*
Care	48,843	53	36,123	39	3,779	4	1,532	2	1,488	2	*2,455*	*91,765*
All economy	1,188,767	52	814,655	35	185,638	8	71,823	3	39,037	2	*44,691*	*2,299,921*

Source: UK Commission’s Employer Skills Survey 2011 (Davies et al, 2012)
Base: All establishments in Module 1 and Scotland

Table 4.10 below shows that only 25 per cent of staff at education establishments have access to flexible working compared to 44 per cent of employers across the whole economy reporting that their staff have access to flexible working "to a large extent". The education sector is the lowest reporting sector for this measure, a reflection of the specific hours imposed upon many staff by learner timetables and school opening hours.

Table 4.10: Extent to which employees at establishment have access to flexible working, UK

	Employees have access to flexible working											
	To a large extent		To some extent		Not much		Not at all		Don't know		*Unweighted base*	*Weighted base*
	Number	%	Number	%	Number	%	Number	%	Number	%		
Agriculture, forestry and fishing	48,869	43	41,468	37	12,485	11	8,004	7	1,950	2	*820*	*112,776*
Energy production and utilities	4,781	36	4,419	34	2,431	19	1,450	11	58	**	*866*	*13,138*
Manufacturing	52,687	39	44,362	33	17,955	13	16,667	12	1,827	1	*4,001*	*133,498*
Construction	139,674	46	101,224	33	33,585	11	26,266	9	3,610	1	*4,570*	*304,360*
Wholesale and retail trade	176,251	37	168,909	36	64,843	14	56,324	12	4,991	1	*8,093*	*471,317*
Transportation and storage	44,233	37	38,327	32	16,329	14	20,683	17	1,233	1	*2,400*	*120,805*
Accommodation, food and tourism activities	99,272	45	77,239	35	22,537	10	17,703	8	2,120	1	*5,819*	*218,871*
Information and communication	42,992	59	20,273	28	5,342	7	4,226	6	289	**	*1,261*	*73,123*
Creative media and entertainment	83,200	56	44,734	30	10,011	7	7,602	5	2,004	1	*1,959*	*147,551*
Financial, insurance & other professional services	89,019	52	55,484	32	15,828	9	11,747	7	546	**	*2,680*	*172,623*
Real estate and facilities management	77,691	48	52,389	33	16,393	10	13,861	9	811	1	*1,745*	*161,145*
Government	34,229	62	15,040	27	3,343	6	1,865	3	823	1	*1,379*	*55,300*
Education	14,445	25	21,754	37	12,772	22	9,545	16	393	1	*2,780*	*58,909*
Health	14,407	27	23,130	44	9,761	19	5,025	10	174	**	*1,739*	*52,498*
Care	38,920	42	35,210	38	9,701	11	6,858	7	1,075	1	*2,455*	*91,765*
All economy	1,012,366	44	783,411	34	264,071	11	216,701	9	23,372	1	*44,691*	*2,299,921*

Source: UK Commission's Employer Skills Survey 2011 (Davies et al, 2012)
Base: All establishments in Module 1 and Scotland
*** denotes a figure greater than 0 per cent but less than 0.5 per cent*

Skills utilisation

Skills when utilised appropriately, especially through the use of high performance working (HPW), can result in increased productivity. HPW conditions lead to the identification and deployment of existing skills of the workforce in all areas of an organisation, thereby resulting in effective skills utilisation and consequent high levels of performance.

> "Policy makers in the UK are now recognising the potential of HPW to offer benefits to both employers and employees, as well as contributing to the economic performance, competitiveness and prosperity of the national economy...The focus of skills policy in the UK has recently extended from a primary concern with improving skills supply to looking at the question of employer demand for skills... HPW is believed by many to provide a means to achieve more effective skills utilisation". (UKCES, 2009)

Management and leadership

Implementing HPW is a reflection of good strategic management and leadership skills, where senior management understand the benefits and value of HPW and ensure its implementation across the organisation.

The importance of management and leadership in the education sector is paramount and these skills are an ongoing requirement for the sector, both currently and in the future. There are existing organisations dedicated to providing support and advice on leadership and management, such as the Leadership Foundation, which operates for all the UK's universities and HE colleges. In the same sector, £10 million has been available from 2007 to 2010, through the Leadership, Governance and Management (LGM) Fund to support the improvement of leadership, governance and management in HE (HEFCE, 2012a). Moreover, there is the National College of School Leadership (NCSL) in England, that have the National Leaders of Education (NLEs) programme for outstanding head-teachers or principals who, together with the staff in their schools, use their skills and experience to support schools in challenging circumstances as well as help increase the leadership capacity of other schools to raise standards (NCSL, 2012). The NCSL also have the National Professional Qualification for Headship (NPQH) for head teachers and aspiring head teachers in British international schools who are looking for professional development or considering taking up a headship in England (ibid).

The role of the head teacher is rapidly changing with a growing requirement to influence strategy; analyse data to monitor the school's progress; develop and work in partnerships with governors, parents, the local authorities as well as lead the organisational policy, principles, performance and culture. Such strategic management – as explained earlier – can be achieved through the implementation of HPW.

Findings from a UKCES report suggest that "*the importance of leaders in making HPW the approach of choice is critical. The willingness and desire of leaders to make a difference, to produce excellence and to do this through people are the hallmarks of HPW" (UKCES, 2010b). Although literature suggests that organisations have struggled to implement HPW in real life, case studies undertaken by the UKCES show that "there are specific core practices that are adopted by some organisations that are cornerstones to the implementation of HPW, namely performance management systems, learning and development, communication and job design*" (ibid.).

Well qualified managers and leaders are necessary for HPW to be effective. The percentage of managers and professionals in the education sector who do not hold S/NVQ Level 4 or above qualifications is lower than in any other sector (Table 4.11). Only 10 per cent of managers and professionals do not hold S/NVQ Level 4 or above qualifications, compared to 39 per cent across the whole economy.

Table 4.11: Managers and professionals without S/NVQ Level 4 or higher qualifications (Percentage of all managers and professionals, 2010)

	UK	England	Scotland	Wales	Northern Ireland
	%	%	%	%	%
Agriculture, forestry and fishing	45	43	*	*	*
Energy production and utilities	49	51	41	*	*
Manufacturing	51	51	51	59	35
Construction	50	51	41	40	*
Wholesale and retail trade	64	64	67	60	50
Transportation and storage	61	59	67	*	*
Hospitality, tourism and sport	66	66	61	70	*
Information and communication technologies	40	40	37	*	*
Creative media and entertainment	38	38	*	*	*
Financial, insurance & other professional services	36	36	38	35	*
Real estate and facilities management	58	59	63	*	*
Government services	31	32	36	29	*
Education	10	11	8	*	*
Health	15	15	*	*	*
Care	30	30	33	*	*
All economy	39	39	37	36	27

Source: Labour Force Survey 2010 (ONS)
** Sample size too small for reliable estimate.*

The percentage of managers and professionals in the education sector who do not hold S/NVQ Level 4 or above qualifications has remained relatively consistent since 2002 (Table 4.12), whereas the percentage across the whole economy has fallen by six percentage points during the same period (Table 4.13), indicating that the qualification gap between the education sector and the rest of the economy is narrowing..

Table 4.12: Managers and professionals without S/NVQ Level 4 or higher qualifications in the education sector, 2002-2010 (UK)

		2002	2003	2004	2005	2006	2007	2008	2009	2010
Managers or professionals without L4 or higher qualifications	000s	124	140	103	142	160	157	149	162	160
	%	10	11	8	10	11	11	11	11	10
Weighted base (number of managers and professionals)	*000s*	*1214.42*	*1300.31*	*1358.25*	*1378.25*	*1413.86*	*1373.20*	*1367.06*	*1512.93*	*1587.08*

Source: Labour Force Survey 2010 (ONS)

Table 4.13: Managers and professionals without S/NVQ Level 4 or higher qualifications in the whole economy, 2002-2010 (UK)

		2002	2003	2004	2005	2006	2007	2008	2009	2010
Managers or professionals without L4 or higher qualifications	000s	3239	3336	2554	3023	3460	3471	3496	3371	3283
	%	45	45	33	38	43	42	42	40	39
Weighted base (number of managers and professionals)	*000s*	*7214.12*	*7481.39*	*7725.65*	*7866.31*	*8123.34*	*8201.11*	*8356.12*	*8406.36*	*8482.68*

Source: Labour Force Survey 2010 (ONS)

Provision of training

Employees in the education sector are more likely than most to receive training, although the proportion being trained at any one time has been declining in recent years. The percentage of education sector employees who report that they have received training in the last 4 or 13 weeks has fallen steadily since 2002, for example from 44 per cent in 2002 to 38 per cent 2010, using the 13-week measure (Tables 4.14 and 4.15). This is in line with the trend across the whole economy, but the decline has been greater within the education sector. Education sector employees are, however, much more likely to have received training during the specified period than employees across all sectors. On average 26 per cent of employees were trained within a 13-week period in 2010. The education sector ranks third among all sectors in terms of employees reporting that they have received training.

Table 4.14: Percentage of employees receiving training in last 4 weeks, 2002-2010 (UK)

	2002	2003	2004	2005	2006	2007	2008	2009	2010
	%	%	%	%	%	%	%	%	%
Agriculture, forestry and fishing	7	7	6	6	6	6	6	6	6
Energy production and utilities	15	14	13	13	13	13	12	11	12
Manufacturing	10	9	9	10	9	9	9	9	9
Construction, building services, engineering and planning	10	9	10	9	9	9	9	9	8
Wholesale and retail trade	11	10	10	10	10	10	9	8	8
Transportation and storage	10	10	9	9	8	8	8	7	7
Hospitality, tourism and sport	13	12	12	11	11	10	10	10	11
Information and communication technologies	13	12	12	11	11	10	10	10	10
Creative media and entertainment	13	12	12	12	11	11	10	9	8
Financial, insurance & other professional services	18	17	17	16	15	15	15	14	15
Real estate and facilities management	14	13	14	12	13	12	12	7	8
Government services	20	20	20	20	19	18	19	19	17
Education	22	21	21	21	20	20	20	20	18
Health	24	25	25	25	24	23	22	24	24
Care	24	25	25	25	24	23	22	21	20
All economy	15	14	14	14	14	13	13	13	13
Weighted base (000s)	*4,095*	*3,987*	*4,074*	*4,061*	*3,949*	*3,863*	*3,834*	*3,685*	*3,642*
Unweighted base (000s)	*35.781*	*33.324*	*32.626*	*31.674*	*29.781*	*28.888*	*27.829*	*25.468*	*24.012*

Source: Labour Force Survey 2010 (ONS)

Table 4.15: Percentage of employees receiving training in last 13 weeks, 2002-2010 (UK)

	2002	2003	2004	2005	2006	2007	2008	2009	2010
	%	%	%	%	%	%	%	%	%
Agriculture, forestry and fishing	15	13	14	13	13	12	13	13	13
Energy production and utilities	33	31	30	28	28	28	26	25	27
Manufacturing	21	20	19	20	19	20	19	18	18
Construction, building services, engineering and planning	19	19	20	19	19	19	19	19	18
Wholesale and retail trade	20	20	20	20	18	18	18	16	16
Transportation and storage	21	21	20	19	19	18	18	17	18
Hospitality, tourism and sport	24	22	22	21	21	20	19	19	19
Information and communication technologies	27	25	24	23	23	22	21	21	20
Creative media and entertainment	24	24	23	23	23	21	21	18	17
Financial, insurance & other professional services	35	33	32	33	30	30	29	29	29
Real estate and facilities management	27	26	27	26	26	25	24	15	16
Government services	40	41	40	39	38	37	36	37	35
Education	44	42	42	42	40	39	40	39	38
Health	45	46	46	47	46	44	44	47	46
Care	45	46	46	47	46	44	44	41	40
All economy	28	28	28	28	27	26	26	26	26
Weighted base (000s)	*7,952*	*7,873*	*7,917*	*8,037*	*7,883*	*7,681*	*7,669*	*7,382*	*7,359*
Unweighted base (000s)	*69.767*	*65.973*	*63.658*	*63.118*	*59.87*	*57.81*	*56.008*	*51.497*	*48.93*

Source: Labour Force Survey 2010 (ONS)

Tables 4.16 and 4.17 below show how the percentage of staff who have received training varies across the four nations. Within the education sector, employees in England and Wales are more likely to have received training than those in Scotland or Northern Ireland.

Table 4.16: Percentage of employees receiving training in last 4 weeks (all nations)

	UK	England	Scotland	Wales	Northern Ireland
	%	%	%	%	%
Agriculture, forestry and fishing	6	7	*	*	*
Energy production and utilities	12	12	13	*	*
Manufacturing	9	9	9	11	8
Construction, building services, engineering and	8	8	9	10	*
Wholesale and retail trade	8	8	9	9	6
Transportation and storage	7	7	8	*	*
Hospitality, tourism and sport	11	11	12	15	*
Information and communication technologies	10	10	*	*	*
Creative media and entertainment	8	8	*	*	*
Financial, insurance & other professional servic	15	15	17	19	*
Real estate and facilities management	8	8	11	*	*
Government services	17	17	18	16	8
Education	18	19	17	19	*
Health	24	25	21	22	11
Care	20	20	19	26	*
All economy	13	13	13	14	7
Weighted base (000s)	*3,642*	*3,085*	*317*	*188*	*52*
Unweighted base (000s)	*24.012*	*20.155*	*2.164*	*1.215*	*0.478*

Source: Labour Force Survey 2010 (ONS)
**Sample size too small for reliable estimate*

Table 4.17: Percentage of employees receiving training in last 13 weeks (all nations)

	UK	England	Scotland	Wales	Northern Ireland
	%	%	%	%	%
Agriculture, forestry and fishing	13	15	12	*	*
Energy production and utilities	27	27	30	*	*
Manufacturing	18	18	18	20	18
Construction, building services, engineering an	18	18	21	18	12
Wholesale and retail trade	16	17	17	15	13
Transportation and storage	18	18	19	16	*
Hospitality, tourism and sport	19	19	20	21	*
Information and communication technologies	20	20	22	*	*
Creative media and entertainment	17	17	18	20	*
Financial, insurance & other professional servic	29	29	28	32	17
Real estate and facilities management	16	16	23	18	*
Government services	35	35	35	34	24
Education	38	39	34	38	26
Health	46	47	42	44	32
Care	40	40	40	46	27
All economy	25	25	27	24	18
Weighted base (000s)	*7,181*	*6,065*	*668*	*312*	*137*
Unweighted base (000s)	*48.93*	*40.947*	*4.41*	*2.282*	*1.291*

Source: Labour Force Survey 2010 (ONS)
**Sample size too small for reliable estimate*

Further evidence of the relatively high amount of training being conducted in the education sector comes from the fact that employers in the education sector are far more likely to provide training to staff than employers across the whole economy. This is particularly true in Scotland where 97 per cent of education sector employers provide training to staff (Table 4.18). Moreover, Table 4.19 shows that 58 per cent of education sector employers who provide training stated that they provide training to all occupational categories (compared to 52 per cent across the whole economy). Table 4.20 shows that 63 per cent of staff receive training, which still ranks third against other sectors, and is greater than the whole economy average of 53 per cent.

Table 4.18: Employers providing training by sector and nation

	UK		England		Scotland		Wales		Northern Ireland	
	Number	%	Number	%	Number	%	Number	%	Number	%
Agriculture, forestry and fishing	58,869	53	42,577	54	†7,737	†58	3,536	34	5,019	71
Energy production and utilities	8,743	69	6,858	69	1,040	81	554	67	291	54
Manufacturing	73,972	57	61,935	55	6,629	71	3,464	64	1,944	51
Construction	163,641	53	137,473	53	13,506	63	7,193	55	5,469	51
Wholesale and retail trade	261,948	56	218,681	55	23,692	67	11,347	54	8,228	58
Transportation and storage	55,004	45	46,106	43	5,633	70	2,103	50	1,161	52
Accommodation, food and tourism activities	134,314	61	108,618	60	15,665	71	6,570	58	3,461	59
Information and communication	39,090	54	34,418	52	†2,974	†83	1,215	62	483	44
Creative media and entertainment	74,069	52	63,945	51	†5,976	†54	2,690	57	1,457	71
Financial, insurance & other professional services	114,074	67	101,640	66	5,354	64	4,605	80	2,474	73
Real estate and facilities management	95,068	57	85,826	57	†6,652	†55	1,340	44	1,249	67
Government	41,608	76	32,980	74	4,715	85	2,343	87	1,571	77
Education	55,629	86	45,309	85	4,348	97	2,941	92	3,031	92
Health	44,797	86	38,133	85	3,208	99	2,216	79	1,239	84
Care	73,669	84	60,516	84	6,798	81	3,562	81	2,793	86
All economy	1,361,250	59	1,141,560	58	119,847	68	58,171	59	41,668	64
Weighted base	2,299,921		1,960,298		175,115		98,952		65,558	
Unweighted base	87,572		75,053		2,503		6,012		4,004	

Source: UK Commission's Employer Skills Survey 2011 (Davies et al, 2012)

Base: All establishments.

† Treat figures with caution due to small unweighted base size of 50-99 establishments in Scotland

Table 4.18: Employers providing training to employees by occupational group

	Education		All economy	
	Number	%	Number	%
Managers, Directors and senior officials occupations	41,343	74	825,928	61
Professional occupations	29,092	52	152,106	11
Associate professional and technical occupations	12,433	22	124,610	9
Administrative and secretarial occupations	30,616	55	372,218	27
Skilled trades occupations	4,621	8	192,480	14
Personal service occupations	20,066	36	129,265	9
Sales and customer service occupations	3,131	6	261,082	19
Process, plant and machine operatives	949	2	96,592	7
Elementary occupations	14,328	26	217,981	16
Other	776	1	35,410	3
Don't know	775	1	20,638	2
Arrange training for all categories of staff employed	32,475	58	714,095	52
Arrange training for some (but not all) categories of staff employed	23,154	42	647,154	48
Weighted base	*55,629*		*1,361,249*	
Unweighted base	*5,129*		*66,916*	

Source: UK Commission's Employer Skills Survey 2011 (Davies et al, 2012)
Base: All establishments providing training

Table 4.19: Employees receiving training by sector and nation

	UK		England		Scotland		Wales		Northern Ireland	
	Number	%	Number	%	Number	%	Number	%	Number	%
Agriculture, forestry and fishing	198,736	43	152,352	43	†25,724	†47	8,993	29	11,667	51
Energy production and utilities	167,507	50	120,687	49	32,976	55	11,072	66	2,772	38
Manufacturing	1,146,654	45	934,516	44	93,562	48	74,719	54	43,857	52
Construction	1,072,552	48	884,923	48	116,140	47	39,666	44	31,826	46
Wholesale and retail trade	2,340,353	50	1,960,109	49	201,879	55	109,603	55	68,761	48
Transportation and storage	538,494	41	448,580	39	49,954	44	22,489	58	17,468	63
Accommodation, food and tourism activities	1,221,736	53	1,017,791	53	124,328	55	48,807	49	30,809	50
Information and communication	233,240	38	205,944	37	†15,377	†51	5,255	28	6,663	65
Creative media and entertainment	524,081	48	451,335	47	†30,017	†43	24,215	69	18,513	69
Financial, insurance & other professional services	1,109,888	54	949,712	52	101,444	73	32,505	60	26,224	69
Real estate and facilities management	560,354	47	492,799	47	†36,284	†49	19,985	60	11,286	50
Government	1,004,866	56	835,514	58	82,550	47	49,901	53	36,901	59
Education	1,598,280	63	1,354,826	63	116,696	62	84,527	72	42,231	58
Health	1,300,684	65	1,032,851	64	187,638	81	58,505	49	21,690	52
Care	969,487	64	780,108	64	89,130	63	52,831	84	47,414	64
All economy	14,476,138	53	12,050,111	52	1,337,833	56	661,045	56	427,137	54
Weighted base	27,547,123		23,198,475		2,381,601		1,182,314		784,732	
Unweighted base	2,816,693		2,345,213		201,868		178,922		90,690	

Source: UK Commission's Employer Skills Survey 2011 (Davies et al, 2012). Base: All employment.

† Treat figures with caution due to small unweighted base size of 50-99 establishments in Scotland

Table 4.18 shows that 74 per cent of education sector employers who provide training stated that they provide training to managers and directors. Fifty-two per cent of education sector employers who provide training stated that they provide training to professionals, compared to only 11 per cent of employers across all sectors, probably reflecting the greater proportion of professional occupations within the education sector.

Table 4.20: Employees receiving training by occupational group

	Education		All economy	
	Number	%	Number	%
Managers, Directors and senior officials occupations	198,713	63	2,413,145	45
Professional occupations	662,366	65	1,904,780	61
Associate professional and technical occupations	150,644	62	1,022,510	56
Administrative and secretarial occupations	191,471	57	1,607,984	45
Skilled trades occupations	27,240	66	1,041,373	55
Personal service occupations	219,828	71	1,606,254	70
Sales and customer service occupations	21,133	63	1,937,670	55
Process, plant and machine operatives	3,842	49	902,782	47
Elementary occupations	112,807	49	1,938,793	48
Other	10,236	n/a	100,845	n/a
All occupations	1,598,281		14,476,137	
Weighted base	*1,598,281*		*14,476,137*	
Unweighted base	*224,806*		*1,517,802*	

Source: UK Commission's Employer Skills Survey 2011 (Davies et al, 2012).
Base: All employees receiving training

Most of the training provided in the sector is either job-specific or related to health and safety. Job specific training was provided by 92 per cent of education sector establishments that provided training (Table 4.21). This is somewhat higher than the equivalent percentage of employers across the whole economy that provided training. Again in all the types of training listed, the education sector out-performed the whole economy, indicating the importance and prevalence of training within the sector.

Table 4.21: Type of training funded or arranged for employees

	Education		All economy	
	Number	%	Number	%
Job specific training	50,902	92	1,149,860	84
Health and safety/first aid training	48,153	87	970,183	71
Induction training	37,791	68	702,846	52
Training in new technology	34,155	61	641,023	47
Management training	31,764	57	457,763	34
Supervisory training	22,810	41	437,577	32
Personal Development Training*	3,517	6	45,451	3
Other	233	**	4,101	**
None of these	46	**	8,809	1
Don't know	121	**	2,412	**
Weighted base	*55,629*		*1,361,249*	
Unweighted base	*5,129*		*66,916*	

Source: UK Commission's Employer Skills Survey 2011 (Davies et al, 2012).
Base: All establishments providing training
*** denotes a figure greater than 0 per cent but less than 0.5 per cent*

Investment in training

Across the UK, employers across all sectors spend an estimated £49bn on training (UKCES, 2011). Total expenditure is divided evenly between expenditure on on-the-job training (£25.8bn) and off-the-job training (£23.2bn). The majority of the expenditure on off-the-job training is course related (£19.3bn), with other off-the-job training for such activities as seminars, workshops and open and distance learning forming a far smaller component (£3.9bn) (ibid).

Spending on training by employers in the education sector was £6.7bn in 2011, the equivalent of £2,650 per employee (ibid).

Over three-quarters (78 per cent) of employers in education sector assess the performance of their employees after training, compared with two-thirds of all employers.. (ibid)

Barriers to training

Table 4.22 shows that, of the education sector employers who do not provide training, 61 per cent stated that they did not need to train as all staff are already fully proficient. A further 11 per cent (of those who do not provide training) stated that there was no money available for training.

Table 4.22 Barriers to training within the education sector

	UK		England	
	Number	%	Number	%
All our staff are fully proficient / no need for training	5,284	61	4,878	61
No money available for training	993	11	956	12
Training is not considered to be a priority for the establishment	574	7	574	7
No training available in relevant subject area	365	4	365	5
Managers have lacked the time to organise training	103	1	97	1
Learn by experience/Learn as you go	89	1	89	1
External courses are too expensive	189	2	189	2
Small firm/training not needed due to size of establishment	37	**	17	**
Employees are too busy to undertake training and development	49	1	49	1
Employees are too busy to give training	80	1	59	1
Business not operating long enough/New business (inc. takeover transition)	5	**	5	**
Trained staff will be poached by other employers	38	**	38	**
I Don't know what provision is available locally	17	**	17	**
The start dates or times of the courses are inconvenient	17	**	17	**
The courses interested in are not available locally	360	4	360	4
No new staff (only train new staff)	0	0	0	0
The quality of the courses or providers locally is not satisfactory	5	**	5	**
Difficult to get information about the courses available locally	9	**	9	**
Other	381	4	290	4
No particular reason	485	6	480	6
Don't know	396	5	362	4
Weighted base	*8,636*		*8,044*	
Unweighted base	*274*		*243*	

Source: Source: UK Commission's Employer Skills Survey 2011 (Davies et al, 2012).
Base: All establishments that do not provide training
NB Column percentages sum to more than 100 since multiple responses were allowed.
Data from Northern Ireland, Scotland and Wales is suppressed as the unweighted establishment base < 25 (<50 for Scotland)
*** Denotes a figures of greater than 0 per cent but less than 0.5 per cent*

4.3 Skills and sectoral performance

Relationship between investment in skills and training

Ofsted's annual report for 2010/11 cites improving the quality of teaching as a major challenge facing the education sector and indicates strongly that improvement is needed at all levels from early years to colleges and adult and community learning providers in England. The report states, "*The quality of teaching in our schools is still too variable: too much is satisfactory and too little outstanding teaching was seen in the schools inspected this year. Satisfactory teaching does not deliver good enough progress for pupils in the most challenging circumstances. Just three per cent of secondary schools and four per cent of primary schools were judged outstanding for the quality of teaching across the school*." Moreover, of the 312 learning and skills providers inspected, only 15 were judged outstanding for their quality of teaching (Ofsted, 2011).

The main issue appears to be the variable quality of learning provision within the sector, placing additional pressure on the education sector itself to ensure that standards are being met and that training programmes are effective.

In order to raise the quality of teaching, the Government is introducing new teachers' standards in England from September 2012. The new standards will apply to all teachers regardless of their career stage and define the minimum level of practice expected of teachers from the point of being awarded qualified teacher status (QTS) (DFE, 2011b). The intention is to make sure that the new standards have a stronger focus on key elements of teaching, including the best approaches to the teaching of early reading and early mathematics, how best to manage poor behaviour, and how to support children with additional needs, including special educational needs and disabilities.

The new standards provide a framework for teaching and personal and professional conduct. According to the new standards, a teacher must:

- Set high expectations which inspire, motivate and challenge pupils;
- Promote good progress and outcomes by pupils;
- Demonstrate good subject and curriculum knowledge;
- Plan and teach well-structured lessons;
- Adapt teaching to respond to the strengths and needs of all pupils;
- Make accurate and productive use of assessment;
- Manage behaviour effectively to ensure a good and safe learning environment; and
- Fulfil wider professional responsibilities.

These new standards will require further development of appropriate skills, such as communication, planning, supervision and intercultural skills. The standards provide a framework for assessment and further professional development so that teachers at all levels can continue to improve the abilities and be more effective in delivering learning outcomes.

Raising standards for existing staff is not the only step that can be taken towards improving teaching. The Government has recently set out its programme to improve initial teacher training (ITT) with a number of measures which will be implemented from 2012 in England (DFE, 2011c). These measures include:

- Expanding the Teach First programme, which has so successfully raised the status of teaching as a career choice among top graduates;
- Encouraging Service Leavers to become teachers through a new Troops to Teachers programme;
- Placing more emphasis on selection processes and trainee quality in making judgements about an ITT provider’s quality;
- Setting a higher bar for entry to ITT courses.

Standards for school leaders are also under review, with NCSL currently revising the National Professional Qualification for Headship (NPQH) which became available in 2012.

Within FE, colleges and approved learning providers are responsible for improving the quality of the teaching and learning they provide to learners. To support this improvement, in December 2011, the Government set out its reform plan for the further education and skills system for adults aged 19 and over in England. As has been seen in the 2010/11 Ofsted report, teaching quality receives special attention. The plan proposes a number of actions to develop and promote excellent teaching, including establishing an independent commission on adult education and vocational pedagogy to develop a sector owned strategy and delivery programme, as well as an independent review of professionalism in the FE and skills workforce. (BIS, 2011b)

It is recognised throughout the sector that outstanding teaching and learning depends on the quality of learning providers, their specialist skills and how they are supported. To support continued improvement in FE, several steps are being taken, including an independent review of professionalism in the further education and skills sector; introduction of bursaries and a development fund for the sector to explore new models of delivering Initial Teacher Education and the creation of a network of expert practitioners in specific vocational skills to build excellence in dual professionalism in key industry areas.

In 2011 professional bodies within Higher Education (HE) from across the UK, including the Higher Education Academy, developed the Professional Standards Framework for teaching and supporting learning in higher education. The framework is supplemented and supported by a series of Framework Guidance Notes to highlight and disseminate good practice in using the framework (HEA, 2011). The framework, which focuses on three interrelated areas - core knowledge, areas of activity and professional values – sets out five aims:

- Support the initial and continuing professional development of staff engaged in teaching and supporting learning;
- Foster dynamic approaches to teaching and learning through creativity, innovation and continuous development in diverse academic and/or professional settings;
- Demonstrate to students and other stakeholders the professionalism that staff and institutions bring to teaching and support for student learning;
- Acknowledge the variety and quality of teaching, learning and assessment practices that support and underpin student learning; and
- Facilitate individuals and institutions in gaining formal recognition for quality-enhanced approaches to teaching and supporting learning, often as part of wider responsibilities that may include research and/or management activities.

As has been seen with the new teachers' standards, specific skills needs are not identified in the framework and will have to be identified and addressed based on the needs of individuals.

5 Extent of skills mismatch

Chapter Summary

- While the education sector accounts for 11 per cent of all in employment across the UK, it accounts for just five per cent of all vacancies.
- There are 3.1 million people employed in the education sector and there are fewer than 35,000 vacancies. Of these vacancies, 14 per cent are hard-to-fill and 11 per cent are skills shortage vacancies.
- The level of skills shortages reported in the education sector is generally lower than the skills shortages reported for the economy as a whole.
- Hard-to-fill vacancies (HTF) in the education sector account for just four per cent of all HTF vacancies and skills shortage vacancies (SSV) form just four per cent of all SSVs.
- The greatest shortages were in job specific skills followed by planning and organisation skills, oral and written communication skills, strategic management skills, and technical or practical skills. Other skills shortages include IT skills, customer handling skills, team working and problem solving, as well as basic numeracy and literacy. Two education occupations: maths and science teachers in secondary education and special educational needs teachers in special schools, appear on the MAC list of skill shortage occupations.
- Only four per cent of staff are reported as having skills gaps in the education sector, slightly less than the average across the whole economy. Reasons for skills gaps include lack of experience in recently recruited staff, lack of staff motivation, failure to train and develop staff, and the failure to keep staff up-to-date with changes in their subject areas.
- The education sector ranks in the top half of average hourly wages paid in the UK at £15.71 per hour, as compared to £14.60 average hourly wage for the economy as a whole.
- Between 2008 and 2010, the education sector employed about 29 per cent of immigrant public sector workers, compared to around 40 per cent in the health sector.
- Skills deficiencies are not reported to be having a major impact on the education sector with the sector ranked 26 out of 27 for skills deficits across all sectors.

5.1 Extent and nature of vacancies

Level of vacancies

This section reviews skills shortages and skills gaps in the education workforce as defined through data from various sources. The data provide an overview of skills issues, including hard-to-fill vacancies, skills shortage vacancies and skills gaps.

Skills issues can take various forms. Skills shortages arise when employers find it difficult to fill their vacancies with appropriately skilled applicants. Skills gaps arise where members of the existing workforce are seen to lack the skills necessary to meet business needs. There are relatively few skills shortages in the UK; skills gaps are far greater in number than skills shortages (UKCES almanac online, 2012).

Another skill issue is underemployment, which UKCES defines in terms of individuals being either over-qualified or over-skilled for their job. Someone is described as being over-qualified if the qualifications they have are higher than the qualifications needed to get their job. Someone is over-skilled if they have enough opportunity to use the knowledge and skills that they have, but little opportunity to use their past experience, skill or abilities in their job.

Although the education sector accounts for 11 per cent of all in employment across the UK, it accounts for just five per cent of all vacancies across all sectors (Table 5.1). Hard-to-fill vacancies (HTF) in the education sector account for just four per cent of all HTF vacancies across all sectors, while skills shortage vacancies (SSV) as a percentage of all SSVs across all sectors is also just four per cent. These data suggest that the sector does not face a particular problem with the supply of skills in the external labour market.

Table 5.1: Employers with vacancies, hard-to-fill vacancies and skills shortage vacancies

	Vacancies		HTF vacancies		SSV			
	Number	%	Number	%	Number	%	*Weighted base*	*Unweighted base*
Agriculture, Forestry & Fishing	8,285	3	4,141	5	2,660	4	*110,220*	*1,547*
Energy Production & Utilities	1,783	1	635	1	532	1	*12,610*	*1,614*
Manufacturing	17,423	6	7,684	8	6,040	9	*130,709*	*7,776*
Construction, Building Services Engineering and Planning	22,972	8	11,596	13	9,607	14	*306,403*	*8,961*
Wholesale & Retail Trade	50,681	18	13,499	15	9,778	14	*470,200*	*16,150*
Transportation and Storage	13,036	5	4,127	5	2,662	4	*122,058*	*4,735*
Hospitality, Tourism and Sport	32,674	12	11,656	13	7,435	11	*220,055*	*11,318*
Information and Communication Technologies	9,146	3	3,596	4	3,386	5	*72,281*	*2,510*
Creative Media & Entertainment	16,182	6	5,506	6	4,746	7	*143,772*	*3,762*
Financial, Insurance & other Professional Services	21,794	8	5,310	6	4,556	7	*170,887*	*5,343*
Real Estate & Facilities Management	17,403	6	4,651	5	3,956	6	*166,486*	*3,424*
Government Services	8,185	3	1,877	2	1,204	2	*54,687*	*2,605*
Education	14,466	5	3,220	4	2,386	4	*64,540*	*5,439*
Health	9,577	3	2,820	3	1,842	3	*52,370*	*3,398*
Care	15,589	6	3,956	4	2,054	3	*87,899*	*4,763*
Not in scope	15,583	6	6,497	7	5,121	8	*114,744*	*4,227*
Total	274,779	100	90,771	100	67,965	100	*2,299,921*	*87,572*

Source: Source: UK Commission's Employer Skills Survey 2011 (Davies et al, 2012).
Base: All establishments

Nature of vacancies

There are 3.1 million people employed in the sector and as can be seen in Table 5.2, there are fewer than 35,000 vacancies, ie about one per cent of jobs in the sector are vacant. Of these vacancies, 14 per cent are hard-to-fill and 11 per cent are skills shortage vacancies, significantly lower than the all sector averages of 23 per cent and 16 per cent respectively.

Table 5.3 shows how these vacancies vary across the UK. Hard-to-fill vacancies and skills shortage vacancies are reported more frequently in England and Northern Ireland than they are in Scotland and Wales.

Table 5.2: Profile of vacancies by sector

	Volume			%				
	Vacancies	HTF vacancies	SSV (prompted and unprompted)	Vacancies as a % employment	HTF vacancies as a % vacancies	SSV as a % vacancies	*Weighted base*	*Unweighted base*
Agriculture, Forestry & Fishing	14,641	5,785	4,238	3	40	29	*466,870*	*19,506*
Energy Production & Utilities	9,343	1,590	1,236	3	17	13	*333,050*	*47,228*
Manufacturing	40,252	11,834	9,711	2	29	24	*2,541,188*	*291,593*
Construction, Building Services Engineering and Planning	47,241	19,103	12,394	2	40	26	*2,235,270*	*150,111*
Wholesale & Retail Trade	95,390	17,441	12,619	2	18	13	*4,674,684*	*514,820*
Transportation and Storage	25,734	4,739	3,182	2	18	12	*1,320,126*	*114,658*
Hospitality, Tourism and Sport	73,886	18,245	11,179	3	25	15	*2,313,487*	*258,524*
Information and Communication Technologies	29,361	5,449	4,937	5	19	17	*614,641*	*53,681*
Creative Media & Entertainment	37,885	6,824	5,502	3	18	15	*1,086,978*	*87,953*
Financial, Insurance & other Professional Services	58,847	11,732	10,623	3	20	18	*2,052,039*	*112,945*
Real Estate & Facilities Management	31,155	5,773	4,252	3	19	14	*1,183,601*	*91,204*
Government Services	35,917	9,330	5,938	2	26	17	*1,780,058*	*223,796*
Education	34,684	4,984	3,729	1	14	11	*2,538,545*	*387,221*
Health	27,811	5,281	3,330	1	19	12	*2,004,436*	*219,765*
Care	37,494	5,924	3,335	2	16	9	*1,504,729*	*157,681*
Not Within Scope	36,266	9,533	7,248	4	26	20	*897,422*	*86,007*
Total	635,907	143,564	103,453	2	23	16	*27,547,123*	*2,816,693*

Source: Source: UK Commission's Employer Skills Survey 2011 (Davies et al, 2012).
Bases: Vary.
Vacancies as a % of employment based on all employment.
Hard-to-fill vacancies as a % of vacancies based on all vacancies.
SSVs as a % of vacancies based on all vacancies.

Table 5.3: Profile of vacancies by sector and nation

	Vacancies as a % employment				HTF vacancies as a % vacancies				SSV as a % vacancies			
	England	Scotland	Wales	NI	England	Scotland	Wales	NI	England	Scotland	Wales	NI
Agriculture, forestry & fishing	3	†4	2	0	36	†45	87	0	28	†22	85	0
Energy production & utilities	2	7	4	1	11	22	32	49	9	17	22	25
Manufacturing	2	1	2	2	28	39	30	33	23	36	27	29
Construction, Building Services Engineering and Planning	2	2	2	1	42	29	41	27	26	24	34	16
Wholesale & retail trade	2	2	2	2	18	17	23	32	13	10	12	18
Transportation and Storage	2	2	3	1	17	6	48	60	12	3	29	11
Hospitality, Tourism and Sport	3	3	4	2	23	25	56	29	13	17	41	23
Information and Communication Technologies	5	†5	3	3	18	†35	19	13	16	†28	17	13
Creative media & entertainment	3	†2	5	11	20	†1	18	7	16	†0	16	4
Financial, Insurance & other Professional Services	3	2	2	11	19	7	12	44	17	6	12	44
Real estate & facilities management	3	†1	2	1	18	†29	17	0	14	†22	12	0
Government services	2	1	2	2	25	10	46	43	17	5	4	36
Education	1	2	1	1	16	6	6	16	12	2	5	11
Health	2	1	1	1	19	19	17	27	12	9	13	27
Care	3	1	3	3	16	19	20	13	9	16	13	3
Total	2	2	2	2	22	20	36	44	16	14	22	22
Weighted base	23,198,476	2,381,601	1,182,314	784,732	545,064	45,749	25,542	19,552	545,064	45,749	25,542	19,552
Unweighted base	2,345,213	201,868	178,922	90,690	43,960	3,186	2,999	1,759	43,960	3,186	2,999	1,759

Source: UK Commission's Employer Skills Survey 2011 (Davies et al, 2012).
Bases: Vary.
Vacancies as a % of employment based on all employment.
Hard-to-fill vacancies as a % of vacancies based on all vacancies.
SSVs as a % of vacancies based on all vacancies.
† Treat figures with caution due to small establishment base size of 50-99 in Scotland.

Table 5.4 shows that 45 per cent of all vacancies in the education sector are in the professional occupational category, reflecting the occupational profile of the sector. Of the vacancies in this category, only 14 per cent are hard-to-fill and 11 per cent are skills shortages. While in the Associate Professionals category for the sector, it is slightly higher with 18 per cent being hard-to-fill vacancies and 14 per cent as skills shortages.

Table 5.4: Profile of vacancies by occupation within education sector

	Volume								
	Vacancies	HTF vacancies	SSV	HTF vacancies as a % vacancies	SSV as a % vacancies	*Weighted base (number of vacancies)*	*Unweighted base (number of vacancies)*	*Weighted base (establishments reporting vacancies)*	*Unweighted base (establishments reporting vacancies)*
Managers	*	*	*	*	*	*	*	*	*
Professionals	15,505	2,195	1,760	14	11	*15,505*	*2,135*	*7,130*	*811*
Associate professionals	5,731	1,012	796	18	14	*5,731*	*547*	*2,823*	*221*
Administrative/clerical staff	3,216	306	242	10	8	*3,216*	*425*	*2,007*	*217*
Skilled trades occupations	445	285	249	64	56	*445*	*49*	*225*	*32*
Caring, leisure and other services staff	7,100	813	444	11	6	*7,100*	*831*	*4,046*	*425*
Sales and customer services staff	*	*	*	*	*	*	*	*	*
Machine operatives	*	*	*	*	*	*	*	*	*
Elementary staff	1,526	256	123	17	8	*1,526*	*199*	*928*	*113*
Unclassified staff	*	*	*	*	*	*	*	*	*
Total	34,557	4,984	3,728	14	11	*34,557*		*17,843*	*1,887*

Source: UK Commission's Employer Skills Survey 2011 (Davies et al, 2012).
Bases: All vacancies.
Establishment bases provided for suppression reasons.
** Data suppressed as unweighted establishment base < 25*

The cause of hard-to-fill vacancies most frequently reported by education sector employers across the UK is "low number of applicants with the required skills" (reported by 39 per cent of education sector employers with hard-to-fill vacancies). The second and third most frequently reported causes are "lack of work experience" and "lack of qualifications" (29 and 24 per cent, respectively).

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It is often the case (especially within vocational education and work based learning) that potential candidates for learning provider or practitioner roles who are vocationally skilled or qualified frequently do not combine that vocational expertise with teaching skills and qualifications on initial entry. This underpins the importance of in-service training such as City & Guilds initial teacher training schemes, and the Postgraduate Certificate in Education for Further and Adult Education.

As a consequence of not being able to fill vacancies, other staff generally had to work harder. Table 5.5 shows that 76 per cent of education sector employers with hard-to-fill vacancies stated that as a result of the hard-to-fill vacancies, they had to increase the workload of other staff. Forty-two per cent stated that they had problems meeting quality standards. Moreover, Table 5.6 shows that 46 per cent of education sector employers with hard-to-fill vacancies stated that they increased advertising and spend on recruitment as an attempt to overcome hard-to-fill vacancies. While 27 per cent stated that they use new recruitment methods or channels.

Table 5.5: Impact of having hard-to-fill vacancies within the education sector

	UK		England	
	Number	%	Number	%
Increase workload for other staff	2,437	76	2,243	76
Have difficulties meeting customer services objectives	1,315	41	1,189	40
Lose business or orders to competitors	1,137	35	1,114	38
Delay developing new products or services	1,364	42	1,266	43
Experience increased operating costs	1,321	41	1,264	43
Have difficulties meeting quality standards	1,361	42	1,262	43
Have difficulties introducing new working practices	1,072	33	978	33
Outsource work	693	22	663	22
Withdraw from offering certain products or services altogether	925	29	866	29
Have difficulties introducing technological change	427	13	401	14
None	230	7	181	6
Don't know	9	**	9	**
Weighted base	*3,220*		*2,959*	
Unweighted base	*284*		*255*	

Source: UK Commission's Employer Skills Survey 2011 (Davies et al, 2012).
Base: All employers with hard-to-fill vacancies
NB Column percentages sum to more than 100 since multiple responses were allowed.
Data from Northern Ireland, Scotland and Wales is suppressed as the unweighted establishment base < 25 (<50 for Scotland)
*** Denotes a figures of greater than 0 per cent but less than 0.5 per cent*

Table 5.6: Measures taken by employers to overcome hard-to-fill vacancies

	UK		England	
	Number	%	Number	%
Increasing advertising / recruitment spend	1,474	46	1,373	46
Using NEW recruitment methods or channels	869	27	809	27
Redefining existing jobs	315	10	222	8
Increasing the training given to your existing workforce	279	9	279	9
Increasing / expanding trainee programmes	161	5	150	5
Being prepared to offer training to less well qualified recruits	203	6	203	7
Bringing in contractors to do the work, or contracting it out	149	5	115	4
Increasing salaries	198	6	198	7
Recruiting workers who are non-UK nationals	85	3	74	2
Making the job more attractive e.g. recruitment incentives, enhanced T&Cs, working hours	10	**	10	**
Other	110	3	105	4
Nothing	553	17	531	18
Don't know	27	1	27	1
Weighted base	*3,220*		*2,959*	
Unweighted base	*284*		*255*	

Source: UK Commission's Employer Skills Survey 2011 (Davies et al, 2012).
Base: All employers with hard-to-fill vacancies
NB Column percentages sum to more than 100 since multiple responses were allowed.
Data from Northern Ireland, Scotland and Wales is suppressed as the unweighted establishment base < 25 (<50 for Scotland)
*** Denotes a figures of greater than 0 per cent but less than 0.5 per cent*

Staff retention

In line with the rest of the economy, only five per cent of employers in the education sector have retention problems (Table 5.7). This low percentage holds for England and Northern Ireland and is slightly higher in Wales at eight per cent.

Table 5.7: Employers with retention problems, by sector and nation

	UK (excl. Scotland)		England		Wales		Northern Ireland	
	Number	*%*	*Number*	*%*	*Number*	*%*	*Number*	*%*
Agriculture, Forestry & Fishing	4,954	5	4,236	5	360	3	358	5
Energy Production & Utilities	555	5	484	5	62	8	9	2
Manufacturing	6,493	5	5,883	5	433	8	177	5
Construction, Building Services Engineering and Planning	10,569	4	9,710	4	722	5	138	1
Wholesale & Retail Trade	18,192	4	16,682	4	891	4	619	4
Transportation and Storage	5,676	5	5,240	5	321	8	115	5
Hospitality, Tourism and Sport	18,345	9	16,670	9	1,126	10	548	9
Information and Communication Technologies	3,084	4	2,948	4	57	3	79	7
Creative Media & Entertainment	5,303	4	4,891	4	306	7	106	5
Financial, Insurance & other Professional Services	6,271	4	5,876	4	339	6	55	2
Real Estate & Facilities Management	5,826	4	5,649	4	139	5	38	2
Government Services	2,496	5	2,200	5	208	8	88	4
Education	2,925	5	2,493	5	267	8	165	5
Health	3,297	7	2,961	7	249	9	87	6
Care	5,134	6	4,615	6	327	7	191	6
Not within scope	6,810	6	6,476	6	247	6	87	3
Whole Economy	105,929	5	97,014	5	6,054	6	2,860	4
Weighted base	*2,124,807*		*1,960,298*		*98,952*		*65,558*	
Unweighted base	*85,069*		*75,053*		*6,012*		*4,004*	

Base: All establishments in England, NI, Wales (question not asked in Scotland)
Source: UK Commission's Employer Skills Survey 2011 (Davies et al, 2012).

Recruitment channels

As was noted in Chapter 3, the sector is gradually reducing the age profile of its workforce and 44 per cent of employers in the sector have actively been recruiting young people in the UK, as opposed to 24 per cent for all UK employers (Table 5.8). More than 40 per cent of employers in England, Scotland and Wales are also targeting young people, with Northern Ireland at 38 per cent.

Table 5.8: Employers recruiting one or more young person over the last three years

	UK		England		Scotland		Wales		Northern Ireland	
	Number	%	Number	%	Number	%	Number	%	Number	%
Agriculture, forestry & fishing	21,769	20	14,815	19	†2,725	†20	1,183	11	3,046	43
Energy production & utilities	2,660	21	2,080	21	322	25	197	24	61	11
Manufacturing	31,047	24	26,304	23	2,442	26	1,437	27	863	23
Construction, building services engineering and planning	66,741	22	55,108	21	6,498	30	2,973	23	2,161	20
Wholesale & retail trade	120,702	26	101,878	25	9,862	28	5,297	25	3,665	26
Transportation and storage	18,432	15	16,069	15	1,496	19	476	11	391	17
Hospitality, tourism and sport	70,608	32	59,071	33	6,164	28	3,583	32	1,789	31
Information and communication technologies	14,960	21	13,659	21	†794	†22	241	12	266	24
Creative media & entertainment	31,843	22	28,704	23	†1,573	†14	1,082	23	484	24
Financial, insurance & other professional services	37,955	22	34,274	22	1,679	20	1,230	21	773	23
Real estate & facilities management	23,229	14	21,827	15	†699	†6	475	16	229	12
Government services	10,268	19	8,375	19	1,084	20	378	14	431	21
Education	28,641	44	24,132	45	1,812	41	1,450	45	1,247	38
Health	13,817	26	11,547	26	938	29	822	29	510	34
Care	26,557	30	22,175	31	1,955	23	1,481	34	947	29
All economy	552,385	24	467,925	24	43,211	25	23,664	24	17,584	27
Weighted base	*2,124,807*		*1,960,298*		*175,115*		*98,952*		*65,558*	
Unweighted base	*85,069*		*75,053*		*2,503*		*6,012*		*4,004*	

Base: all employers who have recruited a person to their first job on leaving school, college or university in the last 2-3 years
Source: UK Commission's Employer Skills Survey 2011 (Davies et al, 2012).
NB: Scottish employers were asked a slightly different question; results cannot be compared directly to UK, England, Wales, or Northern Ireland figures. Scottish employers have not been included in the UK base. † Treat figures with caution due to small base size of 50-99 establishments in Scotland

5.2 Extent and nature of skills issues

Education employers reported a number of skills as lacking in candidates, thereby resulting in skills shortage vacancies.. The greatest shortages were in job specific skills reported by 59 per cent of employers with a skills shortage vacancy. Thirty-three per cent of employers reported shortages in planning and organisation skills, while over a quarter also reported shortages in soft skills, such as oral and written communication skills, strategic management skills, and technical or practical skills (Table 5.9). Other skills shortages include IT skills, customer handling skills, team working and problem solving, as well as basic numeracy and literacy. The levels of skills shortages reported in the education sector are generally lower than the skills shortages reported for the economy as a whole, as shown in Table 5.10. For example the greatest shortages across the whole economy were in job specific skills (similar to the education sector), but this was reported by 66 per cent of employers with a skills shortage vacancy, instead of 59 per cent in education.

Table 5.9: Skills lacking in Skills Shortage Vacancies within the education sector

	UK		England	
	Number	%	Number	%
Basic computer literacy / using IT	546	15	482	14
Advanced IT or software skills	522	14	430	12
Oral communication skills	979	26	921	27
Written communication skills	932	25	870	25
Customer handling skills	862	23	795	23
Team working skills	776	21	724	21
Written Welsh language skills	63	2	0	0
Oral Welsh language skills	63	2	0	0
Foreign language skills	702	19	589	17
Problem solving skills	683	18	674	19
Planning and Organisation skills	1,223	33	1,136	33
Strategic Management skills	971	26	875	25
Numeracy skills	619	17	605	17
Literacy skills	789	21	726	21
Office admin skills	492	13	415	12
Technical or practical skills	941	25	897	26
Job specific skills	2,195	59	2,012	58
Experience/lack of product knowledge	325	9	325	9
Personal attributes e.g. motivation, work ethos, common sense, initiative, reliability, commitment, punctuality, flexibility)	138	4	138	4
Other	59	2	59	2
No particular skills difficulties	540	14	536	15
Don't know	61	2	58	2
Weighted base	*3,729*		*3,467*	
Unweighted base	*356*		*310*	

Source: UK Commission's Employer Skills Survey 2011 (Davies et al, 2012).
Base: All skills shortage vacancies
NB Column percentages sum to more than 100 since multiple responses were allowed.
Data from Northern Ireland, Scotland and Wales is suppressed as the unweighted establishment base < 25 (<50 for Scotland)

Table 5.10: Skills lacking in Skills Shortage Vacancies (Whole economy)

	UK		England		Scotland		Wales		Northern Ireland	
	Number	%	Number	%	Number	%	Number	%	Number	%
Basic computer literacy / using IT	16,832	16	13,842	16	514	8	2,001	35	476	11
Advanced IT or software skills	21,988	21	18,190	21	1,160	18	1,976	35	661	15
Oral communication skills	39,113	38	33,997	39	1,910	30	1,993	35	1,213	28
Written communication skills	33,859	33	28,515	33	2,659	41	1,381	24	1,305	30
Customer handling skills	41,349	40	33,863	39	3,056	47	2,977	53	1,453	33
Team working skills	33,728	33	27,092	31	1,877	29	3,315	59	1,444	33
Written Welsh language skills	1,574	2	0	0	0	0	1,574	28	0	0
Oral Welsh language skills	1,680	2	0	0	0	0	1,680	30	0	0
Foreign language skills	16,773	16	14,601	17	1,451	22	385	7	336	8
Problem solving skills	37,882	37	32,338	37	2,453	38	2,209	39	882	20
Planning and Organisation skills	42,431	41	35,377	41	2,867	44	2,372	42	1,815	41
Strategic Management skills	29,853	29	24,828	29	2,122	33	1,564	28	1,340	31
Numeracy skills	26,775	26	23,194	27	1,866	29	1,149	20	567	13
Literacy skills	30,151	29	25,002	29	1,674	26	2,490	44	985	22
Office admin skills	17,559	17	15,320	18	967	15	797	14	475	11
Technical or practical skills	47,992	46	40,313	46	3,711	57	2,571	46	1,397	32
Job specific skills	68,385	66	56,716	65	5,064	78	4,401	78	2,204	50
Experience/lack of product knowledge	1,668	2	1,523	2	135	2	9	0	0	0
Personal attributes (e.g. motivation, work ethos, common sense, initiative, reliability, commitment, punctuality, flexib	2,743	3	2,385	3	314	5	17	0	26	1
Other	911	1	835	1	0	0	13	0	62	1
No particular skills difficulties	7,129	7	5,588	6	148	2	135	2	1,258	29
Don't know	3,777	4	3,459	4	102	2	124	2	93	2
Weighted base	*103,453*		*86,950*		6,463		5,650		4,390	
Unweighted base	*7,197*		*5,959*		367		482		389	

Source: UK Commission's Employer Skills Survey 2011 (Davies et al, 2012).
Base: All skills shortage vacancies
NB Column percentages sum to more than 100 since multiple responses were allowed.

Almost one in five employers in the education sector employs at least one staff member who is not fully proficient in their role and therefore has a skills gap (Table 5.11). Only four per cent of staff are reported as having skills gaps, slightly less than the average across the whole economy. There are various reasons why staff may lack skills, including a lack of experience in recently recruited staff, lack of staff motivation, failure to train and develop staff, and the failure to keep staff up-to-date with changes in their subject areas. High staff turnover and recruitment problems are also common reasons for skills gaps and skills shortage vacancies.

Employers are more likely to report skills gaps in Scotland than across the rest of the UK, although the actual percentage of staff who are not fully proficient is similarly low (Table 5.12). Finally, Table 5.13 shows that there are three per cent of professional who are reported to have skills gaps and four per cent each among associate professional occupations and managers in the education sector.

Table 5.11: Employers and employees with skills gaps by sector

	Employers with skills gaps				Employees with skills gaps			
	Number	%	*Weighted base*	*Unweighted base*	Number	%	*Weighted base*	*Unweighted base*
Agriculture, Forestry & Fishing	10,665	10	110,220	1,547	20,149	4	466,870	19,506
Energy Production & Utilities	2,000	16	12,610	1,614	17,250	5	333,050	47,228
Manufacturing	21,520	16	130,709	7,776	148,007	6	2,541,188	291,593
Construction, Building Services Engineering and Planning	31,925	10	306,403	8,961	99,184	4	2,235,270	150,111
Wholesale & Retail Trade	72,233	15	470,200	16,150	300,344	6	4,674,684	514,820
Transportation and Storage	11,540	9	122,058	4,735	55,391	4	1,320,126	114,658
Hospitality, Tourism and Sport	43,000	20	220,055	11,318	193,549	8	2,313,487	258,524
Information and Communication Technologies	6,647	9	72,281	2,510	34,775	6	614,641	53,681
Creative Media & Entertainment	9,155	6	143,772	3,762	41,091	4	1,086,978	87,953
Financial, Insurance & other Professional Services	20,954	12	170,887	5,343	92,599	5	2,052,039	112,945
Real Estate & Facilities Management	13,185	8	166,486	3,424	64,302	5	1,183,601	91,204
Government Services	7,980	15	54,687	2,605	94,735	5	1,780,058	223,796
Education	12,304	19	64,540	5,439	94,884	4	2,538,545	387,221
Health	9,776	19	52,370	3,398	101,986	5	2,004,436	219,765
Care	14,886	17	87,899	4,763	78,458	5	1,504,729	157,681
Whole economy	300,941	13	2,299,921	87,572	1,489,540	5	27,547,123	2,816,693

Source: UK Commission's Employer Skills Survey 2011 (Davies et al, 2012).

Table 5.12: Employers and employees with skills gaps in the education sector by nation

	UK		England		Scotland		Wales		Northern Ireland	
	Number	%	Number	%	Number	%	Number	%	Number	%
Employers with skills gaps	12,304	19	10,058	19	1,338	30	534	17	375	11
Employees with skills gaps	94,884	4	83,254	4	6,290	3	4,040	3	1,300	2
Employer weighted base	*64,540*		*53,585*		*4,467*		*3,197*		*3,291*	
Employer unweighted base	*5,439*		*4,597*		*164*		*391*		*287*	
Employment weighted base	*2,538,545*		*2,159,448*		*189,346*		*116,992*		*72,759*	
Employment unweighted base	*387,221*		*325,375*		*32,366*		*20,262*		*9,218*	

Source: UK Commission's Employer Skills Survey 2011 (Davies et al, 2012).

Table 5.13: Skills gaps in the education sector by occupation

	Total employment	Number with skills gaps	% with skills gaps
Managers	317,405	11,441	4
Professionals	1,018,900	27,813	3
Associate professionals	241,302	10,273	4
Administrative/clerical staff	336,760	17,277	5
Skilled trades occupations	41,448	1,296	3
Caring, leisure and other services staff	311,677	13,474	4
Sales and customer services staff	33,289	2,456	7
Machine operatives	*	*	*
Elementary staff	229,995	10,198	4
Weighted base	*2,538,545*	*94,228*	
Unweighted base	*387,221*	*16,211*	

Source: UK Commission's Employer Skills Survey 2011 (Davies et al, 2012).
Base: All employees
** suppressed due to unweighted establishment base <25*

As with skills shortages, the primary impact of skills gaps is that other staff have to work harder, The ESS found that 82 per cent of education sector employers who have skills gaps that impact upon their establishments' performance stated that they are forced to increase workload for other staff. 46 per cent reported that they have difficulty introducing new working practices (Table 5.14).

Table 5.14: Consequences of skills gaps in the education sector

	UK		England		Scotland		Wales		Northern Ireland	
	Number	%	Number	%	Number	%	Number	%	Number	%
Increase workload for other staff	6,147	82	4,783	80	*	*	289	86	*	*
Increase operating costs	2,766	37	2,242	37	*	*	138	41	*	*
Have difficulties meeting quality standards	3,112	41	2,520	42	*	*	164	49	*	*
Have difficulties introducing new working practices	3,458	46	2,558	43	*	*	167	50	*	*
Lose business or orders to competitors	1,273	17	1,084	18	*	*	35	10	*	*
Delay developing new products or services	1,815	24	1,372	23	*	*	99	29	*	*
Outsource work	852	11	763	13	*	*	17	5	*	*
No particular problems / None of the above	624	8	571	10	*	*	10	3	*	*
Don't know	11	**	0	0	*	*	0	0	*	*
Weighted base	7,511		5,986		*		337		*	
Unweighted base	795		681		*		57		*	

Source: UK Commission's Employer Skills Survey 2011 (Davies et al, 2012).
Base: All employers with skills gaps that have impact on establishment performance
NB Column percentages sum to more than 100 since multiple responses were allowed.
**Data suppressed as unweighted establishment base < 25 (<50 for Scotland)*
*** Denotes figures of greater than 0% but less than 0.5%*

In response to skills shortages, education employers increased training and supervision. Table 5.15 shows that 86 per cent of education sector employers who have taken steps to overcome skills gaps (or intend to do so) state that they have increased training activity/spend or expanded their trainee programmes. This is slightly higher than the equivalent figure from across the whole economy which is 82 per cent (see Table 5.16).

Table 5.15: Steps employers have taken to overcome skills gaps in the education sector

	UK		England		Scotland		Wales		Northern Ireland	
	Number	%	Number	%	Number	%	Number	%	Number	%
Increase training activity / spend or increase/expand trainee	8,853	86	7,231	85	*	*	933	96	437	90
More supervision of staff	6,826	66	5,428	64	*	*	760	78	351	73
More staff appraisals / performance reviews	6,355	62	5,257	62	*	*	555	57	332	69
Implementation of mentoring / buddying scheme	6,378	62	5,183	61	*	*	622	64	376	78
Reallocating work	3,958	38	2,931	34	*	*	643	66	231	48
Changing working practices	3,868	38	3,062	36	*	*	469	48	207	43
Increase recruitment activity / spend	1,157	11	912	11	*	*	156	16	48	10
Recruiting workers who are non-UK nationals	783	8	632	7	*	*	101	10	32	7
Other	188	2	182	2	*	*	5	1	0	0
Nothing	90	1	85	1	*	*	0	0	5	1
Don't know	0	0	0	0	*	*	0	0	0	0
Weighted base	*10,310*		*8,533*		*		*484*		*322*	
Unweighted base	*1,110*		*968*		*		*79*		*28*	

Source: UK Commission's Employer Skills Survey 2011 (Davies et al, 2012).
Base: All employers with skills gaps who have taken steps to improve the proficiency or skills of these staff, or have plans to do so
NB Column percentages sum to more than 100 since multiple responses were allowed.
**Data suppressed as unweighted establishment base <50 for Scotland*

Table 5.16: Steps employers have taken to overcome skills gaps – whole economy

	UK		England		Scotland		Wales		Northern Ireland	
	Number	%	Number	%	Number	%	Number	%	Number	%
Increase training activity / spend or increase/expand trainee programmes	185,527	82	155,451	82	3,822	79	18,002	83	8,253	86
More supervision of staff	139,442	62	116,865	62	3,186	66	13,381	62	6,009	62
More staff appraisals / performance reviews	123,245	55	103,336	55	2,939	61	12,001	55	4,968	51
Implementation of mentoring / buddying scheme	113,645	50	94,041	50	2,350	49	12,376	57	4,878	51
Reallocating work	76,053	34	62,381	33	1,952	41	7,876	36	3,844	40
Changing working practices	69,850	31	59,408	31	1,499	31	6,406	29	2,537	26
Increase recruitment activity / spend	33,319	15	28,747	15	762	16	2,386	11	1,424	15
Recruiting workers who are non-UK nationals	21,589	10	18,782	10	572	12	1,373	6	862	9
Other	3,156	1	2,742	1	125	3	221	1	69	1
Nothing	3,541	2	2,736	1	36	1	617	3	152	2
Don't know	348	**	322	0	0	0	0	0	25	0
Weighted base	*225,379*		*189,191*		*21,730*		*9,650*		*4,807*	
Unweighted base	*16,506*		*14,313*		*655*		*1,074*		*464*	

Source: UK Commission's Employer Skills Survey 2011 (Davies et al, 2012).
Base: All employers with skills gaps who have taken steps to improve the proficiency or skills of these staff, or have plans to do so
NB Column percentages sum to more than 100 since multiple responses were allowed.
*** Denotes figures of greater than 0% but less than 0.5%*

Causes of skills gaps

Increased training activity would appear to be an appropriate response as the main cause of skills gaps in the education sector employers is that staff have only partially completed training or that they are new in their role (Table 5.16). Given that employers in the education sector are far more likely to provide training to staff than employers across the whole economy (see Table 4.18); it would appear that not all of this training is effective as it could be or only partially completed at the time of the survey.

Table 5.17: Causes of skills gaps in the education sector

	UK		England		Scotland		Wales		Northern Ireland	
	Number	%	Number	%	Number	%	Number	%	Number	%
They are new to the role	33,297	35	29,050	35	*	*	1,111	28	506	39
Their training is currently only partially completed	34,216	36	29,729	36	*	*	1,689	42	347	27
Staff lack motivation	24,790	26	21,861	26	*	*	755	19	583	45
They have been on training but their performance has nc	25,236	27	21,299	26	*	*	1,401	35	623	48
The introduction of new working practices	21,759	23	18,039	22	*	*	1,545	38	637	49
They have not received the appropriate training	15,935	17	14,076	17	*	*	856	21	256	20
Unable to recruit staff with the required skills	9,963	11	8,896	11	*	*	617	15	158	12
The introduction of new technology	14,454	15	11,454	14	*	*	1,330	33	447	34
The development of new products and service	9,796	10	8,360	10	*	*	1,153	29	112	9
Problems retaining staff	5,410	6	4,383	5	*	*	316	8	33	0
Lack of other skills e.g. communication, interpersonal	962	1	736	1	*	*	17	*	83	6
Lack of aptitude to do job/reached maximum potential	1,117	1	968	1	*	*	8	*	83	6
Non-work related problems e.g. health or personal prob	813	1	689	1	*	*	65	2	0	0
Language barrier - English not first language	20	**	20	**	*	*	0	0	0	0
Staff are too old to carry out the work required	356	**	351	**	*	*	5	*	0	0
Other	1,024	1	726	1	*	*	84	2	136	10
No particular cause	1,463	2	234	**	*	*	448	11	0	0
Don't know	31,258	33	28,738	35	*	*	896	22	0	0
Weighted base	94,884		83,254		*		4,040		1,300	
Unweighted base	16,211		14,384		*		695		155	

Source: UK Commission's Employer Skills Survey 2011 (Davies et al, 2012).
Base: All skills gaps followed up
**Data suppressed as unweighted establishment base <50 for Scotland*
*** Denotes figures of greater than 0% but less than 0.5%*

What skills need improving?

The skills that need improving which were most frequently reported by education sector employers are job specific skills, underlining the emphasis given to teaching and pedagogical skills identified by Ofsted (2011). Also frequently reported were planning and organisational skills, team working skills and customer handling skills.

Table 5.18: Skills that need improving within the education sector workforce

	UK		England		Scotland		Wales		Northern Ireland	
	Number	%	Number	%	Number	%	Number	%	Number	%
Basic computer literacy / using IT	17,942	19	15,197	18	*	*	1,246	31	317	24
Advanced IT or software skills	20,650	22	17,763	21	*	*	396	10	262	20
Oral communication skills	25,359	27	23,189	28	*	*	618	15	631	49
Written communication skills	20,704	22	19,089	23	*	*	722	18	316	24
Customer handling skills	29,695	31	25,367	30	*	*	1,588	39	484	37
Team working skills	32,448	34	27,816	33	*	*	1,739	43	758	58
Written Welsh language skills	1,136	1	0	0	*	*	1,136	28	0	0
Oral Welsh language skills	1,308	1	0	0	*	*	1,308	32	0	0
Foreign language skills	5,135	5	4,610	6	*	*	152	4	10	1
Problem solving skills	27,361	29	25,223	30	*	*	709	18	563	0
Planning and Organisation skills	37,040	39	32,401	39	*	*	1,796	44	833	64
Strategic Management skills	17,355	18	15,259	18	*	*	332	8	549	42
Numeracy skills	12,174	13	11,014	13	*	*	576	14	70	5
Literacy skills	17,011	18	14,673	18	*	*	1,498	37	123	9
Office admin skills	15,832	17	13,294	16	*	*	1,118	28	404	31
Technical or practical skills	18,968	20	15,303	18	*	*	1,238	31	313	24
Job specific skills	39,319	41	32,926	40	*	*	2,151	53	694	53
Personal attributes (e.g. motivation, work ethos, commo	534	1	422	1	*	*	63	2	49	4
Experience/lack of product knowledge	980	1	980	1	*	*	0	0	0	0
Other	734	1	734	1	*	*	0	0	0	0
No particular skills difficulties	1,795	2	1,274	2	*	*	480	12	41	3
Don't know	29,632	31	27,131	33	*	*	877	22	0	0
Weighted base	94,884		83,254		*		4,040		1,300	
Unweighted base	16,211		14,384		*		695		155	

Source: UK Commission's Employer Skills Survey 2011 (Davies et al, 2012).
*Base: All skills gaps followed up. *Data suppressed as unweighted establishment base <50 for Scotland*

5.3 Extent of under-employment

If an employee has higher levels of qualifications and skills than they need to carry out their role, they may be considered over-qualified and over-skilled. Table 5.19 shows that 54 per cent of education sector employers state that they have employees who are over-qualified and over-skilled, slightly more than the average across the whole economy. However, in the same table, only 13 per cent of employees are considered to be over qualified or over skilled, which is slightly lower than the figure across the whole economy. In other words, the sector has a higher than average number of workplaces report that they have over-qualified or over-skilled employees, but relatively few in each case..

Table 5.19: Extent to which workforce is 'over qualified' and 'over skilled' by sector

	Employers with employees who are over qualified and over skilled				Employees who are over qualified and over skilled			
	Number	%	*Weighted base*	*Unweighted base*	Number	%	*Weighted base*	*Unweighted base*
Agriculture, Forestry & Fishing	42,111	38	110,220	1,547	88,613	19	466,870	19,506
Energy Production & Utilities	5,458	43	12,610	1,614	43,319	13	333,050	47,228
Manufacturing	56,009	43	130,709	7,776	252,633	10	2,541,188	291,593
Construction, Building Services Engineering and Planning	129,922	42	306,403	8,961	369,923	17	2,235,270	150,111
Wholesale & Retail Trade	241,146	51	470,200	16,150	846,216	18	4,674,684	514,820
Transportation and Storage	61,038	50	122,058	4,735	202,809	15	1,320,126	114,658
Hospitality, Tourism and Sport	131,526	60	220,055	11,318	566,562	24	2,313,487	258,524
Information and Communication Technologies	33,764	47	72,281	2,510	93,637	15	614,641	53,681
Creative Media & Entertainment	66,845	46	143,772	3,762	205,573	19	1,086,978	87,953
Financial, Insurance & other Professional Services	76,826	45	170,887	5,343	312,906	15	2,052,039	112,945
Real Estate & Facilities Management	81,744	49	166,486	3,424	217,791	18	1,183,601	91,204
Government Services	29,384	54	54,687	2,605	256,006	14	1,780,058	223,796
Education	34,623	54	64,540	5,439	341,455	13	2,538,545	387,221
Health	23,566	45	52,370	3,398	225,183	11	2,004,436	219,765
Care	47,114	54	87,899	4,763	258,385	17	1,504,729	157,681
Whole economy	1,118,691	49	2,299,921	87,572	4,456,192	16	27,547,123	2,816,693
Weighted base	*2,299,921*				*27,547,123*			
Unweighted base	*87,572*				*2,816,693*			

Source: UK Commission's Employer Skills Survey 2011 (Davies et al, 2012).
Bases: vary.
"Employers" columns based on all establishments. "Employees" columns based on all employment.

5.4 Impact of mismatches in terms of wages and migration

Wages

The education sector ranks in the top half of average hourly wages paid in the UK at £15.71 per hour, as compared to £14.60 average hourly wage for the economy as a whole. The highest average hourly wage is £21.99 for the financial, insurance and other professional services sector, whilst the lowest average hourly wage is £9.52 for workers in hospitality, tourism and sport (Table 5.20). The higher than average wage is likely to reflect the higher than average occupational and qualification profile in the sector and the earnings premium attached to higher level skills.

Table 5.20: Average hourly wage by sector (£) (UK)

	2008 £	2009 £	2010 £
Agriculture, forestry and fishing	10.42	11.18	10.38
Energy production and utilities	15.93	16.41	16.62
Manufacturing	13.86	14.28	14.37
Construction, building services, engineering and planning	14.66	15.29	15.39
Wholesale and retail trade	11.00	11.27	11.36
Transportation and storage	12.44	13.16	13.21
Hospitality, tourism and sport	9.14	9.35	9.52
Information and communication technologies	20.05	20.26	20.40
Creative media and entertainment	17.14	17.29	17.50
Financial, insurance & other professional services	21.06	21.45	21.99
Real estate and facilities management	11.36	11.64	11.71
Government services	14.40	14.87	15.62
Education	14.67	15.39	15.71
Health	14.97	15.79	16.45
Care	10.21	10.30	10.49
All economy	13.94	14.39	14.60

Source: Annual Survey of Hours and Earnings, 2010 (ONS)

Migration

Although most discussions of migration in the education sector surrounds the sector attracting overseas students to study in the UK, there has been an increase in staff from overseas working in the UK education sector. Recent research into the country of origin of public sector workers in the UK found that between 2008 to 2010, the education sector employed about 29 per cent of immigrant public sector workers. This compares to around 40 per cent of immigrant public sector workers in the health sector and 18 per cent in public administration. (Dustmann and Frattini, 2011).

In terms of specific occupations, immigrants are more concentrated than natives in professional occupations (which includes teaching staff) within the education sector with 60 per cent of EEA immigrants and 54 per cent of non-EEA immigrants employed in this occupational category (ibid). This fits well with the current shortage occupation list of the UK Border Agency's Migration Advisory Committee, where there are two occupational categories relating to the education sector, indicating a shortage of supply for particular skill specialisms:

- Secondary education teaching professionals (SOC 2314) in the subjects of maths or pure sciences (physics and / or chemistry)
- Special needs education teaching professionals (SOC 2316) in all teaching posts in special schools.

5.5 Extent to which skills deficiencies are hampering growth

Apart from the key specialisms identified above, the rest of the evidence suggest that skills deficiencies are not having a major impact on the education sector. This has also been highlighted in the National Strategic Skills Audit, which ranks the education sector as one but last in the skills-deficit ranking table. Out of 27 sectors in the skills ranking table, education is ranked as 26, with public administration ranking as 27 (UKCES, 2010c). There are however, issues of skills development for existing staff. Moreover, the shortages in the sector are for qualified individuals to fill existing positions and to replace workers who are retiring from the field.

Projected changes in population indicate that demand for qualified workers for the education sector will continue to grow for the foreseeable future, making the sector an attractive and stable employment option during tough economic times.

6 Drivers of change and their skills implications

Chapter Summary

- Within the education sector, the most important driver of change is government policy and regulation. Education is a devolved matter leading to significant policy differences within the sector across the four nations reflecting different political contexts and funding priorities.
- The demographic and population changes which affect the education sector include the ageing population, rising birth rates and the effects of inward migration in the UK.
- Environmental drivers have an impact on the education sector, insofar that the workforce needs knowledge and awareness of environmental sustainability..
- The relationship between the education sector and both society and industry is complex, with the sector being affected by marketisation in recent years. Education is also affected by issues of increased tuition fees in HE, FE loans, demands from international students and UK education providers now operating internationally.
- Technological advancements have a direct impact on the requirement for education professionals to have relevant skills to use digital technology effectively in order to help deliver creative and inspiring learning experiences and engage with learners in the classroom, in employment or at home.
- Changes in the make-up of the population over the years have resulted in changing values and identity of the workforce in general, including - a more mature workforce, increased female participation, increased number of volunteers – all have different requirements and expectations from education and learning providers.
- Consumers of education are now coming from a more diverse consumer base. With larger numbers of students from ethnic backgrounds and older age groups who are adept at using a range of technological platforms, the need for personalisation of services and product customisation is now more relevant.
- The effects of the drivers of change across the four nations are not uniform. The devolved administrations have set out strategies and policies to govern the skills issues for their economies and the impacts of the drivers on the education sector in each nation.

6.1 Drivers of change

The demand for skills is driven by a variety of factors including economic, political, social, technological and environmental changes. This section undertakes an analysis of the drivers of change in terms of their nature and direction, with an aim to further understanding about how they impact on the skills of the workforce in the education sector.

The seven drivers of change (UKCES, 2010c)[6] are:

- Regulation and multi-level governance
- Demographic and population change
- Environmental change
- Economics and globalisation
- Technological change
- Changing values and identity
- Changing consumer demand

A diagram of these drivers can be viewed in Figure 6.1.

[6] Please note that the NSSA is an England focussed document. For specific information relating to Northern Ireland, Scotland and Wales please see Section 6.3.

Figure 6.1 The major drivers of change

Source: UKCES 2010c, page 93.

The interrelationships between and predominance of certain drivers determine their impact on a particular sector. Within the education sector, change is most often associated with government regulation. The government decides the "direction of travel" for the sector and encourages that travel using regulation or funding. In this way, the primary driver which impacts upon all the others is "regulation and governance", complicated by the devolved nature of the governance of the sector. The education sector in Scotland is not (and has never been) within the remit of the UK Government and, since devolution, the sectors in Northern Ireland and Wales have diverged from the sector in England. For this reason there are significant differences within the sector among the four nations; these are highlighted in Section 6.3 of this report. Demographics and funding are also important influences on the extent and nature of the demand for skills in the sector.

Regulation and multi-level governance

Regulation can have an important influence on skills supply because it may affect labour supply through controlling entry to, and exit from, education and the labour market, and can influence skills demands through setting of either training, product or service standards. (ibid.)

The primary driver of skills demand in the education sector is government policy and regulation. The Education Act 2011 (HM Government, 2011) passed in November 2011 forms the foundation which will guide the future of the education sector. The Act makes “provision about education, childcare, apprenticeships and training; ... about schools and the school workforce, institutions within the further education sector and Academies....” (ibid.). There are areas in the Act that will influence skills demand in the future.

- New disciplinary powers for school teachers where pupils can be searched for banned items and same-day detentions issue.
- Reduction in the bureaucratic burdens on schools, including the allowance of schools and colleges to be exempted from routine inspection, with Ofsted introducing a rigorous risk assessment process. Main areas of focus of school inspections will be achievement, teaching, leadership and management, and behaviour and safety.
- Entitlement of 15 hours free Early Years provision per week to parents of disadvantaged two-year-olds, as well as targeting the entitlements to free QCF Level 2 and 3 qualifications to those under 24 years of age.
- Abolition of arms-length bodies, such as the General Teaching Council for England (GTCE), the Training and Development Agency for Schools (TDA) and the Young Peoples’ Learning Agency (YPLA).

The Westminster Government strategy to reduce the number of individuals not in employment, education or training (NEET) in England details the ambition to increase participation of 16-24 year olds, thus improving social mobility and stimulating economic growth. The strategy calls on all providers (e.g., colleges, training providers) to work closely with each other and Jobcentre Plus, career guidance and employers to maximise support for individuals into employment.

The strategy also sets out the ambition for greater achievement in school pupils, leading to greater engagement post-16. Combined with the increase in participation age to 17 in 2013 and to 18 in 2015, there are likely to be effects on the skills needs of teaching staff at secondary level, including skills in engaging with these older children.

Education is a devolved matter and the nations' administrations have specific strategy documents relating to education and skills which create the political context within which the sector operates in each nation. These are discussed in the section 6.3.

Due to increased globalisation and narrowing of international boundaries, various policies are now formulated that have an impact on more than one country. For example, Education and Training 2020 (ET 2020) developed in 2009 (Council of the European Union 2011) is a strategic framework for European cooperation that provides common strategic objectives for Member States, including a set of principles for achieving these objectives. The four strategic objectives of this framework are:

- Making lifelong learning and mobility a reality;
- Improving the quality and efficiency of education and training;
- Promoting equity, social cohesion and active citizenship;
- Enhancing creativity and innovation, including entrepreneurship, at all levels of education and training.

Specific targets for 2020 arise from these objectives, with a view to raising the skills level of the sector. They are:

- An average of at least 15 per cent of adults should participate in lifelong learning;
- The share of low-achieving 15-year olds in reading, mathematics and science should be less than 15 per cent;
- The share of 30-34 year olds with tertiary educational attainment should be at least 40 per cent;
- The share of early leavers from education and training should be less than ten per cent;
- At least 95 per cent of children between four years of age and the age for starting compulsory primary education should participate in early childhood education.

Observation of all the regulations from both national and international perspectives shows common areas of skills development, namely a flexible route of transition between the different levels and sectors of education, including between academic and vocational education, apprenticeships and employer responsive/demand led training, skills-based training, and emphasis on the learner.

Demographic and population change

Demographic change can be an important influence on skills needs because it can affect labour supply through population change and location of different sources of labour, and population change in itself can lead to increases and decreases in consumer demand for different kinds of goods and services, leading to expansion and contraction in related job volumes (UKCES, 2010c).

The demographic and population changes which affect the education sector include the ageing population in the UK and the effects of inward migration. According to the population projections, by 2020 the population in the four nations will increase by eight per cent in England, by six per cent in Northern Ireland and by five per cent each in Scotland and in Wales (ONS, 2011). These changes are the results of more births than deaths, increases in both younger and older (65+) segments, and net inward migration in Scotland and Wales. More information on population change by nation is provided in Section 6.3. The increase in the number of young people may require a rapid increase in the number of primary school places, increasing demand for primary school teachers and staff, along with the need to improve standards in poor-performing schools to make them more attractive to parents.

The issue of an ageing population is also a driver. In developed regions, such as the European Union, population ageing is expected to increase in future years, with the 80+ age group being the fastest growing age group and expected to double in size before 2030. “In the UK specifically, demographic trends mean that 80 per cent of our 2020 workforce are now already in the workforce, and there will be a decline of nine per cent in the number of young people aged between 15 and 24 between 2010 and 2020” (UKCES, 2010c.).

Alongside these changes, the abolition of the compulsory retirement age at 65 and an increase in the age at which the state pension is payable mean that there are a larger number of people in the active workforce for a longer period, demanding a stronger foundation of initial education on which to build their adult learning. A related issue is around skills post-retirement for those that want to continue to work or volunteer, perhaps in a different field or trade. This is likely to result in an increased number of older adults accessing learning provision.

With a change in the demographic profile, employers will be faced with challenges, such as retaining employees and their vital skills; attracting and retaining young people; providing a positive image and career pathways, and adapting to more flexible ways of working.

The last decade has seen a substantial increase in the movement of people among countries, both within Europe and on a global scale, with 230 million people of the world's total population expected to live outside their country of origin by 2050 – an increase from 175 million in 2008 (UKCES, 2010c).

The impacts of migration depend primarily on the skills of migrants, the skills of existing workers and the characteristics of the economy. Research suggests that migration has small impact on average wages of existing workers but greater effects along the wage distribution in that low-wage workers lose while medium and high-paid workers gain. (Ruhs, 2011)

Irrespective of migrants' skills levels, inward migration to the UK results in an increasingly diverse population. This influx demonstrates the role for the education sector in helping migrants to learn the language where required; integrate into their new communities and acquire skills and cultural knowledge to play a productive role in UK society. There is also a role for the sector in helping those communities welcome and adapt to their new members.

Anyone who delivers learning and information to such a diverse population requires skills in overcoming the issues around social exclusion, as well as cultural knowledge and sensitivity and language skills so that learning and information delivery are effective and appropriate.

The European Union has published papers to consult on best practices and the challenges and opportunities that migration presents for EU education systems, specifically in relation to schools.

An EU conference in 2009 concluded that diversity of school pupils from a migrant background requires a reassessment of pedagogical approaches and an increasing need for individualised provision adapted to the needs and the cultural and educational assets of pupils from migrant backgrounds. Intercultural education requires teacher education and training for diversity, reinforcing their intercultural competences, conflict resolution skills and education for intercultural understanding. These skills are required of all learning providers, from early years' education through to all aspects of adult education.

Environmental change

Environmental change may lead to skills needs as a result of government policy and investment to tackle climate change through stimulating the development of a low carbon economy (UKCES, 2010c).

The first budget of the coalition Central Government delivered in June 2010 confirmed that the green agenda is a key driver of change and has the potential to impact on the education sector workforce. The main effects on skills of the green agenda are:

- Frontline delivery staff will need to be up-skilled in the applications of green technology in order to deliver relevant and up-to-date provision;
- All staff need knowledge and awareness of environmental sustainability.

The Education for Sustainable Development and Global Citizenship agenda (ESDGC, 2012) enables people to develop the knowledge, values and skills to participate in decisions that will improve the quality of life now without damaging the planet for the future. Their Strategy for Action challenges staff from across education to play a crucial role in supporting the transition to sustainable development and global citizenship by guiding their institutions' strategic planning, managing major capital programmes, and leading the sector's interactions with external partners and stakeholders. Education administrators and leaders can raise the status of ESDGC within their institutions or remit, and work to embed the principles of sustainable development into all learning delivery.

The United Nations Decade of Education for Sustainable Development began in 2005 with an overarching goal for all member nations, including the UK, to "integrate the principles, values, and practices of sustainable development into all aspects of education and learning, in order to address the social, economic, cultural and environmental problems we face in the 21st century" (UNESCO, 2012). Recent updates on the decade present four main areas of action: enhancing synergies with educational and development initiatives; developing and strengthening capacities for education for Sustainable Development (ESD); building, sharing and applying ESD-related knowledge and advocating ESD, and increasing awareness and understanding of the importance of sustainability (ibid.).

Economics and globalisation

The relation of the education sector to society and industry is increasingly complex, with the sector being affected by marketisation in recent years. The sector is now faced with increased competition for students and staff and the quality of instruction is subject to increased monitoring and visibility, via school league tables and Key Information Sets (KIS) in HE. Furthermore, the introduction of tuition fees in HE as well as FE Loans (from 2013) has and will result in more competition among institutions in order to provide the learning community with more value for money.

Learning experiences are now available from a variety of sources both domestic and international, and students are demanding more personalisation of their programmes. These changes are creating a sector that must adapt its approach to the business aspects of education while maintaining its ultimate purpose of producing skilled and capable citizens for the country and the world.

Economic growth in developing economies may create pressure on the UK to move into higher value-added markets, which may lead to increasing demands for higher level skills in some jobs, and place demands on capacity to adapt to the requirements of emerging overseas markets (UKCES, 2010c). The increase in the number of UK students studying abroad and the increasing number of UK education providers now operating internationally demonstrates that UK education is in demand abroad.

Economic drivers continue to have a significant impact on the skills needs and operations of many organisations across the sector. The UK's fiscal deficit and the severe reduction in public funding are two of the main economic drivers impacting on the employment market. As public funding faces a squeeze, there is a need for more efficient use of resources, both material and human. More will have to be done by effective collaboration within both internal and external sectors. Efficient utilisation of existing and new resources, including digital technology and new/social media, is required. All of this requires the workforce to be agile in order to adapt and transfer their skills to meet changing needs. In order to implement these changes, organisational leaders need to be skilled in strategic planning to ensure that organisations, management and the total workforce are prepared to work competitively and effectively.

Moreover, with globalisation, countries such as Brazil, Russia, India, China (BRIC nations) and others are growing economically and investing in higher level education and skills systems, with Asia “already producing more engineers and physical scientists than Europe and North America combined” (UKCES, 2010c). Such increases elsewhere mean that countries such as the UK have to compete in a much wider global market for highly skilled staff. This increased competition has a direct impact on strategic planning within organisations and requires leaders and managers who are skilled in thinking globally and operating locally.

According to a review (Deloitte, 2011) this change signals the need for a new kind of strategic partnership between business, government and educators. This will require leaders in schools, colleges and universities to develop new skills and expertise as they respond to this new policy landscape and remain financially independent and sustainable.”

However, research by the Chartered Management Institute (CMI) in 2011 found that that employers believe that the education system is contributing to a skills crisis and damaging the UK’s economic performance (Woodman and Hutchings, 2011). Managers believe that young people need training in basic skills, management skills and communication skills in order to start work successfully. Their poor opinion of current skills levels among young people indicate that teachers may not have the necessary skills themselves to provide the appropriate instruction to learners.

Technological change

The development of technologies may create demands for skills at higher levels in research and development, and at lower levels in manufacturing new products, while there may also be skills needs requirements in supporting consumers to use new technologies (UKCES, 2010c).

Technological advancements have a direct impact on the requirement for education professionals to have relevant skills to use digital technology effectively in order to help deliver creative and inspiring learning experiences. The role of technology to support improvements to learning across the sector remains central. Learners of all ages use technology for informal learning, recreation and entertainment. This is matched by rising expectations from learners, parents and employers to make good use of technology to support education and training. Achieving a modern world-class education and skills system that embraces all parts of the sector is essential to ensuring the UK’s global competitiveness. Technology is a key part of that system.

Whilst changes have taken place,this can only be achieved by securing a technologically confident education and skills system where all participants have a good and self-improving capability with technology. The usage of technology not only allows for more effective and personalised teaching; it allows for a more dynamic learning experience. It also enables professionals to share expertise and resources within and beyond their own institutions (Becta, 2008).

Although there is evidence of significant integration of technology across the curriculum (ibid.), the range of uses remains fairly limited and practitioners rarely realise the full benefits of technology in supporting learners. Use of digital resources and tools is regarded as optional in many cases, suggesting a need to ensure professional standards and requirements, and cultures of practice, are in place which recognise the technology as a core tool in a modern education and skills system.

In order to make the most of new technology, leaders and managers have to keep pace with the rapid changes and implement a continuous system of training to ensure that the workforce are appropriately skilled at any point in time. Research indicates that “organisational readiness and agility to be able to take advantage of ICT innovations are likely to be the most important contributing factors to securing competitive advantage” (ibid.). Investing in and updating technology has significant resource implications for the education sector. While schools are faced with the need to update technology and improve learning provision using multiple platforms, workplace learning and continuous professional development providers must also become proficient in the use of e-learning and blended learning in their offerings. Learners who constantly use laptops, smart-phones and tablet computers will respond more willingly to learning received through familiar media.

The four nations agree that science, technology and innovation are essential in increasing competitiveness and improving their economic performance in the 21st century’s knowledge-based economy. Technology is acknowledged as a key driver in future economic success and quality of life and an important part of developing robust, evidence-based policy across all of a Government's responsibilities. Technology is seen as an enabler in the education sector, contributing to improvements in delivery of content and engagement with learners in the classroom, in employment or at home.

Changing values and identity

Changes in values and identities will include attitudes to work and may therefore affect labour supply through influencing choices about type and conditions of work. (UKCES, 2010c).

With high level changes occurring across the world – an economic downturn in the Western hemisphere compared to relative buoyancy in the Eastern hemisphere; large scale migration, and rapid technological advancement to name a few – there is a direct impact on changing values and identity of individuals within society.

With the global village becoming closer than ever, especially with the creation of boundary-less virtual worlds and the ease of physical migration, individuals adopt diverse values and roles to suit their needs. Somewhat contradictorily, there is also an “increasing individualisation of values and emphasis on personal rather than collective goals [which] may influence individual employment aspirations.... [for example] the pursuit of work options which offer greater personal control over working time, including self-employment” (ibid.).

Changes in the makeup of the general population that have occurred over the years have resulted in changing values and identity of the workforce in general. A more mature workforce, increased female participation in the workforce, and single parent families all have different requirements and expectations from the job market, which, together with the recession-led economy, have an effect on the supply and skills of the wider workforce.

The increasing number of volunteers in the workforce is also having an impact. The Coalition Government's agenda of 'Big Society' is supporting a change in the makeup of the workforce with volunteers playing a larger role. Volunteers are already taking part in various societal agendas, such as the prevention of anti-social behaviour and crime and other community led projects relating to education.

Reports from across the four nations have also noted the increasing numbers of volunteers along with increasing numbers of participants and learners, for example within community learning and development settings. Existing staff are required to offer a wider range of programmes to meet this demand, while also training and mentoring new volunteers. The Big Lottery Fund (BIG) has committed £43 million to be invested across the UK to tackle the longer term effects of the recession on the UK's communities, including support to help train increasing numbers of volunteers and continues to support volunteers in this way (BIG 2011).

Changing consumer demand

The development of niche consumer markets, consumer preferences for tailored goods and services and rising consumer expectations about service quality may lead to skills needs within a variety of segments of the service sector (UKCES, 2010c).

Changes in the population and a decreasing jobs market indicate an agenda for wider participation in education as non-traditional learners seek new or better qualifications. Learners who may have been marginalised in the past are also seeking entry to the sector and the opportunities increased education provides. Moreover, due to increased inward migration and an ageing population, students in HEIs are now coming from a more diverse consumer base. With larger numbers of students from ethnic backgrounds and older age groups, the need for personalisation of services and product customisation is now more relevant.

Personalisation of service has to be viewed in the context of new technological drivers as well. Consumers that use digital technology (such as video calls, online social networks, file, photo, and document sharing, and micro blogging) as part of their everyday lives will demand new ways of learning which involve the usage of digital media and diverse learning platforms.

Such changes in consumer requirements mean that the workforce in the education sector needs to be flexible in order to respond to demand. This required flexibility will probably stimulate demand for blended learning delivery skills (via traditional and 'new'/online routes) as the new learners demand different (or broader) access to learning. Basic employability skills such as communications and customer service will become more relevant to education sector staff. Such skills will be vital, so that the education workforce are able to respond to changing consumer demands in an appropriate manner.

There is also a need for clarity of professional standards, qualifications, initial training, performance management and continuing professional development across the different levels of the education workforce, so that the public are assured that all education professionals have similar high standards of professional conduct and competence. The HE sector is already setting aggressive targets to address the demand for better quality teaching in order to meet the higher expectations of students for a quality education, particularly now that tuition fees are increasing significantly. The Higher Education Academy has published targets for 2012-2016, which include a target of at least 50 per cent of eligible academic staff working in UK higher education to achieve the Descriptor 2 of the UK Professional Standards Framework through HEA accreditation or HEA recognition processes by 2016. During the same period, HEA expects 2,000 eligible academic staff to achieve Descriptor 3 and more than 1,000 to achieve Descriptor 4 of the UK Professional Standards Framework (HEA, 2011).

Finally, the increased costs associated with HE and potentially FE (via FE Loans from 2013) mean that students – as consumers – wish to be make well informed choices about where they study. The introduction of the Key Information Sets (KIS) is a step which will aid student in that direction within HE. KIS are comparable sets of standardised information about undergraduate courses. They are designed to meet the information needs of prospective students and will be published 'in context' on the web-sites of universities and colleges (HEFCE, 2012b). However as consumers, students expectations about the education service they receive is likely to rise, placing greater emphasis on the pedagogical skills of academic teaching staff.

6.2 Scale of drivers

The drivers discussed in the previous section will affect the education sector in different ways. Therefore it is of value to note the anticipated increase or decrease in impact on demand for or supply of skills within the sector. While the education sector may not be directly affected by some of the anticipated changes, the role of the sector on learning and development of the workforce places it in a strategic position to benefit the workforce and the UK economy as a whole.

The following table is based on analysis of documents and information from sectoral and government sources. For a full list, please see the Bibliography. This table provides an indication of the dynamics of change for the education sector.

Nature of driver and impact on skills	**Increase or decrease in impact**	**Impact on supply or demand of skills of the education sector workforce**
Regulation and multi-level governance		
Regulation relates to enhancing skills of the general workforce of the nation to increase economic performance and productivity, requiring improved skills across the education workforce. There are many common areas of skills development identified in Government policy.	Likely to increase	Will raise demand for skills identified in government policy including literacy, numeracy, IT, ICT; management and leadership; cultural awareness; change management; communications, technical and job specific skills and knowledge
Removal of barriers so the workforce and their skills can be transferred sub-sectors and nations	Likely to increase	Will increase supply of transferable skills

Nature of driver and impact on skills	**Increase or decrease in impact**	**Impact on supply or demand of skills of the education sector workforce**
Demographic and population change		
Ageing population leads to increased supply of older workforce	Likely to increase	Will increase demand for skills retraining of the older workforce Will increase supply of skills
Modest population growth may affect availability of younger workers to replace retiring workers.	Likely to increase	Decrease in supply from a younger workforce in general, although it has been identified previously that there is a presence of a younger workforce in the sector, in particular
Inward migration creates need for inclusion and culturally-sensitive practices	Likely to increase	Will raise demand for skills relating to cultural awareness and knowledge as well as language, communications and inter personal skills
Environmental change		
Climate change requires green practices and awareness	Likely to increase	Will raise demand for skills relating to awareness and knowledge of new areas such as green practices
Development of low carbon economy may raise needs for STEM skills but nature / volume uncertain	Likely to increase	Will raise demand for skills related to teaching of STEM subjects
Economics and globalisation		
Fewer funds available and increase in costs requires more efficient operations	Likely to increase	Will raise demand for skills relating to management, leadership, change and utilisation of available resources

Nature of driver and impact on skills	**Increase or decrease in impact**	**Impact on supply or demand of skills of the education sector workforce**
Globalisation results in student population and workforce moving outside of the UK	Uncertain	Decrease in supply of the workforce as well as learners
Technological change		
Exploiting new technology to deliver learning	Likely to increase	Will raise demand for skills for leadership, management and change as well as pedagogy, communications, interpersonal, IT and e-learning delivery
Changing values and identity		
Increased diversity of cultures due to inward migration	Likely to increase	Will raise demand for skills relating to cultural awareness and knowledge as well as language, communications and inter personal skills
Increased concern for maintaining cultures within the nations supporting native language training and schools	Likely to increase	Will raise demand for skills relating to cultural awareness and knowledge as well as language, communications and inter personal skills
Increased number of volunteers	Likely to increase	Will raise demand for skills to train the volunteers Will increase supply of skills via the volunteer workforce

Nature of driver and impact on skills	Increase or decrease in impact	Impact on supply or demand of skills of the education sector workforce
Changing consumer demand		
Increased demand for personalised learning	Likely to increase	Will raise demand for skills to provide personalised training with an impact on pedagogy, communications, interpersonal, IT and e-learning delivery
Increased expectations from consumers for better quality in education	Likely to increase	Will raise demand for skills relating to management and leadership, pedagogy, communications, interpersonal, IT and e-learning delivery skills

6.3 Differences in drivers across the four nations

While the drivers discussed in earlier sections affect the four nations of the UK, their effects are not uniform. This section gives an overview of the major differences and highlights the ways that the skills challenges are being met. The devolved administrations have set out strategies and policies to govern the skills issues for their economies and the implications they have for the education sector in each nation. Before reviewing the actions that are being taken in Northern Ireland, Scotland and Wales, it should be noted that the impact of the drivers discussed previously for the UK as a whole generally apply to England, so there are few differences to mention relative to England in the discussion of drivers and their effects in each nation.

Regulation and multi-level governance

Northern Ireland

In Northern Ireland a revised skills strategy was issued in May 2011 (DELNI, 2011) with the aim of "enabling people to access and progress up the skills ladder in order to raise the skills level of the whole workforce; raise productivity; increase levels of social inclusion by enhancing the employability of those currently excluded from the labour market, and secure Northern Ireland's future in a global marketplace" (ibid.).

The Northern Ireland government recognises the need for higher-level skills in order for its economy to improve. The skills strategy sets out a number of strategic goals that require increasing the proportion of people in employment with qualifications generally and to up-skill and re-skill those workers who have already completed their compulsory education. There is additional focus on addressing subject imbalances towards science and mathematics, law and creative arts which will continue to be in demand, along with increasing the number of people qualifying from Northern Ireland Higher Education Institutions with graduate and post graduate level courses in STEM subjects.

The strategy recognises that the education sector, particularly further education, higher education, apprenticeships and essential skills training, will continue to make the largest contribution to the attainment of the strategic goals, albeit during a period of government spending determined by fiscal constraints.

Scotland

Education in Scotland has always been distinct from the rest of the UK and is legislated for separately. The education sector in Scotland is fully devolved to the Scottish Parliament. Since the 2011 Scottish Parliamentary election, the Scottish Government (the executive arm of the devolved government in Scotland) has had a majority Scottish National Party administration. The Scottish Government is responsible for all issues that are not explicitly reserved to Central Government at Westminster. Such devolved matters include health, education, justice and policing, rural affairs, economic development and transport.

In October 2010, the Scottish Government published a refreshed Skills for Scotland: Accelerating the Recovery and Increasing Sustainable Economic Growth (Scottish Government, 2010), which recognised the progress made since publication of the previous skills strategy in 2007 and identified how the Government plans to reposition the skills policy to accelerate economic recovery and to realise their long-term economic aspirations for Scotland. There are four priority themes in the new strategy: empowering people so that they can contribute to and benefit from future economic success; supporting employers in their skills needs; simplifying the skills system, and strengthening partnerships and collective responsibility.

Keeping this broader skills context in mind, the Scottish Government has set out specific policies and regulations (both new and existing) that have an impact on the education sector in Scotland. These policies promote early intervention and provide greater fiscal freedom and decision-making power to local authorities to meet Government goals, including sustainable economic growth.

The Curriculum for Excellence (which is being implemented by three partner organisations: Education Scotland, the Scottish Qualifications Authority and the Scottish Government) aims to achieve a transformation in education in Scotland by providing a coherent, more flexible and enriched curriculum from age three to eighteen. The curriculum will probably change what is asked of some learning providers, especially around assessment.

Implications for the education sector are increased collaborative working with a variety of stakeholders involved in the delivery of the Curriculum for Excellence and skills across the sector and the economy. For example as part of the Literacy Plan for Scotland, Adult Literacies in Scotland 2020 sets out a vision that by 2020 Scotland's society and economy will be stronger because more of its adults are able to read, write and use numbers effectively.

Activity Agreements for those young people who may not, without additional support, make a successful transition to work, further education or training are now being delivered to young people across all 32 local authorities in Scotland

The Scottish Government is taking action to enhance the quality of delivery and leadership within the education sector. Key proposals from the review of teacher education (Continuing to Build Excellence in Teaching) are currently being implemented. Consultation is taking place on post-16 education and vocational training in Scotland including developing a Community Learning and Development (CLD) strategy to widen access to learning.

Wales

The process of devolution of power to the Welsh Assembly Government (now the Welsh Government) commenced with the first Government of Wales Act 1998 and the Government of Wales Act has regularly been extended. Since 1998, policy decisions relating to the education sector have been a matter for the Welsh Government. The policies that impact upon the education sector in Wales arise primarily from the Department for Education and Skills. In addition to formal policies, the sector is also influenced by Ministerial speeches and Independent Reviews which will shape policy in years to come.

In May 2011, shortly after voting overwhelmingly for greater powers in a national referendum, the people of Wales elected a Welsh Government with renewed ambition for improving the nation. The Programme for Government (2011-2016) sets out the plan of action which will be measured by the impact the government is actually having on people’s lives. Targets have been set in many areas to achieve: healthy people living productive lives in a more prosperous and innovative economy; safer and more cohesive communities, with lower levels of poverty and greater equality; a resilient environment with more sustainable use of natural resources, and a society with a vital sense of its own culture and heritage.

When the First Minister announced the 2012 legislative programme and in the 2012-13 Education Bill, proposals were made to enable the Welsh Government to register a wider workforce than just schools and to legislate around professional standards, performance management and Continued and Professional Development for all education practitioners in Wales.

Demographic and population change

Population projections provide estimates of the future population and are based on assumptions about future fertility, life expectancy, international and domestic migration. Understanding and responding to these trends in population change will be important for public services in the four nations, particularly for those in the education sector, as the growth in both younger and older people may require additional resources to meet their education and training needs.

Overall, the population of England is projected to increase by eight per cent by 2020. The populations of the other UK countries are also projected to increase, but at a slower rate. Northern Ireland is projected to increase by six per cent over the same period, while Scotland and Wales are projected to increase by five per cent by 2020 (ONS, 2011). These figures are discussed in more details within their national context, in the next sections.

Northern Ireland

The Northern Ireland population is projected to rise by six per cent over the next 10 years (2010-2020), reaching 1.9 million people by 2020 (ibid.). These projections indicate a marked increase in the size of the older population. The number of older people (those aged 65 or more) is projected to increase by over a quarter in the next ten years (2010-2020), whilst the population aged 85 or more is projected to rise by 51 per cent in the same period. The projected population increase will be due to more births than deaths in Northern Ireland. Between 2010 and 2020 it is projected that there will be 107,000 more births than deaths, accounting for over 95 per cent of population growth.

Northern Ireland’s population is already increasing due to natural growth (more births than deaths), equal numbers of people coming to and leaving Northern Ireland (migration). Between 2004 and 2008, net migration accounted for 50 per cent of population growth. With migration currently in the balance, population growth is now solely due to natural change.

Scotland

Scotland's population is projected to rise from 5.2 million in 2010 to 5.4 million in 2020, and to reach 5.8 million by 2035. The latest projections suggest a greater rise in Scotland's population than expected because the birth rate has remained high and migration has continued to increase. By 2020, the number of children aged under 16 is projected to increase by 5 per cent from 0.91 to 0.96 million, and the number of people of working age is projected to increase from 3.27 million in 2010 to 3.45 million in 2020 (an increase of six per cent). The number of people of pensionable age is projected to rise from 1.04 million in 2010 to 1.07 million in 2020 (an increase of three per cent), and the number of people aged 75 and over is projected to increase by around 23 per cent, from 0.41 million in 2010 to 0.50 million in 2020.

Historically, Scotland has been a country of net out-migration, with more people leaving to live elsewhere than moving to live in Scotland. However, since the 1960s, net out-migration has greatly reduced and, in some years during the late 1980s and early 1990s, Scotland experienced net migration gains. Scotland has now entered a period of net in-migration. Since 2005, there have been net gains of at least 19,000 per year. In 2008-09 the net migration gain was 21,700, the third highest since records started in 1951. (ibid.)

Wales

The population of Wales is projected to increase by five per cent to 3.17 million by 2020. Although births are projected to exceed deaths, the main driver of population growth in Wales is expected to be net migration. The number of children under 16 is projected to peak at around 605,000 by 2027, a projected increase of seven per cent. The number of people aged 16-64 is projected to remain relatively constant throughout the projection period. The number of people aged 65 and over is projected to increase by around 306,000 or 55 per cent between 2010 and 2035.

According to the latest reports (Welsh Government, 2011b), Wales has experienced an estimated net inflow of migrants every year since mid-1998, experiencing net inflow of 9,600 people per year. Migration to and from Wales has been variable over the last decade but Wales has experienced a net inflow of both international and internal (from the other parts of the UK) migrants.

Environmental change

Although UK policies to manage the effects of environmental change are set in Westminster, the devolved administrations have set targets to ensure that the effects are being minimised as much as possible.

Northern Ireland

Northern Ireland provides an example of how Further Education colleges are making a significant contribution to addressing the skills challenges of this important “green” sector. The South Eastern Regional College (SERC) Environmental Skills Centre in Newtownards helps businesses exploit ‘Low Carbon Economy’ opportunities and acts as a hub for sustainable development and renewable technology. The Centre also pioneers skills development in the green economy for businesses in Northern Ireland and beyond. During a visit in September 2011, Education and Learning Minister, Dr. Stephen Ferry, commented, “Further Education colleges play a crucial role in delivering skills which are fundamental to the success of every industry, whether it is mature or emerging. The cutting-edge skills developed here provide a huge boost to both the local community and economy, whilst also helping to drive the sustainable energy and renewable technology agenda forward. This centre is part of my Department's goal to ensure that the local workforce and economy has access to the highest standards of education.”

Scotland

The Scottish Government is working towards a Greener Scotland by improving the natural and built environment and protecting it for present and future generations. Action is being taken to reduce local and global environmental impact through tackling climate change, moving towards a zero-waste Scotland and increasing the use of renewable energy. Learning for Change Scotland’s action plan for the second half of the UN Decade of Education for Sustainable Development outlines the contribution of schools, universities, colleges and lifelong learning in taking this forward.

Wales

In Wales, the Government is working to bring together the Forestry Commission Wales (FCW), Countryside Council for Wales (CCW) and the Environment Agency Wales (EAW) in a single body to better oversee environmental policies and programmes in Wales. As with the other devolved nations, the Welsh Government is delivering guidance and support to environmental efforts in waste management, rural development and regeneration, farming, animal health, forestry, fisheries and food production.

The devolved administrations all have targets to reduce carbon emissions and environmental impact. These targets have obvious impacts on the provision of education, such as the introduction of more e-learning to reduce learners' travel. As the lower carbon economy becomes more influential, the skills required to work in a low carbon manner in all sectors will become more of an issue. These skills will need to be embedded in curricula and provision of learning by education staff.

Economics and globalisation

Northern Ireland

Developing a stronger, more vibrant and competitive economy is the focus of the economic strategy for Northern Ireland (DETI NI, 2011), which calls for:

- Supporting the promotion of over 25,000 new jobs;
- Achieving £300 million investment through Foreign Direct Investment (FDI);
- Pressing for the devolution of Corporation Tax and reducing its level;
- Increasing the value of manufacturing exports by 15 per cent;
- Supporting £300 million investment by businesses in Research and Development – with at least 20 per cent coming from Small to Medium sized Enterprises (SMEs);
- Increasing visitor numbers to 3.6 million and tourist revenue to £625 million by 2013.

The Northern Ireland Assembly government recognises that uncertainty in the global economy continues to be an issue but is committed to strengthen competitiveness and be responsive to new national and international market opportunities. This focus on economic growth will require more people in the workforce with higher level qualifications and the Northern Ireland skills profile has been improving steadily. For example, the proportion of the working age population with QCF Level 2 qualifications or above has increased from around 55 per cent in 1997 to 65 per cent by mid-2009. However, the rate of progress is not sufficient to attain the ambitions set out by the Northern Ireland Assembly. There will be continued pressure on the education sector to meet the needs of learners at all levels and in all sectors of the Northern Ireland economy.

Scotland

The Scottish Government has an economic strategy that reaffirms their commitment to delivering faster sustainable economic growth with opportunities for all to flourish. The strategy sets out six Strategic Priorities which will drive sustainable economic growth and develop a more resilient and adaptable economy, including a strategic priority on learning, skills and well-being. This priority acknowledges that a skilled, educated and creative workforce is essential to creating a more competitive and resilient economy. In spite of the on-going effects of the recession, the Scottish Government is committed to maintaining the skills and employability of Scotland's workforce, and reducing the number of people who are out of work or underemployed - particularly young people.

Key actions include:

- Through Opportunities for All will ensure that every 16-19 year old in Scotland who is not in work, a Modern Apprenticeship or education will be offered a place in education or training;
- A commitment to deliver 25,000 Modern Apprenticeship opportunities in each year of this Parliament and maintain bursary support to help young people remain engaged in college and training;
- Reforming post-16 learning to deliver a system-wide focus on employability and growth;
- Developing a community learning and development strategy that takes account of its contribution to wider national priorities, working with local authorities, the Third Sector and other partners;
- A commitment to investment in Higher Education so that Scotland remains an international centre of excellence for learning and creative thinking whilst ensuring that access is based upon ability to succeed rather than ability to pay.

Wales

Over the long term, the performance of the Welsh economy has not met expectations, particularly when measured in terms of relative Gross Value Added (GVA) per capita. The two factors immediately responsible for Wales' position are a low employment rate and low average wages (reflecting low average productivity). There are three main challenges that underpin Wales' employment rate, productivity and hence its growth rate:

- An adverse skill mix, particularly the prevalence of individuals with low or no qualifications; low or no skills are strongly associated with both a low employment rate and low average wages and productivity;
- The absence of a major conurbation (by European standards) is associated with wages and productivity levels that are lower than would otherwise be the case (the “agglomeration effect”); however, there is a key opportunity in the medium term to build on the projected rapid population growth of Cardiff, the Wales' capital city;
- A relatively high proportion of people who are of retirement age. (Welsh Government, 2010)

In order to improve the economy, the Welsh Government is pursuing an economic policy based on economic renewal, a direction that provides the best conditions and framework to enable the private sector to grow and flourish and make Wales one of the best places to live and work.

The Economic Renewal policy will create the right environment to encourage entrepreneurship allowing the private sector to flourish rather than directly deliver support to individual businesses. The approach has five priorities:

- Investing in high-quality and sustainable infrastructure;
- Making Wales a more attractive place to do business;
- Broadening and deepening the skills base;
- Encouraging innovation;
- Targeting the business support offered.

Changing values and identity

Language is one of the most important drivers of identity and culture. Learning a second language can open doors for people and help them to become creative, confident and articulate individuals, able to play their full part in society and achieve their full potential.

Northern Ireland

In recent years Northern Ireland has seen steady growth in the number of children and young people educated in the Irish-medium sector, with over 3,300 pupils now being educated in Irish medium schools compared to fewer than 400 in 1991. A consultation on Irish medium education was launched in 2008 and found that there is a legacy of sub-standard accommodation that needs to be addressed along with the important issues of support for educators and availability of resources (DENI, 2009). The Review recommended, among other things, the meeting of needs for classroom resources appropriate to teaching through the medium of Irish and the provision of more teachers at both primary and post-primary level in the sector and meeting the need for more subject specialists.

Further evidence of the demand for Irish medium education is the awarding in 2010 of the first Irish Immersion Certificate for teachers. The certificate recognises the particular competences needed for the delivery of education in early years settings through immersion in the Irish language.

Scotland

The Scottish Government is promoting the use of Gaelic and Scots and stimulating demand for these language skills as an integral part of Scotland's heritage, national identity and current cultural life. The Scots language is recognised as a language in its own right by the Scottish and UK Governments and by the European Union and is now part of Curriculum for Excellence. The Scottish Government has introduced structures and initiatives to ensure that Gaelic has a sustainable future in Scotland. This goal will require concerted effort by Government, the public sector, the private sector, community organisations and individual speakers to enhance the status of Gaelic; encourage the increased use of Gaelic, and promote the acquisition and learning of Gaelic. The final point has obvious implications for the Gaelic language skills of providers in the education sector, especially in areas of Scotland where Gaelic is more commonly spoken.

Wales

In Wales, the creation of a bilingual nation has long been a government priority. In the last decade, there has been an increase in the use of Welsh medium across the education sector in Wales, indicating a rise in the demand for Welsh language skills. There is also a strong will to ensure equal treatment of the Welsh language in Wales. To monitor progress towards bilingualism and to fulfil a One Wales commitment, the Welsh Government launched the Welsh-medium Education Strategy in April 2010 to develop effective Welsh language provision from nursery through to further and higher education. The Strategy contains fixed five-year and indicative ten-year targets based on outcomes which will be used to monitor progress in implementing the strategy (Welsh Government, 2011c).

According to the first annual report on the strategy, good progress has been made on preparing for changes in methods of implementation. For example, progress has been made in providing more targeted support to the post-16 sector to develop Welsh-medium and bilingual provision and raising standards in Welsh first and second language is now emphasised.

The report states, "Improving the Welsh-language and methodological skills of the education workforce will be key to achieving higher levels in Welsh-language, Welsh-medium and bilingual provision." (ibid.).

Changing consumer demand

One of the influencing factors of consumer demand in the education sector is the changing of tuition fees in higher education. In England, Wales and Northern Ireland, with the increased tuition fees in higher education, students will be scrutinising their cost-benefit ratio and demanding the best service from higher education institutions (HEIs). In such a scenario, with consumers demanding more value for their money, HEIs will have to provide a personalised service and environment of learning to attract the best students. HEIs in Scotland do not charge Scottish students tuition fees. Universities Scotland have outlined efficiency savings, in both progress to date and future plans (Universities Scotland, 2011), and the Scottish Government has pledged to fill any comparative funding gap between Scottish and English universities.

A second factor relating to consumer demand is the perceived quality of education delivery.

Northern Ireland

In Northern Ireland, raising standards in education and delivering improved outcomes for young people is a top government priority and a number of programmes are being reviewed.

Scotland

In 2011 Education Scotland was established as a key national body by bringing together the functions of Learning and Teaching Scotland, Her Majesty's Inspectorate of Education, the National CPD Team and the Scottish Government's Positive Behaviour Team. Education Scotland supports quality and improvement in Scottish education from early years to adult and community learning. It does this in a number of ways, including leading and supporting the implementation of Curriculum for Excellence; increasing the capacity for self-evaluation and self-improvement amongst education providers and practitioners; promoting high quality professional learning and leadership; identifying and stimulating innovation, and providing independent external evaluations of the quality of educational provision at individual provider, local authority and partners, and national levels.

Wales

There are efforts to raise standards of education in Wales and the necessary qualifications and standards of the wider education workforce, which includes teachers, school learning support staff, further education lecturers and the work-based learning workforce.

Throughout the UK, changes in consumer demand are placing even more pressure on a sector workforce that is already stretched to the limit. The increase in demand for education is being met with a decrease in supply of teachers and other staff at many levels. Older workers are retiring and the number entering the field is not keeping pace, even with incentives for new teachers. Whether or not increased customisation and the continuing need to upskill and meet changing standards pushes more workers away from the sector remains to be seen.

7 Future skills needs

Chapter Summary

- The UK population is forecast to grow by 4.9 million people between 2010 and 2020, with an estimated net growth of just over 1.5 million people employed in the UK over the same period.
- Employment in the education sector is predicted to fall by 39,000 (1.5 per cent), masking a large projected growth in the number of staff in professional occupations (which includes teaching staff), increasing by 134,000 individuals across the UK between 2010 and 2020. The increase in professionals (and a smaller increase in caring staff) is offset by fall in the numbers employed in administrative and elementary occupations.
- Future skills needs of teachers include the basic skills of literacy and numeracy in order to join the sector workforce; pedagogic skills to deliver learning effectively and certain specific subjects such as STEM. Teachers also need communications and interpersonal skills to respond to a diverse range of learners from different international countries, with high levels of e-learning and varied personalised demands.
- Educational assistants (part of associate professionals), although a fast growing occupation up to 2009, is forecast to fall from a 7.3 per cent share of the whole education sector to 6.9 per cent between 2010 and 2020. Their skills will still need to develop as a support service to the growing teaching workforce.
- The occupational group of managers is not projected to increase in the education sector; but their multi-skilling capabilities, management, leadership, business, communications and inter personal skills will need to increase so that they can understand the current policy context and plan for the future to ensure that their organisations remain competitive and in the forefront of their sectors.
- Immediate skills needs include: job specific skills required for specific roles; pedagogical skills; communication and interpersonal skills and ability to deliver personalised services.
- Continuous skills need include managerial and leadership skills to effectively lead the sector through the changes of the future.

7.1 Future occupational profile

The UK population is forecast to grow by 4.9 million people between 2010 and 2020 (ONS, 2011). Projections estimate that there will be a net growth of just over 1.5 million jobs in the UK over the same period (See Table 7.1).

However employment in the education sector is predicted to fall over the decade to 2020 by 39,000, which represents a 1.5 per cent decline. This overall decline masks a large projected growth in the number of staff in professional occupations (which includes teaching staff), increasing by 134,000 individuals across the UK (Table 7.2). Professionals are expected to constitute over 55 per cent of the education workforce by 2020. Caring staff are also expected to increase by 29,000.

The recent growth in the educational assistant occupational category role may not be sustainable. Educational assistants have been one of the fastest growing occupations up to 2009 (UKCES, 2010c), but the number of associate professionals in the sector (which includes this occupation) is expected to fall by 13,000 between 2010 and 2020. In fact the number of associate professionals is forecast to fall from a 7.3 per cent share of the whole education sector to 6.9 per cent (Table 7.2).

The number of administrative and secretarial staff is expected to decline by 79,000 (a 37 per cent decline) and the number employed in elementary occupations is predicted to fall even faster by 45 per cent to represent only 3.8 per cent of the education workforce (Table 7.2)

Table 7.1: Workplace job growth by occupation within the whole economy, UK (2010-2020)

Employment growth	2010	2015	2020	2010	2015	2020	2010-2020
	Numbers (000s)			% shares			Net change (000s)
Managers, directors and senior officials	3,016	3,279	3,560	9.9	10.6	11.1	544
Professional occupations	5,843	6,189	6,712	19.2	20.1	21.0	869
Associate professional and technical	3,926	4,138	4,476	12.9	13.4	14.0	551
Administrative and secretarial	3,698	3,466	3,312	12.1	11.2	10.3	-387
Skilled trades occupations	3,526	3,389	3,295	11.6	11.0	10.3	-230
Caring, leisure and other service	2,719	2,801	3,032	8.9	9.1	9.5	313
Sales and customer service	2,608	2,555	2,610	8.6	8.3	8.2	2
Process, plant and machine operatives	1,950	1,829	1,737	6.4	5.9	5.4	-213
Elementary occupations	3,173	3,209	3,274	10.4	10.4	10.2	101
All occupations	30,458	30,855	32,008	100.0	100.0	100.0	1,550

Source: Working Futures 2010-2020 (UKCES 2011c)

Table 7.2: Workplace job growth by occupation within the education sector, UK (2010-2020)

Employment growth	2010	2015	2020	2010	2015	2020	2010-2020
	Numbers (000s)			% shares			Net change (000s)
Managers, directors and senior officials	68	66	64	2.5	2.5	2.4	-3
Professional occupations	1,356	1,405	1,490	50.2	53.6	55.9	134
Associate professional and technical	196	184	183	7.3	7.0	6.9	-13
Administrative and secretarial	214	170	135	7.9	6.5	5.1	-79
Skilled trades occupations	45	34	28	1.7	1.3	1.0	-17
Caring, leisure and other service	572	582	601	21.2	22.2	22.6	29
Sales and customer service	14	13	12	0.5	0.5	0.4	-3
Process, plant and machine operatives	53	49	49	1.9	1.9	1.8	-4
Elementary occupations	185	121	101	6.8	4.6	3.8	-84
All occupations	2,703	2,623	2,663	100.0	100.0	100.0	-39

Source: Working Futures 2010-2020 (UKCES 2011c)

7.2 Future skill needs

Providing the necessary skills upon which to build a stronger economy places the education sector in a difficult position as demands upon the sector are increasing while funding for the sector is decreasing.

Although predicting the future can be challenging, this report – based on the analyses so far – finds that the future skills needs of the education sector will be shaped primarily by changes in the population, the overall state of the UK economy and government policy environment.

Government reports on skills needs in the wider economy (UKCES, 2010c) clearly indicate that pressures on the sector will increase, particularly on FE and HE establishments where training and education (for new kinds of jobs) largely takes place. For example, projected growth in jobs related to the digital economy and low carbon economy will require education sector professionals to continually update their skills and competences in their specific knowledge area (such as STEM) in order to keep pace with developments in their field and in order to instruct the future workforce.

As has been seen in section 7.1 projections of growth in the four nations will increase demand for teaching professionals. These workers must have the basic skills of literacy and numeracy in order to join the sector workforce and the necessary job specific qualifications and skills to deliver learning effectively.

Although the occupational group of managers is not projected to increase within the education sector, the skills levels of managers will need to increase as these are the individuals that will lead their organisations through the changes related to the current economic circumstances. Education managers will need to be able to plan and guide their organisations and staff into a world where public funding is limited and electronic media are far more advanced; think ahead and ensure their workforces are producing rich quality products by efficiently using limited resources; and understand the current policy context as well as plan for the future to ensure that their organisations remain competitive and in the forefront of their sectors.

Therefore, future skills needs across the sector are mainly focused on the growth occupation of professionals and the strategically important skills of managers:

Professionals

Future skills needs for teachers, tutors and trainers include:

- Pedagogical skills, including thinking skills, creative skills, teaching and classroom management skills and IT;
- Specialist subject areas such as STEM (Science, Technology, Engineering and Math) and special educational needs;
- Adaptive skills in order to meet changing curriculum requirements;
- Cultural awareness and language skills;
- Communications and interpersonal skills to respond to a diverse range of learners from different countries, with high levels of e-learning demands and with varied personalised demands.

Managers

Educational managers will need to develop:

- Sector specific knowledge and experience;
- Management knowledge of shifting policy contexts and adaptability to change, including curriculum requirements;
- Budgetary planning and financial management skills to adapt to more complex funding arrangements;

- New teaching techniques to ensure blended learning, greater learner autonomy, and work-based learning environments are sufficiently developed;
- Skills to manage an older workforce and volunteers. Innovation and entrepreneurship skills to ensure business development in international markets as well as in response to more personalised demands of delivery from a diverse range of consumers – i.e. the learner community;
- Commercial awareness in order to develop and commercialise new courses and programmes; analytical skills to understand learner interests and translate that into business intelligence;
- Communications and interpersonal skills: an understanding of communication in order to promote the establishment to appropriate learners and stakeholders;
- Skills to manage an older workforce and volunteers.

Associate professionals and technical staff

While the number of teaching assistants and other associate professionals is not expected to increase in the future, their skills will need to develop as a support service to the growing teaching workforce, by ensuring they keep pace with growing technological complexity and changing skill mixes in many subject areas. Similarly, there is a continuing need to develop support roles in the education sector, to maximise business opportunities raise revenue, along with building the sector's R&D capacity.

The diversity of the sector requires a mix of approaches in meeting these future skills needs. Some skills are the same across the sector (literacy and numeracy for example); however, skills such as communication or job-related skills will be different for a teacher working in early years' education in comparison to HE. Each sub-sector has different standards and qualifications, so continuing professional development will require different training solutions to meet the future skills needs of those in each sub-sector. The availability of new technologies and workers who are familiar with different learning platforms will enable employers to provide training and development programmes that cater to individual needs and schedules.

In the **immediate term**, therefore, workers in the sector will be required to regularly demonstrate job specific skills required for their roles, including increasing their e-learning capabilities. Literacy, numeracy and pedagogical skills must also be improved. Increasing diversity of learners – as a result of international students; migration; a mix of an older and younger learning community, and their resultant differing consumer demands - puts increased emphasis on communication and interpersonal skills (including language and cultural skills), as well as the ability to deliver personalised services where possible.

Continuous skills needs which relate the demands on the sector to be more competitive and offer greater personalisation of learning will require those with responsibilities for managing these changes to have managerial and leadership skills to effectively lead the sector through the coming years. Moreover, as older workers in the education sector retire, there will be a continual demand to replace those workers with an appropriately trained and qualified younger workforce. Such future skills needs must continue to be met if the UK is going to have a 21st century education sector workforce to meet the needs of learners at all levels.

8 Priority areas for action

Chapter Summary

- Teaching staff, tutors and trainers form the greatest component of the professional occupational category and are, by far, the priority occupation area in the education sector.
- Skills of associate professionals and technical staff must be honed in the future as a support service to the growing teaching workforce, by ensuring they keep pace with growing technological complexity and changing skill mixes in many subject areas.
- The skills of managers need to grow as these are the individuals that will lead their organisations through the changes related to the current economic circumstances.
- Cross border movement among the four nations will lead to rationalisation of qualifications and standards..
- Critical priority areas in the education sector are categorised as follows:
    - those where immediate action is critical, for example basic literacy, numeracy and pedagogic skills in teachers; STEM and special needs education teachers; management skills to ensure that the workforce is appropriately trained and qualified; business acumen to attracted the growing internationalised learning community and as well as other learners from diverse background demanding a personalised learning delivery and;
    - other critical areas, for example - strategic leadership skills; skills of digital pedagogy; continuous training of the older workforce – for which there are no short term solutions – these will benefit from more continual actions so that the change is embedded, structural and long-term.
- Priority areas that are medium to low risk include cultural awareness and language skills and knowledge of green practices in the workforce.
- Management and leadership are skills priorities in each of the devolved nations' skills strategies for the future. Other future skills highlighted include higher skills, basic skills and subject areas such as STEM.

Based on the review of the education sector's skills needs and the demands being placed on the sector as a priority sector in achieving economic growth and significance across the UK, this section identifies the skills which are priorities for action within the education sector.

The first section deals with the priority occupational areas based on the areas of highest growth and most significant impact.

8.1 Priority occupational areas

According to the latest figures, professional occupations account for 47 per cent of workers in the education sector. **Teaching staff as well as tutors and trainers** form the greatest component of this occupational category and are, by far, the priority occupation area in the education sector. Predicted to grow by 134,000 individuals across the UK (between 2010 and 2020), this occupational group delivers education at all levels of the sector and have the greatest influence on learner achievement. Although the sector and its professionals are well qualified, there is a need to ensure that teaching staff are appropriately and continually trained in their teaching and subject specific qualifications (for example around STEM subjects) as well as basic literacy and numeracy. Data on migration, too, suggests that immigrants are more concentrated in professional occupations within the education sector with 60 per cent of EEA immigrants and 54 per cent of non-EEA immigrants employed in this occupational category. Moreover, in the Migration Advisory Committee's shortage occupation list two occupational categories relating to the education sector are secondary education teaching professionals (SOC 2314) in the subjects of maths or pure sciences (physics and / or chemistry) and special needs education teaching professionals (SOC 2316) in all teaching posts in special schools (UKBA, 2012).

Across the sector there is recognition of the other competences needed for the professionals working in the sector. These competences focus on professional knowledge and understanding, including subject matter, cultures and languages, special needs, and use of technology; professional skills and application, including planning, leading, teaching and learning as well as assessment and analysis of strategies.

Associate professionals and technical staff, which currently account for nine per cent of the sector workforce, are projected to fall from a 7.3 per cent share of the whole education sector to 6.9 per cent. However, their skills must be developed further in the future as a support service to the growing teaching workforce, by ensuring they keep pace with growing technological complexity and changing skill mixes in many subject areas. This will aid in the reduction of the current levels of skills shortage vacancies in this occupational group, which currently stands at 18 per cent of all vacancies for associate and technical staff.

Although the occupational group of **managers** is not projected to increase, the skills of managers will need to grow as these are the individuals that will lead their organisations through the changes related to the current economic circumstances. The current level of skills gaps among managers in the education sector is only four per cent. However, continuous training of managers is essential so that they can be versatile and efficient in initiating and implementing change – relating to governmental agenda, the digital economy, the diverse consumer base and changing consumer demands among others.

In general, within the education sector, skills deficits are currently not a major concern. There is a small percentage of vacancies within the sector, with low levels of hard-to-fill and skills shortage vacancies and skills gaps as a whole, apart from a few specialist areas. In order to fill sector vacancies, the four nations are working to **enable professionals within the sector to move across borders**. This transferability demonstrates the need to join up the sector across the UK which will lead to rationalisation of qualifications and standards. UK-wide standards have been achieved in Higher Education and may not be difficult to achieve for schools that are already well-regulated in each nation. The challenge will most likely be faced in further education and vocational education which are more fluid in their requirements.

Providing on-going continuous professional development to the whole workforce is important to maintain and expand current skills levels, as well as develop the multi-tasking and flexibility that may be skills needed for the future. Even though a younger age group is attracted to the sector, the existing older workforce in the sector underlines the need to ensure that **qualified replacement workers** and new professionals are entering the sector; this need will require a sufficient number of trainers of teachers and people taking on other roles. Changing ways of working and teaching may result in casualisation of terms and conditions of employment, again, requiring greater flexibility among the workforce.

8.2 Priority skills areas

This section highlights the current and anticipated future skills needs categorised in terms of criticality (i.e. on the implications of no or slow action) and whether the need requires immediate action. The following table has been compiled by LSIS and is based on the analysis of all the information in this report so far. The analysis highlights areas where immediate action is critical, such as pedagogic and basic literacy and numeracy skills of teachers. There are other critical areas such as strategic leadership skills, for which short term solutions may prove to be counter-productive – these areas will benefit from more continual actions so that the change is embedded, structural and long-term.

Criticality	Immediate need for action	Need for continual action
High risk if no or slow action is taken	• **Pedagogic skills in teachers.** • **Shortage teaching areas** such as the subjects of STEM and special needs education (SEN) teaching staff. • **Management skills in managers** relating to ensuring that the workforce is appropriately trained and qualified. • Development of **business strategies by the senior management** (especially within HE and FE) to compete in a growing internationalised system of learning delivery. This will ensure that the large body of overseas students with varying demands are attracted into the UK education system. • Strategies and capabilities to provide **personalised training by all staff to**	• **Management skills in managers** relating to strategic leadership around change is paramount, so that senior managers have the necessary skills to respond to future economic circumstances and consequent changes in Governmental agenda; and deliver by utilising limited resources. This will have implications on skills of problem solving, communications and team working as well. • **Skills to deliver teaching to a diverse learner community** who have advanced digital skills and therefore, differing personal demands. This is the world of **digital pedagogy** where staff need to use modes of e-learning delivery in order to access a vast number of learners who may have

Criticality	Immediate need for action	Need for continual action
	satisfy differing levels of consumer demands. The learner community now is diverse – international and domestic learners of varying age groups have increased expectations for a better quality in education, especially if they are paying a higher price, which means that education providers must provide **cost-effective, high quality services.**	differing levels of digital capabilities and/or be remotely based. The overarching need is for a workforce that is agile enough to make use of new technology in all learning delivery and support across the sector. • **Continuous training of younger cohorts** of the workforce so that they can be adequately trained and qualified to replace the older workforce when the latter retires. • **Updating of skills and retraining of the older workforce** as well as a large number of volunteers that are entering the sector.
Medium risk if no or slow action taken	• **Management strategies for further development of offshore provision of UK qualifications** (especially of HE) via collaboration, to capture additional student markets in existing and new international areas. • **IT and ICT capabilities** of all staff	• **Embedding of collaborative work and partnership arrangements,** including engagement with employers and communities in order to share resources and take advantage of economies of scale to ensure the most efficient use of resources and support social cohesion. • **Cultural and language awareness in teachers** and across the rest of the workforce • **Awareness and knowledge**

Criticality	Immediate need for action	Need for continual action
		of new areas such as **green practices** across the workforce. • Globalisation, trends towards casualisation and the general economic situation can lead to issues of **workforce retention,** with people looking for jobs in different countries and industries.
Low risk if no or slow action is taken		• **Language skills across all occupations** in the nations. The increase in the number of learners who have English as a second language and the demand for bilingual education, particularly in languages such as Welsh and Gaelic, is raising the priority for language tuition (See Section 8.3).

8.3 Key implications

The implications of the foregoing analysis are that to avoid skill deficits hampering the development of the sector and therefore economic and social growth the UK needs to:

- Raise the level of training for existing professional staff to ensure that pedagogical skills continue to improve and adapt to the needs of particular learners
- Improve manager and leadership across the sector to ensure the sector develops to meet the demands of learners and exploit new business opportunities to extend the reach of the sector
- Improve the supply of new professional staff in specialist areas such as STEM and SEN.

8.4 Nations' perspectives

There are various and complex factors driving the skills priorities within the education sector, most significantly the economy and public policy and legislation. These are not unique to the education sector, but nevertheless have an impact on the demand for skills. For example, Northern Ireland's economic aspirations require **higher level skills**, up-skilling the existing workforce, reducing imbalances across employment sectors, more **management and leadership skills** and more skilled labour in the workforce (DELNI, 2011).

Scotland's skills strategy is aimed at improving the skills and employability of individuals and creating **high skills, high productivity**, and healthy workplaces to provide opportunities for all and create sustainable employment. The strategy intends to create an **enterprising and innovative workforce** who are aware of the skills they possess and can use them effectively; who can deliver **progressive leadership**; who support lifelong development through high quality learning opportunities (Scottish Government, 2010).

The strategy is structured around four priorities: empowering people to ensure they have the opportunity to access the right advice, support and opportunities to acquire the skills and attributes to both contribute to and benefit from future economic success; supporting employers by better understanding and assessing the skills needs and to ensure skills supply; simplifying the skills system to ensure that it is more coherent and easy to understand for individuals and employers, and strengthening partnerships and collective responsibility between public, private and third sectors to help improve skills and the contribution they make towards achieving Scotland's social and economic aspirations (ibid).

The Welsh Government's skills strategy demonstrates their commitment to ensuring a strong supply of appropriately skilled young people for the labour market, reducing skills mismatches and up-skilling the workforce. To achieve this, they are giving special attention to **basic skills** in the workplace, **leadership and management skills** and apprenticeships. There is also emphasis on **higher level skills**, such as STEM and accountancy and business, with universities offering more part-time courses and professional qualification programmes (Welsh Government, 2010).

Economic drivers clearly have a significant impact on the skills needs and operation of many establishments and organisations in the education sector. Achieving a nation's economic goals requires a skills delivery system which is increasingly flexible and better able to respond to the changing needs of individuals and employers.

The findings in this report demonstrate the importance of the education sector to the UK as a whole. Currently the sector has few skills issues and is coping with funding reductions and a changing learner base. But increasing demands on the sector to fulfil its mission to educate and train future generations of capable and enlightened citizens while enduring decreasing investment from Government means that more highly skilled workers will be required. This Sector Skills Assessment provides some insight into the education sector and the impact of drivers of change to enable decision-makers to better understand the sector and its future skills needs.

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Annex 1: Technical appendix

The provision of core data

To ensure consistency and comparability across all 15 SSA reports, data from core labour market information sources was centrally collected, processed and formatted. It was then distributed by the UK Commission to Sector Skills Councils for inclusion within the reports.

Core data was centrally produced from the following sources:

- The Labour Force Survey;
- The UK Employer Skills Survey 2011;
- Working Futures 2010-2020;
- Regional Accounts (information on Gross Value Added);
- Mid Year Population Estimates;
- European Continuing Vocational Training Survey;
- Business Demography Statistics.

Data from the Labour Force Survey, regional accounts and mid-year population estimates was collated, processed and formatted by Cambridge Econometrics and the Institute for Employment Research (IER), Warwick.

Data from the UK Employer Skills Survey 2011 was collated and processed by IFF Research and formatted by the UK Commission.

Data from Working Futures was collated, processed and formatted by IER.

Data from the European Continuing Vocational Training Survey and Business Demography Statistics was collated, processed and formatted by the UK Commission.

All data was quality assured by contractors, the UK Commission and by Sector Skills Councils and LSIS.

It has been necessary to suppress some data within the reports to adhere to official guidelines regarding data quality. The details of suppression strategies applied to data from specific sources are described in more detail below. Data for Scotland, Wales and Northern Ireland for the three smallest SSA sectors is most likely to be suppressed. These are:

- Agriculture, forestry and fishing;
- Energy production and utilities;
- Information and communication technologies.

Methodological information for core labour market information sources

Method used to derive estimates of gross value added (GVA) per employee job by SSA sector and nation

No official estimates are currently available for the level of productivity by sector and UK nation. The figures presented in this report have therefore been estimated by the UK Commission using the following process.

Levels of workplace gross value added at current basic prices by SIC 2007 Section were derived from the official estimates published by the Office for National Statistics as part of its Regional Accounts series. Levels of employee jobs were taken from the Business Register and Employment Survey for 2009.

The sectoral “footprint” definitions used as the basis for the SSA reports are not coterminous with SIC Sections, however, and in some cases draw on 2-digit SIC divisions. At present the official GVA estimates for nations and regions are only available at a SIC section level.

To overcome this an approach was adopted which has been developed by Welsh Government to derive gross value added estimates for its priority sectors. This approach was applied to the UK and all four nations. Approximate estimates of GVA at 2-digit level are available for much of the economy from the Annual Business Survey (ABS). These were used to allocate GVA at the 2-digit level with the results being constrained to the official GVA totals by SIC section taken from the Regional Accounts. For those areas of the economy not covered by the ABS, shares of employment at the 2-digit level were used instead, taken from the Annual Population Survey.

Labour Force Survey

About the survey

One of the key data sources used within this report is the Office for National Statistics' (ONS) Labour Force Survey (LFS). The LFS is a survey of households living at private addresses (plus in NHS accommodation and student halls of residence) in the UK.

The survey is carried on a quarterly basis. The sample is made up of around 41,000 responding (or imputed) households in Great Britain every quarter, and around 1,600 households in Northern Ireland. The LFS uses a rotational sampling design which means that, once selected, a household[7] is kept in the sample for a total of five consecutive quarters.

Interviewers can take answers to questions by proxy if a respondent is unavailable. This is usually from another related adult who is a member of the same household. About a third of LFS responses are collected by proxy. Information on individuals aged 16 – 19 most likely to be obtained by proxy.

Full user guidance can be accessed here: http://www.ons.gov.uk/ons/guide-method/user-guidance/labour-market-statistics/index.html

Preparation of LFS data for this report

The UK Commission provided report authors with a core set of tables based on LFS data for mandatory inclusion within Sector Skills Assessment reports. The data within these tables was prepared by two contractors: Cambridge Econometrics (CE) and Warwick Institute for Employer Research (IER).

Data was prepared in three stages.

- The original survey data was gathered and coded by IER to the categories and classifications required for the SSA tables. This was then sent to CE.
- CE used the data prepared by IER and derived the indicators and aggregated the data to the dimensions required for the tables.
- The UK Commission checked tables and distributed to report authors.

[7] Note, it is the address that is selected and not necessarily the particular people who live there.

Annual data presented within this report is based on an average of four consecutive quarters of data. Data prior to 2009 is based on SIC2003 and data for 2009 and 2010 is based on SIC2007 codes.

Reporting of LFS data

In line with ONS convention, annual LFS data presented within this report has been suppressed if individual cell sizes fall below 6,000. This is because cell sizes of fewer than 6,000 are deemed to be low quality estimates.

Analysis of employment uses all four categories of employments status within the LFS: employee, self-employed, government scheme & unpaid family worker.

Please note, some tables present a total for All sectors while others present a total for Whole economy. The values for these totals are different because the Whole economy total includes the 'Not within scope' category (i.e. sectors that don't fall within an SSA sector), whereas All sectors is the total for just the 15 SSA sectors.

UK Commission's Employer Skills Survey 2011

The UK Commission's Employer Skills Survey 2011 (UK Commission's ESS 11) was the first large-scale economy-wide employer skills survey to be conducted across the whole of the UK. The survey was managed by the UK Commission for Employment and Skills and was conducted by three contractors: IFF Research, BMG Research and Ipsos Mori (Davies et al, 2012). The project steering group included representatives from all four nation governments, the Alliance of Sector Skills Councils, the Department for Work and Pensions and the Skills Funding Agency.

Fieldwork was carried out from March to July 2011. Two waves of interviews were conducted. The main survey involved telephone interviews with approximately 87,600 employers and a follow-up survey focusing on investment in training was undertaken with over 11,000 respondents. The data presented within this report draws only on information gathered from the main survey.

The table below provides information on the number of employers interviewed by sector and nation for the main survey.

SSA sector	England	Scotland	Wales	NI	UK
Agriculture, forestry and fishing	1,270	99	133	45	1,547
Energy production and utilities	1,306	106	133	69	1,614
Manufacturing	6,774	182	470	350	7,776
Construction	7,538	300	660	463	8,961

SSA sector	England	Scotland	Wales	NI	UK
Wholesale and retail trade	13,919	333	1,129	769	16,150
Transportation and storage	4,078	152	300	205	4,735
Accommodation, food and tourism activities	9,630	324	909	455	11,318
Information and communication	2,262	56	111	81	2,510
Creative media and entertainment	3,301	99	227	135	3,762
Financial, insurance & other professional services	4,525	146	391	281	5,343
Real estate and facilities management	3,113	85	133	93	3,424
Government	2,078	163	188	176	2,605
Education	4,597	164	391	287	5,439
Health	2,912	107	242	137	3,398
Care	4,028	101	338	296	4,763
Not within scope	3,722	86	257	162	4,227
Total	75,053	2,503	6,012	4,004	87,572

UK Commission's ESS 11 is a quota survey. Quotas were set on a size by sector within nation / English region basis. In Northern Ireland and Wales, where more interviews were carried out than the required minimum to get national representation, they were predominately distributed in proportion to the population.

In order to include the maximum number of questions without extending the overall length of the interview, the sample was randomly split in half for some sections, and one set of employers were asked one module of questions, and the other half of the sample different questions.

The survey is a local unit (establishment) survey. This means that for large multi-site organisations several branches/ locations may have been interviewed. The establishment level sampling reflects that the survey asks employers about issues that need to be answered by people with day-to-day contact with employees rather than head office.

Respondents are those who have the best overview of HR and training within the establishment. This will tend to be HR or training managers in large establishments and owner/managers or senior managers within small establishments.

The valid population of establishments being used in UK Commission's ESS 11 is all establishments with the exception of sole traders (this means that establishments with one employee and no working proprietors (for e.g. flower stall at a station, where there is one person working but they don't own it themselves) are included). In addition, establishments with multiple working proprietors but no employees are also included.

Sampling error for the survey results overall and for different sub-groups by which analysis is presented in the report is shown in the table below. Sectoral figures are presented for the 14 SIC 2007 sections which were used for the survey sampling approach.

Figures have been based on a survey result of 50 per cent (the 'worst' case in terms of statistical reliability), and have used a 95 per cent confidence level. Where the table indicates that a survey result based on all respondents has a sampling error of +/- 0.32 per cent, this should be interpreted as follows: 'for a question asked of all respondents where the survey result is 50 per cent, we are 95 per cent confident that the true figure lies within the range 49.68 per cent to 50.32 per cent'.

As a note, the calculation of sampling error has taken into account the finite population correction factor to account for cases where we are measuring a significant portion of the population universe (i.e. even if two sample sizes are the same, the sampling error will be lower if in one case a far higher proportion of the population was covered).

These confidence intervals are based on the assumption of a normal distribution of responses.

Sampling error (at the confidence 95 per cent level) associated with findings of 50 per cent

	Population	Number of interviews	(Maximum) Sampling Error
Overall	**2,299,921**	**87,572**	**+/-0.32**
By country			
England	1,960,298	75,053	+/-0.35
Northern Ireland	65,559	4,004	+/-1.5
Scotland	175,114	2,503	+/-1.94
Wales	98,950	6,012	+/-1.22
By size of establishment			
1-4	1,466,397	18,955	+/-0.99
5-24	648,446	47,770	+/-0.61
25-99	147,319	15,951	+/-1.03
100-249	25,945	3,270	+/-2.27
250+	11,814	1,626	+/-3.12
By sector			
Agriculture	98,458	939	+/-3.18
Mining & Quarrying	2,222	188	+/-6.84
Manufacturing	128,255	7,704	+/-1.08
Electricity, Gas and Water	10,583	1,426	+/-3.35
Construction	241,429	6,654	+/-1.18
Wholesale and Retail	441,365	15,340	+/-0.78
Hotels & Restaurants	167,215	8,471	+/-1.04
Transport and Communications	210,801	7,885	+/-1.08
Financial Services	52,381	1,881	+/-2.22
Business Services	551,612	14,488	+/-0.80
Public Administration	26,058	1,617	+/-2.36

	Population	Number of interviews	(Maximum) Sampling Error
Education	65,499	5,439	+/-1.27
Health and Social Work	140,269	8,161	+/-1.05
Community, Social and Personal Services	163,774	7,379	+/-1.11

Looking specifically at sampling error for SSA sectors at national level, Agriculture in Scotland provides an illustrative example. 99 interviews were completed for this sub-group. Applying the assumptions outlined above, this gives a maximum sampling error of around +/-10 percentage points. This demonstrates the indicative nature of the detailed survey estimates for smaller sectors.

Within the report, data based on unweighted bases of less than 25 have therefore been suppressed for quality reasons. In addition, data based on unweighted bases of between 25 and 50 have been marked as indicative. More stringent thresholds have been applied in Scotland because of the lower total number of interviews that were conducted than in other nations. Estimates based on unweighted bases of fewer than 50 have been suppressed, whilst estimates based on bases of 50-99 are marked as indicative in the relevant tables.

Finally, occupations within the survey are defined by 2010 Standard Occupational Classification codes and sectors are defined by 2007 Standard Industrial Classification codes.

Please visit the UK Commission's Employer Surveys website for further information including the full survey report and questionnaire. https://ness.ukces.org.uk/default.aspx

Annex 2: OECD Indicators

Table A.1: Expenditure on educational institutions as a percentage of GDP (1995, 2000, 2008)

OECD	Notes	2008	2000	1995
Australia		5.2	5.0	5.0
Austria		5.4	5.5	6.2
Belgium		6.6	6.1	m
Canada	1, 2	6.0	5.9	6.7
Chile	3	7.1	6.7	4.6
Czech Republic		4.5	4.2	5.1
Denmark	2	7.1	6.6	6.2
Estonia	4	5.8	5.4	5.8
Finland		5.9	5.6	6.3
France		6.0	6.4	6.6
Germany		4.8	4.9	5.1
Greece	2	m	3.6	2.6
Hungary	4	4.8	4.3	4.8
Iceland		7.9	7.1	m
Ireland		5.6	4.5	5.2
Israel		7.3	7.6	7.8
Italy		4.8	4.5	4.6
Japan	2	4.9	5.0	5.0
Korea		7.6	6.1	m
Luxembourg		m	m	m
Mexico		5.8	5.0	5.1
Netherlands		5.6	5.1	5.4
New Zealand		6.6	5.6	4.7
Norway	4	7.3	6.8	6.9
Poland		5.7	5.6	5.2
Portugal		5.2	5.2	4.9
Slovak Republic	2	4.0	4.1	4.6
Slovenia		5.4	m	m
Spain		5.1	4.8	5.3
Sweden		6.3	6.3	6.0
Switzerland	4	5.7	5.7	6.0
Turkey	4	m	2.5	1.7
United Kingdom		5.7	4.9	5.2
United States		7.2	6.9	6.6
OECD average		5.9	~	~
EU21 average		5.5	~	~

OECD (ranked high to low)	2008
Iceland	7.9
Korea	7.6
Israel	7.3
Norway	7.3
United States	7.2
Denmark	7.1
Chile	7.1
Belgium	6.6
New Zealand	6.6
Sweden	6.3
Canada	6.0
France	6.0
OECD average	5.9
Finland	5.9
Mexico	5.8
Estonia	5.8
Poland	5.7
Switzerland	5.7
United Kingdom	5.7
Netherlands	5.6
Ireland	5.6
EU21 average	5.5
Slovenia	5.4
Austria	5.4
Portugal	5.2
Australia	5.2
Spain	5.1
Japan	4.9
Italy	4.8
Germany	4.8
Hungary	4.8
Czech Republic	4.5
Slovak Republic	4.0
Greece	m
Luxembourg	m
Turkey	m

NOTES:

1. Year of reference 2007 instead of 2008.
2. Some levels of education are included with others. Refer to "x" code in Table B1.1a for details.
3. Year of reference 2009 instead of 2008.
4. Public expenditure only (for Switzerland, in tertiary education only; for Norway, in primary, secondary and post-secondary non-tertiary education only; for Estonia, New Zealand and the Russian Federation, for 1995 and 2000 only).

Source: OECD 2011. *Please refer to the source for information concerning the symbols replacing missing data.*

Annex 3: Education sector SIC codes

Table A.2: Education sub sector definitions with current SIC 2007 to previous SIC 2003 code comparison (Codes that are newly included are highlighted in the table)

SIC 2007 Code	Previous SIC 2003 Code	Sub-sector	Description
85100	8010	Pre-primary education	Pre-primary education
85200	8010	Primary education	Primary education
85310	8021	General secondary education	General secondary education
85320	8022	Technical and vocational secondary education	Further education colleges. Also includes: tuition for ships' licenses for commercial certificates and permits; activities of flying schools for commercial airline pilots; technical and vocational education for adults below university level (includes driving schools for occupational drivers – excludes cultural education and sports and recreation)
85410	80301	Post-secondary, non-tertiary education	Sub-degree level higher education and higher education delivered by further education colleges.
85421	80302	First degree level higher education	First degree level higher education
85422	80303	Post graduate level higher education	Post graduate level higher education
85510	92629*	Sports and recreation education	Activities of sport and game schools; activities of riding academies; yoga instructions
85520	80429	Cultural education	Cultural education part of adult and other education (below academic level: music, fine arts, performing arts, dance, theatre, photography); activities of dancing schools and dance
85530	8041	Driving school activities	Other than driving schools for occupational drivers of e.g. trucks, buses, coaches - which are included in SIC 85320 above.
85590	8042	Other education not elsewhere classified	All activities of work based learning, training providers and community learning and development practitioners (including adult and community learning). Excluding cultural, sport and vocational adult education
85600	74149*	Educational support services	Educational support services (part of inclusion – advice and help to businesses and public services); scholastic agent; school agent

**At a two digit SIC level, "Education" includes two codes in SIC (2007) 85 which were not includesd in SIC (2003) 80. these are 92629; Sports and recreation education and 74149; Educational support services*

Notes: The 2007 SIC (UK Standard Industrial Classification of Economic Activities) system became effective 1 January 2008

The UK 2007 SIC system replaced the earlier 2003 version, which itself was a development of the 1992 standards, the first to correlate significantly with the European system

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