

# Skills in England 2001

## The Key Messages

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## Introduction

This report summarises the key messages on skills supply, demand and shortfall in England in 2001. The messages have emerged from a synthesis, review and assessment of the research evidence on skills issues. The National Skills Task Force recommended such an assessment be carried out on an annual basis. From next year the Learning and Skills Council will take responsibility for undertaking this task.

This report does not seek to update the work of the National Skills Task Force nor to examine or reassess the priorities they identified. Rather, the purpose of undertaking the review was to assess the current evidence on skill issues, identify key findings and draw out the key messages which could inform action on skills issues in the future.

This report draws attention to 10 key messages that emerged from the review of the evidence. In each case we identify the message, summarise the research evidence which supports it and, where appropriate, draw attention to the research gaps which need to be filled in order to enhance our understanding of the issues. For a much fuller assessment of the research evidence and a more detailed set of findings and sources, the reader is referred to the full research report – “Skills in England 2001: Research Report”.

The Key Messages are as follows:

- **Skills are valuable** - people, companies, communities and the country as a whole benefit when people increase their skill levels;
- **The importance of skills is increasing** - the evidence suggests that occupations which require higher skill levels are growing faster than those which require lower skill levels and that the skills needed in jobs, across the occupational spectrum, are also increasing;
- **Understanding the demand for skills in the labour market** – this is a complex process and requires consideration of a range of factors, including future occupational and sectoral employment trends; demand triggered by retirement and mobility out of occupations; and the factors that drive changes in employment demand such as globalisation, technological changes and changes in consumer demand. All these factors are important in assessing the current and future demand for skills;
- **Improving international competitiveness demands better skills** - we need to up skill to levels at or above our competitor nations. Whilst recent improvements have been made in skill levels in the UK, the improvements do not fare well against other OECD nations;
- **Inequalities in attainment and participation must be tackled** - inequalities in skill attainment exist with certain groups participating in, for example, training to a lesser extent than others, e.g. those in low skilled jobs and members of ethnic minority groups. To meet increasing skill demand requires us to meet the challenge of increasing skill levels of groups in the population currently disadvantaged;

- **Employers have a vital role to play** - employers are a key partner in tackling skill deficiencies in terms of providing training; in enabling employees to undertake training to upgrade skills; and in recognising the business benefits that accrue through skill acquisition within their own firms;
- **Skill deficiencies are concentrated amongst certain types of employers** - skill deficiencies, as measured through a DfES survey of employers suggest that around 1 in 10 establishments experience some form of skill deficiency, whether in the external labour market or within their own workforce. However these deficiencies are concentrated amongst certain types of establishment;
- **There are a number of skill hotspots** - these include intermediate level skills, ICT skills, generic/transferable skills, numeracy skills, management skills;
- **Regional and Local differences must be taken into consideration** - there are important regional and local differences in many aspects of skills issues. For example, in terms of issues such as occupational employment structure and the impact upon the demand for skills, the levels of qualifications of the workforce and in the experience of skill deficiencies.
- **Using the evidence base on skills** - encouraging greater use of the available evidence would enhance the effectiveness of policy, planning and service delivery

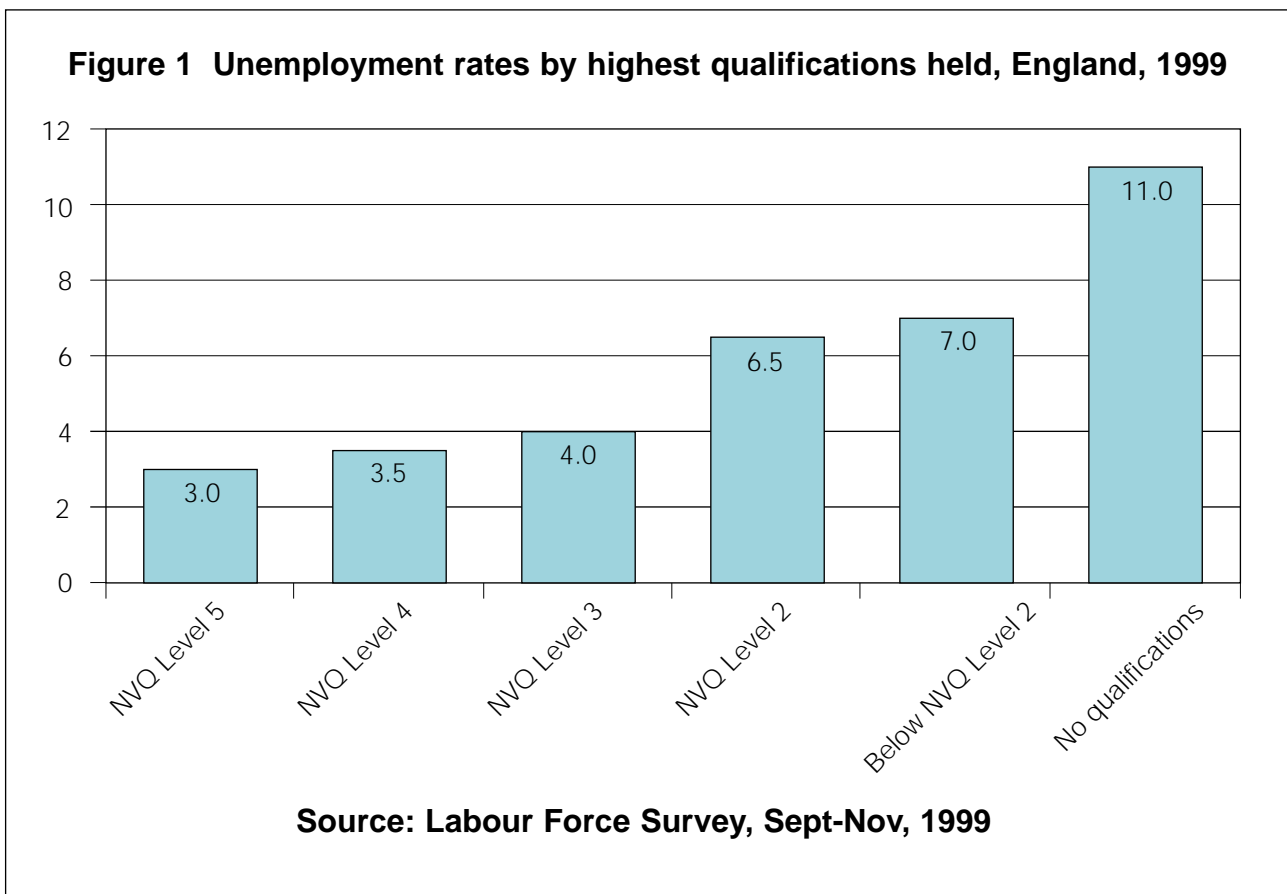
In the remainder of this report we deal with each of these messages in turn.

## Skills are valuable

There are substantial economic benefits that accrue from skills acquisition. Individuals, companies, communities and the country as a whole benefit when people increase their skill levels. Moreover, higher skills levels are required for the 'jobs of the future' as the new jobs that are being created are predominately 'skill rich'. Increasing skill levels contributes to both the competitiveness and social inclusion agendas as organisational and economic performance improves alongside enhanced earnings and employability for those individuals concerned.

Encouraging participation in learning and the progression of people through higher levels of learning is likely to be beneficial to both employers and individuals.

**The value to individuals.** There is a strong association between people's qualifications and earnings not only in the UK, but across most OECD countries, with evidence of a large wage premium associated with higher level qualifications. There is a similar association between qualifications and unemployment rates (see Figure 1).



Furthermore, those with high levels of numeracy and literacy have earnings levels substantially in excess of those with low levels of numeracy and literacy. Studies of the economic returns to acquiring qualifications show substantial returns to NVQ level 2, 3 and 4 or equivalent qualifications, with broadly similar returns to both vocational and academic

qualifications at levels 3 and 4, when consideration is taken of the time required to obtain the qualifications. For example, the wage premium for men with GCSEs compared to those without is 21%, with A levels compared to those without is 17% and with a degree is 28% compared to those without. Thus a man with all 3 of these qualifications is likely to earn, on average, 66% more than one with no qualifications. In terms of literacy and numeracy, achievement at NVQ level 1 or above produces returns of 16% and 26% respectively, compared to those adults with skills below that level. There are also considerable earnings gains associated with training and these are especially high for women and for those with lower levels of educational attainment. The possession of a range of generic skills also attracts a pay premium e.g. with regard to communication skills, problem solving skills and, in particular, computer skills.

**The value to employers.** There is also evidence of a connection between training and company productivity and, importantly, evidence that the productivity effect is higher than the effect on employee's earnings, thus generating a 'net' return to employers. The effects are greater when training is associated with a wider 'bundle' of human resource practices in companies. There is also some evidence that differences in profitability between companies are in part a function of differences in human resource practices in general and skills development in particular.

**The value to the economy.** There is some evidence of a relationship between education and economic growth. A recent study, for example, has shown that a 1% increase in school enrolment rates tends to generate economic growth of up to 3% points.

**The value to communities.** There is also evidence on the economic benefits of learning to localities and regions in so far as there is an association between a range of measures of skills levels and local earnings, employment growth, deprivation and competitiveness.

A recent OECD study, *Cities and Regions in the New Learning Economy* (OECD 2001), has also found a significant correlation across the EU regions between competitiveness and measures of secondary level educational attainment. Studies of the relation between skills and economic growth demonstrate a positive impact. Indeed, across the OECD, differences between countries' stock of human capital are an important explanatory variable in explaining differences in economic growth.

*There are, however, a number of research gaps which prevent a full understanding of the economic benefits of skills acquisition:*

- *There is little evidence on the returns to different types of academic and vocational qualification in terms of the subjects studied. Such research would help inform public resource allocation as well as individual learning decisions.*
- *Evidence on the impact of training activity on productivity and profitability is limited. Moreover little is known about the effect of the attainment levels of an organisation's workforce on its performance. Such research would help inform employer training and recruitment practices.*

- *There is little evidence on the effects of training on national economic performance. Most studies use 'aggregate' measures, like number of years of schooling, which do not allow us to disentangle the different forms of skill acquisition.*
- *The relationship between skills and economic performance at the national and local level requires further investigation. There exist substantial variations in skill levels across localities but little is known about how these are affected by patterns of skills demand and their impact on local economic performance.*

### The importance of skills is increasing

The labour market is changing, with shifts in the occupational pattern of job opportunities which, overall, is leading to a growth in jobs which require higher level skills and a decline in jobs requiring lower level skills. The fastest growing occupational groups are professional occupations (e.g. IT and software professionals; scientists and engineers; health professionals; teachers and researchers; lawyers; accountants and consultants); associate professional and technical occupations (e.g. technicians, nurses, police, designers, estate agents, marketing staff, insurers and trainers) and personal service occupations (e.g. care assistants, travel agents/assistants, hairdressers and sports/leisure staff).

This rapid growth in the numbers employed in a range of occupational groups where qualification levels are currently relatively high, combined with the decline of several occupational groups where qualifications are relatively low, will lead to around 4 in 5 of the new jobs being at least at NVQ level 3, or equivalent, by the end of the decade.

It is also the case that a range of generic skills are also likely to increase in importance in the future – most notably verbal skills, numerical skills, planning skills and communication skills. Verbal skill requirements and communication skills are increasing most amongst managers; numerical skills most amongst clerical/secretarial occupations and planning skills most amongst sales occupations.

### Understanding the demand for skills

A range of factors affect the evolving demand for skills and it is important to understand them and their importance so that appropriate responses to changes in demand can be developed to ensure that the workforce is appropriately skilled to meet these challenges.

Changes in the sectoral and occupational structure of labour demand have important implications for the volume and pattern of skills required. Moreover, the continuous process of occupational mobility and movements out of the workforce, also structures the pattern of workforce skill requirements. Behind these observable changes in the labour market lie the forces that drive employment and skill requirements. These include:

- the process of globalisation and its consequent changes to the competitive position of different economic sectors, products and services across countries;

- the evolution of technology, including information and communication technologies;
- the constantly changing patterns of consumer demand, both nationally and in the wider global economy.

It is important therefore to seek to ensure that the evolving pattern of skills which are being acquired are consistent with the changing requirements of the labour market so we are able to better balance the skills we have available with the skills we need. The ongoing structural changes in the labour market mean that a large proportion of 'new' jobs are likely to be in a relatively small number of occupations and that many of the new jobs will require higher levels of qualifications/skills. In parallel, a range of jobs will be lost in other occupations, often with relatively lower qualification levels.

It will be important to monitor evolving supply patterns and their interaction with the pattern of skills demand so as to ensure that no major imbalances develop. It will also be valuable to encourage adaptability and learning decisions, through information and incentives in a manner consistent with evolving labour market demands. This requires ongoing research and intelligence at the national, regional and local levels.

In the previous section we outlined the changing pattern of 'new' labour demand in terms of occupations and qualifications which are expanding and growing, and drew attention to its high degree of concentration in a relatively small number of occupations. Indeed just 6 occupational groups – caring and personal services; business and public service professionals and associate professionals; teaching and research professionals; health and social welfare associate professionals and corporate managers – together may account for as much as 8 in 10 of all new jobs created in the next 10 years. Moreover it is likely that around 8 in 10 of all of the new jobs may well be at NVQ levels, 3 or 4 or their equivalent, and above.

In addition to meeting the skill needs of 'new' jobs, it is also very important to replace the skills 'lost' in the normal process of labour turnover (retirement and occupational mobility in the main). This 'replacement demand' outstrips the scale of new job generation and, moreover, the patterns of replacement and new jobs demand vary across occupations - see Figure 2.



**Figure 2: Projected Demand by SOC Sub Major Group 1999-2010**

<b>Occupations<sup>a</sup></b>	Replacement demand	Expansion demand	Net requirement
Elementary Occupations (clerical and services related)	+ 1327	-154	+1172
Administrative & Clerical Occupations	+ 1178	+160	+1338
Sales Occupations	+ 939	+172	+1111
Caring Personal Service Occupations	+ 673	+47	+1144
Managers/Proprietors in Agric/Services	+ 649	-151	+498

**Source: Wilson (2001) Page 39.**

Notes:

<sup>a</sup> Occupations shown are the five largest in terms of projected replacement demand.

The volume of replacement demand that is likely to be required, and thus the relevant skills to go with them, may well be around 5 times as great as the volume of 'new' jobs and the skills that go with them.

A small number of occupations experience high levels of both expansion and replacement demand, most notably business and public service associate professional; caring and personal service occupations; and teaching and research professional groups. Such groups face a particularly strong challenge in working with providers and in recruitment activities in order to seek to ensure that the necessary levels of skills supply are available to meet these substantial requirements.

It is also important, however, to recognise that in a number of occupations, for example, secretarial; skilled metal and electrical trades; and plant and machine workers, the large decline in overall numbers of those employed in these groups in future years is more than outweighed by the need to replace skills lost through replacement demand.

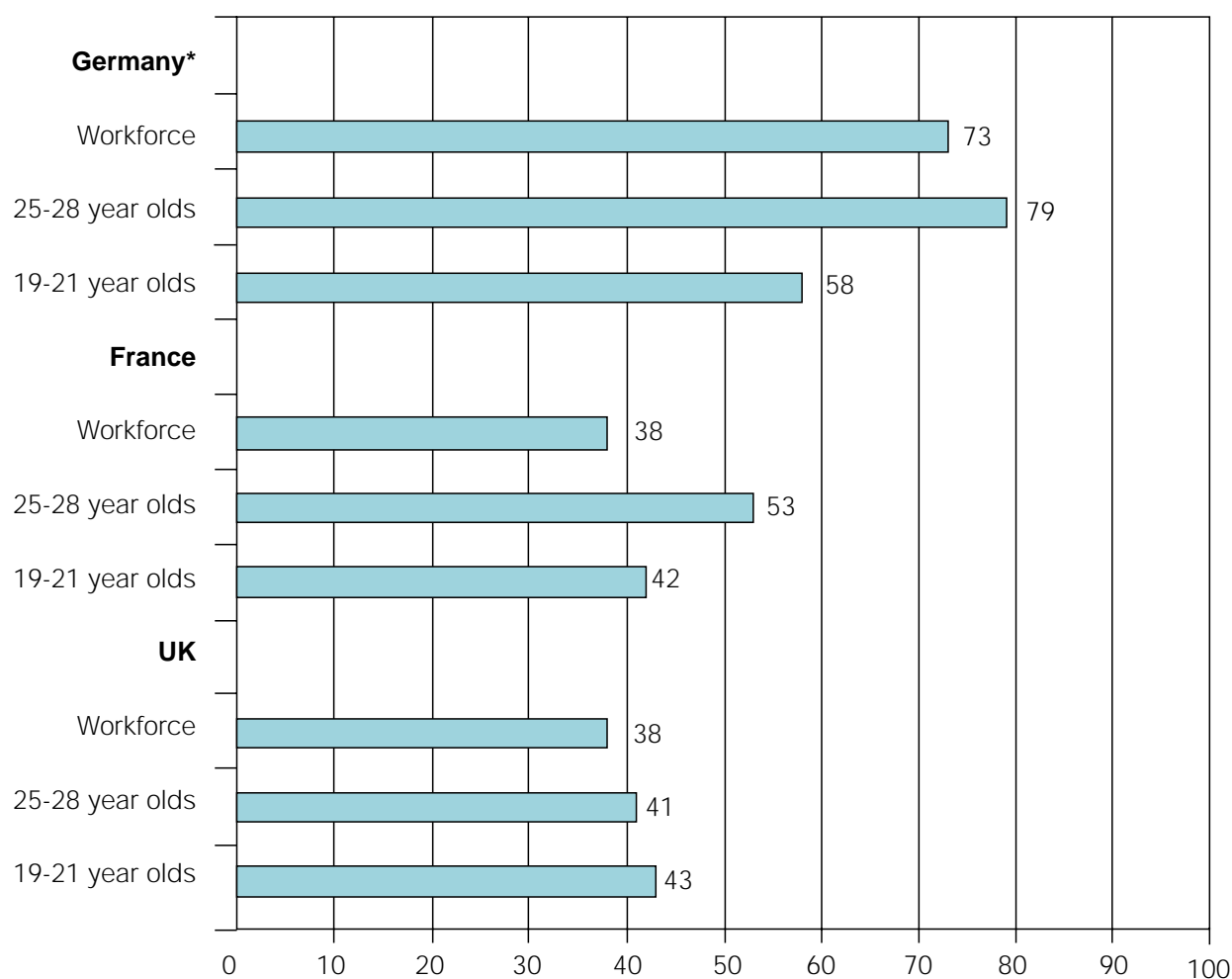
*The main gap in terms of the intelligence and research that would be valuable in enhancing our understanding of the issues discussed above, is the lack of estimates of replacement demand at the regional level and at the more detailed SOC minor level. This would help us understand more completely the nature of changing skill demands at the regional level and at a level of disaggregation that would be helpful to providers.*

### International competitiveness demands better skills

It is important to position the main dimensions of our domestic skills performance in an international context. This helps to benchmark our position and to map our progress not just against our domestic past, but through assessing ourselves in relative terms against many of our European Union and OECD competitor nations. Whilst substantial improvements have taken place in our skill levels in recent years, these look more modest when placed in relation to the skill levels of other countries.

The U.K.'s overall position in terms of the qualifications of the workforce at NVQ levels 2, 3 and equivalent, is around the OECD average, although it appears to be above average in relation to older workers and below average in relation to younger workers. The position with regard to NVQ 3 and equivalent qualifications in relation to France and Germany is set out in Figure 3.

**Figure 3: Qualifications at NVQ Level 3 or equivalent in the UK, France and Germany (1998)**



Source: Steedman in DTI (2001)  
 \*Germany data is 1997

In terms of upper secondary level education (NVQ level 2 or equivalent), whilst in historical terms domestic qualification levels have increased considerably, the improvement is less substantial than that which has taken place in nearly all other OECD countries. For example, the proportion of adults in the UK qualified to NVQ level 2 or equivalent is exactly equal to the OECD average, however the performance of younger people is weaker than that for older people. The U.K. is ranked 19 out of 26 OECD countries in the former case and 13 out of 26 in the latter case. The literacy levels of young people achieving upper secondary level education are comparatively modest, placing the U.K. 13th out of 18 OECD countries.

In terms of tertiary level (higher) education, whilst again, in historical terms qualification levels have increased substantially, the improvement is less than in most OECD countries. Moreover, in comparative terms, the performance of younger people in terms of the proportion participating in tertiary education is again weaker than that for older people - the U.K. is ranked 17th out of 26 in the former case and 12th in the latter case.

As far as continuing education and training is concerned, the comparative position of the U.K. is relatively strong. Participation rates in job related education and training are amongst the highest in the OECD. On the other hand, the actual amount of time that each participant spends training (training intensity) is low in comparative terms. In terms of the overall training 'effort', i.e. the 2 measures combined, the UK is placed second only to New Zealand.

The distribution of such training activity across the range of social groups generally reinforces pre-existing differences in skill levels both in terms of participation rates and volume of training received. However, in the U.K. this process exacerbates initial differences less dramatically than in most other OECD countries. In terms of international comparison therefore, participation is high at lower skill levels, though substantial differences in participation between different social groups are still experienced. Not all of these differences are associated with employer behaviour as it appears that, overall, the less well qualified are also less interested in undertaking training than their more highly qualified counterparts.

Adult literacy and numeracy in an increasingly information based society is of considerable importance. The International Adult Literacy Survey (IALS) demonstrates that the UK ranking on average literacy and numeracy levels varies, according to the measure used, from 13th to 17th out of 22 OECD countries. The U.K.'s ranking is especially weak amongst craft and other manual workers.

The proportion of the adult population of working age who are proficient only at the lowest level – IALS level 1 – is between 22% and 23%. This is around the 6th highest proportion in the OECD study. However, the proportion proficient at IALS level 5 is relatively high, thus indicating a higher degree of 'skills polarisation' in this regard than in most OECD countries.

In terms of quantitative literacy at IALS level 3 (defined as a suitable minimum for coping with the demands of every day life and work in an advanced society) the UK is lagging behind most OECD countries with the UK having a mean score higher only than 4 countries (Slovenia, Poland, Portugal and Chile) out of the 22 studied.

*The major research gap relating to the assessment of our position relative to other countries, is that the data available and that which is used in the research reports on which it is based, are not up-to-date. Thus mostly relate to 1995 and, at best, 1998. Moreover their country coverage is often limited.*

### **Inequalities in attainment and participation must be tackled**

Skills are unequally distributed across various groups in the population. Given the importance of the possession of skills to both individual labour market success and social inclusion it is important to recognise the existence and extent of such widespread skill inequalities. The Learning and Skills Council's key corporate objectives and targets include the extension of participation in learning, in order to equalise access to learning, and the raising of the achievement levels of young people and adults, in terms of the proportions attaining NVQ level 2 and 3, or equivalent, qualifications. A range of relevant areas of concern were identified – qualification attainment, basic skills, participation in education and training and the gendered nature of such inequalities. However, this should not be seen as a complete assessment of this important dimension of skills issues as the review did not specifically examine inequality and social exclusion issues.

First, in terms of the attainment of qualifications (see Figure 4). Around 30% of the workforce either have no qualifications or hold qualifications below NVQ level 2 or equivalent. Moreover, attainment levels are highly uneven across different social groups, with the unemployed, economically inactive, those aged over 50 and those employed in manual occupations amongst the groups who are least likely to hold any formal qualifications. 29% of the long term unemployed and nearly 40% of the economically inactive have no qualifications at all. In particular it should be noted that members of certain ethnic minority groups are more likely not to hold any qualifications – individuals from the Bangladeshi, Pakistani and Black Caribbean groups are particularly disadvantaged in this regard. Ethnic minority groups are expected to account for more than half of the growth of the working age population over the next 10 years and their attainment levels are therefore of particular importance, especially in localities where they already constitute a large proportion of the actual or potential workforce.

**Figure 4: Workforce Qualifications: Highest NVQ Equivalent Qualification, England 2001 (%)**

	No Qual	NVQ1	NVQ2	NVQ3	NVQ4
<b>All aged 16+ Age</b>	16	15	23	24	24
16-24	8	10	38	29	15
25-49	9	14	23	24	31
50+	21	18	14	23	24
<b>Gender</b>					
Male	11	14	18	30	27
Female	13	15	29	18	27
<b>Ethnicity</b>					
White	12	14	24	25	26
Non-White	12	24	16	17	31

Source: Labour Force Survey, 2001, First Quarter

Second, **poor basic skills** are a significant problem. Defined as 'the ability' to read, write and speak in English and use mathematics at a level necessary to function and progress at work and in society, it is estimated that: around 1 in 5 adults have a lower level of literacy than that expected of an average 11 year old and nearly half of adults have a lower level of numeracy than that expected of an average 11 year old. There may be as many as 7 million adults who could be considered functionally illiterate or innumerate. Those groups in the workforce most likely to suffer from low basic skills levels include older people, those with low/no educational attainment, the economically inactive, the unemployed, non whites (especially Punjabi and Bengali speakers) and ex-offenders. This lack of basic skills impacts on people's employability and earnings potential yet a relatively small proportion of those who lack basic skills recognise that they have literacy or numeracy problems.

Third, **participation levels** in post compulsory education and training need to be increased in order to raise attainment and reduce inequalities in skills levels. The proportion of **young people** participating in education post 16 has increased considerably over recent years. However, compared to most other OECD countries young people's (18 year olds) participation in full time education is low, being ranked 26 out of 28 countries and being well below the rate in many of our major competitor countries such as the USA, Netherlands, Ireland, Germany and Sweden. Such relatively low levels of participation imply a high degree of inequality in the pattern of skills acquisition amongst young people.

Moreover, participation in **adult learning** has remained relatively constant over the last few years with around 40% of adults of working age being classed as current or recent (last 3 years) learners and just less than 40% who have not participated in learning since they completed their full time education. Most importantly, there are significant disparities in

participation rates in learning across different groups in the workforce. In particular, low levels of participation are apparent amongst older individuals, the economically inactive, those in skilled, semi and unskilled manual and service occupations and those who completed their initial education at the earliest age. These low levels of participation imply a high degree of inequality in the pattern of adult skills acquisition.

Whilst there has been a substantial growth in **workplace training** in recent years access to such training is unevenly distributed amongst the workforce. Certain groups of employees, most notably plant/machine operatives and those in elementary occupations, the less well-qualified, part-time workers and older workers, are amongst those least likely to receive formal job-related training. Furthermore this inequality in training participation is cumulative – those who do not receive training in one year tend also to be excluded from it in future years.

One final aspect of **inequality** relates to the **gendered** nature of participation in post compulsory education and training. For example, there is a strong gender dimension to the pattern of degree subjects being studied, with three quarters of those studying subjects allied to medicine being women and over 70% of those studying languages or education. On the other hand 85% of those studying engineering and technology are men, as are 80% of those studying computer science.

Similarly there is a gender dimension to the subjects/occupational areas in which trainees on Modern Apprenticeship programmes participate with 1% of Advanced Modern Apprenticeship trainees in electrical engineering, plumbing and construction being women compared to 90% being women on travel, social care, child care and hairdressing programmes.

These systematic differences in participation by gender create inequalities between men and women not only in terms of skill acquisition but also in continuing the occupational segregation of men and women within the labour market. It also means that areas of skill shortages are unlikely to be effectively tackled if the resources, male and female, of the whole workforce are not tapped and, in this sense, inequalities in learning participation are likely to hinder the development of efficiently functioning skills and labour markets.

### Employers have a vital role to play

Employer awareness of skills issues and their responsiveness to them is critical. Recruitment and training decisions, attitudes to product and service development and their commitment generally to investing in people, can make a significant difference to the volume, nature and distribution of skills across the workforce. Three aspects of this are: their provision of training; the extent of skill gaps in their workforce; and the existence of latent skills gaps.

**Workforce training** is an important means through which skills acquisition can be increased. Participation in workplace training has increased in recent years. However,

access to it is unevenly distributed amongst the workforce with semi skilled and unskilled manual and service workers, the less well-qualified, part-timers and older workers being amongst those least likely to receive formal job-related training (see figure 5). Whilst the distribution of training therefore reinforces existing differences in skill levels, the exacerbation of initial differences is less dramatic than in many other countries. While the proportion of adults with relatively low levels of initial education who participate in training is below that of those with, for example, a University degree, **both** these proportions are higher than in most other OECD countries. Furthermore, UK participation in training in every age group is above the OECD average.

**Figure 5: Percentage of employees receiving training in the last 13 weeks before the survey**

<b>Occupation</b>	
Managers/Administrators	28
Professional	50
Associate prof/Tech	42
Clerical/Secretarial	27
Craft and related	18
Personal/Protective	34
Sales	25
Plant/Machine Operatives	15
Other	14
<b>Qualifications</b>	
No qualifications	10
NVQ 1	20
NVQ 2	28
NVQ 3	28
NVQ 4+	43
<b>Age</b>	
16 to 24	39
25 to 49	31
50+	21
<b>All</b>	<b>29%</b>

Source: LFS Winter 2000/01

The size of an establishment is an important factor in the level and type of workplace training which is provided, with smaller establishments being less likely to provide formal workplace training than larger ones, especially in respect to off-the-job training. A third of employers with 1-4 employees reported that they had provided off-the-job training in 2001, compared to 41% overall. They are also less likely to provide training that leads to formal qualifications. Overall, the provision of on-the-job training is also significantly greater than off-the-job training and a significant proportion of workplace training is short-term.

In terms of international comparisons participation in job related education and training is high in terms of the proportion of the workforce involved. However, the actual amount of time that each participant spends on training is relatively low in international terms.

There is extensive evidence of the existence of **skill gaps** in the workforce. Skill gaps exist where there is a divergence between an organisations current skill levels and those which are actually required to meet organisational objectives. This is an issue of the proficiency of an organisation's existing staff. Around 1 in 14 establishments report the existence of such skills gaps – where a third or more of staff in at least one occupational area are considered not to be fully proficient in their job.

The main skill gaps in terms of the skill characteristics which are lacking are: communication skills; non-IT technical/practical skills; team working; customer handling; and problem solving skills. IT skill characteristics (basic and advanced) also feature prominently.

These skill gaps negatively affect organisational performance in a range of ways – customer service, quality, costs and new working practices in particular. Of course, one important cause of the existence of skill gaps is a failure to train staff in the first place. In addition, 31% of employers reported a lack of time for training and 23% reported a lack of funding and a lack of cover for training were barriers preventing them from maintaining or developing a fully proficient workforce. It seems employers perceive training to be an important cause (in terms of lack of training) and solution to skill gaps, but the evidence suggests that skill gaps will continue to be experienced by employers.

There is also evidence to suggest that some potential skill gaps exist within establishments but are not recognised as such until the organisation tries to improve its position in terms of growth or market position. If an organisation were to 'raise its game' and perform in line with the 'best' in their sector, this would reveal new skill gaps. So, moves to higher value added production or services provision, expansion into new markets or shifts in technology or organisation could uncover additional skill requirements that would be necessary in order to achieve these changes and improve organisational performance. In other words there are 'latent' skills gaps which are a constraint preventing establishments from taking full advantage of the opportunities they face.

Such **latent skills gaps** have 2 main dimensions. Firstly, the skill levels needed to achieve 'best practice' and the perceived skill deficiencies when best practice is achieved. Secondly, a range of skills are required in order to move from the existing situation to a



high performance position i.e. there are 'transitional' skill requirements. We can think of the sum of these elements as the scale of a latent skills gap.

Moreover a skills gap in the existing workforce may actually inhibit establishments from achieving improved performance. In the 1999 Employers Skill Survey a substantial proportion of establishments indicated that they would wish to improve product or service quality but were constrained from so doing by the skills currently available in their existing workforce.

Such latent skills gaps constrain the potential for growth and are therefore of considerable importance. Their existence provides evidence of a 'low skill equilibrium' where organisations are unaware of what is holding them back and are therefore not demanding the skills that are actually required to achieve enhanced organisational success.

Latent skill gaps may well be as significant as the reported skill gaps and there is therefore a need to make employers more aware of the importance of skills for their long-term success and to assist them in addressing these 'hidden' problems. More generally, latent skill gaps demonstrate the importance of the 'product and service strategies' which employers pursue in structuring the demand for skills. Certain strategies may lead to a pattern of workforce skill requirements which are largely appropriate to establishment's current needs but which do not provide the basis for long term enhanced competitiveness or performance through adaptation to changes in technology or the market place. Latent skill gaps are gaps that need to be filled if England is to continue its development as a high skill, high value added economy.

*In terms of tackling research gaps, there are 3 main areas:*

- *First, data is needed on the **content** of training activity, so that the effects of different types/levels of training can be identified. Our current measures are too crude to analyse the effects of different types of training activity.*
- *Second, it would be valuable to know more about the effect of workplace training on organisational performance.*
- *Finally we need to continue to develop the means by which the scale and distribution of latent skill gaps can be identified, especially if we wish to follow the path of developing in high value added/high skills based economy.*

### Skill deficiencies are concentrated amongst certain types of employer

There are a variety of means through which the levels of skill shortage in the labour market can be measured. The review considers evidence on use of qualifications in the workplace, returns to education and evidence from employer surveys. This latter provides an important measure of skills and identifies areas where skill deficiencies are most voluminous and concentrated.

**Skill shortage vacancies** only affect around 4% of employers but the estimated number of such vacancies is around 160,000 (see figure 6).

**Figure 6: Vacancies, hard-to-fill vacancies and skill shortages (2001)**

	% of all establishments reporting	Number of vacancies (a) '000s
All vacancies	14	766
Hard-to-fill vacancies	8	358
Skill-shortage vacancies	4	159

Source: Hogarth et al (2001) Tables 2.1 and 6.2; pages 5 and 134

Base: All establishments

Note: (a) Grossed up survey-based estimates

Moreover the nature and distribution of the shortages exhibits a high degree of specificity, disproportionately affecting some parts of the economy and labour market more than others. The most significant feature of skill shortage vacancies is that they disproportionately occur in very small establishments – skill shortage vacancies represent 3% of employment in establishments with less than 5 employees compared to 0.8% overall. They are also disproportionately concentrated in the manufacturing, construction, wholesale/retail, health/social care and, especially, business services sectors of the economy. In terms of occupations in business services they relate mainly to professional and associate professional occupations whereas in manufacturing they relate primarily to skilled trade and production process operators. Overall, however, the 3 occupational groups of professional, associate professional and craft, account for well over half of all skill shortage vacancies.

We have already seen under the message 'the role of employers' the extent of internal skill gaps in the workplace, their impact and importance to employers. It is also important to note that, as with skill shortage vacancies, skill gaps affect some sectors more than others. The sectors most affected are manufacturing (which accounts for nearly one quarter of all skill gaps) and hospitality, as well as wholesale/retail, financial services and public administration. The occupational distribution of the gaps varies with nearly half of skill gaps in manufacturing relating to production/process operators and around 40% of skill gaps in both financial services and public administration being in administrative/secretarial occupations. Nearly 40% of health and social care skill gaps are in personal service occupations.

Small establishments are much less likely to report internal skill gaps whereas between 20% and a quarter of all establishments employing 25 or more people, report the existence of a skills gap.

*In terms of research gaps, it would be helpful to have evidence on skill shortage vacancies and skill gaps, available at a more detailed level than the current one digit SOC level, so as to provide a better intelligence base for providers.*

## Skill Hotspots

There are a number of particular skills issues which emerge from the assessment contained in the research report: ICT skills; numerical ability; management skills; intermediate level skills; and generic skills. Each of these represent a challenge that needs to be addressed, to seek to ensure that the relevant skills are acquired and made available. We deal with each in turn.

### ICT Skills

ICT skills are an important issue as evidenced by the fact that the most sought after skills in the 2 main skill shortage occupational groups (professional and associate professional) are advanced IT skills. Moreover the evidence from the Skills Survey of individuals demonstrates that there continued to be significant increases in the demand for, and use of, computing skills. The possession of computer related skills attracts a high wage premium, even at relatively low levels of complexity, whilst more complex computer use earns a still higher premium. Furthermore the growth of the ICT sector itself (computing, telecommunication and electronics) has been very considerable in recent years (with jobs growth of 39% between 1995-2000) and there has also been a substantial increase in the demand for ICT professionals.

The demand for skills amongst ICT professionals is not solely related to technical IT skills but reflect a need for appropriate combinations of these technical skills with business and personal skills in particular the ability to work with internal and external customers. The key generic skills that are sought in combination with technical IT skills include problem solving, oral communication, team working and customer handling.

In addition, employers in many other sectors of the economy require an increasing number of ICT professionals and, increasingly, computer literacy may well become a basic requirement for all but a small proportion of jobs in the future.

Evidence also suggests that IT will continue to be important in future with a third of employers in the 2001 Employers Skill Survey citing advanced IT/software skills as skills they will be needing more in the next two to three years. A far higher proportion than for any other skill type.

## **Numeracy skills**

Concern has also been expressed about skills relating to numerical ability. The International Adult Literacy Study (IALS) contains a measure of adult proficiency in numerical skills – the so called ‘quantitative’ domain. The mean level of proficiency on this measure places the UK 17<sup>th</sup> out of the 22 nations covered in the survey (as discussed above in the ‘international comparisons’ section). Just over a fifth of 16-25 year olds in the UK perform only at IALS level 1 i.e. have ‘very poor’ basic skills. On the other hand, however, the UK also has a relatively high proportion of the population scoring at level 5 – the highest level of proficiency. Nonetheless, around half of all adults in the UK are estimated to have a numeracy problem (i.e. proficiency below that expected of an average 11 year old).

The number of ‘A’ level entries in Maths is also declining, both in terms of absolute numbers and the proportion of the total number of ‘A’ level entries which are to Maths. The absolute number obtaining Maths degrees is increasing, though as a proportion of all degrees awarded, there has been no change in the last 5 years. Overall, Maths performance amongst young people, at age 14, is around the international average as indicated by the most recent international survey of 38 countries, but again, performance has not improved over the 1995-1999 period.

## **Management Skills**

Managerial occupations are one of the most rapidly growing groups in the workforce. Moreover, increasing numbers of other employees now undertake a range of management tasks. The nature of the skills required by managers is also changing rapidly as a result of economic, political, social, technological and organisational changes. Through these, an increasing demand is generated for a range of skills in leadership, the management of change and strategy, as well as a range of ‘meta competencies’ relating to the ability to deal with uncertainty, to learn more quickly than competitors and to deal with technical issues. More directly, it is management in organisations who are responsible for, and able to make, decisions on skills acquisition and deployment.

Case studies found that in many sectors, the most critical, if not necessarily the most numerous, skill gaps were in management occupations. These gaps were shown to have a detrimental effect on an organisations ability both to identify, and to move into, higher value product markets.

*In terms of research, however, there is relatively little known about the quality of UK management and on the impact of management competence on organisational performance.*

## Intermediate Level Skills

Associate professional and skilled trade occupations may be referred to as 'intermediate' occupational groups. They typically require qualifications at NVQ levels 3 / 4 (sub-degree) or equivalent. Together these 2 occupational groups account for 17% of employment – some 7.2 million workers. There are a number of pieces of evidence which imply that there may be a shortage of intermediate level skills.

First, the largest proportions of skill shortage vacancies are in these 2 occupational groups, accounting for 38% of all skill shortage vacancies – more than double their share of employment (See Figure 7).

**Figure 7: Distribution of Skill Shortages Vacancies by Occupation**

Occupation	Distribution of total employment England	Distribution of skill-shortage vacancies	Total Number of skill shortage vacancies	Skill shortage vacancies as a % of employment
Managers/senior officials	16	5	7,000	0.2
Professional	13	18	29,000	1.1
Associate professional/technical	8	18	29,000	1.7
Administrative/secretarial	15	7	11,000	0.3
Skilled Trades	9	20	32,000	1.7
Personal service	7	9	15,000	1.0
Sales/Customer Service	13	9	15,000	0.6
Process, plant, and machine operatives	11	9	15,000	0.7
Elementary occupations	8	5	8,000	0.5
<b>TOTAL</b>	<b>100</b>	<b>100</b>	<b>159,000</b>	<b>0.8</b>

*Source: Hogarth et al (2001) tables 2.5 and 2.13a; pages 14 and 26*

These skill shortage problems are also sectorally specific with skilled trade skill shortage vacancies concentrated in construction and manufacturing and associate professional and technical skill shortages vacancies concentrated in health and business services.

Second, the rate of return to vocational qualifications (at least for males) at level 3 is high and comparable to that obtained via academic qualifications at this level when account is taken of the time required to obtain the qualifications. More generally the earnings levels

and unemployment rates associated with the acquisition of NVQ level 3 or equivalent qualifications show a significant improvement over those associated with NVQ level 2 or equivalent qualifications.

Third, in terms of the changing supply of intermediate level skills (as proxied by qualifications) there has been a substantial growth in NVQ level 3 or equivalent qualifications, especially amongst young people. However, this is almost wholly accounted for by the acquisition of academic A levels, where the majority of people who acquire them proceed to university. The growth in vocational qualifications at this level is largely amongst adults. Moreover, vocational qualifications at level 3 (both GNVQ and NVQ) are largely related to associate professional/technical occupations rather than skilled trade occupations. Only one third of leavers from the Advanced Modern Apprenticeship programme achieve a level 3 qualification. It appears, therefore that there maybe a shortfall in the supply of vocational qualifications, particularly amongst young people and in skilled trade occupations.

Fourth, over recent years there has been a substantial fall in the proportion of long-term unemployed people whose previous occupation was in skilled trades.

Finally, there is projected to be a continued substantial expansion of demand for associate professional and technical jobs, as well as significant replacement demand. Even where total employment in skilled trade occupations is declining, the levels of replacement demand are significant.

### **Generic Skills**

Generic skills are those that can be used across a range of occupations and, as such, are transferable. Employer surveys draw attention to the importance of these skills and the wide extent to which they are sought. The most sought after skills to meet existing skill gaps include communication skills, team working, customer handling and problem solving skills. Evidence relating to the skills actually utilised by the workforce demonstrates an upward trend in the use of problem solving, professional communication, writing and, in particular, computing skills in recent years. There has been a decline however in the use of manual skills.

The demand for these generic skills varies by occupation and is particularly strong in the professional, associate professional and technical and managerial occupational groups. Nonetheless the demand for these skills is increasing across all occupational groups.

*Future research in this area could usefully seek to examine the relation between the possession of such generic skills and other specific skill types in the workforce and organisational performance.*

## Regional and Local Differences must be taken into consideration

There exists considerable regional and local variation in many dimensions of the demand for, and supply of, skills as well as in the extent and nature of skill shortages and skill gaps. It is essential that these differentiating features are articulated, recognised and responded to by providers and agencies as well as by individuals and employers, as the skills issues confronting different places often vary in scale and nature. There is also a danger of skill problems affecting local and regional, as well as national, economic performance and social exclusion, as a result of the combined existence of 'skill rich' and 'skill poor' areas. It will be very difficult to secure a substantial and sustained improvement in skills performance without significant improvements in currently skill poor regions and localities. This is likely to involve the stimulation of skills demand as well as skills supply.

A portrait of the skills position across differing regions is set out in figure 8.

**Figure 8: A Tale of Two Regions**

	<b>North East</b>	<b>South East</b>
% Growth in Managerial Occupations 1999-2010	-5	+10
% Growth in Professional Occupations 1999-2010	+17	+33
% Growth in Assoc. Prof./Tech. Occups. 1999-2010	+12	+27
% of Working Age Population qualified to NVQ 3 or equivalent and above	36.6	45.8
% of those aged 16-19 in Full Time Education	53.6	62.5
% of Working age population currently 'learning'	17	23
% of employers reporting skill shortage vacancy	3	4

Current skill levels vary substantially across localities too with the proportion of those of working age qualified to NVQ3 and above or equivalent, varying by up to 22% points across Learning and Skill Council (LSC) areas. Most of those areas which fall below the average are in central and northern England, the East coast and Cornwall/Devon.

Training provision also varies across the 9 regions by as much as 20 percentage points in terms of the proportion of establishments providing training though, interestingly, training levels appear to be actually lower in high qualification and employment regions, an apparently paradoxical finding unless significant levels of training are designed to remedy existing skill deficiencies.

Skill shortage vacancies are predominantly concentrated in London and the South East

and to a lesser extent, in the South West and Eastern regions. However, the degree of variations is greatest within, rather than between, regions. Skill gaps also vary greatly between LSC areas, being concentrated across large parts of South and East England. On the other hand, the North East experiences by far the lowest number of skill gaps.

*In terms of research gaps, we know relatively little about the relationship between local skills levels and their development and their relation to various dimensions of local economic performance. It would also be valuable to investigate further the issue of relatively low training levels in high qualification localities and why this may be so.*

*It would also be valuable to seek to understand why high levels of unemployment can co-exist with high levels of skill shortage vacancies so that we can appreciate how to address the issue.*

### The Evidence Base

An extensive amount of research has been, and is being undertaken, on skills issues. Much of this recent work is synthesised in the report 'Skills in England 2001: Research Report'. It is of considerable importance that this research evidence is utilised by policy makers and practitioners in the development of strategy, policy, planning and service delivery so that actions are effectively informed by the evidence available. Such evidence helps to identify key issues and to begin the process of establishing priorities for action and resource allocation. This is particularly important as many skills issues exhibit a high degree of particularity and specificity. Many problems are concentrated in particular social groups, sectors, occupations or geographical areas and thus a targeted approach founded on a clear knowledge of the relevant issues is important. The research can also provide a firm foundation for setting baselines and for benchmarking.

Major current imbalances between supply and demand at national, regional and local levels can be identified in some of the following ways:

- Skill shortage vacancies in particular occupations and/or at particular qualification levels
- Shifts in the pattern of the previous occupations and qualifications of the unemployed
- Changes in the employment destinations/success rates of education/training leavers
- Changes in occupational wage differentials

The approach and framework which has been used in this skills assessment can also be used, and adapted, by regional and local agencies who undertake their own skills assessments. Its wide ranging and eclectic nature, as well as the detailed research on which it draws, provides a range of directly usable material. But it also provides a framework and something of a benchmark against which the results from other local and regional assessments can be made, for example, in relation to the Employers Skill Survey and (individual) skills survey results, in relation to the forecasts and in relation to skills supply.



For the evidence base to be effectively utilised, it is important that the key messages contained in this report together with the findings of the research report itself, are widely disseminated to those engaged in the skills agenda – Learning and Skills Councils, Regional Development Agencies, National Training Organisations, employer organisations, education and training providers, information, advice and guidance bodies and local learning and regeneration partnerships – in order to inform their research staff and their strategy development. This would also assist the process of creating a shared agenda on skills issues.

Finally, in terms of research priorities, it is clear that at national, regional and local levels there is extensive collection and use of skills and labour market data. It is important to seek to co-ordinate our approach to this skills information and research so that we can work together more effectively to identify emerging skills issues and to improve our understanding of both the skill and labour markets. The Department for Education and Skills is leading the development of a partnership framework on skills and economic intelligence which sets out objectives and principles to help enable greater co-ordination and sharing of skills intelligence between partners. An enhanced evidence base, greater access to it, and more extensive use of it, will be of considerable value to those actively involved in skills policy, planning and delivery.

**Published Research Reports commissioned by the DfES.**

Employers Skill Survey: 2001 (SKT 40)

Skills, Local Areas and Unemployment. (SKT39)

Sector Skills Dialogue Report: An assessment of skill needs in Transport (SD3)

Sector Skills Dialogue Report: An assessment of skill needs in Engineering (SD2)

Sector Skills Dialogue Report: An assessment of skill needs in construction and related industries (SD1)

Projections of Occupations and Qualifications, 2000/2001. National and regional reports.

Employers Skill Survey: Case Study Report - Telecommunications Sector (SKT 38)

Employers Skill Survey: Case Study Report - Local and Central Government (SKT 37)

Employers Skill Survey: Case Study Report - Hospitality Sector (SKT 36)

Employers Skill Survey: Case Study Report - Health and Social Care (SKT 35)

Employers Skill Survey: Case Study Report - Food Manufacturing Sector (SKT 34)

Employers Skill Survey: Case Study Report - Engineering (SKT 33)

Employers Skill Survey: Case Study Report - Banking, Finance and Insurance (SKT 32)

The Employers Skill Survey: Statistical Report (SKT 31)

The Employers Skill Survey: Existing Survey Evidence and its Use in the Analysis of Skill Deficiencies (SKT 30)

Skills for all: Research Report from the National Skills Task Force (SKT 29)

Skills for all: proposals for a National Skills Agenda: Final Report of the National Skills Task Force (SKT 28)

