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Skills at Work in Northern Ireland 2006

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EXECUTIVE SUMMARY

Raising work skills attracts the interest of policy makers and researchers alike. However, evidence on the use of work skills in Northern Ireland has hitherto been in short supply. This report presents evidence on work skills in Northern Ireland drawn from data collected for the 2006 Skills Survey. The survey generated a high quality, and reasonably large, representative sample of working individuals living in the United Kingdom aged 20-65, consisting of 7,787 respondents. A total of 498 of these were in Northern Ireland. The survey's aim was to gather information on the *skills used at work via questions directed at workers themselves*.

This report explains how several different aspects of work skills can be measured using the information gathered and examines the distribution of job skills among those in work. The report also compares job skills in Northern Ireland with those elsewhere in the UK.

The report focuses on the distribution of skills using the following measures:

- **broad skill** measures including the qualification level required on entry into jobs, the training time for the type of work individuals carry out and the learning time needed to do jobs well (**Chapter 3**);
- the use of **computer skills** and their level of sophistication (**Chapter 4**);
- the use of **other generic skills**, such as problem-solving and communication skills (**Chapter 5**);
- **employee task discretion**, that is the level of control employees have over the detailed execution of work tasks and hence the extent to which employees' judgement and skill is required (**Chapter 6**); and
- **employee attitudes** to work and skill development, the opportunities for training and learning, and the consequences of, reasons for and costs of employee development (**Chapter 7**).

BULLET POINT FINDINGS

The Pattern of Broad Skills

- Three out of ten jobs (30.0%) in Northern Ireland in 2006 required a level 4 or above qualification for entry. However, a quarter of jobs (25.1%) required no qualifications on entry. A similar polarisation of jobs is reflected in the training times respondents reported for their current type of work and the length of time it took to learn to do the job well – three-fifths of jobs (59.8%) in Northern Ireland were reported as requiring less than three months training time, while around three-tenths (29.9%) reported training times of over two years. Similarly, some jobs took a long time to do well, while others were picked up relatively quickly. Over a quarter of jobs (26.1%) could only be done well after spending more than two years in post, but a similar proportion of jobs (23.0%) could be learnt in under a month.

- It is not clear which gender is in more skilled jobs in Northern Ireland. In terms of the highest level of qualification required to get jobs, men and women are neck and neck with no statistically discernible difference between the genders. However, women record significantly higher scores for training time compared with men and men

record significantly higher scores for learning time compared with women. Nevertheless, this masks marked differences in the skill content of jobs occupied by women who work part-time compared to those who work full-time. These differences are large and statistically significant across all three measures, and therefore confirm that the jobs done by women part-timers are, on the whole, lowly skilled.

- Job skills in Northern Ireland are distributed in line with occupational expectations with those at the top of the hierarchy requiring more skills than those at the bottom. In addition, the skill level of jobs declines with establishment size and tends to be lower in the private sector.

- As gauged by broad skills measures, jobs in Northern Ireland are not unambiguously higher or lower skilled than those elsewhere in the UK since on one measure they are higher skilled, while on two others they are lower skilled. Furthermore, none of these differences are statistically significant. Overall, then, it is reasonable to conclude that jobs in Northern Ireland – according to the broad skills measures – are of a similar skill level to jobs elsewhere.

- Northern Ireland has approximately the same proportion of people with level 4 or above qualifications as in the UK as a whole – in 2006, 32.2% of those in Northern Ireland possessed these qualifications compared to 32.8% of those in the UK. It also has a similar proportion of jobs requiring this level of qualification on entry. However, at the other end of the scale, the picture is very different. Whereas less than one in ten people (9.4%) in the UK as a whole have no qualifications to their name, around one in six (16.2%) people living in Northern Ireland are unqualified. The proportion of jobs requiring no qualifications on entry in each country also differs, if only by three percentage points. In Northern Ireland a quarter (25.3%) of jobs can be secured without a qualification compared to a slightly higher proportion (28.2%) of jobs in the UK as a whole. Thus, at the lowest level the qualification demand/supply discrepancy is smaller in Northern Ireland than it is in the UK as a whole – Northern Ireland has a nine percentage point gap between the demand and supply of jobs/people in the 'no qualifications' category compared to a gap of 19 percentage points for the UK as a whole.

- 'Over-qualification' is less prevalent in Northern Ireland than in other parts of the UK. However, even in Northern Ireland a third (32.4%) of workers are in possession of a qualification which is higher than the qualification required for the job they currently occupy. This compares to an 'over-qualification' rate of almost two-fifths elsewhere in the UK.

The Pattern of Computing Skills

- Computers are used in 68.1% of jobs in Northern Ireland. In 41.1% of jobs, computer usage is 'essential' for the job, and in 14.5% of jobs it involves using computers in 'complex' (e.g. use of spreadsheets) or 'advanced' (e.g. programming) ways. In 34.3% of jobs use of the internet is either 'essential' or 'very important'.

- In contrast to the picture with respect to our measures of broad skills noted above, computer skills are used significantly less in Northern Ireland jobs than in jobs elsewhere in the UK. For example, computer use is 'essential' for 46.7% of jobs

across the UK as a whole, six percentage points above the figure for Northern Ireland.

- Women in Northern Ireland are more likely than men to report that computers are ‘essential’ for their jobs (44.6% compared with 37.8%), but are less likely to be using computers in ‘complex’ or ‘advanced’ ways (10.3% of jobs compared with 18.5%).

- Among women the differences are also striking: computers were essential in the jobs of 33.4% of part-time workers, as compared with 50.1% of the jobs of full-time workers.

- All indicators of computer use are very considerably larger in Managerial, Professional and Associate Professional Occupations.

- All indicators of computer use are greater for those working in establishments of at least 25 workers, compared with those working in smaller establishments.

- Computer participation, the centrality of computing and the centrality of internet use are all greater in the Service Industries than in the Production Industries, and greater in the public than in the private sector. However, there are no significant differences between sectors in the level of complexity with which computers are used.

The Pattern of Other Generic Skills

- There are modest but significant differences between the generic skills deployed in Northern Ireland jobs, as compared with jobs in the UK as a whole. In several skill domains, jobs in Northern Ireland require lower skill levels. On average, jobs elsewhere in the UK require higher literacy, technical know-how, horizontal communication skills, problem-solving skills, checking skills, emotional skills and aesthetic skills than those in Northern Ireland. These differences generally apply within industries, as well as in aggregate.

- There are differences between the generic skills utilised by men and women, with women typically found in jobs requiring more communication skills, and more emotional and aesthetic skills.

- Among females, those in full-time jobs exercise considerably greater levels of generic skills in all domains than those in part-time jobs. To illustrate, writing long documents is essential for 30% of full-time jobs, but for only 14% of part-time jobs (not shown in report).

- Generic skills vary across sectors and occupations in expected ways: for example, influence skills are strongest in the Public Sector, and in Managerial, Professional and Associate Professional Occupations, and are on average considered less than ‘fairly important’ in other occupations.

Discretion at Work

- In Northern Ireland, one in two (50.3%) respondents claimed to have ‘a great deal’ of influence over their work effort, while two out of five (42.2%) claimed to have ‘a great deal’ of influence over quality standards. Much smaller, but sizeable proportions,

claimed to exercise ‘a great deal’ of influence over what tasks are to be done and how (22.5% and 32.8%).

- Women in Northern Ireland are, on average, able to exercise more autonomy at work than their male counterparts. For example, 55.2% of women reported that they had ‘a great deal’ of influence over how hard they worked compared to 45.1% of men who claimed to have a similar level of job control. Similarly, there was a gap between the proportions of men and women claiming to have ‘a great deal’ of influence over work standards – 38.5% of men claimed to exercise this level of control compared to 45.5% of women.

- Employees in Northern Ireland enjoy less latitude in how they carry out their daily tasks than employees working elsewhere in the UK. Only a third (32.8%) of employees in Northern Ireland exercise ‘a great deal’ of influence over how they are to do their daily tasks compared to over two-fifths (42.7%) of employees working in the UK. Similarly, there is a ten percentage point gap between the proportions claiming ‘a great deal’ of influence over quality standards in Northern Ireland compared to those working in the UK minus London and the South East.

- Men in Northern Ireland enjoy significantly lower levels of autonomy than elsewhere. Women’s discretion levels, on the other hand, are much the same in Northern Ireland as they are in other parts of the UK.

Training and Learning

- Many job features are important to people’s work orientations, but ‘good training provision’ does not appear one of them. It was ranked ninth out of fifteen job features in Northern Ireland. Nevertheless, it was rated as ‘essential’ by over a fifth (22.8%) of job-holders in Northern Ireland, a figure higher than in the UK minus London and the South East (16.5%) and in the UK as a whole (20.5%).

- Two-thirds (65.3%) of Northern Ireland employees received some form of training in the last year. Almost identical proportions were reported in the UK minus London and the South East and in the UK as a whole.

- Over half (56.3%) of the Northern Ireland non-trainees said that they ‘did not want any training’ compared to around a fifth (19.0%) who said that ‘my employer was not willing to provide additional training, even though I wanted it’. Two-thirds (63.3%) of Northern Ireland respondents who did not undertake training in the past twelve months regarded such activity as irrelevant to the job.

- Nevertheless, the lack of training may be considered an obstacle to improved work performance. However, this does not appear to be the case. Around nine out of ten (88.3%) Northern Ireland non-trainees thought that their lack of training would not harm them in keeping up with changes in the job. This figure is around ten percentage points higher than elsewhere.

- When training is undertaken it is often at the behest of the employer: whereas only a third (32.6%) of Northern Ireland trainee respondents claimed personal responsibility, around three-quarters (74.2%) mentioned that training had been initiated on the suggestion of their employer. It is notable that employers have a stronger say in

training decisions in Northern Ireland than in other parts of the UK. In both the UK as a whole and in the UK minus London and the South East, trainees reported that training was undertaken at the employers' request in two-thirds of cases compared to three-quarters of cases in Northern Ireland.

- The impact of training on work performance was high. For example, nine out of ten Northern Ireland respondents said that it was important for keeping up-to-date with developments in the job; that it had helped them to improve their work practices; and that it had improved their skills.

- On-the-job learning through experience and experimentation as well as learning from others was strong. Around a third of Northern Ireland respondents strongly agreed that: the job itself requires learning; they are able to learn from work colleagues; and they are expected to help others learn. These mirror the results for the rest of the UK.

- Overall, a fifth (20.0%) of Northern Ireland respondents registered a strong desire for future training and nearly a quarter (22.4%) were optimistic about their chances of getting training in the future. Elsewhere in the UK respondents were a little less optimistic.

1 INTRODUCTION

1.1 Issues to be Addressed

There is considerable interest, from both the policy-maker's and the academic researcher's perspectives, in measuring the stock of skills in the economy: its distribution, how it is changing and whether there are differences between the skills across nations. Substantial evidence about the links between skills and economic performance can be called upon to justify this interest. In the 1990s a stream of articles from the National Institute for Economic and Social Research (NIESR) in particular highlighted Britain's relatively lowly ranking in the world skills league – as measured by qualifications of a comparable standard. This, it was argued, hinders labour productivity and weakens Britain's economic performance (DfES, 2001; HM Treasury, 2002; Mason and Finegold, 1995; Mason *et al*., 1992). The argument and the evidence persist (Campbell and Porter, 2006), and understanding skills continues to be at the forefront of practical research.

This research evidence prompted a flurry of policy interest which intensified with the election of the Labour government in 1997. An up-to-date understanding of the distribution of skills is, therefore, an important underpinning for the policy agenda of enhancing Northern Ireland's economic performance and promoting greater social inclusion. Similarly, evidence on the changing use of skills is warranted, if we are to understand the direction in which Northern Ireland's workplaces are headed. However, these issues pose some basic prior questions, including 'which skills are relevant?', and 'how can they be measured?'. Given answers to these questions, one can then examine how the different skills are distributed across workplaces in different parts of the country, which are growing and which are declining. It is also useful to find out what workers, as well as employers, think about the prospects for acquiring skills at work. Answers to these questions can be of interest both to scholars eager to test theories of the modern workplace and to policy-makers concerned to use skills if possible to improve economic performance.

This report tries to answer a number of questions concerning skills utilisation in Northern Ireland, using information derived from the workers actually exercising those skills. The report looks at several skills domains and asks which groups deploy which skills and to what extent. It stands in contrast to, and complementary with, reports on skill shortages and other skills-related variables that are based on data collected from employers. The report presents results from the 2006 Skills Survey, a survey of work skills in the UK based on interviews with individuals in their homes concerning their jobs. A substantial sample of respondents to the survey are in Northern Ireland. Results are compared across different groups in Northern Ireland, and comparisons are given with overall UK figures. Comparisons are also given with the UK excluding London and the South East of England: this is because the characteristics of London and the South East differ from the rest of the UK, partly because of migration to the South East and partly because of the concentration of many high-skill jobs there. Thus by excluding London and the South East a different, and more arguably more opposite, comparator can be constructed.

1.2 The 2006 Skills Survey in Northern Ireland

The 2006 Skills Survey is a survey of jobs, where the main features of the jobs are reported by the individuals themselves who carry them out. It is supported by a consortium formed by the Economic and Social Research Council (ESRC) and several government agencies: the Department for Education and Skills, the Department for Trade and Industry, the Learning and Skills Council, the Sector Skills Development Agency, Scottish Enterprise and Future Skills Wales. This consortium is supplemented by the East Midlands Development Agency, Highlands and Islands Enterprise and the Department for Employment and Learning (Northern Ireland) who have funded additional regional samples. The Department for Employment and Learning supported funding for a target of 500 interviews within Northern Ireland.

The survey is part of a long-running series. The first substantial study which aimed to find valid measures of the skill requirements of jobs and to measure the distribution of broad skills in Britain was carried out as part of the ESRC's Social Change and Economic Life Initiative surveys in 1986. Its focus was on the skills required of employees in their jobs. The Employment in Britain Survey in 1992 (which was funded by an Industrial consortium, the Employment Department, the Employment Service and the Leverhulme Trust) included the same measures together with much more extensive information on job quality, thereby giving us the first rigorous evidence on trends over time (Gallie *et al*., 1998).

The first Skills Survey, carried out in 1997 as part of the ESRC's 'Learning Society' programme of research, was designed to extend the evidence about trends over time in 'broad skills' such as the qualifications required for job entry, the length of time it takes to train and the period taken to learn to do a job well. In addition, the survey also provided us with much more detailed knowledge about the importance of a wide range of activities carried out at work. These data were collected by adapting the methods of job analysis for the purposes of social survey. The outcome of this approach was that it enabled the measurement of ten generic skills and in addition computing skills.

The 2001 Skills Survey was a partial repeat survey, but this time funded by the Department for Education and Skills. All the key questions on job analyses and skill requirements were repeated identically. The survey thereby enabled an updating of the picture of the distribution and trend of broad skill requirements and for the first time gave measures of the trends in utilisation of generic skills. The survey extended the work of the 1997 survey by including a richer set of measures of other aspects of job quality that allowed comparisons with the 1992 Employment in Britain Survey.

These earlier surveys, with their varying funding sources, were not originally planned as part of a series. They had a mix of objectives driven by academic issues in social science and by the concerns of policy-makers. Yet, as funding has become available researchers have been able to construct a series by designing continuity into questionnaire design where possible. The same principle has driven the design of the current survey. Together, the surveys provide a unique picture of change in British workplaces as reported by individual jobholders.[1] However, none of the earlier surveys included Northern Ireland.

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[1] *For a list of publications based on the three Skills Surveys and some related ones based on the earlier surveys, see* ***http://www.kent.ac.uk/economics/staff/gfg/2006skillssurvey.htm***

1.3 Objectives of the 2006 Skills Survey in Northern Ireland

The overarching objective of the 2006 Skills Survey is to provide a resource for analysing skill and job requirements in the UK economy in the middle part of the current decade, providing continuity with the previous sequence of surveys, and a benchmark for comparison with the past and potential future surveys. Within this overarching aim, there are six main objectives which informed the design of the questionnaire:

1) To provide information on the level and distribution of skills being utilised in workplaces in 2006. Data on important skills-related variables is also collected, including task discretion, team-working, the requirement for learning and skills mismatches.
2) To provide a picture of recent trends in broad and generic skills.
3) To enable us to update our knowledge of the valuation of skills and of the association of skills usage with other worker rewards and indicators of well-being and of how skills are related to the evolution of inequality.
4) To provide a description of the work preferences and work motivation of those in employment, and to make possible a systematic analysis of how preferences and motivation relate to the skill development that people experience in their jobs.
5) To enable us to further our knowledge about the relationship between employers' human resource practices, the competitive environment in which they operate, other job characteristics, and the level and development of their employees' skills.
6) To provide analyses of job skills utilisation within and between the regions and nations of the United Kingdom.

The objective of collecting the Northern Ireland sample was to meet objectives 1 and 4, and specifically to facilitate objective 6 in respect of workplaces in Northern Ireland. Since Northern Ireland did not figure in previous surveys, it is not currently possible to measure changes over the previous period. However, the current sample does provide a benchmark for comparison with any future surveys and hence the measurement of skill change.

1.4 Objectives of the Report

This report relates to objectives 1, 4 and 6. It describes the findings of the research team in respect of the distribution of skills, task discretion and the experience of skills acquisition in Northern Ireland. It also compares where possible with findings for the rest of the country.

We begin in **Chapter 2**, however, by setting the methods used in the survey in the context of a general discussion about skills measurement in national populations. **Chapter 2** also provides a summary description of the survey methods and outcomes, which are described in detail in the **Appendix**.

Our findings on the distribution of 'broad' skills – the qualification, learning and training requirements of jobs – are presented in **Chapter 3**. Included in this chapter is a description of how we generate the measures of the skills from the raw data. We focus on how the skills are spread across jobs, and across genders, part-time and full-time workers, occupations, industries within Northern Ireland and examine the balance

between the supply of qualifications at various levels in the population and employers' use of qualifications as perceived by jobholders.

Chapter 4 is focused entirely on computing skills, looking both at the distribution of computing skills, and makes comparisons with elsewhere in the UK. **Chapter 5** focuses on several other types of generic skill.

In **Chapter 6** we turn to the distribution of task discretion. **Chapter 7** examines workers' motivations and attitudes towards skills acquisition and related variables. **Chapter 8** concludes with a brief review of some important themes that have emerged from the analysis and points to the further research which is planned for these areas.

2 METHODOLOGY

The previous chapter stated the purpose of and motivation for measuring skills used in Northern Ireland's workplaces in 2006. Before considering the detailed structure of the new survey, it will be useful to review various approaches to skills measurement that have been adopted in previous literature, in order to set the current study in context. This chapter will then describe the innovations made in the 2006 Skills Survey, outline the questionnaire, and summarise the sampling and data collection procedures and outcomes.[2]

2.1 Approaches to Skills Measurement

Several approaches have been used to assess skills among national or sub-national populations, and it is useful to begin by considering the general advantages and disadvantages of each. The five main approaches base their measures on, respectively: educational attainment, occupational classification, skill tests, self-assessment and job requirements.[3] The 2006 Skills Survey, like its predecessors, is largely based on individuals' reports of job requirements. The usefulness of each approach, whether for academic or policy-making purposes, depends on the concept of skill which is the object of the study, as well as on the issues of reliability and feasibility. A broad judgement about each approach is summarised in **Table 2.1**.[4]

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[2] *The first part of this chapter uses material prepared in common for the overall survey (Felstead et al., 2007) and for the other regional surveys.*

[3] *For the sake of completeness it may be worth mentioning two indirect approaches which are occasionally resorted to by economists, for lack of other data: the ideas that skills could be proxied by wages or by indicators of work experience. Thus, high wage jobs are typically thought of as high-skilled jobs; and the 'returns' to work experience are thought to capture the acquisition of workplace skills.*

[4] *This section extends the discussions contained in Borghans et al. (2001), which looked just at the issue of skills in economic analysis, in Green (2006) and in Felstead et al. (2002).*

Table 2.1: Ways of Measuring Skills in the Adult Population

Approach	Example(s)	Advantages	Disadvantages
1a. Qualifications The proportions at each level (sometimes limited to degree-level and below)	Steedman and Murray (2001)	Objective; long-term trends available	Loose connection of academic qualifications with job skills
1b. Education Length Average years of schooling, or proportions with at least x years	Barro and Lee (1996; 2001)	Objective; long-term trends available; internationally comparable	Variable quality of education, and loose link with job skills
2. Occupation The proportions in higher-skilled occupations	Machin and Van Reenen (1998); Gregory *et al*. (2001)	Easily available from labour force surveys or censuses; sometimes internationally comparable	Skills change within occupations; the hierarchy of skill among occupations is contestable and changing
3. Tests Scores from literacy and numeracy tests, such as the Skills for Life Survey	OECD *et al*. (1997); Freeman and Schettkatt (2001)	Objective; international comparisons sometimes possible	Narrow range of skills; expensive to administer
4. Self-Assessment Survey-based individual reports about themselves	Bynner (1994)	Wide range of skills	Subjective and skill assessment associated with self-esteem
5. Job requirements Sourced from commercial job analyses, expert assessments of occupations, or surveys of individuals or employers	Cappelli (1993); Holzer (1998); Howell and Wolff (1991); Ashton *et al*.(1999); Felstead *et al*. (2002); Autor *et al*. (2003); Handel (2000)	Wide range of skills; intimately connected to jobs	Job skill requirement could differ from person skill; subjective; does not measure skills of non-employed people

Source: Adapted from Green (2006: 30).

Educational attainment and qualifications gained are probably the most commonly used measures of the skills of populations. The basic idea is to measure, through survey methods (or where possible through administrative data collection), the proportions of the adult population who have achieved certain education or qualification levels, such as possession of a bachelor's degree or equivalent. Conversely, one might measure the proportions of the population who are not in possession of any academic or vocational qualifications. Educational attainment, as measured by the stage reached (e.g. 'completed high school') or by the number of years' schooling, is closely related to qualifications achievement, though not quite the same. A measure of the number of years' schooling has the particular advantage of being most easily utilised in an international comparative measure of human capital, as for example in the series of studies by Barro and Lee (2001, 1996).

The main advantage of this approach is that the measures obtained are normally 'objective', in the sense that the measure of skill is determined by some external

authority (the examining body) or by some externally verifiable datum. Educational measures should also, in principle, be consistent. If the proportion of people holding a degree rises from x% to y% over time, one would infer that the skills base has increased, providing that one has confidence that the standard of the degree qualification has not been lowered in the meantime. Objective comparisons across countries are more constrained because the extent to which the qualifications of different educational systems are equivalent has only been established in relatively few cases, and even then the equivalence is never very precise. The International Standard Classification of Education (ISCED) system is one way of measuring broad attainment levels, but the attribution of individuals to ISCED levels sometimes requires contestable judgements. Where, however, the comparison is of years of schooling the measures are more obviously internationally commensurate (Barro and Lee, 1996, 2001), although there can be international differences in the quantity of educational inputs per year and in their quality.

The disadvantages of using qualifications or educational attainment as a measure of job skills are however, well-known. Qualifications gained in schools and colleges are only loose measures of the skills actually used in workplaces, and by the same token of the productivity of workers. This is as it should be: education is for life, not just for the workplace. Equal years of schooling can lead to differing workplace skills, according to the varying emphasis and quality of the education process, and according to individual characteristics. Most qualifications assess academic competence, not workplace skills. Many of the skills necessary for high levels of productivity are acquired at work, either formally through training or informally through a practical learning environment. Organisational change is found especially to be a trigger for the acquisition and utilisation of higher and new workplace skills (Green *et al.*, 2003; Caroli and Van Reenen, 2001; Felstead and Gallie, 2004). Sometimes a positive learning environment is consciously fostered by employers, for example, through the use of continuous improvement groups ('quality circles').

Occupational classification is another commonly used method of skills measurement. Quite commonly the rise in proportions of higher status occupational groups such as managers and professionals, for example, is given as evidence of rising skills demand. In economic analyses requiring detailed multi-country data on skill, for lack of anything better a particularly simple classification is sometimes adopted, namely the proportion of workers in non-manual occupations (Machin and Van Reenen, 1998). The major advantage of using occupational classification is that this measure is relatively easily available, certainly at national level, using labour force surveys or census data.

International comparisons using anything other than the manual/non-manual ratios are unfortunately much harder, owing to the lack of widespread conformity of international occupation classification standards. Moreover, there are two other serious problems with this method. First, there is likely to be imperfect agreement over the skills hierarchy of occupations, which may be grouped according to other criteria such as pay or social esteem, which may not coincide with skill. In any case, any such ranking is likely only to be partial: many occupations have to be grouped together as equally skilled. Moreover, a single skills hierarchy would not distinguish between different types of generic skills, which can be ranked differently across the occupations. A second problem of using occupation as the measure of skill is that jobs change within occupations. The overall skill structure of nations may grow partly because of compositional changes in occupations and industries, but partly also because of the transformation of jobs. The

changing roles of managers is a case in point; another is the widespread diffusion of requirements for computing skills. In an earlier study we estimated that the changing occupational structure in Britain could account for no more than half of the skills changes observed using direct measures of job skill requirements (Green *et al*., 2003).

The third method of measuring the stock of skills in the adult population is through the use of skills tests. The International Adult Literacy Surveys pioneered in the 1990s by the Organisation for Economic Co-operation and Development (OECD) have had a considerable influence on both academic research and on research for policy-makers. Other tests have been developed in a similar vein, such as the Information et Vie Quotidienne (IVQ) in France, and the UK Skills for Life Survey. The focus of these tests, carried out usually in people's homes and supported by a regular survey collecting demographic and workplace data, has largely been on numeracy and literacy. IT skills have been examined but with mixed success so far. Some analytical skills are also tested in the more recent Adult Literacy and Life Skills Survey, in which Britain, like many other major industrial countries, did not take part. The advantages of the testing approach to skills measurement are self-evident: if done properly they provide objective measures. However, tests have some important disadvantages if one wants regular assessments of a wide range of skills in a work context. Skills tests have hitherto only been able to tap a relatively narrow range of skills, primarily the basic academic ones. There are likely to be some skills, which are thought to be of distinct value in the labour market, which would be hard to measure using a testing methodology. Communication skills may be a case in point. Tests are also especially expensive to administer. Persuading a representative sample of adults to sit tests in their own homes is a non-trivial task. Given finite resources this limits the scope of accompanying surveys. A third potential disadvantage is that the tests may not capture the usage of skills in the context of the workplace. An example is problem-solving: though a generic skill, the capacity to transfer problem-solving skills in analytical exercises performed in the home under test conditions to the needs of the workplace is itself problematic.

Self-assessment of skills has been used in some survey contexts, such as the National Child Development Study (Bynner *et al*., 1997). The advantage of this method is that it allows one to investigate an especially wide range of competences. The disadvantage, however, is that self-assessment is potentially subject to considerable social esteem biases, and also to measurement error if people are unable to judge for themselves how good they are. Comparisons of self-assessed competences between groups – for example, between males and females – do carry significant information, and have been found to be related to economic performance. But one cannot safely attribute such effects to the skills *per se* rather than to the individual's self-confidence and other character traits.

Finally, the approach to skills measurement based on job requirements has its origins in the commercial practice of job analysis developed by occupational psychologists. In the early 1990s a selection of path-breaking skills studies were made through retrospective analyses of commercial files (measures of broad skills were first used in Britain in the Social Change and Economic Life Initiative (SCELI) survey carried out in 1986). These studies were able to examine skills change in particular occupations, but not with respect to the aggregate workforce.

More recently, there has been the development of survey-based measures of job skills adapted from the general principles of job analysis. This approach, which has been

termed the ‘job requirements approach’, underpins the 1997 Skills Survey and the 2001 Skills Survey (see Ashton *et al*., 1999; Felstead *et al*., 2002).

The advantages and disadvantages of the job requirements approach are both shown in the following three assumptions which underpin this approach. First, suppose that the objective is to measure the work skills of the employed population. It could be assumed that measures of skills in use in jobs are a reasonable proxy for the skills of the jobholder. If an individual is using a computer for advanced programming, for example, it is assumed that he/she has the relevant skills, or would not have survived in the job. Nevertheless, discrepancies between jobholders’ skills and job requirements are possible and supplementary questions need to be asked to ascertain subjective views about skills mismatches. Some individuals may have an excess supply of some skills, and not be using them fully on the job; others may have insufficient skills for the job they are doing, and may survive despite the consequent poor performance. These mismatches are dynamic: they can appear and disappear as both jobs and people change. While data on job skill requirements is useful in its own right, any inferences from the job requirements about workers’ skills will need to be qualified by this first assumption. An alternative response to this issue is simply to regard and make use of the data as direct measures of job skills, that is, the skills required and used in jobs. For the most part, this latter position is the approach taken in this study.

A second assumption is that the individual is a well-informed person to report about the job he/she is doing. All jobs differ, even within quite narrowly categorised occupations and one would normally (but not always) expect the jobholder to know best. In highly skilled jobs this is more likely to be true, as workers adapt jobs to their own abilities and tastes. In less skilled jobs, and where the jobholder has been only a short time in post, the assumption might be questioned in some cases. Still, on balance it seems reasonable to assume that the individual is generally the best informant about the job he/she is doing.

The third assumption is that the individual reports these activities in an unbiased way. This assumption is also arguable: individuals might talk up their jobs, to boost their self-esteem. But, it is maintained by occupational psychologists that reportage of behaviour (something that is grounded in activity) is more reliable than reportage of capabilities. A validation study of a limited selection of the skills measures used in the 1997 survey is reported in Green and James (2003).

If, following the second assumption, individuals are the best-placed informants about their own jobs, and if social esteem bias is reduced as far as possible through careful phrasing of questions about grounded activities, measurement error is likely to be minimised.

Also using the job requirements approach, the US Government’s Occupational Information Network (ONET) data collection program has derived job skill measures for the large majority of US occupations. The ONET approach itself has its origins in the skills measures allocated to the Dictionary of Occupation Titles (DOT), which ONET replaced; the DOT measures were decided by expert panels at certain points in time, and the changes in the skills of the American workforce could be traced by examining the changing occupation structure (Howell and Wolff, 1991). The value of the DOT measures was, however, limited by the dependence on the judgements of the panel and on the irregular and infrequent timing of those judgements and on the incomplete

representativeness of the jobs assessed. By contrast ONET derives information from surveys of employees in representatives samples of establishments, with respondents being asked to describe a typical job in his/her occupation.

2.2 An Outline of the Main Features of the British Skills Surveys

2.2.1 Conceptual Approach

The British Skills Surveys have all adopted a broad conceptual approach, comprising intellectual ability, interpersonal skills, physical ability, knowledge base, and working environment. A more detailed account is given in the introduction to the report on the 1997 Skills Survey (Ashton *et al*., 1999: 25); while the introduction to the report on the 2001 Skills Survey provides a comparison of skill definitions among different social science disciplines – economics, sociology and psychology (Felstead *et al.*, 2002). Only a few items of motivation are included, but a good deal of information is collected about the context in which skills are exercised (working conditions, work organisation, responsibility, autonomy and so on).

2.2.2 Skills Assessed

In addition to the conventional measures of occupation and educational qualifications, the Skills Surveys measure utilised skills in two ways.

First, the surveys generate very many items describing generic activities involved in doing the job. The choice of items is informed by theories of skill and the practices of commercial psychology; but to reduce the multiple items to a smaller and more meaningful set of 'generic skills', statistical techniques are used to generate several generic skill indicators from the responses on these items. The skills captured in this way are: literacy, numeracy, technical know-how, high-level communication skills, planning skills, client communication skills, horizontal communication skills, problem-solving, checking skills as well as physical skills and there are two measures of the importance and sophistication of computer use in jobs. Measures are also obtained of a small number of generic management skills, taken just from those identified as managers in the sample. In the 2006 survey, emotional and aesthetic skills have been added.

Second, there are three indicators of the 'broad skills' required in the job, measured in terms of the total training time required to do the job, the time spent learning on the job in order to become fully competent and the qualification level required by employers for new recruits to the job. Instruments were included that were identical to those used in earlier surveys in SCELI in 1986 and in Employment in Britain in 1992.

In addition, the survey captures other measures of skills such as workers' own qualifications, prior training and length of work experience as well as other job and worker characteristics that are not directly connected to skill.

The measures of skills do not encompass measures of motivations and attitudes of respondents, with the exception that some investigation of skills expectations is included. Also, the surveys have only loose measures of the extent to which jobs use occupation-specific technical skills. Intermediate technical skills relevant to particular jobs have been picked up only approximately through the role of required technical qualifications, and

through some items in the job requirements part of the questionnaire. Occupation-specific technical skills may be very important in certain jobs.

2.2.3 Unit of Analysis

The basic method of measurement is through a social survey, with multiple questions about the requirements and activities of respondents' jobs. Nationally representative surveys are conducted using random sampling methods. The sample is drawn from postcode addresses, from which eligible individuals are selected. Individuals are interviewed in their homes, rather than at their place of work. Thus the unit of analysis is the person-job. The analytical output consists of measures of skills that can be held to be statistically acceptable measures for the population of employed people aged between 20 and 65.

2.2.4 The Range and the Level of Generic Skills

In addition to the desire to capture a wide range of skills, it must also be noted that certain skills appear at a number of different levels. For example, writing a signpost requires one to be able to spell and form sentences; and these same skills are needed to write a long report for clients. Nevertheless, writing a long report needs a much wider range of writing skills, deploying, for example, analytical capabilities and involving complex constructions. These are additional skills, that require the spelling and grammatical skills needed for sign-writing as a foundation. An alternative is to think of long-report writing as deploying the same skill as that needed for writing a signpost, but at a higher level. Whether we think of long-report writing as a different skill, or whether we think of different levels of writing skill, any survey of generic skills needs to capture such skill hierarchies where they are important. In the case of the British Skills surveys, hierarchies in the use of literacy skills (both reading and writing) and numerical skills are captured by asking sequentially about activities of increasing complexity and sophistication. For most other activities, no attempt is made to subdivide them into hierarchies. This decision is driven in part by survey time limitations, in part by consideration of the skills themselves and the purposes of the overall project. In many cases, the significant aspect is whether or not the activity is part of the job, and how central or important that activity is to the job.

2.2.5 Response Scales for the Importance of Skills

The skill used in the job is captured by asking respondents to reply on a conventional importance scale. (We say 'conventional' because this is what is used widely and successfully in occupational psychology in commercial practice). Responses on these scales form the core of the measures of generic skills. The scale is: 'not at all important/does not apply, not very important, fairly important, very important, essential'. This scale employs the device of skewing the language, so that the mid-point is not neutral; this was deliberate, following pilot testing, as otherwise respondents tended to bunch at the top of the scale. Comparisons between people rely ultimately on an assumption that there is a common understanding of the notion of 'importance' among respondents and between respondents and researchers.

2.3 Innovations in the 2006 Skills Survey

There are five main ways in which the 2006 survey makes innovations compared with the 2001 survey.

First, the new questionnaire includes some questions on individuals' motivations and attitudes. The issues of the centrality of work in people's lives, their motivation at work and their preferences with respect to jobs and careers have been of core interest in the social science literature for several decades. Through the light they shed on barriers to social mobility, they are also of central importance for policy concern with the factors affecting social integration and social cohesion. But progress has been very severely hampered by lack of adequate data and by the failure to connect these issues properly to the changing nature of work. The new survey makes it possible to take a major step forward in understanding these issues.

Second, the range of skill domains included in the job requirements analysis has been extended, to include aesthetic and emotional skills. This extension reflects a number of case studies and theoretical arguments within sociology that suggest that these skills have become especially important in service industries, and may have a bearing on gender disparities at the workplace (Nickson *et al*., 2003; Korczynski, 2005; Payne, 2006).

Third, the questions on training have been altered to focus on training that took place in the year leading up to interview and questions surrounding the motivation for this training have been included for the first time. The intention is to gain more thorough information about the extent and forms of skill acquisition currently taking place in respondents' jobs.

A fourth innovation is that the target sample has been expanded to include all those in employment aged between 20 and 65. The previous surveys had restricted the sample to those between 20 and 60. It was felt that now, with pressure for all people to retire later, and especially women, it was important to gain a picture of the sorts of jobs being done by people in their early sixties. This innovation means that the trend analyses in this report, involving comparisons with earlier surveys, are confined to those aged 20 to 60, while the distributional picture in 2006 includes the whole age range 20 to 65.

Last but not least, the sampling procedures included provision to over-sample in five areas: Scotland, the Highlands and Islands in particular, Wales, the East Midlands and Northern Ireland. In previous surveys, these areas had either been excluded (in the case of Northern Ireland and the Highlands and Islands), or simply included as part of the main sample which meant that the achieved sample sizes available for analyses were too restrictive to permit disaggregated analyses within areas. Moreover, in these 'boost sample' regions, the sampling in the 2006 survey has been designed to generate representative overall samples when taken together with the 'core' sample respondents.

2.4 Questionnaire Content

The broad outline of the topics covered in the questionnaire is as follows:

BLOCK A: Checking Eligibility (age and whether in paid work in the last 7 days)

BLOCK B: Broad Questions about the Job

BLOCK C: Detailed Job Analysis Questions

BLOCK D: Computing Skills and Qualifications Questions

BLOCK F: Work Attitudes

BLOCK E: The Organisation

BLOCK G: Pay Questions

BLOCK H: The Job Five Years Ago

BLOCK J: Recent Training, Skill Changes and Future Perspectives

BLOCK K: Personal Details and Measures of Well-Being at Work

BLOCK Q: Details of Employing Organisation and Conclusion

The ordering above, with Block F coming before Block E, comes from a design preference about question ordering, combined with the requirement for continuity in variable names with earlier surveys to aid analysis.

2.5 Survey Methods and Outcomes

The 2006 Skills Survey replicated many aspects of the two previous Skills Surveys in the series carried out in 1997 and 2001. At the same time as maintaining a strong element of comparability between surveys, we were also keen to introduce new themes including individuals' work motivations and attitudes, aesthetic and emotional skills, and the usefulness of training in skill acquisition. Many of these questions have not been used before and so we cognitively tested 12 key questions on a sample of employees (see BMRB, 2007: Appendix B). As a result, these questions were either confirmed as conveying the meaning intended by the research team, adapted or, in some cases, abandoned as likely to generate misleading responses. These cognitive interviews were followed by a pilot survey of 60 respondents, which tested the procedures of the survey and led to further refinements of the questions.

The fieldwork for the 2006 Skills Survey was conducted through computer-aided personal interview (CAPI). Sample selection was based on a conventional multi-stage design with addresses eventually being drawn from a random start point within each of the 297 geographical boundaries selected (in most cases, postcode sectors). Sampling was carried out in two stages. First, a 'core' sample was selected, designed to form a representative sample of eligible persons in Britain, excluding those living north of the Caledonian Canal. The aim was to generate a sample that would be comparable to that obtained in the previous surveys. Second, a 'boost' sample was selected, which would increase the number of achieved interviews in Scotland, Wales and the East Midlands, and also generate data points in the Highlands and Islands and in Northern Ireland. The additional sampling points selected for each of the boost areas were designed so that the aggregate sample ('core' plus 'boost') would be representative within each of the boost areas. The interviews were carried out between March 2006 and March 2007, with all the 'core' sample interviews being completed by 15 October 2006.

The specific method of sample selection for Northern Ireland was as follows. The small-user NI Postcode Address File (PAF) was used as the sampling frame. A list of all postal sectors in Northern Ireland was generated and, before selection, was stratified in the following way:

- By region. The postal sectors were stratified by the five NUTS3 areas (Belfast, Outer Belfast, North, West & South, East).
- Within region, sectors were listed in increasing order by the percentage of Household Reference Persons in non-manual socio-economic groups (NS-SEC operational categories 1, 2, 3.1, 3.2, 3.3, 3.4, 4.1, 4.2, 4.3, 5, 6, 7.1, 7.2, 7.3, 8.1, 8.2, 12.1, 12.6). Cut-off points were then drawn approximately one third and two thirds (in terms of delivery points) down the ordered list, to create three bands of roughly equal size.
- Within each of the resulting 15 NS-SEC strata, sectors were sorted by the percentage of non-retired men 16-74 who are unemployed.

44 postcode sectors were selected in Northern Ireland with probability proportional to address count within each region, based on a random start and a fixed interval. The design gave each sampled address the same probability of selection at this level. Interviewer assignments within the Northern Ireland sample consisted of 42 addresses within 44 postcode sectors, so the issued sample for Northern Ireland was 1,848 addresses. The 42 delivery points (DPs) were selected systematically from each sector. This was done by using an interval of M/42, with a random start between 1 and M/42, where M was the DP count for the Primary Sampling Unit (PSU). A single dwelling unit was selected (in the same way as for the British sample using a 'Kish grid'), when the address contained two or more dwelling units. A single adult person was selected when the dwelling unit contained two or more eligible for selection.

Across the whole of the UK, considerable effort was devoted to maximising the response rate, including the re-issuing of 6,674 addresses which initially failed to produce an interview. A total of 7,787 productive interviews with individuals aged 20-65 years old and in work were conducted. There were 498 interviews in Northern Ireland, close to the target of 500. Across the UK the achieved number of interviews gave a 'net response rate' of 56%, and a 'gross response rate' of 62%, the difference depending on the assumptions made about the eligibility of households that could not be screened. In Northern Ireland, the gross and net response rates were, respectively, 54.4% and 60.4%. These response rates are lower than those achieved for the 2001 Skills Survey. However, the decline is in line with falling response rates to similar surveys such as the Labour Force Survey.

Weights were computed to take into account the differential probabilities of sample selection according to the number of dwelling units at each issued address, the number of eligible interview respondents (Kish weight), and the oversampling of the boost areas. Further analysis was carried out on the representativeness of the achieved sample. The distribution of the achieved sample was compared with the Labour Force Survey for the UK as a whole and separately for Northern Ireland (see **Appendix**), according to gender, age, ethnicity, working time, occupation, industry and qualification level, and found to be acceptably close. However, gender and age weights were added to the sample weights in order to correct for a slight under-representation in the sample of men and those in their twenties. With this correction, the result is a high quality, randomly drawn, data set, with an achieved sample that is representative both for Northern Ireland and for the UK as a whole.

3 BROAD SKILLS

3.1 Introduction

This chapter examines the distribution of 'broad skills' using data from the 2006 Skills Survey data. The chapter is divided into three substantive sections. First, we outline the instruments used to gauge the ability level and capacities required by those in employment. We refer to these as 'broad skills' since they are proxies rather than direct measures. Our measure of 'generic skills', on the other hand, is designed to collect data on activities actually carried out by individuals at work (see **Chapter 5**). The second section of the chapter examines the distribution of broad skills in Northern Ireland in 2006 in order to highlight the relative skill position of groups of workers, occupations and industries. The third section of the chapter extends the analysis by comparing the distribution of broad skills in Northern Ireland with the pattern in the other parts of the UK – namely the UK minus London and the South East, and the UK as a whole. The chapter ends with a short summary of our findings.

3.2 Measuring Broad Skills

Typically skills are measured by examining the stock of qualifications held by the workforce. Labour Force Survey and their equivalents in other countries adopt this approach making analyses of the stock of 'skills' possible on a regular basis. One aspect of the skills debate, therefore, has been to compare the qualifications of the British workforce with those of competitor nations. While this is a complex and difficult task since adjustments have to be made which take into account different qualification standards, norms and scope between nations, several studies have adopted such an approach (e.g. DfEE and Cabinet Office, 1996; HM Treasury, 2005). This type of research identifies the strengths and weaknesses of the British educational system. Its strength lies in the production of graduates – approaching a quarter of the population now have qualifications above National Vocational Qualification (NVQ) level 3, a proportion which has more than doubled over the last decade. However, the UK has proportionately more people with low qualification levels than many of its major comparators and is ranked 18th across the Organisation for Economic Co-operation and Development (OECD) on this measure. Five million people have no formal qualifications at all (HM Treasury, 2005: 40). It also has a smaller than average proportion of people with intermediate-level qualifications which puts it 20th out of the 30 countries in the OECD (HM Treasury, 2005: 43).

This type of approach, however, focuses exclusively on the supply of skills as proxied by qualifications. Although it is possible to examine the qualifications held by those actually in employment, the match between the qualifications held by jobholder and the qualifications their employers and their jobs require is likely to be less than perfect. We therefore need accurate data on the qualifications that are required for each job. Moreover, an academic or a vocational qualification may be only a loose proxy for the skills and abilities that an individual possesses. There is a need for other broad measures of job skills to supplement the measure derived from the qualifications needed to get jobs.

The 2006 Skills Survey contains measures both of the qualifications held by the jobholder, and of three separate measures of the broad skills required in the job.

Collecting three broad measures of the skills required for jobs recognises that skills are acquired in different ways, and that it is important therefore to have a multi-dimensional picture rather than any single measure. The series therefore collected information on:

- the qualifications required to get the job;
- the length of training for the type of work undertaken; and
- the time taken to learn to do the job well.

These broad skill measures have been successfully tested in previous surveys. By repeating the same questions (word-for-word and prompt-for-prompt) a firm basis from which to make comparisons over time was secured. This is not possible for Northern Ireland in 2006 since the 1997 and 2001 Skills Surveys (as well as others carried out in 1986 and 1992) focused on Britain. Nevertheless, the 2006 data provide a firm basis on which to track skill trends in Northern Ireland. By repeating some or all of these questions in future surveys (such as the Skills Survey in five years' time), it will then be possible to track skill change based on information generated by survey questions directed at workers themselves.

The 2006 Skills Survey collected data on three broad skill dimensions. First, each respondent to the surveys was asked to judge what qualifications would be required to get his or her current job in today's labour market. They were asked: 'If they were applying today, what qualifications, if any, would someone need to *get* the type of job you have now?' A range of qualification options was given. From this, the highest qualification level ranked by NVQ equivalents was derived. Hence, the responses were grouped into five categories, with the top category (level 4) further sub-divided into degrees and professional qualifications. As a summary measure of the entire scale, the Required Qualifications Index was derived ranging from zero to four, corresponding to the five qualification levels.

This survey question also allows us to compare the required qualification level of jobs (as perceived by jobholders) with the supply of qualifications available in the labour market. Using evidence drawn from the contemporaneous winter 2006 Labour Force Survey the profile of skills supply among the economically active can be mapped, the Vacancies Survey for the equivalent months can provide data on the level of unmet labour demand (ONS, 2006; Williams, 2004a) and data from the 2006 Skills Survey can be used to estimate the number of jobs requiring a particular level of qualification on entry (for more detail see **Table 3.4**). By restricting these three sources of data to the relevant 20-65 year old British population (however, the vacancy data cannot be restricted in this way as vacancies are open to all irrespective of age), it is possible to identify at which levels in the qualification hierarchy the aggregate qualification requirements and qualifications supply are in equilibrium and where, if at all, they are out of step with one another. However, in these analyses it should be remembered that required qualifications are merely one aspect used in recruitment, and are only one measure of the complex skills needed in jobs. Other factors such as experience, natural ability and motivation also play a part and give further insights into the demands of the job.

A second broad skill measure is based on responses to a series of questions on the length of training time required for the particular type of work carried out by respondents. It is based on the premise that the training time required for different jobs reflects various

ability levels and knowledge demanded by contrasting types of work. Respondents were asked: 'Since completing full-time education, have you ever had, or are you currently undertaking, training for the type of work that you currently do?' If 'yes', 'How long, in total, did (or will) that training last?' If training was still on-going respondents were asked to estimate how long it would take. For the purposes of presentation, we examine the proportions reporting 'short' (less than three months) and 'long' (over two years) training times i.e. the points at either end of the continuum. We also use a summary measure of the complete range of options allowed, ranging from zero to six, entitled the Training Time Index. We report the average Training Time Index for various groups.

The third broad skill measure is similarly constructed. Respondents were asked: 'How long did it take for you after you first started doing this type of job to learn to do it well?' If they answered 'still learning' they were asked: 'How long do you *think* it will take?' Again, for the purposes of presentation, we examine the proportions at either end of the continuum – 'short' learning time denoting less than one month and 'long' denoting over two years. The Learning Time Index is a summary measure of all the answers given ranging from one to six. Our basic expectation is that the more skilled jobs take longer to learn. Nevertheless, some ambiguity still remains. It might be the case, for example, that since a better-educated person could learn to do some jobs well more quickly than a person with less education, a high learning time may be a negative rather than a positive indicator of skill. Alternatively, if the job called for manual dexterity, then perhaps the better educated would be slower learners since they may have put more emphasis on the development of their cognitive abilities at the expense of manual skills. However, the analysis that follows confirms our basic expectation that learning time is positively correlated with other skills indicators and provides a reasonable indicator of the skill level demanded of those in work.

3.3 Distribution of Broad Skills in Northern Ireland, 2006

Table 3.1 gives the distribution of broad skills according to the gender and job status of the jobholder, as measured in the three ways outlined above. This shows that three out of ten jobs (30.0%) in Northern Ireland in 2006 required a level 4 or above qualification for entry – that is, a professional qualification such as SRN in nursing, or an undergraduate or post-graduate degree. However, a quarter of jobs (25.1%) required no qualifications on entry. A similar polarisation of jobs is reflected in the training times respondents reported for their current type of work and the length of time it took to learn to do the job well. For example, three-fifths of jobs (59.8%) in Northern Ireland were reported as requiring less than three months training time, while around three-tenths (29.9%) reported training times of over two years. Similarly, some jobs took a long time to do well, while others were picked up relatively quickly. Over a quarter of jobs (26.1%) could only be done well after spending more than two years in post, but a similar proportion of jobs (23.0%) could be learnt in under a month.

Table 3.1 also reveals the extent to which work skills are gendered. In terms of the highest level of qualification required to get jobs, men and women are neck and neck with no statistically discernible difference between the genders. For example, similar proportions of men and women reported that new recruits required degrees on entry (around a fifth of respondents of both sexes), while around a quarter of men and women reported that newcomers would not need any qualifications at all. However, the differences between training times and learning times are statistically significant between men and women. Women record significantly higher scores for training time while men

record significantly higher scores for learning time. Therefore it is not clear which gender is in more skilled jobs. However, elsewhere in the UK the pattern is rather different and suggests that men, on average, are in higher skilled jobs than women (see Felstead *et al*., 2007: Table 3.1). Even so, the gendered pattern of skills reported in earlier surveys carried out in 1986, 1992, 1997 and 2001 has weakened substantially across Britain as a whole (cf. Ashton *et al.*, 1999; Felstead *et al*., 2000, 2001; Felstead and Gallie, 2004).

Nevertheless, this picture masks marked differences in the skill content of jobs occupied by women who work part-time compared to those who work full-time. These differences are large and statistically significant across all three measures. The required qualification index for women full-timers, for example, is 2.41 compared to a figure of 1.75 for women who work part-time. This pattern is repeated for the other two broad skills indices and is evident in the component measures of the indices. Almost a third (32.6%) of female part-timers, for example, report that they do not need a qualification for the job they currently occupy compared to around a fifth (22.5%) of women who work full-time.

Job skills in Northern Ireland are distributed in line with occupational expectations with those at the top of the hierarchy requiring more skills than those at the bottom (see **Table 3.2**). Given the relatively small sample size for the Northern Ireland boost we have constructed three groups: those in the top three occupational categories; those in the middle four; and those in the bottom two. This categorisation results in reasonable cell sizes, although the cell size of the third category is relatively small (with 86 respondents for Northern Ireland). This should be borne in mind when interpreting these results.

On this evidence, we find that those in the top occupational category have the highest score across all three broad skills indices, whereas those at the bottom scored the lowest. This means that, on average, Managers, Professionals and Associate Professionals are in jobs that require a level 3 qualification, have a training period of 3-6 months and take 1-2 years to learn to do well. This compares to Operative and Elementary jobs which, on average, need a level 1 qualification on entry, require a training period of less than a month and take 1-3 months to learn to do well.

Skills used at work also vary by industry, sector and size of establishment (see **Table 3.3**). The Northern Ireland results confirm this pattern. Without exception, jobs in smaller workplaces tend to be lower skilled than those where larger numbers of workers are employed. For example, there are considerable differences in the indices for required qualifications and training time according to workplace size. However, the size effect is more modest when measured by the average time it takes to learn to do a job well. Nevertheless, this indicator still suggests jobs are more highly skilled the larger the establishment.

Skill differences in Northern Ireland are more pronounced when jobs are analysed according to whether they are in the private or public sector. Here, the gaps are considerable. For example, on average public sector jobs require qualifications almost a full level higher than jobs in the private sector (required qualification index of 2.70 versus 1.83). Similarly, average training times are over three months longer in the public sector compared to the private sector (training time index of 3.30 versus 1.68).

However, the ‘Production’ versus ‘Service’ industries distinction produces less clear-cut results. It suggests that on two out of three broad skill measures ‘Service’ industry jobs

are higher skilled, but on one of the measures 'Production' jobs are more skilled. Moreover, in general the differences are relatively modest. It is therefore difficult to state with any certainty whether jobs in the 'Service' or 'Production' part of the Northern Ireland economy are the more skilled.

Table 3.4 presents estimates of the numbers of jobs including vacancies that require various levels of qualifications to get jobs, alongside the numbers of economically active people holding each level of qualification. We refer to the former as the 'demand' for qualifications, because it is an estimate of employers' demand for labour at each qualification level as perceived by current jobholders. We thus use the conventional assumption that, in a relatively flexible labour market, the actual number of jobs would not remain in the long term above employers' planned demand for qualified labour; and the inclusion of vacancies accounts for sectors where the demand exceeds the current number of jobs. In effect, 'demand' equates to the number of jobs occupied by level of qualification required by new entrants plus an estimate for unfilled posts at each of these levels.

The estimates of demand for qualifications are based on the 2006 Skills Survey evidence for the highest qualification required to get the job respondents occupied at the time of interview. These proportions are grossed up to the numbers of 20-65 year olds recorded to be in work in Northern Ireland according to the winter 2006 Labour Force Surveys. It should be remembered that these demand estimates derive from the jobholders' perceptions of the required qualifications, rather than their employers' perceptions. Evidence from elsewhere suggests that line managers' perceptions of the qualification requirements of jobs are on average not substantially different from the perceptions of their subordinates (Green and James, 2003). Nevertheless, it should be noted that qualifications are only loose measures of the demand for different skill levels.

The details of the calculation are as follows. In order to provide a complete picture of the demand for labour at each qualification level we need to take into account vacancies in the labour market and apportion these to each of the qualification levels. The numbers (shown in column 3, **Table 3.4**) are derived from two sources. The first source is the Vacancies Survey which is carried out every month and asks businesses (who have to take part in the survey by law) to report the number of 'unoccupied or soon to be vacated' posts for which recruitment activities – such as placing adverts or approaching potential recruits – have already taken place (Machin, 2003). We take a three-month rolling average covering the months October-December 2006. To produce a Northern Ireland estimate we divide this figure (602,000) by the proportion of UK jobs held in Northern Ireland (2.7% of jobs). Our second source of data is the 2006 Skills Survey. To approximate the qualification levels of these vacancies, we examine the required qualifications of the 2006 Northern Ireland respondents who are new appointees (in post 24 months or less – this captures 98 respondents in a sample of 498). These proportions are multiplied by the total number of vacancies available to produce estimates of vacancies by qualification level.

By adding the number of jobs and vacancies at each of the qualification levels, we estimate the total demand for labour in Northern Ireland according to the level of certification required on entry. This is shown in column 4 in **Table 3.4** and is headed 'Total demand'.

Estimates of the supply of qualifications are more straightforward. These are based on the winter 2006 Labour Force Surveys and cover 20-65 year olds who were economically active in Britain at the time of interview. The table gives in column 5 a breakdown of the supply of individuals qualified at each level whether in, or actively seeking, work. These data have been categorised in the same qualification groups as the demand data derived from the 2006 Skills Survey.[5]

Table 3.4 provides estimates of the numbers of jobs requiring qualifications ranging from level 4 or above to none against the numbers of people who report holding these qualifications. This provides a balance sheet of qualifications demand and qualifications supply. On this evidence, there are around 21,000 more people with level 4 or above qualifications than there are jobs requiring this level of qualification on entry. The qualification demand-supply discrepancy is higher for level 3 qualifications (80,000 more people than jobs). On the other hand, the data suggest that there are many more people with qualifications of any level than there are jobs that require qualifications for entry. Estimates from the 2006 Skills Survey show that there are 185,000 jobs in Northern Ireland that do not require qualifications on entry. However, there are only 120,000 people who possess no qualifications to their name.

3.4 Broad Skills in Northern Ireland and the United Kingdom, 2006

The 2006 Skills Survey data also allow us to examine how the pattern of skill distribution – as measured by these broad indicators – differs across the UK. In this section, we will compare the Northern Ireland pattern with that found in the UK as a whole and the UK minus London and the South East.

Table 3.5 summarises these results. The picture presented by these data is mixed, but none of the differences are statistically significant. For example, according to the Required Qualification Index the Northern Ireland economy demands higher skills from its workers than in the UK minus London and the South East (i.e. the high skill demand areas). Even when London and the South East are included in the UK figures, Northern Ireland posts a higher skill score (2.17 versus 2.08 for the UK and 1.99 for the UK minus London and the South East, but none of these differences are statistically significant). Put it another way, a quarter (25.1%) of jobs in Northern Ireland do not require a qualification on entry according to our respondents compared to a higher proportion in the UK as a whole (28.1%) and an even higher proportion of jobs in the UK minus London and the South East (30.0%). However, according to the Training Time Index jobs in Northern Ireland are lower skilled than those in the UK as a whole and even the UK minus London and the South East. The scores are 2.41, 2.55 and 2.56 respectively. However, these differences fail to reach levels of statistical significance. The Learning Time Index paints a similar picture of jobs in Northern Ireland, on average, being quicker to pick up and, by implication, lower skilled (but the difference is not significant). For example, approaching a quarter (23.0%) of jobs in Northern Ireland can be done well after less than a month compared to around a fifth (19.0%) of jobs in the UK as a whole. Despite absolute differences in the reported proportions of respondents in the high and low skilled categories as well as differences in the skill indices between Northern Ireland and other parts of the UK, none of these differences are large enough to be statistically

[5] *Details are given in the notes to **Table 3.4**. These supply and demand estimates do not take account of the supply of economically active people and the available jobs for people over 65 and below 20. Nor is account taken of the fact that a small proportion of people (around 6%) hold second jobs.*

significant. Overall, then, it is reasonable to conclude that jobs in Northern Ireland – according to the broad skills measures – are of a similar skill level to jobs elsewhere.

The UK coverage of the 2006 Skills Survey also allows us to compare balance sheet of qualifications demand and qualifications supply for Northern Ireland with the equivalent figures for the UK as a whole. **Table 3.6**, therefore, presents the qualification demand and supply balance sheet for the UK as a whole. However, while comparison of the absolute figures may be of some interest, comparison of the percentage point differences are more meaningful since these results provide a comparative analysis which takes into account the different sizes of the Northern Ireland and UK economies. **Table 3.7** presents these results. It shows that Northern Ireland has within its borders approximately the same proportion of people with level 4 or above qualifications than in the UK as a whole – in 2006, 32.2% of those in Northern Ireland possessed these qualifications compared to 32.8% of those in the UK. They also have a similar proportion of jobs requiring this level of qualification on entry. So, at this level in both countries there is a three percentage point qualification gap. However, at the other end of the scale, the picture is very different. Whereas less than one in ten people (9.4%) in the UK as a whole have no qualifications to their name, around one in six (16.2%) people living in Northern Ireland are unqualified. The proportion of jobs requiring no qualifications on entry (as perceived by our respondents) in each country also differs, if only by three percentage points. In Northern Ireland a quarter (25.3%) of jobs can be secured without a qualification compared to a slightly higher proportion (28.2%) of jobs in the UK as a whole. This means that at the lowest level the qualification demand/supply discrepancy is much lower in Northern Ireland than it is in the UK as a whole – Northern Ireland has a nine percentage point gap between the demand and supply of jobs/people in the 'no qualifications' category compared to a gap of 19 percentage points for the UK as a whole (see **Table 3.7**).

Related to this is the issue of 'over-qualification'; that is, a situation where an individual is in possession of a qualification which is higher than the qualification required for the job the individual currently holds. **Table 3.8** plots 'over-qualification' rates for Northern Ireland alongside the rates for the UK minus London and the South East, and the UK as a whole. This corroborates our earlier finding of better job-matching in the province than elsewhere in the UK. Whereas around a third (32.4%) of workers in Northern Ireland could be defined as 'over-qualified' in the terms identified above, the proportion rose to almost two-fifths in the UK as a whole (39.0%) and in the UK minus London and the South East (39.7%).

3.5 Summary of Main Findings

- Three out of ten jobs (30.0%) in Northern Ireland in 2006 required a level 4 or above qualification for entry. However, a quarter of jobs (25.1%) required no qualifications on entry. A similar polarisation of jobs is reflected in the training times respondents reported for their current type of work and the length of time it took to learn to do the job well – three-fifths of jobs (59.8%) in Northern Ireland were reported as requiring less than three months training time, while around three-tenths (29.9%) reported training times of over two years. Similarly, some jobs took a long time to do well, while others were picked up relatively quickly. Over a quarter of jobs (26.1%) could only be done well after spending more than two years in post, but a similar proportion of jobs (23.0%) could be learnt in under a month.

- It is not clear which gender is in more skilled jobs in Northern Ireland. In terms of the highest level of qualification required to get jobs, men and women are neck and neck with no statistically discernible difference between the genders. However, women record significantly higher scores for training time compared with men and men record significantly higher scores for learning time compared with women. Nevertheless, this masks marked differences in the skill content of jobs occupied by women who work part-time compared to those who work full-time. These differences are large and statistically significant across all three measures, and therefore confirm that the jobs done by women part-timers are, on the whole, lowly skilled.

- Job skills in Northern Ireland are distributed in line with occupational expectations with those at the top of the hierarchy requiring more skills than those at the bottom. In addition, the skill level of jobs declines with establishment size and tends to be lower in the private sector.

- Jobs in Northern Ireland are not unambiguously higher or lower skilled than those elsewhere in the UK since on one measure they are higher skilled, while on two others they are lower skilled. Furthermore, none of these differences are statistically significant. Overall, then, it is reasonable to conclude that jobs in Northern Ireland – according to the broad skills measures – are of a similar skill level to jobs elsewhere.

- Northern Ireland has within its borders approximately the same proportion of people with level 4 or above qualifications as in the UK as a whole – in 2006, 32.2% of those in Northern Ireland possessed these qualifications compared to 32.8% of those in the UK. It also has a similar proportion of jobs requiring this level of qualification on entry. So, at this level in both countries there is a three percentage point qualification gap. However, at the other end of the scale, the picture is very different. Whereas less than one in ten people (9.4%) in the UK as a whole have no qualifications to their name, around one in six (16.2%) people living in Northern Ireland are unqualified. The proportion of jobs requiring no qualifications on entry (as perceived by our respondents) in each country also differs, if only by three percentage points. In Northern Ireland a quarter (25.3%) of jobs can be secured without a qualification compared to a slightly higher proportion (28.2%) of jobs in the UK as a whole. This means that at the lowest level the qualification demand/supply discrepancy is much lower in Northern Ireland than it is in the UK as a whole – Northern Ireland has a nine percentage point gap between the demand and supply of jobs/people in the 'no qualifications' category compared to a gap of 19 percentage points for the UK as a whole.

- As a result, 'over-qualification' is less of an issue in Northern Ireland than in other parts of the UK. However, even in Northern Ireland a third (32.4%) of workers are in possession of a qualification which is higher than the qualification required for the job they currently occupy. This compares to an 'over-qualification' rate of almost two-fifths elsewhere in the UK.

Table 3.1: Distribution of Broad Skills by Gender and by Full-Time/Part-Time Status, Northern Ireland, 2006

Broad Skills[1]	Sample Percentages (%) / Scores				
	All	Males	Females	Females Full-Time	Females Part-Time
(a) Highest Qualification Required[2]					
Degrees	21.2	21.6	20.8	25.6	11.0†
Professional qualifications	8.8	7.0	10.7	12.6	6.8
Level 4	30.0	28.6	31.6	38.3	17.8†
Level 3	15.5	19.5	11.2*	10.7	12.3
Level 2	20.6	14.0	27.7*	26.9	29.4
Level 1	8.7	13.4	3.7*	1.7	7.9†
No qualifications	25.1	24.4	25.8	22.5	32.6
Required Qualification Index	2.17	2.14	2.19	2.41	1.75†
(b) Training Time[3]					
> 2 years	29.9	26.9	31.6	35.2	24.2†
< 3 months	59.8	64.8	54.6*	50.0	64.0†
Training Time Index	2.41	2.14	2.70*	2.97	2.11†
(c) Learning Time[4]					
> 2 years	26.1	36.2	15.5*	18.7	8.8†
< 1 month	23.0	19.8	26.5*	22.1	35.6†
Learning Time Index	3.53	3.89	3.16*	3.41	2.62†

** = a statistically significant difference between male and female workers ($p < 0.05$)*
† = a statistically significant difference between female full-time and female part-time workers ($p < 0.05$)
*[1] The data reported here and throughout have been weighted by a factor that takes into account the slight over-representation of women and the under-representation of the 20-29 year old age group (see **Appendix**). In addition, the data has been weighted to take into account the variation in the number of eligible respondents at each address visited. All calculations exclude missing values.*
[2] Respondents were asked: 'If they were applying today, what qualifications, if any, would someone need to get the type of job you have now?' A range of options was given. From this the highest qualification level, ranked by NVQ equivalents, was derived. The following qualification mapping was applied:

- *Level 4 or above = masters or PhD degree, university or CNAA degree, other professional (eg, law, medicine), teaching, nursing (eg SCM, RGN, SRN, SEN), NVQ level 4 (or SNVQ4) or HNC/HNC (or SHNC/SHNC); Degree = masters or PhD degree, university or CNAA degree; Professional qualifications = other professional (eg, law, medicine), teaching, nursing (eg SCM, RGN, SRN, SEN), NVQ level 4 (or SNVQ4) or HNC/HNC (or SHNC/SHNC);*
- *Level 3 = GCE 'A' level or GNVQ advanced, SCE higher or SLC/SUPE higher, certificate of 6th year studies, university certificate/diploma (not degree), SCOTVEC national certificate, SCOTBEC/SCOTBEC certificate/diploma, completion of trade apprenticeship, NVQ level 3 (or SNVQ 3) or ONC/OND (or SNC/SND);*
- *Level 2 = GCSE A*-C or GNVQ intermediate or GCE 'O' level or CSE grade 1 or school certificate of matriculation, SCE standard (1-3)/ordinary (A-C) or SLC/SUPE lower, clerical/commercial (eg typing or bookkeeping), professional qualification without sitting exam, NVQ level 2 (or SNVQ 2);*
- *Level 1 = GCSE D-G or CSE (other than grade 1) or GNVQ foundation, other, NVQ level 1 (or SNVQ 1);*
- *No qualifications = none reported.*
- *The Required Qualifications Index was calculated from the responses: none=0; level 1=1; level 2=2; level 3 =3; and level 4 or above=4.*
- *Respondents were asked: 'Since completing full-time education, have you ever had, or are you currently undertaking, training for the type of work that you currently do? Respondents answering 'yes' were then asked: 'How long, in total, did (or will) that training last?' A range of options was given.*
- *The Training Time Index was calculated from the responses: none=0; less than 1 month=1; 1=3 months=2; 3-6 months=3; 6-12 months=4; 1-2 years=5; and over 2 years=6.*
- *Respondents were asked: 'How long did it take for you after you first started doing this type of job to learn to do it well?'*
- *The Learning Time Index was calculated from the responses: less than 1 month=1; less than 3 months=2; 3-6 months=3; 6-12 months=4; 1-2 years=5; and over 2 years=6.*

Table 3.2: Distribution of Broad Skills by Occupation, Northern Ireland, 2006

Occupation[1]	Required Qualification Index	Training Time Index	Learning Time Index
Managers, Professionals and Associate Professionals	3.23	3.18	4.58
Admin & Secretarial, Skilled Trades, Personal Service and Sales Occupations	1.70	2.37	3.04
Plant & Machine Operatives and Elementary Occupations	0.69	0.67	2.19

*[1] Occupations are classified by SOC2000 Major Groups and grouped as shown in table. The indices are derived as outlined in **Table 3.1.***

Table 3.3: Distribution of Broad Skills by Industry, Sector and Size of Establishment, Northern Ireland, 2006

	Required Qualification Index[1]	Training Time Index	Learning Time Index
Industry			
Production Industries, Divisions A-F[2]	1.82	2.04	3.89
Service Industries, Divisions G-O[3]	2.28	2.57	3.40
Sector			
Private	1.83	1.68	3.16
Public	2.70	3.30	3.68
Size (no. of workers)			
Up to 24	1.78	2.11	3.46
25 and over	2.54	2.70	3.60

*[1] The indices are derived as outlined in **Table 3.1**.*
[2] Agriculture, Fishing, Mining, Manufacturing, Energy and Construction.
[3] Wholesale & Retail, Transport & Storage, Real Estate & Business Services, Public Administration, Education, Health & Social Work and Personal Services.

Table 3.4: Qualifications Demand and Supply, Northern Ireland, 2006

(1)	Demand: Highest Qualification Required[1] Number of Jobs (%)			Supply: Highest Qualification Held[2] (%)
	Jobs (2)	Vacancies (3)	Total demand (4)	(5)
Level 4 or above	214,080 (30.0)	2,805 (17.3)	216,885 (29.7)	238,343 (32.2)
Degree	151,283 (21.2)	1,633 (10.1)	152,916 (21.0)	168,064 (22.7)
Professional qualifications	62,797 (8.8)	1,172 (7.2)	63,969 (8.8)	70,206 (9.5)
Level 3	107,754 (15.5)	1,983 (12.2)	109,775 (15.0)	190,082 (9.5)
Level 2	147,002 (20.6)	3,773 (23.2)	150,775 (20.7)	145,675 (19.7)
Level 1	62,083 (8.7)	1,871 (11.5)	63,954 (8.8)	47,001 (3.4)
No qualifications	179,114 (25.1)	5,824 (35.8)	184,938 (25.3)	120,321 (16.2)
Column totals	713,601	16,254	729,855	741,348

** Due to rounding column totals and percentages do not always add up precisely.*

[1] Using the winter 2006 Quarterly Labour Force Surveys, an estimate was derived of the total number of individuals aged 20-65 years old who were in paid work in Northern Ireland. This figure was then multiplied by the percentage of respondents to the 2006 Skills Survey who reported that access to their jobs required qualifications at one of the levels shown in column 1. Column 2, then, comprises estimates of the number of jobs in Northern Ireland that demand qualifications at various levels in the NVQ hierarchy. The analysis here is restricted to individuals' main job; secondary jobs are not included. In addition, vacancies represent the number of posts for which employers are seeking recruits, hence column 3. These need to be added to the demand column of jobs filled (Williams, 2004a and 2004b). These data are taken from the Vacancy Survey for the months October-December 2006 (ONS, 2006: Table 21, downloaded 11 July 2007; Machin, 2003). The average monthly number of vacancies over this period – during which around half of the Northern Ireland interviews were carried out – was 602,000. To derive a Northern Ireland estimate we divide this by the proportion of UK jobs held in Northern Ireland (2.7% of jobs). These 16,254 vacancies are apportioned according to the qualifications required by those recently securing posts (i.e. job tenure of two years or less – this captures 98 respondents). These proportions are multiplied to produce estimates of vacancies in the labour market at each qualification level. Column 4 combines the jobs and vacancies columns to produce an estimate of total qualification demand at each level in the hierarchy.

[2] Using the winter 2006 Quarterly Labour Force Surveys, an estimate was also made of the total number of individuals who possess qualifications at each of these levels. To capture the complete supply of individuals available for work, we selected not only those in paid work – employees and the self-employed – but also those recorded as ILO unemployed (using the INECAC05 derived variable) i.e. Highest qualification of the labour force. For comparability with evidence from the 2006 Skills Survey, we restrict the analysis to those aged 20-65 years old living in Northern Ireland. The figures in column 5, then, provide estimates of the numbers of individuals qualified to particular levels in the NVQ hierarchy. The LFS proportions are multiplied by the total number of individuals available for work. To maximise comparability with the 2006 Skills Survey qualifications mapping protocols, the highest qualification variable, HIQUAL5, was categorised as follows:

- *Level 4 or above = higher degree, NVQ level 5, first/foundation degree, other degree, NVQ level 4, diploma in higher education, HNC/HND, BTEC higher etc, teaching – further education, teaching – secondary, teaching – primary, teaching – foundation stage, teaching – level not stated, nursing etc, RSA higher diploma, other higher education below degree level;*
- *Degree = higher degree, first/foundation degree, other degree;*

- *Professional qualifications = NVQ level 5, NVQ level 4, diploma in higher education, HNC/HND, BTEC higher etc, teaching – further education, teaching – secondary, teaching – primary, teaching – foundation stage, teaching – level not stated, nursing etc, RSA higher diploma, other higher education below degree level;*
- *Level 3 = A level or equivalent, RSA advanced diploma, OND/ONC, BTEC/SCOTVEC national, City and Guilds advanced craft/part1, Scottish 6th year certificate (CSYS), SCE higher or equivalent, access qualifications, AS level or equivalent, trade apprenticeship;*
- *Level 2 = NVQ level 2 or equivalent, intermediate Welsh baccalaureate, GNVQ intermediate, RSA diploma, City and Guilds craft/part 2, BTEC/SCOTVEC first or general diploma, O level, GCSE grade A-C or equivalent;*
- *Level 1 = NVQ level 1 or equivalent, GNVQ/GSVQ foundation level, CSE below grade 1, GCSE below grade C, BTEC/SCOTVEC first or general certificate, SCOTVEC modules, RSA other, City and Guilds other, YT/YTP certificate, key skills qualification, basic skills qualification, entry level qualification, other qualifications;*
- *No qualifications = none reported.*

Table 3.5: Broad Skills in Northern Ireland, the UK (other than London and the South East of England) and the UK, 2006

	Sample Percentages (%) / Scores		
	Northern Ireland	UK minus London & South East England	UK
(a) Highest Qualification Required[1]			
Level 4 or above	30.0	27.2	29.8
Degree	21.2	16.6	18.7
Professional qualifications	8.8	10.6	11.1
Level 3	15.5	16.2	15.7
Level 2	20.6	15.3	14.9
Level 1	8.7	11.3	11.5
No qualifications	25.1	30.0	28.1
Required Qualification Index[2]	2.17	1.99	2.08
(b) Training Time			
> 2 years	29.1	30.0	29.3
< 3 months	59.8	56.3	56.4
Training Time Index	2.41	2.56	2.55
(c) Learning Time			
> 2 years	26.1	27.8	27.0
< 1 month	23.0	19.3	19.0
Learning Time Index	3.53	3.66	3.67

*See notes on **Table 3.4**.*

Table 3.6: Qualifications Demand and Supply, UK, 2006

	Demand			Supply
	Highest Qualification Required[1] ('000s)			Highest Qualification Held[2] ('000s of people)
	Jobs	Vacancies	Total demand	
Level 4 or above	7,868 (29.8)	143 (23.8)	8,011 (29.7)	9,079 (32.8)
Degree	4,938 (18.7)	100 (16.7)	5,038 (18.7)	6,311 (22.8)
Professional qualifications	2,931 (11.1)	43 (7.2)	2,974 (11.0)	2,768 (10.0)
Level 3	4,145 (15.7)	88 (14.7)	4,233 (15.7)	6,588 (23.8)
Level 2	3,934 (14.9)	91 (15.2)	4,025 (14.9)	5,924 (21.4)
Level 1	3,036 (11.5)	74 (12.4)	3,110 (11.5)	3,488 (12.6)
No qualifications	7,420 (28.1)	203 (33.9)	7,623 (28.2)	2,602 (9.4)
Column totals	26,404	600	27,004	27,680

** Due to rounding column totals and percentages do not always add up precisely.*
*See notes on **Table 3.4.***

Table 3.7: Patterns of Qualification Mismatch, Northern Ireland and UK, 2006

	Qualification Mismatch[1] (% Of Jobs Requiring Qualifications At Each Level Minus % Of Workforce Qualified At Each Level)	
	Northern Ireland	UK
Level 4 or above	-2.5	-3.1
Degree	-1.7	-4.1
Non-degree	-0.7	+1.0
Level 3	-10.6	-8.1
Level 2	+1.0	-6.5
Level 1	+5.4	-1.1
No qualifications	+9.1	+18.8

[1] A positive figure indicates excess demand, while a negative figure indicates over-supply.

Table 3.8: Proportions 'Over-Qualified' for their Jobs, Northern Ireland, the UK (other than London and the South East of England) and the UK, 2006

	Sample Percentages (%)		
	Northern Ireland	UK minus London & South East England	UK
Percentage 'Over-Qualified'[1]	32.4	39.7	39.0

[1] *An 'over-qualified' individual has a qualification at a higher level than that currently required to get the job he/she now holds.*

4 COMPUTING SKILLS

4.1 Introduction

It is widely held that the introduction of computer-based technologies has transformed the nature of employment in the modern era. Correspondingly, computing skills are considered to be the most far-reaching 'generic skill', that is, a skill that is used in various ways and levels in many different occupations. The last ten years has witnessed a major expansion in the use of ICT at work. Employers' investment in computer software reached 2% of UK GDP in 2002 after a 5-year period of rapid growth (Abramovsky and Griffith, 2007) and an accelerated expansion of overall ICT investment from £13 billion in 1992 to more than £35 billion in 2000 (National Statistics, 2007). The advent of computers has accompanied a fundamental re-alignment of the mix of skilled and unskilled workers (Bresnahan, 1999). In particular, the upskilling reported in British jobs between 1986 and 1997 has been shown to be strongly associated with the expansion of computer usage (Green *et al.*, 2003).[6] Rather than being confined to a relatively small sector of highly skilled information technology experts, the direct impact of computers has spread through a very diverse range of jobs. Policy in recent years has been developed to ensure that school and college students can all acquire sufficient computer skills, and there is also concern that adults should have sufficient access to this technology. Even so, the spread of ICT among the UK population as a whole was far from complete by 2005, with one in four 16-74 year olds professing not even basic computing skills, according to official European Union data (Demunter, 2005, 2006).

Yet there is a scarcity of information about just how widespread computer usage is in Northern Ireland, how fast it is changing, how workers are coping with the changes and whether they are doing so adequately, and how the uptake in Northern Ireland compares with other parts of the United Kingdom. There is, therefore, a strong need for accurate, representative data about computer usage at work. In this chapter, we plot the distribution of computing and internet skills in Northern Ireland in 2006 and compare with the distribution elsewhere in the UK.

4.2 Computing Skills in Northern Ireland and the United Kingdom, 2006

The 2006 Skills Survey collects data on the use of computing skills in four ways. It asks respondents whether computerised or automated equipment is used at work (participation), whether the use of a PC or other computerised equipment is 'essential' to their jobs (centrality), whether the use of this equipment is 'complex' or 'advanced' (complexity) and whether they regard the use of the internet as 'essential' or 'very important' to their job (internet usage). **Table 4.1** presents the findings about the distribution of computing skills in Northern Ireland in 2006.

Participation is our broadest indicator on the use of advanced technology in jobs. The question posed to employees is: 'Does your own job involve use of computerised or automated equipment?', to which respondents answer 'yes' or 'no', and we refer to those who respond 'yes' as 'participating' in advanced technology use. The table shows that

[6] *At the same time, some studies have also attributed to computers a substantive role in the changing distribution of wages, though this claim is contested and the evidence is mixed. We report some relevant findings in* ***Chapter 7****.*

Northern Ireland is about seven percentage points behind the UK as a whole in the take-up of advanced technology (68.1% compared with 74.6%). There remains a gap, though a lesser one of five percentage points, when comparison is made with the UK other than London and the South East.

However, computers are not central to the jobs of all of these workers. A further question helps to explore whether computing has not only come to affect a wide range of jobs, but also has become more important to the nature of the tasks carried out. The question asks how important 'Using a computer, PC or other types of computerised equipment' was to their job. The overall use of computers can be measured as the sum of the responses ranging from 'essential' to 'fairly important'. This gives a similar estimate to the previous question, with 65.4% saying it was of importance in 2006. Looked at another way, there are 28.4% of jobs in Northern Ireland for which computing skills are not at all important; this compares with 22.4% for the UK as a whole.

Taking those who said that the use of such equipment was 'essential' as an indicator of the 'centrality' of computer skills to the work task, we find that computer skills are central in this way to 41.1% of jobs in Northern Ireland. This compares with 46.7% for the UK as a whole, and 45.4% for the UK minus London and the South East.

The measures of participation and centrality cover a wide range of tasks of very different levels of complexity. Our third indicator focuses on the level of sophistication with which computers are used. To what extent is computer use at simple levels as against more advanced use? To address this issue, those who used computers (i.e. excluding those who reported computer use as 'not at all important') were given a set of statements about possible types of use and asked which best characterised their own job. The four broad types of use given were: 'Simple' (for example, using a computer for straightforward routine procedures such as printing out an invoice in a shop); 'Moderate' (for example, using a computer for word-processing and/or spreadsheets or communicating with others by e-mail); 'Complex' (for example, using a computer for analysing information or design, including use of computer aided design or statistical analysis packages); and 'Advanced' (for example, using computer syntax and/or formulae for programming). We find that 14.5% of workers in Northern Ireland were using computers at either 'complex' or 'advanced' levels. This compares with 21.4% of workers in the UK as a whole, and 19.5% of workers in the UK minus London and the South East.

Another indicator of more complex use of computers is the importance and type of use of the internet. Accordingly, respondents were asked how important use of the internet was in their jobs. We find that 34.3% of workers in Northern Ireland are in jobs where use of the internet is 'essential' or 'very important', compared with 40.2% of workers in the UK as a whole, and 37.6% in the UK minus London and the South East.

All four indicators thus record that computing skills are somewhat less used in Northern Ireland jobs than elsewhere in the UK. The question arises as to whether this difference arises because of the different industrial structures to be found in Northern Ireland and elsewhere in the UK. However, the differences in industrial structure are not so large as to be able to explain the varying computer use. Below, we shall record how computing skills vary across sectors in Northern Ireland. Here, we simply note that computer skills use appears to vary considerably across regions, even within the same industry. In the Health Industry, for example, an additional analysis (not shown in the table) found that

computer use is ‘Essential’ in 23.4% of jobs in Northern Ireland; this compares with 40.5% of jobs in the UK as a whole, the difference being statistically significant at the 1% level.

Finally in this section, we explore how computer users in Northern Ireland use the internet, and whether this use differs from elsewhere. This question arises because the skills needed to use the internet are not perfectly captured by the importance of internet use to the job. They depend also on the types of activities that are required to be performed through the internet. Rather than assigning skill levels a priori to the different types of internet use, the survey asks respondents to list the activities that they use the internet for. Thus, **Table 4.1** also delves a little deeper into the ways in which the internet is used by those who report that they use it at work.

The table shows that, among internet users, the type of internet use is quite similar in Northern Ireland and elsewhere. Use of email is the most common usage, followed by gaining information about suppliers, gaining information on one’s own organisation, and delivering information to clients. Delivering products to clients figures in approximately one in six jobs (16.3%) in Northern Ireland. There are, however, some differences between internet use in Northern Ireland and elsewhere. Most notably, internet users in Northern Ireland are somewhat less likely to use internal or external email than users in the UK as a whole, and somewhat less likely to use the internet for delivering information to clients (27.5% compared with 32.7%).

4.3 Distribution of Computing Skills across Socio-Economic Groups in Northern Ireland in 2006

Computer skills are a potential source of inequality and differentiation among workers in the modern economy. Hence there is also interest in how computing skills vary across groups of workers. **Table 4.2** also shows how our four indicators of the use of computing skills varies according to gender, whether (for females) workers are working full-time or part-time, and age.

We find that the participation in computer use for women in Northern Ireland is quite close to that for men (67.9% compared with 68.2%). However, a greater proportion of women than men report that computers are ‘essential’ for their job (44.6% compared with 37.8%). Conversely, ‘complex’ or ‘advanced’ use of computers is much less common in women’s jobs than in men’s jobs (10.3% compared with 18.5%); while use of the internet is very similar among men and women.

With all four indicators, there is more differentiation among women, according to whether they work full-time or part-time. Full-time workers’ participation in computer use is 73.0%, compared with just 57.4% for part-timers. Moreover, 12.4% of full-time workers use computers in ‘complex’ or ‘advanced’ ways, as compared with just 6.1% of part-time workers. Similarly, ‘essential’ or ‘very important’ internet use is 38.8% for full-timers as compared with 21.7% for part-timers.

It is frequently assumed that computer use is found most frequently among younger sections of the population, who will have benefited from computer education in school, and perhaps have been more open than older workers to the use of new technologies. Nevertheless, the imperatives of modern working potentially affect all jobs, including those of older workers. In the event, as **Table 4.2** shows, whether or not one uses a

computer in Northern Ireland depends only to a limited extent on age. 63.6% of workers aged 40 and over participate in computer use, compared with 72.5% of younger workers. Younger workers are more likely to be using computers at a complex or advanced level (16.6% compared with 12.4%). There is however, no significant difference according to age as regards the centrality of computing.

Table 4.3 examines how computers are used in different types of work as reflected by occupational group. All four of our indicators of computer use show a stark variation according to occupational group, as would be expected. For example, 89.9% of Managers, Professionals and Associate Professionals ('upper tier occupations') participated in computer use, as compared with 60.2% of 'Administrative & Secretarial', Skilled Trades, Personal Service, and Sales workers ('middle-tier occupations'), and with 32.9% of Plant & Machine Operatives and Elementary Occupations ('lower-tier occupations'). Computer use was regarded as 'essential' in three out five jobs (60.1%) in 'upper-tier' occupations, compared with only a third (33.5%) of 'middle-tier occupations' and just 11.7% in 'lower-tier occupations'.

Table 4.4 examines how far computer use varies across sectors and according to size of establishment in Northern Ireland. The table shows that computer use is higher in the Service Industries than in the Production Industries, according to three out of the four measures. For example, computers are essential in 44.4% of jobs in the Service Industries, compared with 31.4% of jobs in Production Industries; internet use is 'very important' or 'essential' for 38.4% of jobs in the Service Industries, compared with only 22.7% of jobs in the Production Industries. The exception concerns the complexity of computer use, which is at approximately the same level in the Production and Service Industries.

In a similar way, there is a difference in computer use between public sector and private sector jobs. The former require more computing skills according to three measures. For example, computer skills are essential in 50.4% of public sector jobs but only 36.1% of private sector jobs. Again the level of complexity of computer use is the exception, with no significant difference between the sectors.

Finally, according to all four measures, computer use is considerably more prevalent in larger than smaller establishments. Thus, computers are used in over three quarters (76.9%) of large establishments (with at least 25 workers), compared with only 58.8% in small establishments. Complex or advanced use of computers is prevalent in twice as many large as small establishments (19.3% compared with 9.6%).

4.4 Summary of Main Findings

- Computers are used in 68.1% of jobs in Northern Ireland. In 41.1% of jobs, computer usage is 'essential' for the job, and in 14.5% of jobs it involves using computers in 'complex' (e.g. use of spreadsheets) or 'advanced' (e.g. programming) ways. In 34.3% of jobs use of the internet is either 'essential' or 'very important'.

- According to all indicators, computer skills are used significantly less in Northern Ireland jobs than in jobs elsewhere in the UK. For example, computer use is 'essential' for 46.7% of jobs across the UK as a whole.

- Women in Northern Ireland are more likely than men to report that computers are ‘essential’ for their jobs (44.6% compared with 37.8%), but are less likely to be using computers in ‘complex’ or ‘advanced’ ways (10.3% of jobs compared with 18.5%).

- Among women the differences are also striking: computers were essential in the jobs of 33.4% of part-time workers, as compared with 50.1% of the jobs of full-time workers.

- All indicators of computer use are very considerably larger in Managerial, Professional and Associate Professional Occupations.

- All indicators of computer use are greater for those working in establishments of at least 25 workers, compared with those working in smaller establishments.

- Computer participation, the centrality of computing and the centrality of internet use are all greater in the Service Industries than in the Production Industries, and greater in the public than in the private sector. However, there are no significant differences between sectors in the level of complexity with which computers are used.

Table 4.1: Distribution of Computing Skills in Northern Ireland, the UK (other than London and the South East of England) and the UK, 2006

	Sample Percentages (%)		
	Northern Ireland	UK minus London & South East England	UK
Whether uses Computerised or Automated Equipment	68.1	73.2	74.6
Importance of Use of PC or Other Types of Computerised Equipment to Job			
Not at all important	28.4	23.8	22.4
Not very important	6.2	5.8	5.5
Fairly important	13.7	11.5	11.5
Very important	10.6	13.9	13.9
Essential	41.1	45.4	46.7
Complexity of Use of Computers or Computerised Equipment			
Non-user	28.4	23.8	22.4
Simple	22.3	21.4	20.5
Moderate	34.7	35.4	35.7
Complex	9.5	14.3	15.5
Advanced	5.0	5.2	5.9
Importance of Use of the Internet in the Job			
Not at all important	47.7	42.9	39.6
Not very important	6.4	7.5	7.4
Fairly important	11.7	12.1	12.7
Very important	11.3	13.4	14.4
Essential	23.0	24.1	25.8
*Type of Internet Use**			
Internal E-Mail	42.2	46.6	49.9
External E-Mail	36.3	41.3	44.8
Information on Own Organisation	27.9	30.4	32.0
Information on Suppliers	31.8	33.2	34.7
Delivering Information to Clients	27.5	30.2	32.7
Delivering Products to Clients	16.3	17.0	18.6
Buy/sell Products or Services	12.2	13.0	14.4
Update Web Pages	8.6	8.8	9.4
Design Web Pages	4.9	4.4	4.8
Other use	3.0	6.1	7.0

** Excludes those not using the internet.*

Table 4.2: Distribution of Computing Skills by Gender and by Full-Time/Part-Time Status, 2006

	Sample Percentages (%)			
	Whether Uses Computerised or Automated Equipment	Use of PC or Other Types of Computerised Equipment 'Essential'	Complex or Advanced Use of PC/ Computers	Use of Internet 'Essential' or 'Very Important'
All	68.1	41.1	14.5	34.2
Gender				
Male	68.2	37.8	18.5	35.2
Female	67.9	44.6	10.3	33.2
Working Time				
Female Full-Time	73.0	50.1	12.4	38.8
Female Part-Time	57.4	33.4	6.1	21.7
Age				
20-39	72.5	42.3	16.6	36.0
40-65	63.6	39.9	12.4	32.5

Table 4.3: Distribution of Computing Skills by Occupation, 2006

Occupation	Sample Percentages (%)			
	Whether Uses Computerised or Automated Equipment	Use of PC or Other Types of Computerised Equipment 'Essential'	Complex or Advanced Use of PC/ Computers	Use of Internet 'Essential' or 'Very Important'
Managers, Professionals and Associate Professionals	89.9	60.1	28	60.7
Admin & Secretarial, Skilled Trades, Personal Service and Sales Occupations	60.2	33.5	7.3	20.5
Plant & Machine Operatives and Elementary Occupations	32.9	11.7	0.8	3.9

Table 4.4: Distribution of Computing Skills by Industry, Sector and Size, 2006

	Sample Percentages (%)			
	Whether Uses Computerised or Automated Equipment	Use of PC or Other Types of Computerised Equipment 'Essential'	Complex or Advanced Use of PC/ Computers	Use of Internet 'Essential' or 'Very Important'
Industry				
Production Industries, Divisions A-F*	53.5	31.4	16.0	22.7
Service Industries, Divisions G-O**	73.5	44.4	14.1	38.4
Sector				
Private	61.5	36.1	15.5	29.1
Public	80.1	50.4	12.9	43.6
Size (no. of workers)				
Up to 24	58.8	28.7	9.6	30.3
25 or more	76.9	53.1	19.3	38.1

** Agriculture, Fishing, Mining, Manufacturing, Energy and Construction.*
*** Wholesale & Retail, Transport & Storage, Real Estate & Business Services, Public Administration, Education, Health & Social Work and Personal Services.*

5 OTHER GENERIC SKILLS

5.1 Introduction

Supplementing the importance commonly attached to the use of computing skills, many commentators, including employers' representatives, refer also to the requirement for other 'generic skills' in modern workplaces. Previous surveys in this series have pioneered the development of measures of the use of generic skills. The idea of a generic skill refers to a skill which is used across a wide range of occupations and industrial situations, in contrast to occupation-specific or firm-specific skills that are needed in particular jobs. A widely-cited example is the skill of communication, which is needed in many jobs, but to differing degrees and at varying levels. There is nothing new in this: communication has been necessary in many jobs since the dawn of cooperative working. The desire to measure generic skills arose in the 1990s, however, from the claim that there were certain identifiable skills that were growing in importance in modern workplaces, and for which employees were not always being well-prepared either at school or through training. In many countries a policy focus on 'key skills' emerged, and these were entered in school and university curricula.

The measures of generic skills usage in 1997 and 2001 afforded the opportunity to test the proposition that the skills were indeed becoming more important in the workplace. The changes in the responses to the first two surveys revealed that most generic skills had become somewhat more important, even over that comparatively short period of only four years. Analyses of the 2006 Skills Survey for the whole of the UK showed that this rise in the importance of generic skills is being maintained in the current decade (Felstead et al., 2007).

The aims of this chapter are to describe how measures of generic skills are obtained from the survey responses, to examine how generic skills are distributed across jobs held by various socio-economic groups in Northern Ireland, and to compare generic skills usage in Northern Ireland with that elsewhere in the UK.

5.2 Measurement

The overall approach taken to devising measures of generic skills from the 2006 Skills Survey responses is similar in principle to that utilised in the previous surveys. In those surveys the 35 items involved were factor analysed and the scores on the 10 resulting factors were treated as the indices of generic skills. However, certain changes have been made with the current survey for two reasons. First, there were now some additional items to be included in the analysis. Second, it was felt that a new way of calculating skill indices would be beneficial if the interpretation of the indices were to be made somewhat more transparent than in previous surveys, and if the indices enabled the importance of the skills to be compared with each other.[7]

Four additional items were included in the generic skills section of the questionnaire. There are two questions concerning 'emotional skills', concerning how important it is for workers to manage their own feelings and handling the feelings of others. There are also

[7] *Continuity is maintained, for the purposes of trend analyses, by recalculating indices for the previous surveys using the new method utilised here.*

two questions on ‘aesthetic skills’, concerning how important it is for them to ‘look the part’ and to ‘sound the part’ in their jobs. These items were introduced into the survey because it has been argued that there are a number of jobs, particular in the service sector where it is common to interact with the public or with colleagues, where such skills are becoming especially important, particularly so for women (Nickson *et al*., 2003; Korczynski, 2005; Payne, 2006). On the basis of such studies, we expected to find that women utilise more emotional skills and more aesthetic skills than do men. If so, failing to collect information about these activities would give an incomplete picture of the differences between men’s and women’s jobs.

Initially a factor analysis similar to that used in previous surveys was conducted. This analysis, which is described in the next sub-section, had the purpose of exploring the structure of the data – that is to say, whether it was still correct to reduce the many individual items to a limited number of underlying generic skills in the same way as before. However, to improve the interpretability of the indices, it was decided not to use the factor scores as the skills indices. Rather, the factor analysis was used to specify how items would be combined (i.e. which items grouped together). The skill indices were then obtained by averaging across the items in each group.

Five additional items had been introduced in the 2001 Survey to capture various aspects of management skills. These items were only addressed to managers and supervisors, and therefore were not generic across all occupations.

5.2.1 Factor Analysis

This sub-section describes how the factor analysis was conducted. It follows closely the description of the factor analysis conducted in the 2001 and 1997 surveys (Felstead *et al*. 2002: 33-4).

Respondents were asked a series of detailed questions about what their job comprises. The generic skills section of the questionnaire was prefaced by the following: ‘You will be asked about different activities which may or may not be part of your job. At this stage we are only interested in finding out what types of activities your job involves and how important these are’. Respondents were asked: ‘in your job, how important is [a particular job activity]’. The response scale offered was: ‘essential’, ‘very important’, ‘fairly important’, ‘not very important’ and ‘not at all important or does not apply’. Examples of the activities included working with a team of people, working out the causes of problems or faults, making speeches or presentations and planning the activities of others. To maintain continuity with previous surveys the factor analysis focused on the 35 activities (other than computing) that were also covered in the earlier surveys.

The 35 items were first changed into 35 variables. We transformed the ordinal scale of ‘importance’ for each variable into an increasing cardinal scale, running from 0 (meaning ‘not at all important’) to 4 (meaning ‘essential’). Factor analysis is a statistical technique which examines the hidden structure of a large number of variables, reducing them to a much more limited number of ‘factors’ whose covariance captures a large proportion of the overall covariance between the original items. The factors were chosen in such a way as to capture sub-sets of the 35 variables which vary closely together, and which conform to theoretical concepts – in this case, to our concepts of generic skill types. We chose to extract ten factors because, after ‘rotation’, ten factors were consistent in this

case with the accepted criteria for factor analyses, because the resulting factor scores were easily interpretable as skill types, and because these factors involved the same high loadings as had been found when factor analysing the 1997 and 2001 surveys. The same set of factors was found whether we used just males, just females or the whole sample.

5.2.2 Skills Indices

To calculate skills indices, we grouped the variables/items in the ways implied by the factor analysis. For each group an additive index is calculated, which is scaled to lie between 0 and 4, just as for the raw data items. We attributed labels to the index scores identical to the labels in the raw data. Thus, at point 4, we use the label 'essential', at point 3 'very important' and so on. If a person has a value of 3, in effect what this means is that the score of that person averaged across questions in that group is 3. At the bottom end we use the label 'not used', as a short-hand for 'not at all important/does not apply'.

The same approach was used to gain measures of the additional generic skills implied in our additional questions. A factor analysis implied that the variables loaded onto two distinct factors, which were easily interpreted as aesthetic skills and emotional skills. Two further additive indices were accordingly created in the same way as the previous ten.

Finally, we calculated an index of management skills from the five items addressed to managers and supervisors only. For this index, the base for calculations is much smaller than for the whole sample.

A brief description of the generic skill measures is as follows (with Cronbach's alpha statistic in parentheses):[8]

- *Literacy Skills*: both reading and writing forms, notices, memos, signs, letters, short and long documents etc. (0.90)
- *Physical Skills*: the use of physical strength and/or stamina; skill in using one's hands. (0.78)
- *Number Skills*: adding, subtracting, divisions, decimal point or fraction calculations etc., and/or more advanced maths or statistical procedures. (0.86)
- *Technical 'Know-How'*: knowing how to use tools or equipment or machinery, knowing about products and services, specialist knowledge and/or skill in using one's hands. (0.64)
- *Influence*: persuading or influencing others, instructing, training or teaching people, making speeches or presentations, writing long reports, analysing complex problems in depth, and planning the activities of others. (0.84)
- *Planning*: planning activities, organising one's own time and thinking ahead. (0.85)

[8] *In a small number of cases it may be seen that the same variable figures in more than one skill index: an example is 'skill in using one's hands' which is part of both technical know-how and of physical skills. This grouping reflects the factor analysis, and is similar in practice to using the weighted combinations of variables that are the factor scores used with previous surveys.*

- *Client Communication*: selling a product or service, counselling or caring for customers or clients, dealing with people, knowing about products and services. (0.66)
- *Horizontal Communication*: working with a team of people, listening carefully to colleagues. (0.76)
- *Problem-Solving*: detecting, diagnosing, analysing and resolving problems. (0.88)
- *Checking Skills*: noticing and checking for errors. (0.88)
- *Aesthetic Skills*: looking and sounding the part. (0.79)
- *Emotional Skills*: managing own and handling others' feelings. (0.75)
- *Management skills*: motivating subordinate staff, controlling resources, coaching, developing careers, strategic decision-making. (0.79)

Apart from management skills and the two new measures, the definitions of the skills thus closely followed the interpretation of the factors reported in Felstead *et al*. (2002). One difference is that we have named one generic skill 'influence skill', in contrast to previous surveys where we used the term 'high communication skill'. The new term is intended to convey the somewhat broader package of activities that, according to the data, tend to be combined in certain jobs.

5.3 Generic Skills in Northern Ireland and Britain, 2006

The 2006 data also allow us to investigate differences between Northern Ireland and the UK as a whole, and with the UK other than London and the South East of England. **Table 5.1** documents the differences in respect of all the generic skills indices.

It may be recalled that the analyses of the previous chapter revealed that computing skills were being used at somewhat lower levels in jobs in Northern Ireland, compared with elsewhere in the UK. **Table 5.1** reveals that this difference also pertains to some of the other generic skills. On average, jobs elsewhere in the UK require higher literacy, technical know-how, horizontal communication skills, problem-solving skills, checking skills, emotional skills and aesthetic skills than those in Northern Ireland. These differences remain when comparison is made with the UK other than London and the South East of England. However, the use of the other generic skills does not significantly differ between Northern Ireland and elsewhere.

The differences in the use of generic skills in Northern Ireland and in the whole of the UK are relatively modest. An idea of the magnitude can be gleaned by taking the example of aesthetic skills, where the index is 0.17 lower in Northern Ireland than for the whole of the UK. One of the constituents of aesthetic skills is the importance of 'looking the part'. In a separate analysis not shown in the table which looks just at this item, one finds that this particular skill is 'essential' in 18% of jobs in Northern Ireland, as compared with 23% of jobs in the UK as a whole. Other items mainly show similar differences between Northern Ireland and elsewhere.

Nevertheless, the differences between Northern Ireland and elsewhere could not be explained as due to the different industrial composition of jobs in Northern Ireland and elsewhere. There were differences even within the same industry. As an illustration of this point, in a separate analysis (not shown in the table) of the item 'looking the part', focused solely on jobs within the Health industry, one finds that aesthetic skills are

‘essential’ in 18% of jobs in Northern Ireland, as compared with 30% of jobs in the UK Health industry as a whole.

5.4 The Distribution of Generic Skills in Northern Ireland, 2006

Table 5.2 gives figures for the average level of each generic skill in Northern Ireland as a whole, and separately according to gender and to full-time/part-time status. In interpreting the indices, it can be recalled that an average score of 2 is associated with the response point ‘fairly important’, so that scores above 2 indicate that the generic skill is at least ‘fairly important’ on average across all jobs in Northern Ireland. Reading along the first row, one can observe that all but three of the generic skills fall into this category. The exceptions are physical skills, number skills and influence, each of which appear to be used on average at relatively low levels.

The second and third rows show that there are differences between the skills being used in men’s and women’s jobs in Northern Ireland. Physical skills, number skills, technical know-how, checking skills and management skills are all more in demand in the jobs being done by men. Client communication skills, horizontal communication skills, emotional and aesthetic skills, however, are all more used in jobs done by women. These gender differences are consistent, we maintain, with a conventional perception of the gendered division of labour.

Among females there is a notable difference between those working in full-time and part-time jobs. The skills used in full-time jobs are greater in every domain, though with physical skills the difference is too small to be significant. This finding emphasises further the differences between part-time and full-time jobs, noted earlier in this report with respect to our broad skills measures and to computing skills. A third of female workers in Northern Ireland are working part-time; our findings imply that they are generally being used in substantially lower-skilled jobs than full-timers. A separate analysis, not shown in the table, that illustrates this point comes from the domain of literacy skills: in women’s jobs, writing long documents is essential for 30% of full-time jobs, but for only 14% of part-time jobs.

Table 5.3 shows the distribution of generic skills by occupational group. It can be seen that, on the whole, occupations normally considered high-skilled show greater uses of most of the generic skills. Influence skills are strongest in Managerial, Professional and Associate Professional Occupations, and are on average considered less than ‘Fairly important’ in the other occupations. In addition, the variation across occupations is broadly what one might expect. For example, physical skills are greatest among Plant & Machine Operatives and Elementary Occupations. And, as one might expect, management skills are greatest in managerial occupations. Unfortunately, the small numbers in the sample mean that it is not safe to quote estimates for generic skills for more disaggregated occupational groups.

Table 5.4 gives the distribution of generic skills separately for the Production and Service Industries. It can be seen that generic skills are used to some extent in both industrial sectors. There is, however, some cross-sector variation which conforms to expectations. Emotional and aesthetic skills, for example, are more important in the service industries, while technical know-how is more important in the Production sector.

In a similar way, there is a difference in generic skills use between public sector and private sector jobs. The former require more generic skills in most domains. For example, the index of literacy skills use is 2.81 in the public sector, but only 2.10 in the private sector. Similarly, the index of planning skills is 3.17 in the public sector, 2.88 in the private sector. An exception is physical skills, which is more utilised in the private sector than in the public sector.

Finally, according to a number of skills domains, skill use is somewhat greater in larger establishments (with 25 or more workers) than in small establishments (with less than 25 workers). This ranking applies to literacy skills, technical know-how, influence skills, horizontal communication skills, problem-solving skills, checking skills and aesthetic skills. However, in respect of physical skills use is significantly greater in small establishments.

5.5 Summary of Main Findings

- The use of generic skills, other than computing, can be measured by asking questions about the importance of several particular activities in jobs, and calculating indices each of which is the average response to multiple items.

- There are modest but significant differences between the generic skills deployed in Northern Ireland jobs, as compared with jobs in the UK as a whole. In several skill domains, jobs in Northern Ireland require lower skill levels. On average, jobs elsewhere in the UK require higher literacy, technical know-how, horizontal communication skills, problem-solving skills, checking skills, emotional skills and aesthetic skills than those in Northern Ireland. These differences generally apply within industries, as well as in aggregate.

- There are differences between the generic skills utilised by men and women, with women typically found in jobs requiring more communication skills, and more emotional and aesthetic skills.

- Among females, those in full-time jobs exercise considerably greater levels of generic skills in all domains than those in part-time jobs. To illustrate, writing long documents is essential for 30% of full-time jobs, but for only 14% of part-time jobs (not shown in report).

- Generic skills vary across sectors and occupations in expected ways: for example, influence skills are strongest in the Public Sector, and in Managerial, Professional and Associate Professional Occupations, and are on average considered less than ‘fairly important’ in other occupations.

Table 5.1: Distribution of Generic Skills in Northern Ireland, the UK (other than London and the South East of England) and the UK, 2006

	Literacy	Physical	Number	Technical Know-How	Influence	Planning	Client Communication	Horizontal Communication	Problem-Solving	Checking	Emotional	Aesthetic	Management
Northern Ireland	2.35‡	1.97	1.84	2.47*	1.99	2.98	2.62	3.01‡	2.86‡	3.09‡	2.84‡	2.47‡	2.81
The UK minus London & SE of England	2.46[b]	1.93	1.85	2.59[a]	2.01	3.03	2.65	3.12[a]	3.01[a]	3.25[a]	2.93[b]	2.63[a]	2.79
UK	2.48	1.87	1.86	2.56	2.04	3.05	2.67	3.13	3.00	3.24	2.94	2.64	2.78

[1] The item scale ranges from 0 ('not at all important/does not apply') to 4 ('essential').
*‡ indicates that the figure for Northern Ireland is statistically different from the rest of the UK at the 5% level, * at the 10% level.*
[a] indicates that the figure for Northern Ireland is statistically different from the UK minus London & the South East at the 5% level, [b] at the 10% level.

Table 5.2: Distribution of Generic Skills by Gender and by Full-Time/Part-Time Status, 2006

	Literacy	Physical	Number	Technical Know-How	Influence	Planning	Client Communication	Horizontal Communication	Problem-Solving	Checking	Emotional	Aesthetic	Management
All	2.35	1.97	1.84	2.47	1.99	2.98	2.62	3.01	2.86	3.09	2.84	2.47	2.81
Gender													
Male	2.22	2.12	1.92	2.66	1.94	2.94	2.57	2.86	2.89	3.13	2.63	2.32	2.83
Female	2.49	1.82	1.76	2.26	2.05	3.03	2.68	3.17	2.83	3.05	3.06	2.63	2.79
Working Time													
Female Full-Time	2.69	1.82	1.93	2.36	2.27	3.15	2.80	3.29	2.96	3.18	3.12	2.67	2.90
Female Part-time	2.07	1.81	1.39	2.05	1.60	2.79	2.43	2.93	2.55	2.80	2.93	2.55	2.26

Note: The generic skills indices are the average scores of the items in each index, derived from the 2006 data. The item scale ranges from 0 ('not at all important/does not apply') to 4 ('essential').
All proportions are weighted by a factor that takes into account sample design and differential response weights by young males and females. The differential response weights were computed from comparisons with the contemporaneous Quarterly Labour Force Survey.

Table 5.3: Distribution of Generic Skills by Occupation, 2006

Occupation	Literacy	Physical	Number	Technical Know-How	Influence	Planning	Client Communication	Horizontal Communication	Problem-Solving	Checking	Emotional	Aesthetic
Managers, Professionals and Associate Professionals	2.92	1.64	2.19	2.58	2.6	3.42	2.93	3.31	3.19	3.37	3.09	2.77
Admin & Secretarial, Skilled Trades, Personal Service and Sales Occupations	2.18	2.08	1.76	2.39	1.68	2.83	2.55	2.89	2.72	3.01	2.77	2.34
Plant & Machine Operatives and Elementary Occupations	1.35	2.56	1.15	2.43	1.30	2.29	2.04	2.56	2.41	2.63	2.38	2.03

Note: The generic skills indices are the average scores of the items in each index, derived from the 2006 data. The item scale ranges from 0 ('not at all important/does not apply') to 4 ('essential'). Management skills were not included, owing to small cell sizes.

Table 5.4: Distribution of Generic Skills by Industry, Sector and Size, 2006

	Literacy	Physical	Number	Technical Know-How	Influence	Planning	Client Communication	Horizontal Communication	Problem-Solving	Checking	Emotional	Aesthetic
Industry												
Production Industries, Divisions A-F*	1.93	2.40	1.76	2.84	1.65	2.85	2.24	2.72	3.07	3.22	2.33	1.92
Service Industries, Divisions G-O**	2.51	1.83	1.87	2.35	2.11	3.04	2.76	3.12	2.80	3.06	3.02	2.65
Sector												
Private‡	2.10	2.03	1.86	2.49	1.77	2.88	2.63	2.84	2.82	3.06	2.63	2.34
Public	2.81	1.87	1.81	2.42	2.39	3.17	2.61	3.33	2.94	3.14	3.21	2.71
Size (no. of workers)												
Up to 24	2.16	2.16	1.84	2.44	1.82	2.99	2.66	2.73	2.79	2.96	2.81	2.38
25 or more	2.53	1.79	1.84	2.50	2.16	2.98	2.58	3.29	2.93	3.21	2.86	2.56

** Agriculture, Fishing, Mining, Manufacturing, Energy and Construction.*
*** Wholesale & Retail, Transport & Storage, Real Estate & Business Services, Public Administration, Education, Health & Social Work and Personal Services; ‡ Non-profit organisations classified with private sector.*
Note: The generic skills indices are the average scores of the items in each index, derived from the 2006 data. The item scale ranges from 0 ('not at all important/does not apply') to 4 ('essential'). Management skills were not included, owing to small cell sizes.

6 EMPLOYEE TASK DISCRETION

6.1 Introduction

In earlier chapters in this report, we have measured skills in terms of what is required to get and do jobs as well as by the importance of activities carried out by people at work. In this chapter we examine the extent to which workers exercise autonomy in how they carry out their work tasks. It is often argued that skills are closely linked to levels of task discretion for employees – that is to say greater control over the detailed execution of the job. This is thought to reflect the need to motivate employees who are carrying out more complex work and greater difficulties in externally monitoring more skilled work. Discretion offers the potential productive advantages of flexibility, together with better use of employees' judgement and skill. The connection between task discretion and skill has been assumed or proposed by writers from diverse social scientific traditions (e.g. Blauner, 1964; Braverman, 1974; Zuboff, 1988). Furthermore, in recent years, management theorists have also argued that workers should be 'empowered', as their skills and responsibilities are broadened. Recent research showed that employee task discretion indeed increased in some European countries (e.g., Sweden and Germany) over the 1990s (Gallie, 2007); while an earlier increase was also recorded for Finland (Lehto and Sutela, 1999). In contrast, previous research showed that in Britain as a whole there has been a decline in choice and discretion at work (Gallie *et al*., 2004).

The chapter therefore proceeds as follows. **Section 6.2** outlines how employee task discretion is measured in the 2006 Skills Survey. **Section 6.3** goes on to highlight what type of workers in Northern Ireland are able to exercise more discretion than others. This pattern is examined in terms of gender, working time, industry, occupation, sector and size of establishment. Using many of the same tables **Section 6.4** follows by examining whether jobs in Northern Ireland allow workers more or less discretion than those elsewhere in the UK as a whole and in the UK minus London and the South East. The chapter ends with a short summary of our findings.

6.2 Measuring Employee Task Discretion

The 2006 Skills Survey includes four questions that assess how much personal influence people have over specific aspects of their work. Respondents were asked: 'How much influence do *you personally* have on how hard you work?' The options were: 'a great deal'; 'a fair amount'; 'not much'; and 'none at all'. The same question format was used to determine employee influence on: 'deciding what tasks you are to do'; 'deciding on how you are to do the task'; and 'deciding the quality standards to which you work'. These questions were asked of the entire sample, but in this chapter we report only on the results for employees since they, by definition, have less control over their working environment.

To provide an overall picture from the different items measuring task discretion, a summary index was constructed by giving a score ranging from 0 (no influence at all) to 3 (a great deal of influence) and then taking the average of the summed scores. Statistical tests confirm that the resulting measure captures a reasonable proportion of the inter-correlation between the four-item index (the Cronbach's alpha is 0.78). In what follows, we use the raw responses to the four items and the summary index to examine

the pattern of task discretion among jobs in Northern Ireland and to make comparisons with the situation elsewhere in the UK.

6.3 Employee Task Discretion in Northern Ireland, 2006

The questions on task discretion are designed to provide a picture of the extent of influence that employees had over specific aspects of their work task. It is clear that influence was felt to be highest with respect to work effort and quality standards, where around half of employees thought they had a great deal of influence in 2006, and lowest with respect to decisions about which tasks were to be done and how to do the task (see **Table 6.1**). In Northern Ireland, one in two (50.3%) respondents claimed to have 'a great deal' of influence over their work effort, while two out of five (42.2%) claimed to have 'a great deal' of influence over quality standards. Much smaller, but sizeable proportions, claimed to exercise 'a great deal' of influence over what tasks are to be done and how (22.5% and 32.8%).

Women in Northern Ireland are, on average, able to exercise more autonomy at work than their male counterparts (see **Table 6.2**). This is shown in the summary index (**Table 6.3**) which is higher for women (2.15) than it is for men (2.05). However, given the relatively small sample sizes involved this difference falls short of being statistically significant (p=0.15). Nevertheless, each of the component parts of the index puts women ahead of men in terms of exercising autonomy over how hard they work, the tasks to be carried out, how they are carried out and to what standard the work is to be completed. For example, 55.2% of women reported that they had 'a great deal' of influence over how hard they worked compared to 45.1% of men who claimed to have a similar level of job control. Similarly, there was a gap between the proportions of men and women claiming to have 'a great deal' of influence over work standards – 38.5% of men claimed to exercise this level of control compared to 45.5% of women (see **Table 6.2**).

A common division among women in the labour market is between those who work full-time and those who work part-time. In many respects, those working part-time are often the poorer relation of the two. The 2006 Skills Survey allows us to examine how discretion levels in Northern Ireland vary among these two groups. However, the cell sizes involved are relatively small and so the results should be treated cautiously. There are 167 women full-timers and 94 women part-timers in the Northern Ireland sample compared to 2,302 and 1,548 respectively in the UK sample as a whole. Bearing this in mind, the results suggest that there is little difference in Northern Ireland between the discretion levels exercised by women according to their working time arrangements. The Individual Task Discretion Index is 2.16 for women full-timers and 2.12 for women part-timers – a statistically insignificant difference (p=0.64).

Nevertheless, the pattern of discretion in Northern Ireland varies in other ways. Employees in some occupations, for example, exercise more discretion than others. This is shown in **Table 6.4** which plots the Individual Task Discretion Index by broad occupational grouping. Unsurprisingly, this confirms that Managers, Professionals and Associate Professionals working in Northern Ireland have much higher levels of autonomy than those working in other occupations. The top occupations post a score of 2.24 on the index, the middle level occupations achieve a score of 2.06 and those at the bottom are rated 1.89 on the scale (where the higher scores denote more discretion).

The public sector in Northern Ireland allows, on average, employees more autonomy than those working in the private sector (Individual Task Discretion Index scores of 2.20 and 2.01 respectively). In addition, smaller workplaces allow employees more latitude in task completion.

In addition to individuals' own control over the job task, the 2006 Skills Survey also collected information on the types of external control used by employers. To collect these data, respondents were asked which of a range of factors were 'important in determining how hard you work in your job'. These included a machine or assembly line; clients or customers; a supervisor or boss; own discretion; pay incentives; and reports and appraisals. They were asked to choose as many factors as were relevant. **Table 6.5** presents these results.

Over half (54.4%) of employees in Northern Ireland said that they themselves had an important say in how hard they worked. This corroborates the findings presented earlier which indicated that the proportions reporting 'a great deal' of influence over how hard they work was of a similar order (cf. **Table 6.1**). The next most important determinant of work effort were clients (48.3%). After that, around two out of five respondents mentioned line managers (43.1%) and colleagues (37.1%) as having an important influence, around a quarter (24.5%) mentioned monitoring through appraisals and a sixth (15.6%) cited pay rises. Machine pacing, however, was relatively uncommon, so much so that the numbers in the cell are too small to report.

6.4 Task Discretion in Northern Ireland and the United Kingdom, 2006

Given the 2006 Skills Survey's UK focus it is also possible to compare the Northern Ireland results alongside those for other parts of the UK. In this section, we revisit the issues discussed above in this comparative context.

A notable issue is the difference in discretion levels in Northern Ireland compared to the UK as a whole and even the UK minus London and the South East (i.e. excluding areas which sometimes skew the overall picture). Moreover, these differences are statistically significant. This suggests that, on average, employees in Northern Ireland enjoy less latitude in how they carry out their daily tasks than employees working elsewhere in the UK. The data show (**Table 6.1**), for example, that only a third (32.8%) of employees in Northern Ireland exercise 'a great deal' of influence over how they are to do their daily tasks compared to over two-fifths (42.7%) of employees working in the UK. Similarly, there is a ten percentage point gap between the proportions claiming 'a great deal' of influence over quality standards in Northern Ireland compared to those working in the UK minus London and the South East.

Table 6.3 suggests that men and women working full-time in Northern Ireland are the biggest losers. The Individual Task Discretion Index for men in the province is significantly lower than the level recorded elsewhere, while women's discretion levels are much the same in Northern Ireland as they are elsewhere. The other losers are women full-timers whose autonomy is reduced somewhat compared to the level enjoyed by female counterparts working elsewhere. Nevertheless, it should also be pointed out that these absolute differences fail to reach levels of statistical significance and so they should be treated cautiously.

In terms of the comparative patterns of discretion by occupation, industry, sector and establishment size, Northern Ireland is broadly in line with the patterns found in the UK as a whole and in the UK minus London and the South East (**Table 6.4**). Nevertheless, our summary measure of discretion – the Individual Task Discretion Index – is in all but one case lower in Northern Ireland than in other parts of the UK. This corroborates our overall finding that discretion levels are lower in Northern Ireland than in the UK as a whole or even the UK minus London and the South East.

6.5 Summary of Main Findings

- In Northern Ireland, one in two (50.3%) respondents claimed to have 'a great deal' of influence over their work effort, while two out of five (42.2%) claimed to have 'a great deal' of influence over quality standards. Much smaller, but sizeable proportions, claimed to exercise 'a great deal' of influence over what tasks are to be done and how (22.5% and 32.8%).

- Women in Northern Ireland are, on average, able to exercise more autonomy at work than their male counterparts. For example, 55.2% of women reported that they had 'a great deal' of influence over how hard they worked compared to 45.1% of men who claimed to have a similar level of job control. Similarly, there was a gap between the proportions of men and women claiming to have 'a great deal' of influence over work standards – 38.5% of men claimed to exercise this level of control compared to 45.5% of women.

- Employees in Northern Ireland enjoy less latitude in how they carry out their daily tasks than employees working elsewhere in the UK. Only a third (32.8%) of employees in Northern Ireland exercise 'a great deal' of influence over how they are to do their daily tasks compared to over two-fifths (42.7%) of employees working in the UK. Similarly, there is a ten percentage point gap between the proportions claiming 'a great deal' of influence over quality standards in Northern Ireland compared to those working in the UK minus London and the South East.

- Men in Northern Ireland enjoy significantly lower levels of autonomy than elsewhere. Women's discretion levels, on the other hand, are much the same in Northern Ireland as they are in other parts of the UK.

Table 6.1: Individual Task Discretion at Work, Northern Ireland, the UK (other than London and the South East of England) and the UK

Dimensions of Individual Task Discretion	Sample Percentages (%)		
	Northern Ireland	UK minus London & South East England	UK
Influence Over How Hard To Work[1]			
A great deal	50.3	52.3	52.3
A fair amount	39.1	38.7	38.4
Influence Over What Tasks Are Done[2]			
A great deal	22.5	29.0	28.5
A fair amount	42.3	36.9	37.6
Influence Over How To Do Task[3]			
A great deal	32.8	42.8	42.7
A fair amount	47.3	39.4	39.4
Influence Over Quality Standards[4]			
A great deal	42.2	51.9	51.6
A fair amount	36.5	30.4	30.6
Individual Task Discretion Index[5]	2.10	2.18	2.18

[1] Respondents were asked: 'How much influence do you personally have on how hard you work?' The options were: 'a great deal'; 'a fair amount'; 'not much'; and 'none at all'.
[2] Respondents were asked: 'And how much influence do you personally have on deciding what tasks you are to do? 'The options were: 'a great deal'; 'a fair amount'; 'not much'; and 'none at all'.
[3] Respondents were asked: 'And how much influence do you personally have on deciding how you are to do the task?' The options were: 'a great deal'; 'a fair amount'; 'not much'; and 'none at all'.
[4] Respondents were asked: 'And how much influence do you personally have on deciding the quality standards to which you work?' The options were: 'a great deal'; 'a fair amount'; 'not much'; and 'none at all'.
[5] The Individual Task Discretion Index allocates scores of 3, 2, 1 and 0 to the responses 'a great deal', 'a fair amount', 'not much' and 'none at all' respectively. This are summed and average is taken produce this Index with a range of 0 to 3.
Base is employees only.

Table 6.2: Individual Task Discretion at Work by Gender, Northern Ireland, 2006

Dimensions of Individual Task Discretion	Sample Percentages (%)	
	Males	Females
Influence Over How Hard To Work		
A great deal	45.1	55.2
Influence Over What Tasks Are Done		
A great deal	19.4	24.4
Influence Over How To Do Task		
A great deal	30.1	35.3
Influence Over Quality Standards		
A great deal	38.5	45.5

Base is employees only.

Table 6.3: Individual Task Discretion Index by Gender and Working Time, Northern Ireland, the UK (other than London and the South East of England) and the UK, 2006

	Individual Task Discretion Index[1]		
	Northern Ireland	UK minus London & South East England	UK
All	2.10	2.18	2.18
Gender			
Male[2]	2.05	2.18	2.19
Female	2.15	2.19	2.17
Working Time			
Female Full-time	2.16	2.24	2.23
Female Part-time	2.12	2.10	2.10

[1] *See **Table 6.1**, footnote 5.*
[2] *Male discretion levels in Northern Ireland are significantly lower ($p<0.05$) than those in the UK minus London and the South East, and the UK as a whole. However, the gender is not significant.*
Base is employees only.

Table 6.4: Individual Task Discretion Index by Occupation, Industry, Sector and Size of Establishment, Northern Ireland, the UK (other than London and the South East of England) and the UK, 2006

	Individual Task Discretion Index[1]		
	Northern Ireland	UK minus London & South East England	UK
Occupation[2]			
Managers, Professionals and Associate Professionals	2.24	2.37	2.35
Admin & Secretarial, Skilled Trades, Personal Service and Sales Occupations	2.06	2.17	2.16
Plant & Machine Operatives and Elementary Occupations	1.89	1.87	1.85
Industry			
Production Industries, Divisions A-F[3]	--	2.18	2.19
Service Industries, Divisions G-O[4]	2.12	2.18	2.18
Sector			
Private	2.01	2.17	2.17
Public	2.20	2.20	2.19
Size (no. of workers)			
Up to 24	2.15	2.24	2.22
25 and over	2.06	2.15	2.16

*[1] See **Table 6.1** footnote 5.*
[2] Occupations are classified by SOC2000 Major Groups and grouped as shown in table.
[3] Agriculture, Fishing, Mining, Manufacturing, Energy and Construction.
[4] Wholesale & Retail, Transport & Storage, Real Estate & Business Services, Public Administration, Education, Health & Social Work and Personal Services.
Base is employees only.

Table 6.5: Forms of Control over Work Effort of Employees[1], Northern Ireland, the UK (other than London and the South East of England) and the UK, 2006

	Sample Percentages (%)		
	Northern Ireland	UK minus London & South East England	UK
Clients	48.3	53.9	54.2
Own Discretion	54.4	55.3	56.3
Supervisor	43.1	38.8	39.6
Fellow Workers	37.1	42.4	42.3
Reports/ Appraisals	24.5	26.8	27.4
Pay	15.6	20.2	21.1
Machine	--	--	4.9

[1] Respondents were asked: 'Which, if any, of the things on this card are important in determining how hard you work in your job?' Multiple responses were allowed; the responses are shown in the left hand column of the table.
Base is employees only.

7 EXPERIENCES OF AND ATTITUDES TOWARDS SKILL ACQUISITION AT WORK

7.1 Introduction

An important aspect of the 2006 Skills Survey was the addition of a set of questions designed to uncover more about the routes through which employees acquire the skills they use at work. While we have a lot of data on the incidence and intensity of training activities through surveys such as the Labour Force Survey, we know comparatively little about the reasons for training take-up by employees, its consequences for their performance at work and their future training prospects. We know even less about those who do not receive training and the consequences this has for their skill development and work performance. The 2006 Skills Survey was also designed to shed light on other sources of skill development such as learning from others while at work, learning opportunities embedded in the job and teaching others how to do the job more effectively. However, employees' attitudes to skill development will be affected by their underlying values about work – the extent to which their job preferences reflect a concern for the intrinsic characteristics of work, such as the opportunity to make use of skills and initiative in a job, or are primarily related to the extrinsic benefits of a job, for instance its pay level.

This chapter considers the results produced by these new questions. Throughout the chapter the Northern Ireland results are compared to the results for other parts of the UK – in particular, the UK minus London and the South East as well as the UK as a whole. The chapter proceeds as follows. The chapter begins by examining the extent to which training and the opportunity to use one's abilities are important for employees in their jobs. It then goes onto examine the reasons why training was not undertaken, and the consequences this had for job performance and career development. Correspondingly, the chapter also contains a section which focuses on those who reported undertaking training for the job in the last year. We present data on who instigated the training and the consequences it had for job performance and career development. In addition, jobs may also require employees to help others learn, so that workers take on more of a teaching role in the workplace. The 2006 data set contains information on these important aspects of workplace learning. These findings are reported in **Section 7.5**. **Section 7.6** focuses on the training desires and expectations of employees.

7.2 Role of Training and Skill Development in Job Orientations in Northern Ireland, 2006

In order to gauge the importance of training and skill development in people's job orientations, we asked a question designed to investigate the importance of the intrinsic features of work (the qualities of the job task such as training prospects) compared to the more extrinsic (in particular, the financial rewards of work). Respondents were informed: 'I am going to read out a list of some of the things people may look for in a job and I would like you to tell me how important you feel each is for you'. They were asked for each characteristic whether they regarded it as 'essential', 'very important', 'quite important' or 'not very important'. The list of job features was as follows:

- Good promotion prospects
- Good pay
- Good relations with your supervisor or manager
- A secure job
- A job where you can use your initiative
- Work you like doing
- Convenient hours of work
- Choice in your hours of work
- The opportunity to use your abilities
- Good fringe benefits
- An easy work load
- Good training provision
- Good physical working conditions
- A lot of variety in the type of work
- Friendly people to work with

Table 7.1 shows the proportions of all employees who regarded each job feature as 'essential'. In Northern Ireland, the four most important aspects of a job were: 'work you like doing' (36.1%), 'a secure job' (35.4%), 'friendly people to work with' (29.3%) and 'good pay' (29.3%). The same features figured in the top four job facets reported by those working in the UK as a whole and in the UK minus London and the South East. However, the strength of feeling towards these job features was noticeably weaker in Northern Ireland than elsewhere. For example, around a half (47.7%) of those working in the UK reported that 'work you like doing' was an essential feature of a job compared to just over a third (36.1%) of respondents in Northern Ireland. In fact, this pattern is repeated for the top seven job features listed in **Table 7.1**.

It is also noteworthy that 'good training provision' was ranked fairly lowly in Northern Ireland. It was ranked ninth out of fifteen job features. Nevertheless, it was rated as 'essential' by over a fifth (22.8%) of job-holders in Northern Ireland, a figure higher than in the UK minus London and the South East (16.5%) and in the UK as a whole (20.5%).

On the other hand, some job aspects are not rated highly at all by respondents. **Table 7.2** presents four of these features. A third (33.2%) of respondents in Northern Ireland reported that having a job with 'an easy work load' was an unimportant feature of a job. Other 'not very important' job aspects were: choice in the hours of work (14.2%); good promotion prospects (13.9%); and good fringe benefits (17.4%). The pattern of responses elsewhere in the UK was a little higher, suggesting that these factors are a little more important to job-holders in Northern Ireland than they are elsewhere.

7.3 Reasons for and Costs of not Receiving Training in Northern Ireland, 2006

Respondents in the 2006 Skills Survey were asked: 'In the last year (that is since [Month] 2005), have you done any of these types of training or education connected with your *current* job?' The card of options included the following: 'received instruction or training from someone which took you away from your normal job' (off-the-job); 'received instruction whilst performing your normal job' (on-the-job); 'taught yourself from a

book/manual/video/computer/cassette' (self taught); 'followed a correspondence or Internet course (such as Open University (at a distance)'; 'taken an evening class' (out of hours class); 'done some other work-related training' (other work related); and 'none of these'. Using this information we can split the sample into two groups: those who undertook training (as defined in these terms); and those who did not. Two-thirds (65.3%) of Northern Ireland employees received some form of training in the last year. Almost identical proportions were reported in the UK minus London and the South East and in the UK as a whole (see **Table 7.3**).

However, a third (34.7%) of employees said they received no training at all during the previous year. Among female part-timers this proportion rose to around two out of five (41.2%). Non-trainees also varied by occupation with almost two-thirds (65.8%) of those in Operative and Elementary jobs falling into this category, while only one in five (22.1%) of Managers, Professionals and Associate Professionals reported that they had received no training over the last year. Emphasis on training also varied by industry, sector and size of establishment. Respondents were less likely to report having undergone training if employed in production, the private sector or small establishments. Similar patterns were evident in the UK minus London and the South East and the UK as a whole.

Non-trainees were asked a series of questions designed to uncover why they had not received training and what effect it had on their work activities. They were asked: 'You have said that you have not received any training over the last year in your current job. Which of the following statements apply?' Respondents were asked whether they agreed or disagreed with the statements presented. This section reports on some of these results.

One of the statements respondents were presented with was: 'I did not want any training'. This was designed to uncover employee resistance to undertaking training. Over half (56.3%) of the Northern Ireland non-trainees agreed with this statement (see **Table 7.4**). This was a little higher than the equivalent figure for those in the UK as a whole, but on a par with the figure for the UK minus London and the South East.

Those who reported that they had undertaken no training during the last year were also asked whether they had wanted training but had not been given it by their employer. This information was gathered from asking respondents whether they agreed or disagreed with the statement that: 'My employer was not willing to provide additional training, even though I wanted it'. Respondents agreeing with this statement might be regarded as frustrated would-be trainees. Around a fifth (19.0%) of non-trainees in Northern Ireland fell into this category. This proportion was a little higher than the proportions in the whole of the UK (16.7%) and in the UK minus London and the South East (17.9%).

Another possibility is that respondents who do not undertake training do so for rational reasons such as it is not necessary to carry out the job or improve work performance. To capture this eventuality, respondents were asked whether they agreed or disagreed with the statement that: 'I did not need any additional training for my current job'. The responses to this question are shown in the third row of **Table 7.4**. According to this evidence approaching two-thirds (63.3%) of Northern Ireland respondents who did not undertake training in the past twelve months regarded such activity as irrelevant to the job.

The 2006 Skills Survey questioned non-trainees further in an attempt to uncover what consequences their lack of additional training might have for their work performance. One consequence is that these individuals will fail to keep up with developments in the job and hence their job performance will suffer. We therefore asked those who had not undertaken additional training in the last year: 'Was there any time over the last year in your current job when training would have been useful for keeping up to date with the skills required?'. **Table 7.5** presents the results of those who said 'no'. Around nine out of ten (88.3%) Northern Ireland non-trainees thought that their lack of training would not harm them in keeping up with changes in the job. This figure is around ten percentage points higher than elsewhere. This therefore suggests that the lack of training may be less of a drawback for employees who do not receive training in Northern Ireland than it is for jobs located elsewhere.

Furthermore, the lack of training did not appear to hold respondents back in terms of career progression. Non-trainees were asked whether they agreed or disagreed with the statement that: 'Lack of training damaged my career opportunities'. Approaching nine out of ten (86.1%) Northern Ireland respondents who had not undertaken training in the twelve months prior to interview disagreed with this statement. This figure is a little lower than the figure reported for the UK minus London and the South East (90.5%) and the UK as a whole (91.1%). However, it is the same order of magnitude and is, in any case, not significantly different.

7.4 Reasons for and Benefits of Receiving Training in Northern Ireland, 2006

The 2006 Skills Survey also allows us to examine the reasons for and consequences of training for those who received it in the year before they were interviewed. Around two-thirds (65.3%) of Northern Ireland respondents fell into this category (cf. **Table 7.3**). These individuals were asked a specific set of questions about the reasons why they trained and the consequences this had for their work performance. In this section, we will present some of these results.

One of the key issues is whether the initiative for training came from the individual or from the employer. The survey asked all those who had received training in their current job over the previous year whether the following two statements were applicable or not: 'I got the training because I asked my employer for it'; and 'It was my employer that first suggested the training'. Since a person may have received more than one type of training over the period, it was in principle possible to respond positively to both. The findings presented in **Table 7.6**, however, show that this situation was relatively rare. Taking all employees, it is clear that the most common situation was for employers to take the initiative rather than employees themselves: whereas only a third (32.6%) of Northern Ireland trainee respondents claimed personal responsibility, around three-quarters (74.2%) mentioned that training had been initiated on the suggestion of their employer.

It is notable that employers have a stronger say in training decisions in Northern Ireland than in other parts of the UK. In both the UK as a whole and in the UK minus London and the South East, trainees reported that training was undertaken at the employers' request in two-thirds of cases compared to three-quarters of cases in Northern Ireland.

Respondents in receipt of training in the previous 12 months were also asked a series of follow-up questions designed to trace the consequences of their doing so. **Table 7.7**

reports some of these results. For example, they were asked: 'Was the training you received over the last year in your current job adequate for keeping up to date with the skills required?' Over nine out of ten Northern Ireland respondents (92.5%) answered 'yes' to this question. This was a little higher than the proportions agreeing to the statement elsewhere in the UK. This suggests that when it is undertaken training is sufficient in nine times out of ten cases. However, it should also be remembered that a third of Northern Ireland employees did not receive any training in the year before interview (cf. **Table 7.3**).

Trainees were also asked whether it improved the way they carried out their work. Most respondents (86.0%) in Northern Ireland agreed that 'the training has helped me improve the way I work in my job'. Similarly, the consequences of training for skills improvement were overwhelmingly positive. Ninety percent (90.1%) of Northern Ireland respondents reported that the training they had received in the twelve months before being interviewed had increased their skills 'a lot' or 'a little' (see **Table 7.7**). The picture for Northern Ireland and the rest of the UK was very close.

7.5 Informal Learning at Work in Northern Ireland, 2006

It is increasingly becoming recognised that learning can take on many forms at the workplace well beyond traditional training events and activities. This includes other forms of learning activity – such as watching, listening and learning from others – which can only be undertaken on an on-going basis as an active participant in the workplace (Felstead *et al*., 2005; Boreham *et al*., 2002; Fuller and Unwin, 2004). To gauge this form of learning, respondents were asked whether they strongly agreed, agreed, disagreed or strongly disagreed with a number of statements. These included: 'My job requires that I keep learning new things'; 'My job requires that I help my colleagues to learn new things'; and 'I am able to learn new skills through working with other members of my work group'. **Table 7.8** presents the results of these questions for Northern Ireland and other parts of the UK. It shows strong levels of agreement for on-the-job learning through experience and experimentation as well as learning from others. Around a third (35.0%) of Northern Ireland respondents strongly agreed that the job itself requires learning and a similar proportion (32.2%) strongly agreed that they are able to learn from work colleagues. Interestingly, there was also strong agreement that job-holders have a teaching role in helping others learn – nearly a third (32.5%) of Northern Ireland respondents took such a position. The Northern Ireland results were mirrored by those in the rest of the UK.

In order to examine the pattern of learning at work according to gender, working time, occupation, industry, sector and size of establishment, we derive a summary measure that captures the strength of agreement/disagreement to each of the three statements presented and outlined above. This is necessary given the relatively small sample size in Northern Ireland and our concerns that we report results based on reasonable cell sizes. A similar approach was adopted in **Chapter 3** where we summarised the responses given to three skills questions. In this case, we allocate scores of +2, +1, -1 and -2 to responses 'strongly agree', 'agree', 'disagree' or 'strongly disagree' respectively. This means that the higher the score, the stronger the level of agreement and vice versa.

What is immediately apparent from **Tables 7.9**, **7.10** and **7.11** is the closeness of the scores for Northern Ireland and the comparator areas. This suggests that learning at work varies little by geographical area. However, geographical variation is evident when

the data are disaggregated. For example, women in Northern Ireland are more likely than men to agree that their jobs require them to teach others and learn from other colleagues. This is in marked contrast to women living elsewhere in the UK who report that their jobs differ little from men's in either of these respects. However, the differences between women according to their working time arrangements are much more pronounced in Northern Ireland than elsewhere, resulting in the working time gap being much wider in Northern Ireland than either in the UK minus London and the South East or in the UK as a whole.

In other respects, the pattern in Northern Ireland is reflected in other parts of the UK. So, the learning demands of jobs in the top three occupations are greater than jobs in the bottom two, public sector jobs are more likely than private sector jobs to require employees to teach one another and learning through team work is more likely to occur in larger rather than smaller workplaces.

7.6 Future Training Prospects in Northern Ireland, 2006

Given the benefits of training for enhanced work performance, the 2006 Skills Survey asked employees about their future intentions to undertake training and their chances of doing so. **Table 7.12** summarises the results. First, we gathered data on employees' training desires. This information was generated by asking respondents: 'How much do you want to get any training in the future?'. They were given the following options from which to choose: 'very much'; 'a fair amount'; 'not much'; and 'not at all'. For simplicity, **Table 7.12** reports the proportion who registered the strongest desire to get training. Overall, a fifth (20.0%) of Northern Ireland respondents came into this category. Compared to the rest of the UK, the Northern Ireland sample reported a somewhat weaker desire for future training. For example, around a quarter of those living in the UK as a whole (24.6%) reported that they wanted training 'very much' compared to a fifth (20.0%) of those in Northern Ireland.

However, wants for future training may, of course, be frustrated by lack of sufficient opportunities. To capture the latter we asked respondents to what extent they agreed or disagreed with the statement: 'I will have many opportunities to get training in the future'. Those strongly agreeing accounted for approaching a quarter (22.4%) of the Northern Ireland sample. Elsewhere in the UK respondents were a little less optimistic.

7.7 Summary of Main Findings

- Many job features are important to people's work orientations, but 'good training provision' does not appear one of them. It was ranked ninth out of fifteen job features in Northern Ireland. Nevertheless, it was rated as 'essential' by over a fifth (22.8%) of job-holders in Northern Ireland, a figure higher than in the UK minus London and the South East (16.5%) and in the UK as a whole (20.5%).

- Two-thirds (65.3%) of Northern Ireland employees received some form of training in the last year. Almost identical proportions were reported in the UK minus London and the South East and in the UK as a whole.

- Over half (56.3%) of the Northern Ireland non-trainees said that they 'did not want any training' compared to around a fifth (19.0%) who said that 'my employer was not willing to provide additional training, even though I wanted it'. Two-thirds (63.3%) of

Northern Ireland respondents who did not undertake training in the past twelve months regarded such activity as irrelevant to the job.

- Nevertheless, the lack of training may be considered an obstacle to improved work performance. However, this does not appear to be the case. Around nine out of ten (88.3%) Northern Ireland non-trainees thought that their lack of training would not harm them in keeping up with changes in the job. This figure is around ten percentage points higher than elsewhere.

- When training is undertaken it is often at the behest of the employer: whereas only a third (32.6%) of Northern Ireland trainee respondents claimed personal responsibility, around three-quarters (74.2%) mentioned that training had been initiated on the suggestion of their employer. It is notable that employers have a stronger say in training decisions in Northern Ireland than in other parts of the UK. In both the UK as a whole and in the UK minus London and the South East, trainees reported that training was undertaken at the employers' request in two-thirds of cases compared to three-quarters of cases in Northern Ireland.

- The impact of training on work performance was high. For example, nine out of ten Northern Ireland respondents said that: it was important for keeping up-to-date with developments in the job; it had helped them to improve their work practices; and it had improved their skills.

- On-the-job learning through experience and experimentation as well as learning from others was strong. Around a third of Northern Ireland respondents strongly agreed that: the job itself requires learning; they are able to learn from work colleagues; and they are expected to help others learn. These mirror the results for the rest of the UK.

- Overall, a fifth (20.0%) of Northern Ireland respondents registered a strong desire for future training and nearly a quarter (22.4%) were optimistic about their chances of getting training in the future. Elsewhere in the UK respondents were a little less optimistic.

Table 7.1: Essential Job Features, Northern Ireland, the UK (other than London and the South East of England) and the UK, 2006

	Essential Job Features[1] (%)		
	Northern Ireland	UK minus London & South East England	UK
Work you like doing	36.1	47.6	47.7
Secure job	35.4	39.4	37.5
Friendly people to work with	29.3	34.2	34.2
Good pay	29.3	34.2	34.4
Good relationship with supervisor or manager	28.3	30.6	31.6
The opportunity to use your abilities	22.8	33.5	34.5
A job where you can use your initiative	19.6	29.7	30.8
Good physical working conditions	24.9	24.9	23.9
Good training provision	22.8	16.5	20.5
Convenient hours of work	16.5	21.1	20.5
A lot of variety in the type of work	14.9	19.9	21.4

[1] Respondents were asked: 'I am going to read out a list of some of the things people may look for in a job and I would like you to tell me how important you feel each is for you'. Respondents were given a card listing the options – only the first option is shown in this table because of the small sample sizes involved for the sample for the other options.

Table 7.2: Unimportant Job Features, Northern Ireland, the UK (other than London and the South East of England) and the UK, 2006

	Not Very Important Job Features[1] (%)		
	Northern Ireland	UK minus London & South East England	UK
Choice in your hours of work	14.2	17.5	17.3
Good promotion prospects	13.9	22.1	22.0
Good fringe benefits	17.4	21.4	21.3
An easy work load	33.2	43.4	43.2

[1] Respondents were asked: 'I am going to read out a list of some of the things people may look for in a job and I would like you to tell me how important you feel each is for you'. Respondents were given a card listing the options – only the fourth option is shown in this table because of the small sample sizes involved for the sample for the other options.

Table 7.3: Training Provision[1], Northern Ireland, the UK (other than London and the South East of England) and the UK, 2006

	Training Undertaken (%)		
	Northern Ireland	UK minus London & South East England	UK
All	65.3	66.3	66.6
Gender			
Male	62.2	64.7	65.4
Female	69.2	68.1	68.0
Working Time			
Female Full-time	74.4	74.3	72.8
Female Part-time	58.8	58.7	60.7
Occupation			
Managers, Professionals and Associate Professionals	77.9	79.9	80.5
Admin & Secretarial, Skilled Trades, Personal Service and Sales Occupations	67.4	64.4	63.5
Plant & Machine Operatives and Elementary Occupations	34.2	45.3	43.2
Industry			
Production Industries, Divisions A-F	51.3	57.7	57.8
Service Industries, Divisions G-O	70.3	69.2	69.2
Sector			
Private	57.0	59.9	60.5
Public	75.0	77.9	77.4
Size (no. of workers)			
Up to 24	58.4	57.4	57.4
25 and over	70.3	71.0	71.5

[1] *Respondents were asked: 'In the last year (that is since [Month] 2005), have you done any of these types of training or education connected with your current job?' The card of options included the following: 'received instruction or training from someone which took you away from your normal job' (off-the-job); 'received instruction whilst performing your normal job' (on-the-job); 'taught yourself from a book/manual/video/computer/cassette' (self taught); 'followed a correspondence or Internet course (such as Open University (at a distance)'; 'taken an evening class' (out of hours class); and 'done some other work-related training' (other work related).*

Table 7.4: Reasons for the Lack of Training, Northern Ireland, the UK (other than London and the South East of England) and the UK, 2006

Reasons for Lack of Training	Sample Percentages (%)		
	Northern Ireland	UK minus London & South East England	UK
Did not want[1]	56.3	55.6	53.3
Wanted but not given[2]	19.0	17.9	16.7
Did not need[3]	63.3	72.0	69.6

[1] Respondents were asked: 'You have said that you have not received any training over the last year in your current job. Which of the following statements apply?' Respondents were asked whether they agreed or disagreed with the statements presented. For this column, we report the percentage who agreed with the statement: 'I did not want any training'.
[2] For this column, we report the percentage who agreed with the statement: 'My employer was not willing to provide additional training, even though I wanted it'
[3] For this column, we report the percentage who agreed with the statement: 'I did not need any additional training for my current job'.

Table 7.5: Consequences of the Lack of Training, Northern Ireland, the UK (other than London and the South East of England) and the UK, 2006

Consequences	Sample Percentages (%)		
	Northern Ireland	UK minus London & South East England	UK
Does not result in a failure to keep up-to-date[1]	88.3	77.9	77.8
Does not result in damage to career[2]	86.1	90.5	91.1

[1] Respondents who undertook no training during the year before interview were asked: 'Was there any time over the last year in your current job when training would have been useful for keeping up to date with the skills required?' The table presents the results of those who said 'no'.
[2] These respondents were also asked whether they agreed or disagreed with the statement that: 'Lack of training damaged my career opportunities'. The table reports the proportion disagreeing with the statement.

Table 7.6: Reasons for Training, Northern Ireland, the UK (other than London and the South East of England) and the UK, 2006

Reasons	Sample Percentages (%)		
	Northern Ireland	UK minus London & South East England	UK
Employee request [1]	32.6	38.0	39.7
Employer suggestion [2]	74.2	65.2	63.9

[1] Respondents were asked: 'Still thinking about the training you received over the last year in your current job, which of the following statements apply?' Respondents were asked whether they agreed or disagreed with the statements presented. For this column, we report the percentage who agreed with the statement: 'I got the training because I asked my employer for it'.
[2] For this column, we report the percentage who agreed with the statement: 'It was my employer that first suggested the training'.

Table 7.7: Consequences of Training, Northern Ireland, the UK (other than London and the South East of England) and the UK, 2006

Consequences	Sample Percentages (%)		
	Northern Ireland	UK minus London & South East England	UK
Adequate for keeping up-to-date[1]	92.5	89.2	89.0
Improving working practices[2]	86.0	85.5	86.2
Improving skills 'a little' or 'a lot'[3]	90.1	91.0	91.4

[1] Respondents were asked: 'Was the training you received over the last year in your current job adequate for keeping up to date with the skills required?'
[2] For this column, we report the percentage who agreed with the statement: 'The training has helped me improve the way I work in my job'.
[3] For this column, we report the percentage who responded 'a lot' or 'a little' to the question: 'Would you say that this training or education has improved your skills…' (the other alternative response was 'not at all').

Table 7.8: Learning at Work, Northern Ireland, the UK (other than London and the South East of England) and the UK, 2006

Consequences	Sample Percentages (%)		
	Northern Ireland	UK minus London & South East England	UK
Job Requires Learning[1]			
Strongly agree	35.0	34.4	34.2
Agree	46.2	47.2	47.6
Job Requires That Others Are Helped To Learn[2]			
Strongly agree	32.5	31.4	31.5
Agree	45.9	48.9	49.3
Learning From Team Members[3]			
Strongly agree	32.2	26.9	27.6
Agree	52.8	55.7	56.1
Training Is Integral To Job[4]			
Has written career or training plan that sets out future job-related learning, training or education	26.4	24.4	24.3

[1] *Responses taken from the question: 'My job requires that I keep learning new things'.*
[2] *Responses taken from the question: 'My job requires that I help my colleagues to learn new things'.*
[3] *Responses taken from the question: 'I am able to learn new skills through working with other members of my work group?'. This question is only asked of those who work in a group or team.*
[4] *Responses taken from the question: 'Do you have a written career or training plan at work, that is, a written document which sets out your future job-related learning, training or education?'*

Table 7.9: Learning Demands of Job by Gender, Working Time, Occupation, Industry, Sector and Size, Northern Ireland, the UK (other than London and the South East of England) and the UK, 2006

	Learning Demands of Job[1]		
	Northern Ireland	UK minus London & South East England	UK
All	0.93	0.92	0.93
Gender			
Male	0.91	0.91	0.93
Female	0.94	0.94	0.93
Working Time			
Female Full-time	1.13	1.09	1.06
Female Part-time	0.58	0.71	0.73
Occupation			
Managers, Professionals and Associate Professionals	1.33	1.31	1.30
Admin & Secretarial, Skilled Trades, Personal Service and Sales Occupations	0.80	0.91	0.89
Plant & Machine Operatives and Elementary Occupations	--	0.24	0.20
Industry			
Production Industries, Divisions A-F	--	0.76	0.80
Service Industries, Divisions G-O	1.00	0.98	0.97
Sector			
Private	0.79	0.79	0.80
Public	1.08	1.17	1.15
Size (no. of workers)			
Up to 24	0.70	0.86	0.85
25 and over	1.08	0.96	0.97

[1] *Responses taken from the question: 'My job requires that I keep learning new things'. Respondents could 'strongly agree', 'agree', 'disagree' or 'strongly disagree' with this statement. Values of +2, +1, -1 and -2 were given to these respondents respectively. The table reports the average scores for each category.*

Table 7.10: Teaching Demands of Job by Gender, Working Time, Occupation, Industry, Sector and Size, Northern Ireland, the UK (other than London and the South East of England) and the UK, 2006

	Teaching Demands of Job[1]		
	Northern Ireland	UK minus London & South East England	UK
All	0.84	0.88	0.89
Gender			
Male	0.76	0.87	0.89
Female	0.88	0.90	0.89
Working Time			
Female Full-time	1.18	1.07	1.05
Female Part-time	--	0.62	0.66
Occupation			
Managers, Professionals and Associate Professionals	1.30	1.26	1.25
Admin & Secretarial, Skilled Trades, Personal Service and Sales Occupations	0.55	0.81	0.83
Plant & Machine Operatives and Elementary Occupations	--	0.34	0.29
Industry			
Production Industries, Divisions A-F	--	0.80	0.83
Service Industries, Divisions G-O	0.85	0.91	0.91
Sector			
Private	0.68	0.80	0.81
Public	0.99	1.02	1.03
Size (no. of workers)			
Up to 24	0.49	0.76	0.77
25 and over	1.04	0.94	0.96

[1] *Responses taken from the question: 'My job requires that I help my colleagues to learn new things'. Respondents could 'strongly agree', 'agree', 'disagree' or 'strongly disagree' with this statement. Values of +2, +1, -1 and -2 were given to these respondents respectively. The table reports the average scores for each category.*

Table 7.11: Team Learning Demands of the Job by Gender, Working Time, Occupation, Industry, Sector and Size, Northern Ireland, the UK (other than London and the South East of England) and the UK, 2006

	Team Learning Demands of Job[1]		
	Northern Ireland	UK minus London & South East England	UK
All	1.00	0.88	0.91
Gender			
Male	0.88	0.87	0.91
Female	1.13	0.89	0.91
Working Time			
Female Full-time	--	0.96	0.98
Female Part-time	--	0.77	0.81
Occupation			
Managers, Professionals and Associate Professionals	1.22	1.09	1.14
Admin & Secretarial, Skilled Trades, Personal Service and Sales Occupations	0.85	0.91	0.90
Plant & Machine Operatives and Elementary Occupations	--	0.47	0.45
Industry			
Production Industries, Divisions A-F	--	0.79	0.84
Service Industries, Divisions G-O	1.10	0.91	0.94
Sector			
Private	0.91	0.79	0.83
Public	--	1.04	1.05
Size (no. of workers)			
Up to 24	--	0.79	0.80
25 and over	0.96	0.92	0.96

[1] *Responses taken from the question: 'I am able to learn new skills through working with other members of my work group?'. This question is only asked of those who work in a group or team. Respondents could 'strongly agree', 'agree', 'disagree' or 'strongly disagree' with this statement. Values of +2, +1, -1 and -2 were given to these respondents respectively. The table reports the average scores for each category.*

Table 7.12: Desire for Future Training Desires and Expectations, Northern Ireland, the UK (other than London and the South East of England) and the UK, 2006

	Sample Percentages (%)		
	Northern Ireland	UK minus London & South East England	UK
Future Training Wants[1] (% very much)	20.0	24.0	24.6
Expectation of Many Training Opportunities[2] (% strongly agreeing)	22.4	19.6	19.2

[1] Respondents were asked: 'How much do you want to get any training in the future?'. They were given the following options from which to choose: 'very much'; 'a fair amount'; 'not much'; and 'not at all'.
[2] Respondents were asked: 'How much do you agree or disagree with the following statement - I will have many opportunities to get training in the future?' They were given the following options from which to choose: 'strongly agree'; 'agree'; 'disagree'; and 'strongly disagree'.

8 CONCLUSION

8.1 Introduction

The Skills Survey series – carried out in Britain in 1997 and 2001 and for the whole of the UK in 2006 – offers a unique insight into the type and level of skills exercised by workers. However, before 2006 the survey did not include Northern Ireland. Instead the sample was drawn from respondents living in Britain south of the Caledonian Canal (a traditional cut-off point used by market research companies). No skills data for Northern Ireland has therefore been available from this series until now. To rectify this situation, the 2006 Skills Survey contained a Northern Ireland boost which added an additional 498 respondents to the UK sample of 7,289. This report is therefore based on the Northern Ireland results. Other area boosts mean that for 2006 as a whole we are able to report on results for the United Kingdom from a base of 7,787 respondents. As a result, the report has set the Northern Ireland results alongside those for the UK minus London and the South East, and the UK as a whole. A particular focus has been on how the skill content of jobs in Northern Ireland varies by gender, working time, occupation, sector, industry and establishment size. The report therefore complements other sources which mainly give the perspective of employers such as the National Employers Skills Surveys (Shury *et al*., 2006) and the WERS/WIRS series (Kersley *et al*., 2006).

While the report has presented several key trends and described the current distribution of skills in 2006, it remains in a sense the 'first findings' from the latest survey. Several skills-related issues are still to be investigated in greater depth, and the data offer considerable scope for empirical testing of modern theories about the evolution of employment and work. In this final chapter, we briefly recap some themes that have emerged from this first examination of the 2006 survey data in the hope that this report – and the data sets on which it is based – will prompt a further round of research which is of particular interest to Northern Ireland researchers and policy-makers alike.

8.2 Emerging Themes

8.2.1 Upskilling and the Sources of Learning

When compared with the other parts of the UK, it is difficult to say categorically whether the skill content of jobs – as measured by qualifications required, training time and learning time – is higher, lower or about the same as in Northern Ireland. On one measure, they are higher skilled – jobs in Northern Ireland require higher qualification levels to enter – while on two other skill measures, they are lower skilled – they are quicker to learn to do well and require a shorter period of training. However, none of these differences are statistically significant. Overall, then, it is reasonable to conclude that jobs in Northern Ireland – according to the broad skills measures – are of a similar skill level to jobs elsewhere.

Among the various skill domains, computing skills is the area where most upskilling has occurred in the UK as a whole. Computing skills now feature in an increasing proportion of jobs. Their centrality has increased and the sophistication of computing skill use has risen (see Felstead *et al*., 2007). However, the data do not allow us to track how computing skills have changed in Northern Ireland over recent years. Instead, we can report the situation as revealed by the 2006 Skills Survey. This suggests that jobs in

Northern Ireland lag behind those in the rest of the UK in the deployment of computer skills. Jobs in Northern Ireland are significantly less likely: to involve the use of computers or automated equipment; to rate computer use as ‘essential’; to require computers in order to carry out ‘complex’ or ‘advanced’ tasks; and to regard the internet an important aspect of the job. Since the digital revolution is spreading to most jobs in most industries in both the UK and elsewhere, this lag may hold back the future development of the Northern Ireland economy.

Other generic skills are becoming increasingly important in today’s jobs. It is therefore important to note that there are modest, but significant, country differences between the generic skills used in jobs in Northern Ireland compared with jobs elsewhere in the UK. In several skill domains, jobs in Northern Ireland require lower skill levels. Moreover, these differences apply within industries as well as in aggregate which suggests that the different industrial make-up of Northern Ireland alone cannot account for these significant skill differences.

Northern Ireland has within its borders approximately the same proportion of people with level 4 or above qualifications as in the UK as a whole – in 2006, 32.2% of those in Northern Ireland possessed these qualifications compared to 32.8% of those in the UK. It also has a similar proportion of jobs requiring this level of qualification on entry. So, at this level in both countries there is a three percentage point qualification gap. However, at the other end of the scale, the picture is very different. Whereas less than one in ten people (9.4%) in the UK as a whole have no qualifications to their name, around one in six (16.2%) people living in Northern Ireland are unqualified. The proportion of jobs requiring no qualifications on entry (as perceived by our respondents) in each country also differs, if only by three percentage points. In Northern Ireland a quarter (25.3%) of jobs can be secured without a qualification compared to a slightly higher proportion (28.2%) of jobs in the UK as a whole. This means that at the lowest level the qualification demand/supply discrepancy is much lower in Northern Ireland than it is in the UK as a whole.

As far as training and learning experiences are concerned, the picture presented for Northern Ireland is remarkably similar to that presented for the UK minus London and the South East and the UK as a whole. For example, training comes low on a list of important job features in all three areas, and when it is undertaken it is mostly the result of the employer’s rather than employee’s wishes. However, non-receipt of training need not be detrimental to job performance – relatively few thought that non-receipt would make it difficult to keep up-to-date with developments in the job and even fewer thought that it would hinder their career opportunities. On the other hand, those in receipt of training rated the experience highly in terms of being able to keep up-to-date, improving work practices and enhancing skills. Nevertheless, it is notable that employers have a stronger say (and employees a weaker say) in training decisions in Northern Ireland than in other parts of the UK.

8.2.2 Areas for Improvement and Further Research

In the light of these first findings, we can identify a number of potential areas for further research and for policy to focus upon, if improvement is to be brought about in the quality of jobs in Northern Ireland. Most immediately, the above findings suggest that both the supply and demand for computing skills needs to be reinforced on a continual basis. Other skills known to be valuable in the workplace (especially influence skills) also

deserve attention. Government is in a position to influence the supply of computing skills through the school curriculum and through its lifelong learning policies. It is less straightforward to affect the take-up of computing skills in workplaces, and it would be interesting to investigate further the reasons why computers are being used somewhat less in Northern Ireland, even within the same industries.

Another potential focal point for further research and policy attention concerns the distribution of skills use according to gender. Women in the UK as a whole have benefited most from rising skill levels. They have seen the skills they use at work rise significantly over the 1997-2006 period. Moreover, the skills used by part-time women workers have risen most (Felstead *et al*., 2007). It is not clear which gender is in more skilled jobs in Northern Ireland. In terms of the highest level of qualification required to get jobs, men and women are neck and neck with no statistically discernible difference between the genders. However, women record significantly higher scores for training time compared with men and men record significantly higher scores for learning time compared with women. Nevertheless, this masks marked differences in the skill content of jobs occupied by women who work part-time compared to those who work full-time. These differences are large and statistically significant across all three measures, and therefore confirm that the jobs done by women part-timers are, on the whole, lowly skilled. To consider how to ameliorate these differences, it would be of interest to investigate further the reasons for the different usages of skills by women and men in Northern Ireland, by comparison with the rest of the UK, either through qualitative or quantitative research. It might be expected that part of the difference is associated with patterns of gender-based segmentation and segregation among occupations.

Another unexpected finding is that women in Northern Ireland are, on average, able to exercise more autonomy at work than their male counterparts. For example, proportionately more women than men reported that they had ‘a great deal’ of influence over how hard they worked and to what standard. It may therefore be tempting to allow further improvement to take place rather than attempt to design policy interventions, which are hard to achieve when often autonomy is associated with management policies and practices well beyond the reach of government policies. Nevertheless, the importance of discretion and autonomy, both for well-being and for economic performance, is such that, at the very least, a continuous watching brief on autonomy levels exercised in jobs in Northern Ireland is warranted.

In addition to the above issues, which have arisen because of observed differences between Northern Ireland and the rest of the UK, there are a number of UK-wide research questions which are being pursued. These include: the consequences of ‘over-education’ for the economy, employers and individuals; the role of learning in the context of teamworking; the attitudes that workers have towards training and skill acquisition; and the role that employers’ human resource policies have in promoting training and learning at work. Moreover, it is our hope that this report will prompt other researchers – especially in the Northern Ireland context given that we now have rich skills data on 498 Northern Ireland respondents – to consider how their particular interests can be pursued. For this purpose, the data will be deposited in the UK Data Archive in 2008.

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APPENDIX

APPENDIX 1 – Sample Design[9]

A1.1 Structure

The sample comprised two elements: the core sample - a nationally representative sample of people in paid employment in Britain south of the Caledonian Canal; and a number of regional or country boosts, all but two of which were in areas covered within the core sample, the exceptions being a sample of interviews in the Highlands and Islands area and Northern Ireland.

The following sample sizes were required. **Table A1** illustrates this breakdown graphically.

- Core sample n = 4,750
- East Midlands boost n = 700
- Wales boost n = 200
- Scottish Enterprise boost n = 1,000
- Highlands and Islands boost n = 500
- Northern Ireland boost n = 500

Table A1: Breakdown of required sample sizes

	Core sample	Boost sample	Total
Great Britain (excluding Highlands and Islands)	Great Britain (4,750)	East Midlands (700)	6,650
		Wales (200)	
		Scottish Enterprise (1,000)	
Highlands and Islands		Highlands and Islands (500)	500
Northern Ireland		Northern Ireland (500)	500
Total	4,750	2,900	7,650

The design essentially replicated the approach used for the 2001 Skills Survey. However, the area boosts needed to be incorporated into the design so as to ensure representative samples from the core samples and the regional/country samples. The Northern Ireland sample was selected separately as fieldwork began at a later date compared with all other areas. **Section A1.5** describes the selection process for the Northern Ireland sample.

For the purposes of selecting primary sampling units (postcode sectors), the core sample and boost samples in core sample areas (i.e. excluding Highlands and Islands) were treated as a single survey sample (with a target achieved sample size of 6,650). Sampling then proceeded as envisaged for the core sample, but with differential sampling fractions applied at a regional/country level to ensure selection of the appropriate number of sampling points in each region/country. Once the postcode sectors had been selected, the stratified list of sectors were then divided on a systematic (i.e. 1 in *n)* basis into core and boost sampling points. This approach yielded stratified

[9] *This section and the next are adapted from the Technical Report of the survey company for the complete survey covering all of the UK (BMRB, 2006).*

core and boost samples in each of the relevant regions. The Highlands and Islands sample was selected separately (but following the same principles), as it did not form part of the core sample.

A1.2 Sampling Population

The sample needed to be representative of people of working age and living in private households in Great Britain. The definition was people aged 20-65 inclusive, who were in paid employment at the time of selection. Paid employment was defined as doing at least one hour per week of paid work.

A1.3 Sampling Frame

The small user Postcode Address File (PAF) was used as the sampling frame for the 2006 Skills Survey. The PAF was also used as the sampling frame in the 1997 and 2001 Surveys and is accepted in the social research field as being the best general population sampling frame in Britain. It has better coverage of both residential addresses and of the private household population of individuals than the Electoral Register (the only serious alternative to PAF), and what non-coverage it has is less concentrated in particular population sub-groups than is Electoral Register non-coverage[10].

A1.4 Stratification and Selection

The sample design employed was a conventional multi-stage design, as used in many high quality face-to-face interview-based social surveys (e.g. the British Crime Survey), using postcode sectors or combinations of postcode sectors as primary sampling units (PSUs). The convention amongst most PAF-based probability sample designs are for sample points to be stratified prior to selection by one or more stratifiers that correlate or are expected to correlate with key survey variables, since stratification generally improves the precision of survey estimates. In the 2006 Skills Survey, the sample of postcode sectors in the whole of Great Britain was proportionately stratified, as follows:

1) By Sub-Region (35 sub-regions). Definitions of sub-regions can be found in Appendix M of the Technical Report of the survey company (BMRB, 2007).
2) Within sub-region, sectors were listed in increasing order by the percentage of Household Reference Persons in non-manual socio-economic groups (NS-SEC operational categories 1, 2, 3.1, 3.2, 3.3, 3.4, 4.1, 4.2, 4.3, 5, 6, 7.1, 7.2, 7.3, 8.1, 8.2, 12.1, 12.6). Cut-off points were then drawn approximately one third and two thirds (in terms of delivery points) down the ordered list, to create three bands of roughly equal size.
3) Within NS-SEC strata, sectors were sorted by the percentage of non-retired men 16-74 who are unemployed.

Postcode sectors were selected with probability proportional to address count within each sub-region, based on a random start and a fixed interval. Sampling intervals were set for each sub-region according to the boost requirements for that sub-region. Because the same number of addresses were issued in each sector, the design gave each sampled address the same probability of selection at a sub-region level.

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[10] *Foster, K. (1994). The coverage of the Postcode Address File as a sampling frame. Survey Methodology Bulletin, No. 34, OPCS.*

Interviewer assignments within the core sample consisted of 52 addresses within 297 postcode sectors, so the issued core sample was 15,444 addresses. The 52 delivery points (DPs) were selected systematically from each sector. This was done by using an interval of M/52, with a random start between 1 and M/52, where M was the DP count for the PSU. Delivery point counts were based on PAFSOC (Postcode Address File Single Occupancy Count) in England and Wales and PAFMOC (Postcode Address File Multiple Occupancy Count) in Scotland.

Table A2 shows the number of postcode sectors and issued sample for each of the boost area samples.

Table A2: Issued sample for boost areas

Boost area	No. of selected postcode sectors	No. of issued addresses
East Midlands	44	2,288
Wales	13	676
Scottish Enterprise area	63	3,276
Highlands and Islands	32	1,664

The expectation was that just over half the addresses would be found to be eligible in meeting three criteria:

- residential and currently occupied;
- containing someone aged 20-65 years of age; and
- at least one person in paid work of one hour per week or more.

When the interviewer was faced with a choice about selection, the procedure was based on a 'Kish grid', a table of randomly-generated numbers individually prepared for each address. In aggregate, the effect of using a Kish grid is to give each eligible person an equal chance of selection. It is used both for selection of the dwelling unit, where the postal delivery point contains more than one, and, far more often, for selection of a single adult person, when the dwelling unit contained two or more eligible for selection. The process of selection was fully documented on an 'Address Contact Sheet' (ACS), a paper document used by the interviewer to record all attempts to contact those at the address. As a measure to protect the identity of sample members the ACS was returned by interviewers to the office, separately from the computer data file. A copy of the Address Contact Sheet used by interviewers is included as Appendix G of the Technical Report of the survey company (BMRB, 2007). Because there are differences in the probability of selecting each individual, depending on the number of dwelling units at the address and the number of adults in the selected dwelling unit, weights are used in the analysis. With the weights, the data file is representative of adults in Great Britain and each individual in the file had an equal chance of selection.

A1.5 Northern Ireland Sampling Approach

The sample for Northern Ireland was selected in a manner similar to the British sample, using a conventional multi-stage design. The small user NI Postcode Address File (PAF) was used as the sampling frame. A list of all postal sectors in Northern Ireland was generated and, before selection, was stratified as follows:

1) By region. The postal sectors were stratified by the five NUTS3 areas (Belfast, Outer Belfast, North, West & South, East).
2) Within region, sectors were listed in increasing order by the percentage of Household Reference Persons in non-manual socio-economic groups (NS-SEC operational categories 1, 2, 3.1, 3.2, 3.3, 3.4, 4.1, 4.2, 4.3, 5, 6, 7.1, 7.2, 7.3, 8.1, 8.2, 12.1, 12.6). Cut-off points were then drawn approximately one third and two thirds (in terms of delivery points) down the ordered list, to create three bands of roughly equal size.
3) Within each of the resulting 15 NS-SEC strata, sectors were sorted by the percentage of non-retired men 16-74 who are unemployed.

44 postcode sectors were selected with probability proportional to address count within each region, based on a random start and a fixed interval. The design gave each sampled address the same probability of selection at this level.

Interviewer assignments within the Northern Ireland sample consisted of 42 addresses within 44 postcode sectors, so the issued sample for Northern Ireland was 1,848 addresses. The 42 delivery points (DPs) were selected systematically from each sector. This was done by using an interval of M/42, with a random start between 1 and M/42, where M was the DP count for the PSU. A single dwelling unit was selected (in the same way as for the British sample using a 'Kish grid'), when the address contained two or more. A single adult person was selected when the dwelling unit contained two or more eligible for selection.

A1.6 Reserve Sample

In order to maximise interview numbers in each of the survey areas, a reserve sample was selected. The reserve sample was not selected at the same time as the main stage sample.

The precise stratification and selection process taken at the main stage sampling stage was used by taking the **'mid-points'** between selected areas (allocated to the core and boost samples in the same way as was done for the main stage sample). For example, for the first midpoint for England, 11, the midpoint was taken between the number selected on the cumulative list for the 11th selected PSU and that for the 12th selected PSU in England. So, if the number selected on the cumulative list for the 11th selected PSU was 100,000 and the number for the 12th selected PSU was 220,000 then the PSU that corresponded to number 160,000 was taken.

The above process yielded a sample which was too large to be issued as a reserve sample (as the reserve sample did not need to be as big as the initial sample) and therefore an appropriate reserve sample was selected from this. The issued reserve core sample consisted of 1,248 addresses, bringing the total number of issued core sample

for the survey to 16,692 addresses. **Table A3** shows the amount of issued reserve sample for each of the boost areas, including Northern Ireland.

Table A3: Issued reserve sample for boost areas (including Northern Ireland)

Boost area	Amount of issued reserve addresses	Total amount of issued addresses
East Midlands	312	2,600
Wales	104	780
Scottish Enterprise area	416	3,692
Highlands and Islands	260	1,924
Northern Ireland	84	1,932

APPENDIX 2 – Data Collection and Fieldwork Management

A2.1 Interviewer Briefings

All interviewers working on the survey in Great Britain undertook a whole 'assignment' of 52 addresses. Interviewers working in Northern Ireland undertook ‘assignments’ of 42 addresses. All interviewers attended one of a series of briefing sessions on the survey, which were held at various locations around the country. These briefings were each conducted by one of BMRB's researchers, following an agreed briefing plan and using a common set of materials.

Personal briefings of interviewers play various roles and are critical to the success of the survey. Although much of the attention is devoted to practical aspects of a given survey, they have an important motivating function. By seeing that interviewers are aware of the purpose of the research, they are able to explain the study effectively to members of the sample. Standard procedures, such as reporting to the police in advance of interviewing, are also reinforced by attendance at briefings. Personal briefings are standard on most of BMRB’s face-to-face random probability surveys.

Briefings were conducted in several stages. The first round of briefings started on 6 March and was completed on 16 March. A second round was held between 18 April and 21 April. A few ad-hoc briefings were also arranged in the summer months between June and September.

The briefings covered:

- the background to the study and its aims;
- the survey population, what constitutes 'paid work' to determine eligibility;
- introducing the survey to members of the public, use of the advance letter and leaflet;
- sample selection procedures, using some worked examples;
- questionnaire structure; and
- survey administration (led by a fieldwork supervisor).

The definition of the target population (between 20 and 65 years of age inclusive and in paid work) was given particular attention at all of the briefing sessions to ensure that interviewers understood the eligibility criteria. Extra time was taken to clarify the ‘paid work’ definition and examples were worked through to prepare interviewers for a variety of situations that they could have encountered.

All interviewers were provided with a copy of the project instructions for the survey. A video briefing was also put together by BMRB researchers and sent out to interviewers who would be working on the survey, summarising the key points from the main face-to-face briefing.

A2.2 Dates of Fieldwork

Interviewing started immediately after the first briefing session and continued to 15 October 2006 in order to maximise the response rate for the core sample. Boost sample fieldwork continued up to and including 7 March 2007. The Northern Ireland sample

fieldwork started on 4 September 2006 and was completed on 20 March 2007. Allowing contacts to continue over a period of weeks is important to minimise non-contact with people who are often away from home or absent for a period of time. In some cases interviewers had an area in which a relatively high proportion of the addresses included someone who was eligible for interview. In these cases, the interviewing work needed to be spread across a number of weeks. **Table A4** illustrates the breakdown of interviews over the seven months fieldwork period for the core sample. **Table A5** illustrates the breakdown of interviews for all core and boost sample (including Northern Ireland).

Table A4: Month of interview for core sample

Month of interview	Number of interviews	Percentage of total interviews (%)
March	427	9
April	1,178	25
May	1,070	22
June	729	15
July	654	14
August	358	7
September	298	6
October	86	2

Table A5: Month of interview for core and boost sample (including Northern Ireland)

Month of interview	Number of interviews (core and GB boost areas)	Number of interviews (Northern Ireland)	Percentage of total interviews (%)
March 2006	485	-	6
April	1,337	-	17
May	1,266	-	16
June	924	-	12
July	908	-	12
August	837	-	11
September	603	31	8
October	370	94	6
November	284	87	5
December	69	52	2
January 2007	104	128	3
February	87	73	2
March	15	33	1

A2.3 Re-issued Addresses

In addition to allocation of addresses to interviewers at the outset of the project, selected cases were 're-issued', usually to a very experienced interviewer, both to ensure that reasonable response rates were achieved in more difficult areas and to maximise the

overall response rate. Feedback from the original issue determined whether it would be appropriate to re-issue those addresses again, using information collected on the contact sheet. Rather than quickly re-issuing individual outcomes to available interviewers, time was spent matching cases up to the more successful interviewers on the project. A small team of re-issue interviewers was utilised, conducting a far more targeted approach. The re-issue strategy involved assessing cases on a micro level to establish the anticipated success rate with the preferred choice of interviewer.

From the core sample, 4,610 addresses were re-issued and they resulted in an additional 926 interviews being achieved (20 per cent). **Table A6** shows what the original outcome was for these re-issued cases. **Table A7** shows what outcome was achieved after those addresses had been re-issued.

Table A6: Re-issued cases (core sample) – original outcome

Outcome category	All cases	
	n	%
Base: Re-issued addresses from core sample	4,610	100
No Contact		
No contact with selected respondent	397	8.6
Unknown eligibility due to no contact	1,008	21.9
Refusals		
Refusal – respondent, proxy, office	1,620	35.1
Broken appointment	352	7.6
Unknown eligibility due to refusal	913	19.8
Other unproductive	320	6.9

Table A7: Re-issued cases (core sample) – final outcome

Outcome category	n	%	%	%	%
Base: Re-issued addresses from core sample	4,610	100			
Out of scope addresses	149	3.2			
In-scope addresses	4,461	96.8	100		
Not screened	1,202		26.9		
Screened	3,259		73.1	100	
Screened ineligible	382			11.7	
Selected eligible respondent	2,877			88.3	100
No Contact	444				15.4
Refusals	1,310				45.5
Other unproductive	197				6.8
Productive outcomes	**926**				**32.2**

Tables A8 and **A9** show what addresses were re-issued from the GB boost sample and what final outcome was achieved respectively. There was a similar proportion of cases in the core and boost sample which were reissued due to there being 'unknown eligibility due to no contact' – around one in five of the addresses that were re-issued were for this reason. However, in the boost sample there was a smaller proportion of re-issued cases which started out as 'unknown eligibility due to refusal'.

Comparing **Tables A7** and **A9**, it appeared that re-issuing was more successful for the core sample than the boost sample with 20 per cent of re-issued cases being converted into a productive interview in the core, compared with only 15 per cent of re-issued cases being converted. Looking at the possible reasons for this, it could be seen that although the proportion of reissued cases which were due to no contact and refusal in the two samples were similar, nearly 60 per cent of the re-issued cases in the GB boost sample where an eligible respondent was selected ended up as a refusal, compared with only 46 per cent in the core sample.

Table A8: Re-issued cases (GB boost sample) – original outcome

Outcome category	All cases	
	n	%
Base: Re-issued addresses from GB boost sample	2,064	100
No Contact		
No contact with selected respondent	231	11.2
Unknown eligibility due to no contact	432	20.9
Refusals		
Refusal – respondent, proxy, office	810	39.2
Broken appointment	192	9.3
Unknown eligibility due to refusal	258	12.5
Other unproductive	141	6.8

Table A9: Re-issued cases (GB boost sample) – final outcome

Outcome category	n	%	%	%	%
Base: Re-issued addresses from GB boost sample	2,064	100			
Out of scope addresses	87	4.2			
In-scope addresses	1,977	95.8	100		
Not screened	328		16.6		
Screened	1,649		83.4	100	
Screened ineligible	183			11.1	
Selected eligible respondent	1,466			88.9	100
No Contact	92				6.3
Refusals	878				59.9
Other unproductive	180				12.3
Productive outcomes	**316**				**21.6**

For the Northern Ireland sample there was a slightly different approach adopted due to a different fieldwork agency handling the fieldwork operation (MB Ulster). Instead of wide-scale re-issuing of contacts, interviewers held onto contact sheets over an extended number of weeks, calling numerous times over regular intervals. Only in a handful of cases was it felt that reissuing the contact to a different interviewer would have a benefit, in which case it did occur.

A2.4 Household Letter and Leaflet

Owing to the wide range of sponsors of the 2006 Skills Survey advance letters were tailored with a letterhead appropriate to the country which that sponsor operated in. Therefore, for sampled addresses in England, letters on joint Department for Education and Skills and Department of Trade and Industry letterhead were prepared. For addresses in Scotland, letters were prepared on Scottish Executive letterhead. For Welsh addresses the letterhead was that of Futureskills Wales, whilst Northern Irish addresses were sent letters by the Department for Employment and Learning.

For each address, the interviewer also had an envelope, over-printed with the sponsor's logo. Interviewers were instructed to send these letters in batches which they could follow-up personally within a couple of days. It is felt that timely contact following a letter of this type is likely to contribute to a high response rate. The letters explained the purpose of the survey and the importance of taking part. It also mentioned whom to contact if the members of the household were unwilling to take part in the survey. A freephone number was provided at BMRB for any enquiries which members of the public wished to make.

Interviewers were also asked to send a leaflet along with the respondent letter in advance. This was prepared by BMRB and gave more details about some of the issues included in the questionnaire and referred to sources where further information could be found.

A2.5 Selected Respondent Letter

The initial letter was necessarily addressed to 'The Resident', as there was not a named person to interview at that stage. One of the innovative procedures implemented in the 2001 survey to try to maximise the response rate was a personally addressed letter to introduce the survey to the selected respondent. This procedure was used again for the 2006 Skills Survey. This letter was posted by the interviewer when the selected person had not been present at the time of selection. The idea behind this letter was that it would help to reinforce the importance of taking part in the survey, and would minimise possible problems of the interviewer's call not being mentioned to the person selected as respondent, or the purpose of the interview not being explained adequately.

A2.6 Refusal Conversion Letter

It is standard BMRB practice to re-issue any unproductive outcomes (e.g. refusals, non-contacts) to alternative interviewers. This can be a significant vehicle for boosting response and addresses are re-issued twice, sometimes three or four times. Tied in with the re-issue approach is the use of specially targeted letters to respondents who refused to participate in the survey. These letters are a useful way of re-introducing the survey to

respondents and provide a starting point for the interviewer when they make their first re-issue visit.

A2.7 Introducing the Survey and Incentives

Interviewers were given guidelines on how best to introduce the survey and answer questions which the respondent may have. The survey initially offered no financial incentives for respondents to participate. However, they were introduced for the reserve sample and re-issued addresses from June 2006 onwards as another method of maximising response rates.

A £5 conditional incentive payable to the respondent on completion of the interview was employed. This was in the form of a £5 high street gift voucher. The advance letter and selected respondent letter were amended to make respondents aware of this incentive.

A2.8 Self-completion Questions

Blocks C and K contained questions which respondents were encouraged to answer by self-completion, keying a numeric answer on the computer. The questions were suitable for this approach because they followed a simple pattern.

Of the total sample in Great Britain and Northern Ireland, four in five respondents (82 per cent) completed Block C on the computer, with this dropping to 81 per cent for Block K. This was an increase from the 2001 survey when 77 per cent of respondents completed Block C themselves.

A2.9 Length of Interview

In estimating the workloads of interviewers, it was planned that interviews should have an average length of 55 minutes. Some variation in the length of interview was allowed for according to factors such as whether respondents had been working in the past, in which case they would qualify for additional questions (in Blocks H and J). In the event, the median length of interviews was 53 minutes. This was based on the time difference between the start and finishing times, as recorded on the interviewers' computers.

The distribution of interview lengths shows considerable variation around the median. Various timings for the core sample are presented in **Table A10**, broken down by respondent characteristics. **Table A11** shows the same timings but for the whole of the UK sample.

Table A10: Length of interview (core sample)

Type of interview	Mean length (minutes)	Median length (minutes)	Unweighted base
Full productive interviews	59	53	4,800
Time unavailable	-	-	16
11 to 29 minutes	26	28	91
30 to 44 minutes	39	40	1,152
45 to 59 minutes	52	52	1,924
60 to 74 minutes	65	65	978
75 minutes and over	116	89	639
Block C by respondent	60	53	3,910
Block C by interviewer	56	52	890
Respondent in same job 5/4/3 years ago	60	53	2,840
Respondent in different job 5/4/3 years ago	59	53	1,789
Respondent was not in work 5/4/3 years ago	55	49	171
Employed in Organisation	60	53	4,319
Not employed in Organisation	53	46	481

Table A11: Length of interview (core, GB boost and Northern Ireland sample)

Type of interview	Mean length (minutes)	Median length (minutes)	Unweighted base
Full productive interviews	58	53	7,787
Time unavailable	-	-	24
11 to 29 minutes	25	27	168
30 to 44 minutes	39	39.5	1,834
45 to 59 minutes	52	52	3,123
60 to 74 minutes	66	65	1,645
75 minutes and over	110	87	993
Block C by respondent	59	54	6,363
Block C by interviewer	55	50	1,424
Respondent in same job 5/4/3 years ago	59	53	4,672[11]
Respondent in different job 5/4/3 years ago	58	53	2,822
Respondent was not in work 5/4/3 years ago	54	48	291
Employed in Organisation	59	54	6,963
Not employed in Organisation	52	47	824

[11] *Unweighted base sizes for respondent's employment status 5/4/3 years ago does not add up to the total base of 7787 (4672+2822+291=7785) due to there being two interviews where this information was not collected. Those interviews contained only partial data where respondents broke the interview off early before the relevant questions could be asked.*

From **Table A10**, there did not appear to be much difference between respondent-completion and interviewer-completion of Block C on the average length of interview. The median interview length was 52 minutes for interviewer-completion and slightly longer for respondent-completion at 53 minutes. More telling were the combined timings from the whole UK sample in **Table A11**. This more clearly indicated that interviewer-completion was quicker with a median time of 50 minutes compared with 54 minutes for respondent-completion. This was contrary to the way the survey was briefed: researchers briefed interviewers to try to encourage respondent-completion by stating its benefits of shortening the interview length and helping to break up the monotony of a long interview.

Looking at **Tables A10** and **A11**, it can be seen that the average interview length was around 4-5 minutes shorter for those respondents who were not in work at least 3 years ago compared with those who were. This was to be expected as much of Blocks H and J of the questionnaire depended very much on this criterion.

Similarly, looking at the employment status variable from the two tables above indicated that, on average, those classed as being 'Employed in Organisation' took 7 minutes longer to complete the interview. Again, this was due to the filtering present in the questionnaire, particularly Block E.

Table A12 shows the average length of each section of the questionnaire from the whole of the UK sample.

Table A12: Length of questionnaire sections (core, GB boost and Northern Ireland sample)

Block	Mean length (minutes:seconds)	Median length (minutes:seconds)
A: Checking Eligibility	1:28	0:25
B: Broad Questions about the Job	14:34	13:37
C: Detailed Job Analysis Questions	6:25	5:51
D: Computing Skills and Qualifications Questions	6:03	5:35
F: Work Attitudes	2:52	2:37
E: The Organisation	4:53	4:47
G: Pay Questions	1:29	1:18
H: The Job Five Years Ago	1:15	1:07
J: Recent Skill Changes and Future Perspectives	6:37	6:20
K: Personal Details	4:28	3:57
Q: Details of Organisation and Conclusion	4:40	3:45

A2.10 Supervision and Quality Control

One of the key methods of quality control on data collection is regular accompaniment of each interviewer by a supervisor. This was mainly conducted on interviewers with less experience of this type of work. A second quality control measure is re-contact with members of the sample, to check on certain details of the information collected by the interviewer. Eleven per cent of the productive interviews in the core sample (542 cases) were back-checked, of which 474 were conducted by telephone and the remainder by

post. No cases were considered unsatisfactory. Similarly, eleven per cent of the productive interviews in the boost sample (270 cases) were back-checked, with no cases considered unsatisfactory. The electronic communications used for CAPI signalled receipt of questionnaires at head office the morning after interviewing took place. As well as giving instant knowledge about numbers of questionnaires completed, the data was examined in terms of interview length and contact time thus giving tighter control of the survey and interviewer performance.

APPENDIX 3 – Survey Outcomes

A3.1 Response Rate

Tables A13 and **A14** below show detailed response breakdowns of the UK sample (thus incorporating the core sample, GB boost sample and Northern Ireland sample). The UK survey, as a whole, achieved an overall gross response rate of 61.8 per cent and a net response rate of 56.0 per cent.[12]

Table A13: UK sample – Gross Response Rate

Outcome category	ACS Code	Number	%	%	%	%
Original issued addresses		27,620	100.0			
Out of scope addresses:		2,631	9.5			
- insufficient address	11, 12	48	0.2			
- not traced	13	237	0.9			
- not built	1	46	0.2			
- derelict/demolished	2	186	0.7			
- empty dwelling	3	1,311	4.7			
- business premises	4	379	1.4			
- institution	5	39	0.1			
- holiday home	6	279	1.0			
- other out of scope	10	106	0.4			
In scope of screening		24,989	90.5	100.0		
Not screened:		2,330		9.3		
- no contact with an adult	14, 16, 18, 19, 20	965		3.9		
- refusal (including head office)	15, 17, 31	1,365		5.5		
Screened		22,659		90.7	100.0	
No-one aged 20-65 in paid work	7, 32	10,057			44.4	
Selected eligible respondent		12,602			55.6	100.0
Non-contact after screening	35	470				3.7
Refusal after screening:		3,497				27.7
- personal refusal	36, 38	2,000				15.9
- proxy refusal	37	869				6.9
- broken appointment	39	628				5.0
Other unproductives:		848				6.7
- ill during survey	40	36				0.3
- away/in hospital	41	350				2.8
- senile/incapacitated	42	29				0.2
- inadequate English	43	78				0.6
- other unproductive	44	355				2.8
Productive interviews	51, 52	7,787				61.8

[12] *For a discussion of the difference of interpretation between net and gross response rates, see Felstead et al. (2007).*

Table A14: UK sample – Net Response Rate

Outcome category	ACS Code	Number	%	%	%	%
Original issued addresses		27,620	100.0			
Out of scope addresses:		2,631	9.5			
- insufficient address	11, 12	48	0.2			
- not traced	13	237	0.9			
- not built	1	46	0.2			
- derelict/demolished	2	186	0.7			
- empty dwelling	3	1,311	4.7			
- business premises	4	379	1.4			
- institution	5	39	0.1			
- holiday home	6	279	1.0			
- other out of scope	10	106	0.4			
In scope of screening		24,989	90.5	100.0		
Not screened:		2,330		9.3		
- no contact with an adult	14, 16, 18, 19, 20	965		3.9		
- refusal (including head office)	15, 17, 31	1,365		5.5		
Screened		22,659		90.7	100.0	
No-one aged 20-65 in paid work	7, 32	10,057			44.4	
Selected eligible respondent		12,602			55.6	100.0
Not screened, but assumed eligible		1,296				
Estimated eligible addresses		13,898				100.0
Not screened, but assumed eligible		1,296				9.3
Non-contact after screening	35	470				3.4
Refusal after screening:		3,497				25.2
- personal refusal	36, 38	2,000				14.4
- proxy refusal	37	869				6.3
- broken appointment	39	628				4.5
Other unproductives:		848				6.1
- ill during survey	40	36				0.3
- away/in hospital	41	350				2.5
- senile/incapacitated	42	29				0.2
- inadequate English	43	78				0.6
- other unproductive	44	355				2.6
Productive interviews	51, 52	7,787				56.0

A3.2 Survey Representativeness

Although the sample design should ensure that it is representative of workers in Northern Ireland, we first checked whether the sample is broadly representative. We classified the data against some standard socio-economic variables and compared with figures from the **July-September 2006 Quarterly Labour Force Survey (QLFS).** Since the QLFS has a substantially larger sample size, and since it gleans information from every member of households, it can be argued that the QLFS sample is likely to be closely representative of the workforce.

Table A3.5, below, presents this comparison, where the figures in brackets are the figures from the QLFS. **The base is those in employment and aged between 20 and 65 inclusive**. We compare the representation in the two samples of the different age groups, ethnicity, working time status, occupation and industry. The base is those in employment in all Northern Ireland and aged between 20 and 65 inclusive. As can be seen, the Northern Ireland Skills Survey sample is close to the QLFS sample according to most categories. However, males are a little under-represented, as well as both females and males aged 20 to 29.

Table A15: Socio-Economic Distribution of the Sample

	All (%)	Males (%)	Females (%)
All	100	100	100
Gender			
Male	47.4 (54.3)	100	0
Female	52.6 (45.7)	0	100
Age group			
20-29	19.8 (24.4)	18.4 (23.7)	21.2 (25.3)
30-39	27.1 (27.5)	29.5 (27.1)	24.9 (28.1)
40-49	27.8 (25.8)	23.3 (25.6)	31.9 (26.0)
50-60	22.6 (18.7)	24.8 (19.4)	20.7 (17.9)
61-65	2.7 (3.5)	4.1 (4.2)	1.4 (2.7)
Ethnicity			
White	98.0 (98.6)	97.2 (98.5)	98.8 (98.7)
All non-white	2.0 (1.4)	2.8 (1.5)	1.2 (1.3)
Working Time			
Full-Time	78.6 (80.5)	91.7 (95.4)	66.7 (62.9)
Part-Time	21.4 (19.5)	8.3 (4.7)	33.2 (37.2)
Occupation (SOC2000)			
Managers	12.5 (11.2)	-	-
Professionals	14.1 (12.7)	-	-
Associate Professionals	14.4 (13.5)	-	-
Administrative & Secretarial	10.7 (12.1)	-	-
Skilled Trades	11.5 (16.7)	-	-
Personal Services	13.8 (7.6)	-	-
Sales	6.9 (7.4)	-	-
Plant & Machine Operatives	6.6 (9.0)	-	-
Elementary	9.1 (9.8)	-	-
Industry (SIC92)			
Agriculture & fishing	2.2 (3.7)	-	-
Energy & water	0.2 (0.8)	-	-
Manufacturing	12.9 (13.7)	-	-
Construction	9.3 (9.3)	-	-
Distribution, hotels & restaurants	14.2 (19.2)	-	-
Transport & communication	3.1 (4.1)	-	-
Banking, finance & insurance etc	11.4 (8.9)	-	-
Public admin, education & health	42.2 (36.3)	-	-
Other services	3.2 (4.2)	-	-

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