How Much Does Higher Education Enhance the Employability of Graduates?

Report to HEFCE

Contents

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Chapter 1:
Introduction

The principal aim of this study was to investigate universities' efforts to enhance graduate employability and the extent to which they are successful. This report provides new evidence on how higher education courses seek to improve the employability of their graduates, and evaluates the success of these in the light of graduates' experiences in finding their first employment and their experiences in their early years of employment.

The methodology was designed to obtain a threefold 'fix' on the relationship between recent graduate recruits' work performance and their learning experiences in higher education. One triangulation point was the universities' own perceptions of the opportunities for employment-relevant learning that they are offering their students. The second was information on graduates' first employment and their own early work experiences, and their perceptions of the contributions to skills development that had been made by their higher education programmes. The third was to gather systematic opinions of more senior people with direct knowledge of the work performance of individual graduates: the category selected for this was the line managers of individual graduates.

The study had to be selective. Students study a wide range of subjects, and graduates enter a wide range of occupations. It focuses on graduates in five subject areas: biological sciences, business studies, computer science/studies, design studies and history. These subjects were selected in order to obtain a mix of long-standing vocational areas, more recently established vocational subjects and courses where First Destinations data point to a wide range of experiences of initial entry to employment.

Chapter 2 reports on visits to 34 departments in eight universities in order to ascertain what changes have been made in recent years to employability skills teaching and learning. Chapter 3 is an analysis of First Destination survey data for all graduates in the year 2000 from the sample departments. Chapters 4 to 7 give the results of a telephone survey of recent graduates in the subjects being investigated and the parallel survey of their immediate line managers.

Recent Issues in the Development of Graduate Employability

Employability skills and Higher Education

Until the massive expansion of UK higher education in the late 1980s and early 1990s the employability of graduates was largely taken for granted by higher education institutions. Most graduates found satisfactory employment within a short time after graduation and earned sufficiently high incomes to show high private and social rates of return. The types of employment available to graduates were fairly well defined and preparation for employment meant the acquisition, often implicitly, of the knowledge and technical and social skills needed for these occupations. While some employers had complained from the 1970s onwards that many graduates did not have the precise skills they needed, most employers were keen to snap up whatever graduates were available.

The idea that graduates should be expected to possess certain general qualities and attributes as a result of their higher education experience is long established. A century and a half ago, Cardinal Newman suggested that higher education enabled individuals, 'to see things as they are, to go right to the point, to disentangle a skein of thought, to detect what is sophistical and to discard what is irrelevant… to fill any post with credit and to master any subject with facility' (quoted in Griffiths 1999). More recently, the Dearing Report (HMSO 1997) defined the aim of higher education as being, 'to inspire and enable individuals to develop their capabilities to the highest potential levels throughout life, so that they grow intellectually, are well equipped for work, can contribute effectively to society and achieve personal fulfilment'. Both viewpoints, separated by nearly 150 years, recognise the link between higher education and skill development in a way that is often overlooked.

In the 1980s, along with many other changes in the UK economy, complacency about the employability of graduates began to be systematically challenged. The harbinger was the Enterprise in Higher Education Initiative, which offered universities and polytechnics, very short of funds after the massive cuts of the early 1980s, additional resources for developments that laid more emphasis than previously on the needs of a rapidly changing economy. However, it was the rapid shift between 1989 and 1994 to mass enrolment that contributed most to public interest in graduate employability issues.

Since 1990 there have been many reports and papers urging the higher education sector to take key, core, transferable and employability skills into the heart of students' learning experiences. They have come from the Government, industry (AGR 1993, 1995, CBI 1989, 1995, 1999) and from higher education agencies (CVCP 1998, CIHE 1996, Harvey and

Locke, 2002) and higher education researchers (e.g. Harvey *et al* 1997, Smith et al 2000, McKnight et al, 2001, Brennan, 2000, Brennan et al 2001). The common concern has been that under the intensifying pressure of global competition very large numbers of graduates need to offer employers more than the academic skills traditionally represented by the subject and class of degree.

The belief that the Newman skills have always been 'implicit' in the process of knowledge acquisition and, as a corollary, that higher education has always been concerned with the development of the whole person as well as the knowledge, attributes and skills which any educated person should expect to have by the time of graduation, became known in the mid-1990s as 'graduateness'. It represented an apparent consensus about the value of generic skills (of all kinds) and expressed at a high level of generalisation.

The main focus of the reports of the early 1990s was to propose that universities and colleges should aim to assist graduates to develop the core/transferable/key/generic skills needed in many types of high-level employment. In this report they will all be grouped together under the heading 'employability skills', since it is widely assumed that these skills denote graduates' work readiness (CBI 1989, Hyland 1994, Tribe 1996). Governments from the late 1980s onwards launched various programmes to motivate higher education institutions to sharpen the focus of employability skills in the undergraduate and postgraduate curriculum.

Initially, the consensus about the idea of 'graduateness' appeared to provide a way of bridging the challenge that massification had presented; namely a proliferation of different interpretations and values as regards the programmes students were following particularly in modular programmes (Harvey and Knight 1996). It was reasoned that if higher education could make the skills it naturally developed more explicit, then it could be seen to be responding to employers' and policymakers' concerns. Soon, however, the concept of 'graduateness' was felt not to be sufficiently robust to define the nature of a degree, the necessary threshold standard of a degree or the quality of the degree, especially in a period of unrivalled expansion. (HEQC 1997).

Against this changing background, higher education has been subjected to considerable pressure to offer evidence that graduates have acquired relevant employability skills. The Dearing Report endorsed the economic arguments for developing students' employability skills. Although the Report acknowledged that employers do not always present consistent messages when it comes to identifying skill needs, it concluded that there was a set of threshold or 'basic' skills, which encapsulated the skills employers wanted all graduates to

have, and that provision of these should become a central aim for higher education. Dearing defined these skills as *Communication*, *Numeracy*, *IT* and *Learning how to Learn* at a higher level.

A widely held assumption in the literature has been that graduates who acquire such 'threshold' employability skills during their higher education, have improved chances of gaining employment that is appropriate for graduates. This assumption has frequently been cited to counter those who are sceptical about the further expansion of higher education (Keep 1996). The empirical evidence is, however, ambivalent. A number of studies have identified demand from employers in certain sectors of the UK economy for graduates who have specific employability skills (Mason 2001, Westhead 1997). However, other studies have claimed that work experience, for example, is not always viewed positively by employers (Arnold *et al* 1999).

Employers' perceptions about the 'quality' of graduates from certain universities or university departments still often influence graduate transitions into employment more than whether graduates have followed employability skills courses (Brown and Scase 1994, Purcell *et al* 1999). Employers who report higher levels of satisfaction with the performance of graduates are more likely to recruit from institutions commanding higher A-level entry scores, thus helping to perpetuate the idea of a graduate elite who possess a broader form of social and cultural capital than graduates from universities with non-traditional entrants that have specifically tried to develop employability skills (Brown and Scase 1994, Hesketh 2001).

Employers have also expressed concern about graduates' ability to cope with change and to add value by continuing to learn and develop in the workplace (AGR 1995, Harvey *et al* 1997, Guile and Fonda 1998). Apart from stipulating a continuing demand for key skills, reports and papers also began to articulate the need for additional 'skills' that employers expected graduates to display. Two new types of skills were mentioned: meta-cognitive skills such as learning how to learn (AGR 1995), and 'behavioural attributes', such as an ability to take responsibility for managing performance at work and career development (Harvey *et al* 1997).

This focus drew attention to the way firms were using qualifications. Instead of viewing them simply as a statement of graduates' achievement at the point of recruitment, qualifications were frequently used as indications of *potential* to achieve in a particular occupational field during their working lives (Chisholm 1999). Furthermore, the increasing proliferation of employability skills lists highlighted the confusion surrounding nomenclature and

classification of types of skill (e.g. personal attributes, process skills, technical competencies) that purportedly enhanced graduates' employability (Atkins 1999, Bennett *et al* 2000).

In general, the term employability skills has become a 'chameleon' concept. Sometimes it is employed to define either a limited set of 'threshold' skills or a wide range of 'knowledge', 'skills' and 'attributes' that graduates are expected to demonstrate that they have acquired while studying in higher education (CVCP 1998, Hillage and Pollard 1998). On other occasions, it represents the demand, in many professional occupations, for a mix of the traditional disciplinary and technical knowledge, which have always been developed in higher education, as well as employability skills (Mason 2000). The term 'employability' has also been used to convey the idea of graduates' 'propensity' to find work (Harvey 2001).

The term 'skills' is itself frequently used to refer to both the characteristics of jobs (e.g. task demands and role requirements) and the qualities of people who perform them (e.g. abilities, talents and capabilities). For example, most employability skills lists propose qualities such as 'teamworking', 'flexibility' or 'problem-solving' as skills that individuals are expected to have developed. These qualities, however, are not strictly speaking 'skills' so much as a description of how work is organised. What constitutes a 'team' is subject to local definition, and needs to be defined in relation to the working context.

Innovations in teaching and learning

The two most common approaches to skill development have been either to 'embed' skills within degree courses or to offer students 'parallel' or 'stand-alone courses. These two approaches are best viewed as representing two ends of a spectrum. At one end, total embedding can refer to a style of delivery whereby the students may not be aware that they are developing employability skills. At the other, 'bolting-on' skill modules to the curriculum can result in learning of skills isolated from mainstream academic concerns, and students' motivation to study them is marginalized.

The stand-alone model has been used to deliver extra-curricular employability skill courses to students by Careers Services. Patterns of careers provision and student attendance vary widely from one HEI to another. Nevertheless, careers programmes have often been perceived by students as helping them to:

- Understand employers' changing skill demands;

- Produce CVs and develop presentation skills;
- Prepare themselves for undergoing psychometric tests in employers' assessment centres (Arnold *et al* 1999).

The effectiveness of stand-alone university courses run by employers and activities, such as the 'outdoor' adventure courses that universities offer to students to develop their employability skills, has been found to vary considerably (Hattie *et al* 1997; Bennett *et al* 2000; Goldfinch *et al* 1999). It seems that, all too often, although evaluations of courses designed to develop teamworking skills record that students value the opportunity to develop these skills in university or adventure settings, there has been very little follow-up to establish whether general teamworking abilities have improved. Where stand-alone courses have been perceived to support skill development, it is normally because departments have explicitly provided students the opportunity to use the skills they had been introduced to later on as part of their course of study.

Many higher education institutions reviewed course design in the early 1990s in an attempt to enhance student choice and to introduce greater flexibility of course delivery. One outcome of these developments was a significant extension of modular degree programmes and semesterisation. In general, departments and teams chose to modularise their courses in two main ways. They have either 'divided up' existing courses into smaller blocks or they have formulated new criteria, often based on the identification of conceptual learning outcomes and employability skill learning outcomes, in order to redesign teaching, learning and assessment processes (Jenkins and Wallace 1994, Toohey 1997, Dunne 1997). Research evidence suggests that the 'dividing-up' approach has rarely resulted in any significant development of employability skills. Staff have continued to adhere to traditional learning and teaching styles, since they felt under pressure to 'cover content' with reduced time (Bennett *et al* 2000; Drummond *et al* 2000; Chance 1993).

There are some claims that the second approach, which can be referred to as, 'explicit embedding and integration' has proved more effective in developing employability skills. Where courses have been re-designed along these lines and a wider range of learning and teaching strategies (for example, small group work, projects and presentations) have been employed to support students to develop skills, students have affirmed that they:

- are aware of the range of employability skills that departments are promoting through the curriculum (Drummond *et al* 2000);

- can identify the learning activities which have been used to help them to develop employability skills (Arnold *et al* 1999, Kemp and Seagrave 1995);
- can cite evidence of the employability skills they have developed (Fallows and Steven 2000).

However, much of this evidence is based on student self-reports *before* they have graduated. Students were being asked to speculate about their skill development and its potential applicability to employment before they had any substantial experience of employment.

One of the key challenges for HE staff is to alert students to the wider relevance of skill development beyond the immediate context where they first encounter those skills. The conventional educational wisdom has stressed that this issue is most effectively addressed if universities employ a range of assessment methods, for example, self-assessment, peer-assessment and formative assessment (i.e. feedback) to assist students to identify their skill development. This, however, is not as straightforward as it sounds. The original role of self-assessment and peer-assessment was to support self-reflection and self-development. Thus, developing the skill of self-assessment in a university context does not necessarily mean students will be able to distinguish themselves from their peers in a competitive university environment, let alone in a competitive labour market. Lecturers and departmental teams need structured opportunities to mull over how to evolve their academic practice to support graduates to connect their university-based learning more directly to the requirements of the world of work.

Another assumption underlying the drive to develop graduates' employability skills is that skills gained in higher education are transferable to employment. Recent developments in learning theory have argued that simple ideas of transfer are questionable. Some writers are now arguing that the activities in which knowledge and skills are developed and deployed are not separable from the contexts where they are learnt (Engestrom and Gronin, 2001). In this sense, it is a form of 'situated' knowledge and skill that people have to learn to relate to other situations and the expertise of other people.

The idea that knowledge and skill is 'situated' suggests that account has to be taken of the social and cultural basis of learning when considering the question of transfer. This emphasis upon social and cultural context implies that, irrespective of the context of development (i.e. university courses or company training schemes), universities and companies face a common challenge when supporting learners to transfer skills such as teamworking and problem-solving. They have to assist learners to identify how to 're-situate' forms of knowledge and

types of skill they have already acquired in another context. At one level, this process of 're-situation' involves supporting students and trainees to participate in different 'communities of practice' in order to learn how to relate their knowledge, understanding and skill to the demands of a new situation. At another level, it involves assisting students and trainees to develop new forms of knowledge and skill, by learning how to work collaboratively to transform the working practices of those communities (Guile and Young, 2001).

In the past the main purpose of work experience was to help students to develop specific forms of vocational or professional competence, deemed to be central to a specific degree subject, which would enable them to fulfil the *licence to practise* requirements associated with specific professions. Work experience in many undergraduate and postgraduate courses underwent many significant developments in the 1990s. A range of employer-sponsored programmes (for example, Shell's Technology and Enterprise Programme, and government-sponsored initiatives such as the Teaching Company Scheme) were introduced to extend the range of opportunities for students to gain direct experience of work. Furthermore, all work experience programmes have increasingly used 'learning contracts' and 'learning outcomes' to record and review students' skills in order to enhance evidence of their work-related learning, employability skills and key skills (Foster and Stephenson, 1998).

In general, work experience has been widely perceived to enhance students' employability skills (Brennan *et al* 2001). It has been claimed that work experience:

- Enhances students' personal maturity and academic performance, self-confidence (Auburn *et al* 1994), motivation (Kiely and Ruhnke, 1998) and their ability to manage the transition to employment more effectively than students who have not undertaken work experience (Purcell *et al*, 1999; Jones *et al*, 1995);
- Supports students to clarify career choices, gain substantial experience in supervisory or management positions and develop confidence about their future performance in workplaces (Kiely and Ruhkne, 1998);
- Supports effective learning transfer (Westhead 1997), in other words, provides opportunities for students to relate theoretical learning to the practical experience in the workplace (Auburn *et al*, 1998) or to enhance and extend the key skills that are developed through formal study in the workplace (Arnold *et al* 1999).

At the same time Guile and Griffiths (2001) argue that, by overlooking the extent to which knowledge and skill use are domain-specific or context-dependent, many work experience programmes fail to recognise that it is not work experience in itself that results in the

development of employability skills but rather the meaningful engagement in the discourse and activities associated with specific 'communities of practice'. This suggests that if work experience is to be productive, it needs to be located in a setting closely related to that of subsequent employment, a conclusion borne out by the Graduate Apprenticeship Programme (Fallows and Weller, 2000) as much as longstanding experience of students in Psychology (Auburn *et al*, 1994) and Medicine and Law (Bennett *et al*, 2000).

Conclusion

Substantial resources are now being invested in efforts to develop HE students' employability skills while they are at university. Current policy rests on three assumptions:

- That employability skills can be effectively developed in HE;
- That there is a consensus about which employability skills should be developed;
- Those employability skills, once developed, can be easily transferred into employment.

This review of the literature suggests that all these assumptions are contentious in their own way. There is little agreement amongst researchers about what it is in the higher education experience that may impact on the employability of graduates, and the limited amount of empirical evidence is ambivalent.

With regard to the effects of employability skills development on graduate performance in employment, some studies have shown that work experience during undergraduate study is positively associated with finding a first job, but to date there has been very little to substantiate claims that explicit teaching of generic employability skills contributes positively to graduates' job performance in their early years of employment and to subsequent career progress. A key aim of the empirical work described in the remainder of this report, therefore, is to identify what a sample of university departments claim to be doing with respect to employability skills development and to try to form a view of the extent to which this affects various measures of labour market performance of their graduates.

Chapter 2:
Enhancing Employability in English Universities

2.1 Undergraduate Courses

Semi-structured interviews were held with sixty academic staff and ten careers staff in thirty-four departments in five subjects in eight universities comprising 4 pre-1992 (old) and 4 post-1992 (new) universities. In one of the Old Universities the departments were located in three colleges which are identified separately (Table 2.1). The interviews sought respondents' views on definitions of employability; learning, teaching and assessment of employment related skills and knowledge; employer involvement with programmes of study; student work experience; and other employability initiatives.

Table 2.1

Universities in the Sample

Old A: a large pre-1992 Civic university in the Midlands
Old B: a former College of Advanced Technology in the south of England which became a Technological University in 1964
Old C: a large pre-1992 Civic university in the north of England
Old D, Old E and Old F: two medium-sized colleges and one large college of London University
New A: a medium sized post-1992 university in the north of England, focused very much on serving a local community
New B: a very large post-1992 university located in the same city as Old C
New C: a medium sized post-1992 university in the Midlands
New D: a large post-1992 university in the south of England

The main aims of the interviews were:

- To investigate employability-enhancing strategies in the sample of departments;
- To provide background information from which to inform development of the questionnaires for the telephone survey of graduates and line managers;
- To provide a context for the evaluation of graduates' and line managers' responses to survey questions about the development and utilisation of employability skills.

Copies of the interview instruments are provided in Appendix A.

It was anticipated that the post-1992 universities would be more likely to stress employability than their pre-1992 counterparts. However, this was not unambiguously the case. All departments in the sample emphasised their awareness of, and commitment to an employability agenda. There were a wide range of perceptions of graduate employability and the methods by which departments sought to enhance it, with many differences between individual departments and subjects within both New and Old Universities.

2.1.1 Perceptions of Employability

Respondents were invited to give their own definitions of graduate employability. This produced distinct subject differences within two broad categories: subjects with a specific occupational orientation, computing and design in the sample, and subjects without a clear occupational focus, biology and history. The fifth subject, business studies, occupied an intermediate position, having a distinct vocational orientation but linked to a wide range of occupations in business and management.

In **biological sciences** all respondents emphasised the importance of employability and acknowledged their responsibility for producing graduates who were employable both within the biological sciences field and outside it. Respondents at the Technological University (Old B) commented that it was important to be 'employable' as opposed to being 'employed' to cope with the various changes and redundancies that they may face in their working careers when the average person changes jobs 9 times in a lifetime. Respondents from a Civic university (Old A) stressed that biological sciences students would be expected to have above average numeracy and literacy skills which would be useful in entering both biology-related and unrelated fields. Respondents at one New University (New A) said it is the range of skills that students develop during the course that makes them employable, not the subject discipline. At another (New C) interviewees stressed the importance of students being able to choose their jobs and work at an appropriate level, not just be forced to accept any job.

The respondents in the **history** departments, who were all from pre-1992 universities, showed a different approach to the employability skills agenda. At Old C the notion that degrees should be direct preparation for employment was rejected. These respondents claimed that companies should be responsible for providing their own training and that this was not the job of the university. However, they were confident that the academic quality of their graduates ensured good employment prospects. Most of the respondents from history departments emphasised that many of the skills required of a good historian are those required in a wide

range of graduate employment, such as finding out new information, extracting it, analysing it and organising it into a coherent and convincing argument. The respondents at Old A University said that they were more interested in the subject specialism than in generic skills, but that they had been moved to making generic skills more explicit due to politicians' doubts about the usefulness of history in many branches of employment. However, respondents at a technological university (Old B) were emphatic about their commitment to employability and have embedded employability skills in their courses and have recently tried to make these more explicit to students.

In **business studies** there *was* a clear Old–New University split in definitions of employability. All the New Universities offered definitions that suggested both academic rigour and employment related transferable skills are important. However, none of the Old University business departments referred to key skills at all in their definitions. One (Old A) referred to the reputation of the Business School as an influence on the success of their graduates in finding jobs. At another (Old C) respondents were confident that their graduates are attractive to employers because, for instance, they turn out 'good accountants'. However, the definition from Old B emphasised that graduates should be equipped for change. Most respondents thought that business studies graduates would enter a field of employment related to their area of study.

All **computing** departments were aware of the ease with which at that time their graduates were finding employment. Their definitions of employability raised some issues that contrasted with the other four subjects. Respondents claimed that it would be difficult not to teach their students to be employable. It was emphasised in all departments that computer science graduates were highly sought after, with the majority entering employment immediately after leaving university. However, it was also widely reported that this led to resistance from students in engaging with broader employability skills and the theoretical underpinnings of their own subject. The respondents at New B said that it was difficult convincing students that they needed other communication and problem-solving skills: often students felt that because they were doing IT, the world owed them a living. Similarly, the respondents at 'Old D' College, and 'Old C' Universities emphasised that when employers recruited their students, they would take their technical skills for granted but would be looking for adaptability and transferable skills. It was difficult to convince students of this. Two universities (Old A and Old C) reported that some students lacked motivation and aptitude for IT because they had made their degree choice based on future employment prospects rather than as a reflection of their own interests.

Differences between IT and other subjects were pointed out by many of the respondents. One was that the number of women studying for IT degrees was very low and it was claimed by respondents at New D and Old A Universities that the number of women being recruited to computing courses was falling. Another claim about the special position of computing was that the rate of change in IT made it difficult to keep up with new developments both in terms of cost and training. In addition, the recruitment of new staff was particularly difficult because of the higher salaries available outside HE.

All four departments in **design studies** (all in post-1992 universities) stressed that most students began their degrees with the intention of working in this field after university and that the courses are largely focussed explicitly on this range of occupations. Many of the definitions offered showed a high level of commitment to the employability of their graduates and an understanding of the issues involved. At one (New A) interviewees stressed that students were provided with two sets of skills, those for their chosen profession and other more general skills that would be appropriate in any kind of employment they went into. In two departments (New A and New C) we were told that their graduates often took other kinds of employment to enable them to continue to practice their vocational interests independently. University departments of design saw their responsibility as the preparation of graduates who would have the choice. Respondents at New B reported that design graduates are more likely to be self-employed than those in other subjects. Those at New D stressed the need for graduates to have the skills and confidence to be able to manage their own careers, including how to build networks, make contacts and secure employment. The New C respondents said that employers require design graduates to be adaptable, particularly in the 'creative industries'; they need to be able to respond quickly to changing customer demands.

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2.1.2 The balance between employability skills and academic skills in the curriculum

A key aim of the university interviews was to gain an impression of how the employability agenda is integrated into courses. Respondents were asked to indicate the degree of importance in teaching and assessing their students on a number of items ranging from traditional academic objectives such as teaching specialist subject knowledge and theoretical understanding to the development of more explicit employability-enhancing skills such as oral and written communication skills, numeracy, literacy, C & IT (communications and information technology) skills, problem-solving skills, 'understanding of the world of work' and team working skills. While most respondents claimed that both academic and

employability skills were important or very important, there were both subject and institutional differences in the academic–employability balance. A summary of the main responses is given in Tables 2.2A and 2.2B. There are full details in Appendix A.

Table 2.2A
Importance of employability skills (a) in undergraduate teaching

University	Old A	Old B	Old C	Old D	Old E	Old F	New A	New B	New C	New D
Biology	3.2	4.0	3.6		3.4	3.4	3.1	4.0	3.8	3.8
Business studies	3.9	3.6	3.4					3.7	3.4	3.8
Computing	2.4	3.5	3.3	3.1		3.4	4.0	3.7	3.4	3.4
Design							3.8	3.4	3.6	4.0
History	3.6	3.6	2.9	3.0	2.7	3.1				

(a) Employability skills defined as: Communication, Numeracy, Literacy, C&IT, Problem-solving, Understanding world of work, Team-working. The emphasis given to teaching and learning of each of these skills was ranked by departmental interviewees on the following four-point scale: 4=Very important, 3=Fairly important, 2=Not very important, 1=Not at all important.

Table 2.2B
Relative importance of employability skills compared to subject knowledge/theoretical understanding (b)

University	Old A	Old B	Old C	Old D	Old E	Old F	New A	New B	New C	New D
Biology	1.0	4.0	4.0		1.0	1.0	1.0	2.0	4.0	2.0
Business studies	4.0	4.0	1.0					4.0	2.0	3.0
Computing	1.0	3.0	1.0		1.0	2.0	2.0	3.0	2.0	1.0
Design							1.0	2.0	2.0	2.0
History	2.0	1.0	1.0	1.0	1.0	1.0				

(b) Defined as the difference between score given to employability skills LESS score given to subject knowledge/theoretical understanding where these two dimensions of teaching were ranked by interviewees on a four-point scale. These differences were then transformed into a four-point scale.

In **biological sciences**, the non-vocational nature of the subject was stressed in both New and Old University departments. Several respondents claimed that subject specialisation and theoretical understanding were less important than skills and that generic employability skills training was a major feature of their courses. For instance, the respondents at New A said that the subject specialism was the vehicle through which to deliver a range of employment related skills. Similarly, respondents at Old A emphasised a wide range of graduate destinations, reinforcing the view that biological sciences is frequently non-vocational and therefore graduates need generic skills enabling entry to a wide range of occupations. Old C University also downplayed the importance of subject specialisation and theoretical understanding compared with that of employability skills. These respondents emphasised that this was because a significant number of graduates did not enter biological sciences

occupations and thus deeper subject knowledge was seen to be less important than employability skills.

In contrast the relative importance of employability skills compared to subject knowledge and theoretical understanding in all six **history** departments scored very low. In this subject area, despite a similar wide range of graduate occupations as in biology, the focus remains firmly on subject-related skills and knowledge. It is possible that this is linked to the relatively high A-level scores of many history students and their previous education, which ensures prior possession of many of the social skills sought by employers. By contrast biology, in common with many other science subjects, has to accept less well qualified entrants.

Employability was very high on the agenda of nearly all the **business studies** departments in the sample. business studies differs from the other subjects in the sample in that specialist subject knowledge and theoretical knowledge are intrinsically related to the development of generic employability skills. There were more claims of embedding employability issues in the regular teaching than in other subjects and less evidence of a distinction between academic objectives and the employability agenda.

The responses from **computer studies** may also be seen as reflecting its distinct position in the graduate labour market. There is more emphasis on the specialist and theoretical aspects of the subject in relation to generic employability skills than in the other subjects. This could be because computer science skills are in such high demand by employers that the dominant focus of student learning is on specialist subject knowledge. All the departments in the sample were able to cite major firms competing for their graduates.

This contrasts with **design studies**, which also has very specific labour market links but is an area where general employability skills are treated very seriously. This may be because many design graduates enter a very competitive economic environment with many small enterprises in which graduates will be required to have a range of management and business skills as well as technical proficiency in design. Design graduates also have to prepare for the possibility of self-employment where they will have to compete for commissions.

2.1.3 Teaching and assessment of employability skills

The picture was more complicated when respondents were asked about recent changes in teaching and assessment in the light of the employability debate of recent years. All the

departments in the sample were conscious of these issues and all claimed to have responded to some extent.

Most **biological sciences** departments seem to have been quick off the mark in adapting courses. Examples included core modules developing research and professional skills focussed on employability; practice interviews with employers; key skills profiling for students throughout the degree; oral presentations; web page design; self-testing on web site. In terms of overall number of examples of innovative practice in employability, it was three Old University departments that offered the most examples, once more confounding the stereotype that employability skills are more highly emphasised in the post-1992 universities.

Some of the examples were implicit rather than explicit: for example, Old A University cited the breadth of biological sciences as enhancing adaptability whilst New D said that final year projects produced independent learners. The respondents at Old B University cited the placement and reflective log strategies as being beneficial in preparing students for employment in different contexts. For this purpose tutors at New B had introduced 'contextualising', or 'real-world' examples in their teaching. At New D University, numeracy was cited as particularly important for many types of employment, and they were seeking to enhance this through stand-alone mathematics and statistics courses at level 1. They also pointed out that the financial need to have part-time jobs was increasing their students' self-management skills.

There was little evidence of employability skills being explicitly introduced in **history** courses. Old A and Old B Universities were able to provide examples of innovative course content, teaching and assessment methods with the explicit aim of improving employability. However, their scores were low compared with the other subjects. Examples of employability approaches included putting more emphasis on oral presentations by students, group research projects presented to peers and staff, writing book reviews or articles instead of normal assignments to stress practical application, an independent research project in final year and increased use of IT, the Internet in particular.

Business studies respondents reported a variety of efforts to prepare their graduates for employment in different contexts; it was felt that the subject specialism addressed this in its academic content in a way that was different from the other subjects. Most departments provided examples of new employment-focussed teaching, learning and assessment methods introduced in the last 5 years. Some examples are video feedback on presentation skills; team building exercises in the Lake District; key skills unit with focus on understanding of the

world of work; more group assessment; increased weighting in assessment for problem solving, numeracy, literacy and lower weighting for theoretical knowledge. Most of the departments had embedded key skills in their mainstream courses with some also offering stand-alone courses provided by the department. Recognition for employability skills developed prior to the course was offered through APL/APEL in some post-1992 universities.

In terms of overall scores for innovative practice in employability skills in business studies, two of the New Universities and Old B University had the highest scores (Table 2.3). Old A and New D Universities are situated in the middle of the sample on this issue. Respondents from the lowest scoring department at Old C University were confident that the high calibre of their students combined with the academic rigour of the courses ensured their graduates' employability.

Table 2.3
Major employment skills - related innovations in courses in the past 10 years

University	Old A	Old B	Old C	Old D	Old E	Old F	New A	New B	New C	New D
Biology	2	4	4		4	3	3	3	3	3
Business studies	3	4	1					4	4	3
Computing	1	3	3	3		4	3	4	3	2
Design							3	4	3	3
History	2	2	1	1	1	1				

Scores:
4 = Wide-ranging efforts to change traditional course content and teaching
3 = Moderate efforts to change traditional course content and teaching
2 = Some minor efforts to change traditional course content and teaching
1 = No evidence of efforts to change traditional course content and teaching methods

While most of the business studies departments had embedded key skills in their mainstream courses, a number also offer stand-alone courses provided by the department. For instance, Old A University offers a Professional Skills course which includes some focus on employability. New B offers an 'Advanced Writing Skills course' to address problems with basic grammar, etc. New C provides all business studies students with 'developing learning' core modules that seek to enhance both employability and study skills through the subject specialism. New D University had a similar foundation course.

All the **computer science** departments in the sample emphasised their commitment to enhancing the employability of their graduates. They were all making efforts to introduce generic employability related modules to counteract excessive specialisation. These frequently took the form of stand-alone courses in learning and communication skills; group working embedded in courses; and video recorded presentations and peer assessment to

improve students' presentation skills. Respondents in two Old Universities said that they had talks by employers and recent graduates telling students what to expect if they went to work for particular employers. One of these departments is developing ways of connecting summer vacation work experience to the degree. About half the respondents, mainly in New Universities, reported that APL/APEL accreditation could be given, exempting students from particular modules if they could show that they had relevant experience. In practice, this was rarely used.

Nevertheless employability scores for computer science teaching, learning and assessment indicators were relatively low. This is because computer science specialist skills were so sought after by employers, that the main employability focus of their studies was on their specialism. Old B and New B universities placed the highest importance on employability skills compared with subject knowledge. However, at even lower scoring universities such as Old A, Old C and Old F, respondents reported that they were confident that their students were highly employable with most entering employment immediately after graduation. Both Old C and Old F reported that major computer employers such as Logica and Hewlett-Packard actively sought to recruit their graduates. At New D, another low-scoring department in terms of relative emphasis on employability skills, it was reported that the department ran a joint degree with IBM. These examples demonstrate that the weightings given by respondents to employability skills for computer science cannot necessarily be taken as an indicator of their graduates' success in finding work or how highly major computer companies value their degrees.

Design studies departments, which were all in New Universities, had the closest course-related links to specific employment. All the departments emphasised the importance of both subject specialism and generic employability skills. Examples of innovations that were cited included:

- Fashion promotion placements;
- Distance packages so that students who are offered jobs before the end of their course can complete their degrees;
- Learning contracts for students that involve them reflecting, proposing, negotiating, taking responsibility for their own work;
- Earn as you learn schemes whereby students can get paid work assignments;
- Assessed fashion shows produced by students on CD Rom disks.

New A University has projects set by employers who give formative feedback on what has been produced. It was suggested that some of their innovations had been in response to the mass expansion in student numbers rather than employability directly. Also advances in IT had produced innovations, for example the introduction of PowerPoint. New D University provides business planning components in many courses. These include visiting bank managers, carrying out market analyses and writing business plans.

Most of the employability skills in design studies courses were embedded. However, there were some complementary stand-alone courses, including a CV course at New B University to prepare students for their exhibitions at the end of their degrees, and to form part of their portfolio to take into the work place. New C offered some stand-alone courses which could be offered across the programmes, visual culture theory for example. They also offered Career Planning modules. New D reported that they offered extra IT skills courses in specialisms such as multimedia and animation.

2.1.4 Work experience and employer involvement in course provision

Work experience varies widely by subject. There was very little work experience for students in history departments. In contrast the four New University design departments all reported considerable practical work experience as part of the courses.

In **biological sciences**, most of the Old Universities make little provision for work experience while in most of the New Universities it is widespread, but there was one exception on each side. One is Old B, an ex-College of Advanced Technology with a long tradition of providing work experience to undergraduate students, which has been retained since the upgrade to university status nearly 40 years ago. Conversely, New D resembles most of the Old Universities in providing little work experience and experiencing low take up of what is offered. It was suggested by the respondents that this was due to the shortage of local employers with whom close relationships could be built.

Table 2.4
Student Involvement in Work Experience

University	Old A	Old B	Old C	Old D	Old E	Old F	New A	New B	New C	New D
Biology	1	4	1		1	1.5	3	3	3	1
Business studies	3	4	1					4	4	4
Computing	1	4	3	2		1	2	2	4	4
Design							4	4	4	3
History	1	1	1	1	1	1				

Scores:
4 = Average 50% or more of undergraduate students undertake work placements as part of their studies
3 = Average 10-49% of students undertake work placements as part of their studies
2 = Less than 10% of students undertake work placements as part of their studies; some involvement with industry-based project work of different kinds
1 = Less than 10% of students undertake work placements as part of their studies; no involvement with industry-based project work of any kind

The provision and take up of work experience in both Old and New Universities for **business studies** was higher than in any of the other subjects. For instance, at New C and New B universities, most students completed sandwich courses, with shorter placements provided for the remainder; 75% of students went on sandwich placements at both Old B and New D universities; roughly 40% of students did a summer internship with a company as part of their degree at Old A University. One exception was in the business studies department at Old C where no sandwich courses were offered by the department and there was a very low take up of other shorter placements.

In contrast to the other subjects in the sample, **computer science** departments reported that students were able to find course-related part-time and summer paid work. Old E and Old F had particularly low scores on work experience as part of their courses. However, the respondents at Old F indicated that 95% of students gained relevant work experience through paid employment during their time at university. The buoyancy of the local labour market and shortage of IT specialists permitted this. Respondents in Old A University expressed concerns that industry based projects are not academically challenging enough for students. They reported that employers often require that a routine piece of software be written and whilst this could involve a lot of work, it would often not be very difficult to carry out. Similarly, respondents at New B said that they rarely used client projects because they preferred students to learn by venturing into unknown territory and making mistakes. This provided a better learning experience for high-level computer specialists than delivering a fairly standard product to a client.

The **design studies** departments reported a very high level of work experience. At New C, 100% of their knitwear and fashion management students completed a sandwich course. New

B said that 100% of their students undertook work experience and New A reported that 85% of their students undertook work experience.

In contrast all the **history** departments recorded low scores on work experience. All history departments scored the lowest mark possible, with only Old B University (5% of students do optional work experience) and Old C University (some links with royal armoury and other museums) citing any examples at all.

Employer involvement in course provision often overlaps with work experience, and is widespread and often integral in design studies whilst almost non-existent in history. In other subjects differences between institutions were reported but not on any clear Old/New University lines. It was suggested in both biology and history departments that the range of employment that graduates enter was so broad that it would be difficult to identify specific employers who might make a contribution that would be generally useful. Only one department, in a New University, reported heavy employer involvement in lecturing on and assessing business studies courses. Others reported that feedback from employers is sought before starting new courses. Design courses often have a specific type of employer involvement resulting from the widespread use of part-time staff who are practising professionals in the area.

In **biological sciences**, employer involvement in course planning/design, teaching and assessment did not occur at all in more than half the sample of departments, but was extensive in the remainder. Old B and New A Universities claimed a high degree of employer involvement in the design and delivery of its course, and Old C and New A also claimed extensive involvement. The remaining departments all claimed that absence of employer participation was at least partly because it would be difficult to identify particular categories of employer who would be likely to employ biology graduates extensively (Table 2.5).

In contrast the **business studies** departments' scores were clustered together around the middle of the range. Old C University reported that feedback from employers was always sought before the introduction of new courses. Only one department, New C, claimed high involvement of employers in lecturing and assessing as well as involvement in course planning and design. It was pointed out by several universities offering work experience that the placement visits brought them very useful contacts with employers through visiting students. These visits often provided a rich source of informal feedback about the appropriateness of the student's skills for the work environment, which reflected on the university's course provision.

Table 2.5:
Employer Involvement in Course Provision

University	Old A	Old B	Old C	Old D	Old E	Old F	New A	New B	New C	New D
Biology	1	4	3		1.5	1	3	1	4	1
Business studies	2	2	2					3	3	3
Computing	4	2	2	1		1	2	2	2	4
Design							4	4	4	3
History	1	2	1	1	1	1				

Scores:
4 = Some employer involvement in course planning/design, teaching and assessment
3 = Some employer involvement in course planning/design and teaching but not assessment
2 = Some employer involvement in course planning/design but not teaching or assessment
1 = No employer involvement in course planning/design or teaching or assessment

In **computing** employer involvement was generally low but in two departments – at Old A and New D Universities – it was reported to be very high.

In **design studies** New A had an established tradition of employer projects using companies such as Marks and Spencer and Reebok. New C ran a similar scheme. It was also emphasised by New A, New B and New C that a high number of their tutors are practising artists working independently outside education.

In **history** only Old B University had any employer involvement. It was stressed by Old A University and implied by others that work experience and employer involvement would not be useful because of the wide range of jobs their graduates enter.

2.1.5 Review of departmental employability skills provision for undergraduates

There were differences between subjects in the perceptions and definitions of employability given by respondents. In biological sciences, for instance, respondents reported that although they were committed to teaching subject knowledge and theoretical understanding, their awareness of the frequently non-vocational nature of the subject had led them to prepare students for a wide range of occupations borne out by their commitment to employability factors. Conversely, while the history respondents reported a similar non-specific occupational ethos, they had not, in the main, responded with increased employability skills provision. Instead they focussed on equipping their graduates with the skills they saw as essential for a good historian, in the belief that these skills themselves were transferable into a wide range of occupations.

On the whole, the respondents in computer studies, business studies and design saw their students as vocationally orientated. However, there are variations in how this was manifested. For instance, business studies teachers in New Universities reported that the majority of their students learned employability issues alongside subject knowledge and theoretical understanding. However, most of the Old University respondents were confident that the academic content of their courses would ensure their graduates' employability.

All the respondents in computer science departments considered their subject very vocational with a high labour market demand for IT graduates. At the same time, most actively sought to enhance specialist knowledge with more generic skills. However, it was widely reported that the easy routes into employment for computer sciences graduates led to resistance by students to key skills and other employability enhancing factors that could improve their performance when they are established in the work place.

The design departments reported that their subject was vocational and most students intended to enter fields of employment related to their studies. Courses sought to equip students with employability-enhancing attributes to enable them to work well in any field, whether it was their chosen profession or other work to earn money to support their design interests.

Respondents in all subjects except history were able to provide examples of recently introduced approaches to teaching, learning and assessment that are intended to enhance employability, although the extent to which these were deployed varied between universities. All the departments visited stated that their principal intention was to embed key skills in the curriculum rather than addressing them by stand-alone courses. Where stand-alone courses within the departments did exist, these had been introduced to enhance particular non-academic skills that were seen to be lacking in students. There were few patterns identified here with a wide range of courses being offered across the board. For instance, stand-alone Communication Skills courses were as likely to be found in history departments as they were in computer science departments.

In relation to preparation for employment in different contexts, many of the history and biological sciences department respondents reported implicit aspects of their subjects that could enhance employability. For instance, the breadth of biological sciences was reported to enhance adaptability in graduates whilst the history interviewees said that the skills needed to become a good historian could be transferred to many types of employment. These responses reflected the wide range of occupations that the graduates of biological sciences and history enter.

With regard to employability skills developed prior to the courses, most of the departments were able to give recognition for work experience, but it was reported that students rarely had the appropriate experience. This was across the board with the exception of biological sciences at New B University, which had a large intake of mature, part-time students, whose studies complemented their established area of work. With regard to accreditation for part-time jobs, it was reported that jobs were rarely related to the students' field of study. However, computer science students sometimes found work designing web pages and writing software whilst design students could find work in the clothing retail trade. These were rarely accredited, although examples were given (such as by the business studies department at Old B University) of students being encouraged to reflect and write about their experiences of part-time work and the management they received.

2.2 Postgraduate taught Masters courses

The interviews in university departments included a brief discussion of taught postgraduate courses up to Masters degree level. The aim was to form a view about whether the main driver of such courses was employability or other considerations.

Masters level courses fall into two categories: those which build on existing subject knowledge and those which help graduates to diversify into new, often more vocational, areas (conversion courses). Within biological sciences, the courses fall into the former group in that students are expected to already hold a degree in a relevant science related area if not in biological sciences itself. In terms of subject knowledge and theoretical understanding, the courses are designed either to extend the broader biological sciences knowledge base or to specialise in a particular aspect such as Human Genetics or Toxicology.

Respondents in biology departments reported their commitment to employability at postgraduate level as they had done at undergraduate level, although with variations in how this was interpreted. For instance, Old A University said that they sought to develop a range of skills extending from the establishment of a sound knowledge base to production of more articulate, positive and enthusiastic postgraduates. They reported that they had taken key skills for granted in their intake during the last six or seven years although they continued to develop them; for instance, there was greater emphasis on presenting data. Old B University said their aim was to take reasonable undergraduates and give them subject specific knowledge and top up skills. Old C University sought to continue the skills and academic base they provided at undergraduate level but to a more advanced level. Old F reported that

their agenda was different with regard to postgraduate students, as often they had already begun their academic research careers whereas undergraduates had not yet established their field of work.

Masters degrees in biological sciences were driven by a combination of employer and student demand. For instance, when a new Masters degree in Biotechnology was established at New C University, it was preceded by seeking the views of the industrial members of the Courses Committee and canvassing the opinions of undergraduates in order to check out the potential market. Similarly, the respondents at Old A University said that their Masters courses were the result of demands from both British industry and the developing world. Home students often used these courses as a way of converting to specialist areas with good employment potential. In general, the respondents believed that graduates chose to do a Masters within biological sciences to improve their employability. For example, some students took a Masters to specialise in a particular field such as Medical Genetics, viewed as a new area affording huge employment opportunities (Old B University). However, the respondent at Old C University said that the material covered in the Masters probably used to be the equivalent of the third year of the degree but that the undergraduate curriculum had been condensed by the increased emphasis on transferable skills. Some respondents said that doing a Masters was a bridge to starting a PhD (Old E) and/or to improve on initial degree grade (Old A).

In business studies all the departments in the sample offered a range of courses that were open to most graduates almost irrespective of their first-degree subject. They all offered MBAs for example. Standard course pre-requisites across the board were several years of related business experience. However, Old A University said that exceptions to this were made for overseas students as some countries had the expectation that the MBA would be undertaken immediately after the first degree. Most of the departments also offered a range of conversion courses such as Marketing and Management and Information Systems. It was widely reported that these courses recruited first-degree graduates without work experience.

All the business studies departments claimed that students took Masters courses to improve their employment potential. Most of the respondents thought a combination of deepening subject knowledge and theoretical understanding and developing transferable skills was necessary to do this. For instance, respondents at Old C University commented that key skills could not be taken for granted in their postgraduate student intake and that they had to address these whilst developing subject knowledge. Similarly, the respondents at New C said that medium sized firms would not expect to have to train a postgraduate; they would assume

their expertise. This meant that it was essential that the postgraduate was able to fulfil the job description on arrival with the company.

Business studies departments reported a high demand for their postgraduate courses from both home and overseas students. Old A University said that they were overwhelmed by international demand and felt that the department was driven financially by the need to recruit overseas students due to the higher fee income. By contrast, the respondents at New C reported that their courses were in response to local employer demand combined with demand from students. Blue chip companies were keen to employ their postgraduates. Similarly, New D University had started their E-Commerce Masters as the result of employer demand, particularly from IBM, building on links established with the computer science department through running joint first-degree courses.

The focus of computer sciences Masters courses varied but was entirely specialist employment-related. At New D University, it was reported that a very high number (90-95%) of students went directly into employment at the end of their conversion courses, even though some of them had been unemployed at the start of the course. At Old C University, students on traditional courses used them to refocus their careers and seek promotion. At Old B, it was reported that a total of 35% of students were from Europe and overseas and returned to their home countries leaving the remaining 60% to 'plug gaps in the UK IT labour market'.

In computer sciences, most of the respondents said that employer demand was derived from the IT skills shortage in the UK workforce. Some courses were designed to focus on specific employer demands such as Java (Old B University) or were the result of establishing joint degree provision between the University and a local employer, (Siemens, New C). In relation to students' past work and Degree experiences, a wide variety of reasons were cited for student demand which ranged from unemployed applicants to teachers 'desperate to escape teaching', to those already working in the IT field who require skills' updating. Overall, the respondents in computer science said that they aimed to equip students with up-to-date skills.

Design department responses varied in terms of where the demand for their courses came from. For instance, New C University said that they responded to both employer and student demand however, 50% of their students were from overseas non-European countries. Meanwhile, New D University responded to student demand as most of their students were already employed. Departments reported that they tended to take students' employability skills for granted at postgraduate level, as they had already gained work experience and continued to work during their courses.

History departments reported low demand for MA courses with the exception of local history courses. Masters courses were mainly academic and recreational in nature. The students following them were generally established in employment or retired, and the courses were not focused on employability. The history respondents reported that they did not expect their Masters students to have enhanced their careers by taking their courses beyond practising the 'good historian' skills that they sought to instil at undergraduate level. Only occasionally were the courses reported to enhance employability, such as in the case of archivists or history teachers.

2.2.1 Work experience on Masters courses

There were wide variations between departments in terms of work experience as part of the Masters courses in biology. At one end of the scale, New C University offered work experience for all full-time students; and also taught some modules within the local hospital pathology laboratory. Old C University offered placements with English Nature and similar bodies for those studying Biodiversity and Conservation. Students following other Masters courses were offered the opportunity to undertake industry-based projects often within the NHS. However, strikingly, when compared with its emphasis on undergraduate work experience, Old B University offered little work experience as part of its biology masters courses.

In business studies, work based assignments were a common feature of most Masters courses. At New D University all full-time Masters students undertook placements whilst all part-time students were assessed on projects, based on their work places. Most of the other departments provided industry-based projects particularly for full-time students, whilst part-time students were assumed to be gaining relevant work experience within their jobs. However, at Old B University it was reported that there was minimal work experience of this type due to the large numbers of overseas students recruited.

Similarly, the respondents in computer science departments reported that about 95% of their students would undertake industry-based projects, although there were no reported work placements provided. In design, it was reported that no placements were provided at New D University where all students were normally working in related employment. However, New C University, whilst not having placements, did provide group industry-based projects for students. History departments reported no work experience or industry-based projects.

2.2.2 Employer involvement in Masters courses

All the business studies respondents reported that employers had been involved to different extents in consultations about new courses or those under review. This tended to be done through dinners, industrial liaison panels or, at New D University, through several staff being members of the local industrial professional development group. However, employer involvement in teaching was usually limited to guest speaker slots. Similarly, on the whole, there was no employer involvement in assessment with the exception of occasional membership of final examination boards.

There was also a range of responses with respect to previous work experience of entrants to postgraduate courses in biology. New C University said that they had many part-time hospital employees who did it to gain professional accreditation whilst continuing their jobs. Old B University said that students had either work experience or a degree in a related area before they started the course, with part-time students often continuing to work in a related area during the course. However, at Old C University, the majority of biology postgraduate students had relevant degree rather than work experience.

Sources of funding of postgraduate students were sought in order to test the claim sometimes made that employers often paid fees in order to enhance relevant professional skills. However, this does not appear to be widespread. In biology all the departments in the sample reported that the majority of students were self-funded. Two of the universities said that a small number of studentships were available, (3 at Old A University, 5 at Old C), funded by the research councils. Old A and New C Universities also stated that some of the students were funded by ESF (European Social Fund) due to the proven skills shortage in subjects such as Biotechnology. Old B University said they did have several day release students and New C University also had some part-time students funded by the NHS, but it was generally thought that the number of students funded by their employers had fallen in recent years. In business studies all the departments in the sample reported similar patterns of funding in relation to home students. Most part-time MBA students are sponsored by their employers but most of the full-time MBA students are self-funded. Conversion course students in the business studies area, often following on from their First degrees, are largely funded by loans and family contributions.

The patterns of funding for computer sciences were similar to biology in that full-time students tended to be self-funded with the exception of a small number in receipt of research council scholarships. A small percentage of full-time students received grants from the ESF.

There did not appear to be a large number of part-time students funded by their employers as had been the case with MBAs. The majority of design and history students were self-funding, with the exception of a small number of university scholarships and research council grants.

2.3 Overview of employability skills development in sample departments

The picture that emerges from the university visits is one of widespread interest by academic staff in employability as an issue that must be addressed in the provision of undergraduate courses, but there are wide differences between universities and between subjects about how it is most appropriate to treat the issue. The spectrum ranges from some history departments where it is widely believed that the knowledge and skills acquired in becoming a competent historian are useful in a wide range of occupations, to design studies where often something approaching an apprenticeship model of learning is applied. Generic employment concerns were much less often expressed for postgraduate programmes, most of which had specific subject-related aims. It is possible to discern some differences of approach between pre-1992 and post-1992 universities, but there is no sharp distinction within subjects that are offered in both categories of institution.

The significant differences between subjects seem to depend in large part on a combination of (a) the range of occupations that graduates enter and the state of the labour market for graduates with specialist knowledge in that area and (b) the levels of prior educational achievement of students on the courses. The main characteristics of the five subjects in these respects may be described as follows:

History:

- High entry qualifications of course recruits;
- Graduates enter a wide range of occupations;
- Main concern of teachers is to train competent historians;
- Little attention to generic employability issues;
- Postgraduate courses largely personal development in nature.

Biological sciences:

- Relatively modest entry qualifications of course recruits;
- Graduates enter a wide range of occupations;
- Relatively little attention on undergraduate courses with training biology related specialists;
- Considerable concern with generic employability in course provision;

- Postgraduate courses tend to be vocationally specific.

Business studies:

- Wide range of entry qualifications of course recruits;
- Graduates enter range of occupations but mostly within 'business/management';
- Several sub-disciplines have close links with particular professions;
- Close relationship between employability issues and content of many courses;
- High demand for Masters courses often from graduates converting from other subjects.

Design studies:

- Modest academic qualifications at entry: other criteria for student selection;
- Graduates enter well defined range of occupations: many in small businesses;
- Specialist course content mainly concerned with professional and craft skills;
- Considerable emphasis on business related generic employability skills;
- Limited amount of postgraduate courses are vocationally specific.

Computing:

- Fairly high entry qualifications of course recruits;
- Extremely high demand for graduates in specialist occupations;
- Students concentrate almost exclusively on acquiring specialist skills;
- High demand for Masters courses often from graduates converting from other subjects.

Formal course related work experience is widespread in business studies and in many biology departments, though numbers undertaking this continue to fall due to financial constraints. Work experience is much less visible in other subjects for a variety of reasons. Historians (all in Old Universities) tend to consider it not helpful. In computing it is generally considered more important for students to learn computer skills well. The design studies departments (all in New Universities) reported a very high level of work experience and also close integral links through widespread use of part time staff with a foothold in the 'real world'. Most students in all subjects now gain some practical work experience in vacations and many also work during term time through financial necessity. Whilst this undoubtedly enables them to develop skills such as self and time management, it is no substitute for a carefully monitored and supervised work experience placement.

The extent to which any particular graduate has been exposed to employability skills training, and the precise form it takes, will vary considerably depending on the subject of his or her first degree and the institution where it was obtained.

Chapter 3:
Employability Skills Development and Graduate Employment Outcomes

3.1 Measures of graduate employability

Recent efforts to develop 'performance indicators' for HE institutions in the UK have made use of available data from the annual First Destinations Survey of full-time undergraduate leavers from UK universities, which is carried out by the Careers Service at each university and captures information on students' employment outcomes roughly six months after graduation. The performance indicators developed to date have typically focused on:

1. The probability of graduates finding employment after graduation (as against being unemployed or economically inactive)
2. The probability of graduates finding employment in a job deemed, by specified criteria, to be of 'graduate quality'

For example, in a study of 1993 leavers from pre-1992 Universities, Smith, McKnight and Naylor (2000) find that the probability of graduates being unemployed or inactive six months after graduation is inversely related to the class of degree and is strongly influenced by the subject studied, measures of prior educational attainment (such as A-level point scores) age at graduation and social class background. Most of these factors are also found to strongly affect the probability of student leavers in employment being in a 'graduate occupation' although age at graduation has only a weakly significant effect for female graduates and no significant effect for males.

The definition of a 'graduate occupation' by Smith et al includes both 'traditional graduate' and 'graduate track' occupations as defined by McKnight (1999) in the following categorisation:

- 'Traditional graduate' occupations, e.g. doctors, lawyers, qualified engineers, teachers, high-level managerial and technical occupations;
- 'Graduate track' occupations, e.g. low level management jobs, technician jobs, skilled caring jobs, high level sales jobs; these are jobs which require high levels of education, are increasingly filled by graduates and which often constitute entry routes to higher level positions;

- ‘Non-graduate’ occupations (those which do not require high level qualifications).

Six months after graduation is a very early stage in graduates’ careers and the *Moving On* survey of 1995 graduates (Elias, McKnight et al, 1999) found that the likelihood of being under-employed in a non-graduate occupation declines over the first few years after graduation as some individual graduates manage to secure graduate-level employment after first accepting a period of lower-level employment. However, an initial period of under-employment was found to have lingering negative effects on those graduates’ salary and career development, suggesting that data on employment status six months after graduation are useful indicators of future labour market prospects.

Later work in a similar vein by HEFCE (2001) has developed benchmarks for institutional performance with regard to graduate employability using a multi-level model which relates employment indicators for individual graduates in 1999-2000 to vectors of:

1. Student-level factors

- Subject of study;
- Entry qualifications;
- Age on entry;
- Gender;
- Ethnic group;
- Whether or not on sandwich course;
- Social class;
- Whether or not from low participation neighbourhood;
- Degree classification.

2. Institutional-level factors

- Average A-level / Scottish Highers score;
- Unemployment rate among 20-29 year olds in institution’s locality;
- Percentage of jobs classified as ‘graduate jobs’ in institution’s locality.

The HEFCE work combines data from the First Destinations Survey of student leavers with data from the Combined Student Module Record held by HESA (Higher Education Statistics Agency), supplementary files supplied by UCAS (Universities and Colleges Admissions Service) and the Labour Force Survey.

3.2 Employability skills development and graduate employment outcomes

For the present study the availability of the dataset prepared by HEFCE enabled us to explore the impact on graduate employment outcomes of the departmental-level measures of involvement in employability-skills development, which we developed following our university research visits described in the previous Chapter. Our approach was to estimate a similar specification to that used for the HEFCE benchmarks for all available June 2000 graduates from the 34 departments we had visited and then to expand the set of independent variables to include departmental-level measures of:

- Teaching, learning and assessment of employability skills;
- Student participation in work experience;
- Employer involvement in course design and delivery,

based on the employability scores shown in Tables 2.1 to 2.5 above (see Appendix A for further details).

Given that our departmental data were gathered during research visits in early 2001, it was necessary to review the measures in order to ensure that so far as possible they reflected teaching and learning practices during the period 1996/7 to 2000 when most 2000 graduates were attending university. This led to appropriate downward adjustments being made for 10 out of the 34 departments who had only recently introduced certain innovations in respect of employability skills teaching, and it was these adjusted measures of involvement in employability skills development which were included in the statistical analysis (see Tables 3A.1 and 3A.2 in the Annex to this chapter, for variable definitions and descriptive statistics).

In total, data were supplied for 5,763 graduates in year 2000 from the 34 departments in the five selected subject areas, of which 4,676 completed First Destinations returns. In our analyses we focus on the 3,589 graduates among this group who were either employed or unemployed at the time of the 2000 First Destinations Survey (Table 3.1).

Table 3.1 Employment status of 1999-2000 graduates from selected university departments who completed First Destinations returns

	Number	*Percent*
Employed	3284	70.2
Unemployed	305	6.5
Further study or training	712	15.2
Not available for employment	371	7.9
Overseas student returning overseas	4	0.1
TOTAL	**4676**	**100.0**

Table 3.3 shows the results of a logistic regression analysis of the factors determining the probability that individual graduates from the 34 departments are employed as against being unemployed. The odds ratios reported for each independent variable effectively compare the probability of an 'event' occurring, all else being equal, with the probability of it not occurring. Thus for example, in the base specification (Equation 1), the probability of graduates with a First Class or Upper Second degree being employed is roughly a third higher than for graduates with a lower class of degree (after controlling for all the other potential influences represented in the equation). The probability of being employed is also found to be significantly and positively associated with students having participated in a sandwich placement during their studies. However, statistical association tells little about causation. It is possible that this relationship partly reflects unobserved characteristics of students who choose to undertake sandwich courses, for example, a high level of motivation to gain employment-related skills and to develop contacts relevant to future employment.

The significant *negative* influences, all else being equal, are being male, attending a university with a relatively high unemployment rate among 20-29 year olds in its locality and having taken a degree in design studies. This result for design graduates reflects the markedly different early employment patterns of graduates in that subject who tend to take longer to develop a career; for example, needing to establish a portfolio and make useful contacts in order to win contracts for freelance and commissioned work (Blackwell and Harvey, 1999).

These findings are all broadly consistent with those of the HEFCE study based on 1999-2000 graduates in a full range of degree subjects (HEFCE, 2001) and point to the suitability of the base specification for testing the effects of entering our departmental-level measures of employability skills development as independent variables. The initial results in Table 3.3, Equation 2 suggest that none of the three measures are significantly associated with the probability of graduates finding employment. Given the unsurprisingly high correlation between the individual-level sandwich variable and the departmental-level work experience

variable (Table 3.2) it was considered appropriate to omit the latter variable in Equation 3, but this has no impact on the significance levels attached to the two remaining employability skills variables. Similar results are obtained in Equation 4, which omits the Old University variable (which is negatively correlated with all three measures of employability skills development) along with several other variables that failed to signify in the first three equations.

Table 3.2: Correlations between sandwich, Old University and employability skills variables (n=3589)

	Sandwich	Olduniv	tchlngass	workexper	empinvlt
sandwich	1				
olduniv	-0.29	1			
tchlngass	0.20	-0.21	1		
workexper	0.41	-0.53	0.31	1	
empinvlt	0.15	-0.44	0.22	0.65	1

for definitions of variables see Annex Table 3A.1

The second set of logistic regressions, shown in Table 3.4, model the probability that employed graduates from the 34 departments are in graduate-level occupations, that is, in either 'traditional graduate' or 'graduate track' occupations as defined above. The base specification is similar to that in Table 3.3 except that the measure of unemployment of 20-29 year olds in each university's locality is replaced with a measure showing the percentage of jobs that are of graduate level in each locality. Table 3.4, Equation 1 shows that the coefficients on the degree class, sandwich variables and 'percent graduate-level jobs' variables are all positive and significant, as are the coefficients on three of the four subject dummy variables (as compared to the reference category of biological sciences). The exception is history, which is negatively signed and weakly significant. Interestingly, in contrast to the earlier analysis of factors determining the probability of being employed rather than unemployed, the coefficient on the male variable is now positive and weakly significant, supporting an argument that, all else being equal, male graduates are more likely than females to remain unemployed rather than accept a job below graduate level.

When the departmental-level employability skills measures are added to Equation 2, the coefficients on the work experience and employer involvement variables are both found to be positive and significant while that on the teaching, learning and assessment variable is negative but insignificant. These findings remain stable for both the employer involvement and teaching/learning/assessment variables in Equations 3 and 4 which omit the departmental work experience variable, the Old University variable and other variables for the reasons described above. In both the latter specifications, a one unit change in the level of employer involvement in course design and delivery is associated – all else being equal -- with an

estimated 29% increase in the probability of graduates being employed in a graduate-level job.

Table 3.3 Logistic regressions using graduates' employment status as dependent variable

Dependent variable: emp2=1 if employed (base: employed plus unemployed)

	1. Base specification				**2. Add in employability skills measures**				**3. Drop departmental-level measure of participation in work experience**				**4. Drop Old University, low participation neighbourhood and social class variables**			
Independent variables	Odds ratio	Coef.	Robust Std. Err.		Odds ratio	Coef.	Robust Std. Err.		Odds ratio	Coef.	Robust Std. Err.		Odds ratio	Coef.	Robust Std. Err.	
male	0.54	-0.62	0.14	***	0.54	-0.61	0.14	***	0.54	-0.62	0.14	***	0.53	-0.63	0.14	***
alevsc1	1.02	0.02	0.01	*	1.03	0.03	0.01	**	1.03	0.03	0.01	*	1.02	0.02	0.01	*
dalevscx	0.53	-0.63	0.39		0.51	-0.67	0.39	*	0.52	-0.65	0.39	*	0.51	-0.68	0.37	
dclass12	1.32	0.28	0.13	**	1.32	0.28	0.13	**	1.31	0.27	0.13	**	1.32	0.28	0.13	**
ddesign	0.55	-0.6	0.19	***	0.46	-0.78	0.24	***	0.52	-0.65	0.22	***	0.55	-0.6	0.21	***
sandwich	2.31	0.84	0.19	***	2.18	0.78	0.19	***	2.27	0.82	0.19	***	2.28	0.82	0.19	***
olduniv	0.84	-0.17	0.18		0.9	-0.11	0.19		0.85	-0.17	0.18					
unemp	0.89	-0.12	0.05	**	0.88	-0.13	0.06	**	0.88	-0.13	0.06	**	0.88	-0.13	0.06	**
constant		3.69	0.61	***		3.37	0.69	***		3.43	0.71	***		3.42	0.70	***
Number of observations = 3589					Number of obs = 3589				Number of obs = 3589				Number of obs = 3589			
Wald chi^2 (19) = 97.22					Wald chi^2 (22) = 99.28				Wald chi^2 (21) = 97.88				Wald chi^2 (16) = 94.43			
Log likelihood = -985.0					Log likelihood = -983.8				Log likelihood = -984.7				Log likelihood = -987.4			

***Statistically significant at 1% level or better **5% level *10% level

Table 3.4 Logistic regressions using graduates' occupational category as dependent variable

Dependent variable: demp4=1 if employed in traditional graduate or graduate-track occupation

	1. Base specification				2. Add in employability skills measures				3. Drop departmental-level measure of participation in work experience				4. Drop Old University, low participation neighbourhood and social class variables			
Independent variables	Odds ratio	Coef.	Robust Std. Err.		Odds ratio	Coef.	Robust Std. Err.		Odds ratio	Coef.	Robust Std. Err.		Odds ratio	Coef.	Robust Std. Err.	
male	1.19	0.17	0.09	*	1.21	0.19	0.09	**	1.20	0.18	0.09	**	1.20	0.18	0.09	**
age	1.01	0.01	0.01		1.01	0.01	0.01		1.01	0.01	0.01		1.01	0.01	0.01	
dethnic	1.04	0.04	0.16		0.99	-0.01	0.16		1.04	0.04	0.16		1.07	0.07	0.15	
dethnicx	0.92	-0.08	0.23		0.90	-0.11	0.23		0.88	-0.12	0.23		0.90	-0.10	0.23	
alevsc1	1.01	0.01	0.01		1.01	0.01	0.01		1.01	0.01	0.01		1.02	0.02	0.01	**
dnonalev	0.67	-0.41	0.13	***	0.66	-0.41	0.13	***	0.66	-0.41	0.13	***	0.65	-0.43	0.12	***
dalevscx	0.85	-0.16	0.37		0.77	-0.26	0.36		0.79	-0.24	0.36		0.78	-0.25	0.35	
dclass12	1.51	0.41	0.09	***	1.56	0.44	0.09	***	1.55	0.44	0.09	***	1.54	0.43	0.09	***
dcomput	4.29	1.46	0.16	***	3.82	1.34	0.17	***	4.35	1.47	0.16	***	4.33	1.47	0.16	***
dbus	2.01	0.70	0.13	***	1.49	0.40	0.17	**	1.91	0.65	0.13	***	1.91	0.65	0.13	***
dhist	0.76	-0.27	0.16	*	0.71	-0.34	0.19	*	0.76	-0.27	0.19		0.81	-0.21	0.18	
ddesign	1.48	0.39	0.14	***	0.90	-0.11	0.17		1.04	0.04	0.16		0.98	-0.02	0.16	
dlpn	0.88	-0.13	0.14		0.85	-0.16	0.14		0.86	-0.15	0.14					
dlpnx	1.26	0.23	0.21		1.18	0.17	0.21		1.19	0.18	0.21					
dsocclas	1.03	0.03	0.12		1.01	0.01	0.12		1.01	0.01	0.12					
dsocclax	1.02	0.02	0.14		1.00	0.00	0.14		1.00	0.00	0.14					
sandwich	2.15	0.77	0.14	***	1.92	0.65	0.14	***	1.99	0.69	0.14	***	1.94	0.66	0.14	***
olduniv	1.16	0.15	0.13		1.29	0.26	0.14	*	1.17	0.15	0.13					
gradperc	1.02	0.02	0.01	**	1.03	0.03	0.01	***	1.03	0.03	0.01	***	1.04	0.04	0.01	***
tchlngass					0.85	-0.16	0.10		0.85	-0.17	0.10		0.85	-0.16	0.10	
workexper					1.19	0.17	0.07	**								
empinvlt					1.16	0.15	0.07	**	1.29	0.25	0.06	***	1.29	0.25	0.06	***
constant		-0.63	0.43			-1.15	0.56	**		-1.12	0.55	**		-1.24	0.53	
Number of obs =	3284				Number of obs =	3284			Number of obs =	3284			Number of obs =	3284		
Wald chi2(19) =	257.05				Wald chi2(22) =	263.11			Wald chi2(21) =	263.47			Wald chi2(16) =	259.84		
Log likelihood =	-1679.2				Log likelihood =	-1666.2			Log Likelihood =	-1669.1			Log Likelihood =	-1670.9		

These findings point to the following main conclusions:

1. In terms of the factors influencing initial labour market outcomes for graduates, structured work experience during courses appears to be a highly positive influence and predominates over other approaches seeking to develop employability skills in HE. However, the apparent strength of the relationship between sandwich participation and subsequent employment may in part reflect unobserved characteristics of students who choose to follow courses with a sandwich component.

2. After controlling for gender, age, intellectual ability (proxied by A-level scores), degree class, degree subject and a range of other potential influences -- employer involvement in course design and delivery is also positively associated with an occupation-based measure of the quality of initial employment found by graduates. However, there is no evidence of a significant independent effect of the efforts devoted by university departments to the teaching, learning and assessment of employability skills.

We now go on to report the results of a new survey of matched pairs of graduates and line managers which enabled us to investigate the impact of employability skills development using a wider range of indicators of graduate labour market performance than have hitherto been available.

Chapter 3 Annex

Table 3A.1 Definitions of variables

emp2	= 1 if employed (base: employed plus unemployed)
demp4	= 1 if employed in graduate or graduate-track occupation
male	
age	
dethnic	= 1 if non-white
dethnicx	= 1 if ethnic background not known
alevsc	= A-level score
dnonalev	= 1 if didn't take A-levels
dalevscx	= 1 if took A-levels but A-level score unknown
dclass12	= 1 if First class honours or 2.1 degree
dcomput	= computer science Subject dummies: reference category = biological sciences
dbus	= business studies
dhist	= history
ddesign	= design studies
dlpn	= 1 if from low participation neighbourhood
dlpnx	= 1 if neighbourhood participation rate unknown
dsocclas	= 1 if parents in social classes IIIm, IV or V
dsocclax	= 1 if parental social class unknown
sandwich	= 1 if went on sandwich placement
olduniv	= 1 if attended Old University
unemp	= unemployment rate among 20-29 year olds in university's locality
gradperc	= percentage of jobs in institution's locality classified as graduate jobs
tchlngass	= measure of teaching, learning and assessment of employability skills in department [1-4 point scale]
workexper	= measure of student participation in work experience at department level [1-4 point scale]
empinvlt	= measure of employer involvement in course design, teaching and assessment in department [1-4 point scale]

Table 3A.2 Descriptive Statistics

Dependent variable: emp2=1 if employed (base: employed plus unemployed)

Variable	Obs	Mean	Std. Dev.	Min	Max
emp2	3589	0.92	0.28	0	1
male	3589	0.53	0.50	0	1
age	3589	23.61	3.64	20.5	67.1
dethnic	3589	0.12	0.32	0	1
dethnicx	3589	0.03	0.17	0	1
alevsc1	3589	18.39	5.69	2.5	29.5
dnonalev	3589	0.28	0.45	0	1
dalevscx	3589	0.02	0.14	0	1
dclass12	3589	0.56	0.50	0	1
dcomput	3589	0.24	0.42	0	1
dbus	3589	0.20	0.40	0	1
dhist	3589	0.08	0.27	0	1
ddesign	3589	0.17	0.38	0	1
dlpn	3589	0.10	0.30	0	1
dlpnx	3589	0.06	0.23	0	1
dsocclas	3589	0.17	0.38	0	1
dsocclax	3589	0.23	0.42	0	1
sandwich	3589	0.25	0.43	0	1
olduniv	3589	0.41	0.49	0	1
unemp	3589	7.86	1.24	5.68	9.51
tchlngass	3589	2.82	0.57	1.48	3.75
workexper	3589	2.69	1.29	1.0	4.0
empinvlt	3589	2.54	1.09	1.0	4.0

Dependent variable: demp4=1 if employed in traditional graduate or graduate-track occupation

Variable	Obs	Mean	Std. Dev.	Min	Max
demp4	3284	0.75	0.43	0	1
male	3284	0.52	0.50	0	1
age	3284	23.56	3.55	20.5	67.1
dethnic	3284	0.12	0.32	0	1
dethnicx	3284	0.03	0.18	0	1
alevsc1	3284	18.46	5.71	2.5	29.5
dnonalev	3284	0.27	0.44	0	1
dalevscx	3284	0.02	0.13	0	1
dclass12	3284	0.57	0.50	0	1
dcomput	3284	0.24	0.42	0	1
dbus	3284	0.21	0.41	0	1
dhist	3284	0.08	0.27	0	1
ddesign	3284	0.16	0.37	0	1
dlpn	3284	0.10	0.30	0	1
dlpnx	3284	0.06	0.23	0	1
dsocclas	3284	0.17	0.38	0	1
dsocclax	3284	0.22	0.42	0	1
sandwich	3284	0.26	0.44	0	1
olduniv	3284	0.42	0.49	0	1
gradperc	3284	27.79	5.91	22.45	39.20
tchlngass	3284	2.81	0.57	1.48	3.75
workexper	3284	2.69	1.30	1	4
empinvlt	3284	2.52	1.09	1	4

Table 3.5 Logistic regressions using graduates' employment status as dependent variable

Dependent variable: emp2=1 if employed (base: employed plus unemployed)

	1. Base specification				2. Add in employability skills measures				3. Drop departmental-level measure of participation in work experience				4. Drop Old University, low participation neighbourhood and social class variables			
Independent variables	Odds ratio	Coef.	Robust Std. Err.		Odds ratio	Coef.	Robust Std. Err.		Odds ratio	Coef.	Robust Std. Err.		Odds ratio	Coef.	Robust Std. Err.	
male	0.54	-0.62	0.14	***	0.54	-0.61	0.14	***	0.54	-0.62	0.14	***	0.53	-0.63	0.14	***
age	0.98	-0.02	0.02		0.98	-0.02	0.01		0.98	-0.02	0.02		0.98	-0.02	0.01	
dethnic	0.82	-0.2	0.19		0.79	-0.23	0.19		0.82	-0.2	0.19		0.77	-0.27	0.18	
dethnicx	1.22	0.2	0.39		1.2	0.18	0.39		1.21	0.19	0.39		1.2	0.18	0.39	
alevsc1	1.02	0.02	0.01	*	1.03	0.03	0.01	**	1.03	0.03	0.01	*	1.02	0.02	0.01	*
dnonalev	0.83	-0.18	0.17		0.82	-0.2	0.17		0.82	-0.2	0.17		0.81	-0.21	0.15	
dalevscx	0.53	-0.63	0.39		0.51	-0.67	0.39	*	0.52	-0.65	0.39	*	0.51	-0.68	0.37	
dclass12	1.32	0.28	0.13	**	1.32	0.28	0.13	**	1.31	0.27	0.13	**	1.32	0.28	0.13	**
dcomput	1.1	0.1	0.19		1.04	0.04	0.21		1.12	0.11	0.19		1.14	0.13	0.19	
dbus	1.36	0.31	0.22		1.13	0.12	0.24		1.34	0.29	0.22		1.4	0.34	0.22	
dhist	1.11	0.11	0.29		1.19	0.18	0.35		1.25	0.23	0.35		1.25	0.22	0.34	
ddesign	0.55	-0.6	0.19	***	0.46	-0.78	0.24	***	0.52	-0.65	0.22	***	0.55	-0.6	0.21	***
dlpn	0.78	-0.25	0.18		0.77	-0.26	0.18		0.77	-0.26	0.18					
dlpnx	1.21	0.19	0.28		1.18	0.16	0.28		1.2	0.19	0.28					
dsocclas	0.81	-0.21	0.16		0.81	-0.21	0.16		0.81	-0.21	0.16					
dsocclax	0.85	-0.17	0.18		0.85	-0.16	0.18		0.85	-0.16	0.18					
sandwich	2.31	0.84	0.19	***	2.18	0.78	0.19	***	2.27	0.82	0.19	***	2.28	0.82	0.19	***
olduniv	0.84	-0.17	0.18		0.9	-0.11	0.19		0.85	-0.17	0.18					
unemp	0.89	-0.12	0.05	**	0.88	-0.13	0.06	**	0.88	-0.13	0.06	**	0.88	-0.13	0.06	**
tchlngass					1.05	0.05	0.14		1.07	0.07	0.14		1.08	0.07	0.14	
workexper					1.13	0.12	0.08									
empinvlt					0.99	-0.01	0.08		1.05	0.05	0.07		1.05	0.05	0.07	
constant		3.69	0.61	***		3.37	0.69	***		3.43	0.71	***		3.42	0.70	***
Number of obs =	3589				3589				3589				3589			
Wald chi2(19) =	97.22				Wald chi2(22) =	99.28			Wald chi2(21) =	97.88			Wald chi2(16) =	94.43		
Log likelihood =	-985.0				Log likelihood =	-983.8			Log likelihood =	-984.7			Log likelihood =	-987.4		

***Statistically significant at 1% level or better **5% level *10% level

Chapter 4:
Survey Methodology

4.1 Sampling strategy and outcome

To develop measures of graduate labour market performance we took into account, not just employment and occupational status, but also their performance in the workplace. We carried out an unusual telephone survey of recently-qualified graduates in the five subjects of interest – biological sciences, business studies, computer science/studies, design studies and history – and with their line managers. 'Paired interviews' were expected to pose problems in terms of securing a satisfactory response rate from prospective participants but judged to be worthwhile as a means of breaking new ground in empirical investigation of graduate employability skills issues.

In total interviews were carried out with 247 graduates and 210 line managers in 120 establishments between May and August 2001. After carrying out 18 paired interviews during a pilot survey, this left a main sample for analysis of 192 paired graduates/ line managers and another 37 graduates whose line managers could not be contacted for interview in the time available. The average length of interviews was 20 minutes for graduates and 15 minutes for line managers. Initial contacts with employers thought likely to have recently recruited target graduates were made on the basis of information supplied by Careers Services at the ten universities which we had visited. In order to boost the number of interviews, it was necessary to extend the sampling frame to graduates from universities besides those visited in the first phase of the study. However, we continued to confine the sample to graduates in the five selected subject areas in order to make best use of the subject-specific information on employability skills teaching gathered during university visits.

Further details of sampling methods are provided in Appendix B. In total just over 210 establishments were contacted. Allowing for the relatively high proportion of establishments which did not employ any graduates in one of the chosen subjects, we estimate that the effective response rate at establishment level was roughly 27% of all establishments who were in principle eligible to participate (see Appendix Table B1 for details of this calculation). This response rate is not high for a telephone survey, but most telephone surveys do not attempt the difficult task of securing the separate agreement of linked pairs of respondents.

4.2 Description of achieved sample

Given the relatively small size of our achieved sample of graduates and line managers, our focus on graduates in only five subject areas and the unorthodox way in which the sample had been compiled, we were concerned to establish how and to what extent – on a range of criteria – the graduates in our sample differed from the wider population of individuals graduating from UK universities in the same time period.

As described, interviews were carried out with 229 individual graduates and 192 line managers. Throughout this report we focus primarily on the 192 graduates who were 'paired' with line managers since the main strength of our research method was the ability it gave us to compare and combine responses from both graduates and line managers in our data analysis. Accordingly, unless otherwise stated, all survey data reported here refer to the 192 paired graduates and their line managers.

Table 4.1 shows the composition of the graduate sample in terms of degree subjects, years of graduation and age. Some 93% of the graduates had studied one or other of our five target subject areas, with the largest numbers in business studies (79) and the smallest in history (20) and design (13). A small proportion (7%) of the graduates were found on close inspection to have studied subjects outside our target areas. The small numbers in history and design reflect the fact that we only visited (and sought First Destinations contacts from) four departments in each of those subjects as compared to eight departments in biology, business studies and computing. As a result particular caution must be attached to survey findings relating to history and design.

Just under half (47%) of the graduates had attended one of the departments where interviews were carried out in the earlier phase of the study (Chapter 3). The remainder had attended a range of universities in different parts of the UK. In total about 40% of the sample had graduated from pre-1992 Universities and 60% from New Universities and colleges.

About 87% of these graduates entered the labour market between 1998-2001, with a fairly even distribution across those three years. Just over three quarters of them (78%) were born between 1974 and 78. This age distribution – and the spread of years of graduation – largely corresponded with sampling objectives.

Table 4.1: Composition of sample of graduates

A. SUBJECT AREA

	Number of respondents	Percent of total
Biological sciences	32	17
Business studies	79	41
Computing	34	18
Design studies	13	7
History	20	10
Other subjects	14	7
TOTAL	192	100

B. YEARS OF GRADUATION

	Number of respondents	Percent of total
1996 or earlier	11	6
1997	15	8
1998	48	25
1999	51	27
2000 or later	67	35
TOTAL	192	100

C. YEAR OF BIRTH

	Number of respondents	Percent of total
1973 or earlier	27	14
1974	17	9
1975	21	11
1976	37	19
1977	39	20
1978	37	19
1979 or later	13	7
No information	1	1
TOTAL	192	100

In Table 4.2 we review a number of salient characteristics of graduates in our sample and compare them against what is known about the wider population of graduates in similar age-groups. About 54% of sample graduates were female, in line with the gender split among recent graduates as a whole. In ethnic background some 91% were White compared to 85% in the wider graduate population. The sample of graduates had above average shares who had acquired A-levels or equivalent before starting university and had an above average share of people holding vocational qualifications certified by BTEC or SCOTVEC; the main disparity with the wider population of university graduates is the smaller proportion in the sample who are classified to 'other qualifications' apart from A-levels or BTEC/SCOTVEC awards.

The sample also turns out to be biased towards graduates who studied full-time and those who attended New Universities (60% of the sample compared to an estimated 42% of annual new graduates in the UK). The proportions gaining First or Upper Second class honours degrees were above those for graduates as a whole but the proportion which had gone on to gain postgraduate qualifications was much the same as in the wider population.

In respect of work experience gained before graduating, some 41% of sample graduates had undertaken some form of work experience with an employer as part of their course, substantially higher than in the wider population and only partly reflecting our focus on subjects such as computer science and business studies where there is an above average level of involvement in sandwich courses. However, in terms of other kinds of work experience gained as a student, the sample was in line with wider trends in having very high proportions of graduates who had undertaken paid work during term-time or vacations.

Given that we sought to identify employers via university Careers Service records, we anticipated that the sample would be biased towards graduates who had stayed on with their initial employer and this turned out to be the case. Just over two-thirds of sample graduates had started work with their present employer within six months of graduating whereas Labour Force Survey data suggest that only 23% of employed graduates in the 23-27 age group have been with their current employer since the age of 22.

However, in other respects the employment characteristics of sample graduates were not too badly out of line with the wider population, for example, 78% of them were employed in service industries and 16% in manufacturing, roughly in line with the overall distribution of graduates. In terms of occupational distribution, there was a relatively low proportion of sample graduates in occupations below associate professional level, but the 22% of sample

graduates reporting that their degree-level skills and knowledge were 'under-utilised' in some way was roughly in line with findings based on much larger samples of recent graduates.

These sample characteristics have important implications for our investigation of the extent to which higher education has succeeded in enhancing the employability of graduates. Given that sample graduates are above the national average in terms of measures of educational attainment such as degree class, and have displayed a greater tendency to stay in employment with their initial main employer, it seems likely that the average quality of 'matching' between graduates and employers – in terms of meeting each other's needs and requirements – is higher for sample graduates than for graduates as a whole. This likelihood needs to be borne in mind in later evaluation of our survey findings which we now go on to report. For example, any evidence that we find of shortfalls in graduate employability skills is likely to understate the extent of such shortcomings among graduates as a whole. Conversely, any evidence of employability skills being well developed in higher education will need to be treated with some caution unless and until other confirmatory evidence based on a wider survey of graduates and employers can be found. Nonetheless, we believe that the rare opportunity we have had to gather data from matched pairs of graduates and line managers has generated a great deal of new and interesting information relevant to debates about graduate employability skills formation.

Table 4.2: Characteristics of graduates in sample compared to what is known of wider population of graduates in similar age-group

Graduate characteristics	*Sample*	**Population**
Gender	54% female, 46% male	54% female, 46% male (UK-domiciled First degree graduates, 1999, HESA)
Race	91% White 9% Other ethnic backgrounds	85% White 15% ethnic minority (UK-domiciled First degree graduates, 1999, HESA)
Entry qualifications	84% A/AS levels or equivalent, 13% BTEC/SCOTVEC, 3% Other qualifications	70% A/AS levels or equivalent, 8% BTEC/SCOTVEC, 22% Other qualifications (UCAS, 1997)
A-level score distribution	31% 26 points or more, 13% 21-25 points, 24% 16-20 points, 15% 11-15 points, 14% 6-10 points, 3% 5 points or fewer	24% 26 points or more, 17% 21-25 points, 26% 16-20 points, 17% 11-15 points, 15% 6-10 points, 1% 5 points or fewer (UCAS, 1997)
Type of university	40% graduated from Old Universities, 60% from New Universities	58% graduated from Old Universities, 42% from New Universities (Estimate for late 1990s, IER, Projections of Occupations and Qualifications, 1999/2000)
Mode of study	95% studied full-time for First degree	72% of First degree graduates studied full-time (UK-domiciled First degree graduates, 1999, HESA)
Degree class	11% First class, 58% Upper second, 26% Lower second 5% Other	8% First class, 43% Upper second, 35% Lower second 14% Other (UK-domiciled First degree graduates, 1999, HESA)
Postgraduate qualifications	19% hold postgraduate qualifications, primarily Masters degrees	18% of 23-27 year old graduates hold postgraduate qualifications (Labour Force Survey, 1998)
Work experience as part of course	41% had undertaken work experience with an employer as part of their degree course	8% of all undergraduate students did sandwich course Biology -- 7% Computer science –29% Business studies – 24% Creative arts and design 4% Humanities 0% (UK-domiciled First degree graduates, 1999, HESA)
Paid work during term-time	52% did paid work during term-time while studying for their degree	47% of full-time students work during term-time (Callender/Kemp survey, 1998-99, DfEE Research Report No. 213)

Table 4.2: (continued)
Characteristics of graduates in sample compared to what is known of wider population of graduates in similar age-group

Graduate characteristics	*Sample*	**Population**
Paid work during vacations	86% did paid work during vacations while studying for their degree	82% of full-time students work during summer vacations (Callender/Kemp survey, 1998-99, DfEE Research Report No. 213)
Labour market history	11% were unemployed for three months or more since leaving university	Unemployment rate for sample of 1995 graduates reduced from 19% to 3% over first three years after graduation (Moving On, 1999, IER/ AGCAS/ CSU)
	68% started work with present employer within six months of completing university studies	In 1998 an estimated 23% of 23-27 year old graduates in employment had been with their current employer since the age of 22 (Labour Force Survey, 1998)
Current employment:	98% now work full-time for current employer	93% of 23-27 year old graduates in employment work full-time for current employer (Labour Force Survey, 1998)
	1% self-employed	3.1% of 23-27 year old graduates in employment were self-employed (Labour Force Survey, 1998)
Sectoral distribution of employment	78% service industries 16% manufacturing industries 6% other industries	81% service industries 15% manufacturing industries 4% other industries (23-27 year old graduates in employment, Labour Force Survey, 1998)
Occupational distribution of employment	10% managers and senior officials 33% professional occupations 37% associate professional occupations 8% administrative and secretarial occupations 2% other occupations 10% no information provided [SOC2000 classification]	16% managers and administrators 34% professional occupations 22% associate professional occupations 15% clerical and secretarial occupations 13% other occupations [SOC1990 classification] (23-27 year old graduates in employment, Labour Force Survey, 1998)
Indicator of 'under-utilisation' of graduate-level skills and knowledge	22% say their skills and knowledge are 'too high' for current jobs 72% say 'about right' 6% say 'too low'	Sample of 1995 graduates found 71% using degree-level skills and knowledge three years after graduation (Moving On, 1999, IER/ AGCAS/ CSU)