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November 2008

The Flexible Professional in the Knowledge Society
– new demands on higher education in Europe
(Report 3)

Subject differences in graduate employment across Europe

**Report to HEFCE by Centre for Higher
Education Research and Information, The
Open University**

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Executive summary

This report is one of a series of reports commissioned by the Higher Education Funding Council for England which draw on a recent European Commission Framework Project, 'The Flexible Professional in the Knowledge Society' (the REFLEX project). The project – undertaken in 11 European countries – was an investigation into the employment experiences of European graduates over the five years since graduation in 2000. By design, the UK sample comprised graduates who had completed a bachelors degree in 2000. In most of the other countries, the samples comprised wholly (or mainly) those with a masters degree.

The nature of a graduate's subsequent employment is, in considerable part, a function of the subject studied in higher education. Courses in some subject areas prepare students for quite specific jobs in particular areas of employment. Other courses have a much looser link to the labour market, with their graduates dispersed over a wide range of jobs and occupational fields. As we discuss in reports 1 and 2 in this series, countries differ in the proportions of their graduates who have taken courses of these two different types, with the UK characterised more by the second type. Thus, the subject mix differs between countries with, for example, a higher proportion of UK graduates having studied subjects within the humanities.

This report looks at the interaction between subject and country differences in terms of the profiles and experiences of students, their transition into employment, their success in the labour market, the features of their workplaces, their perceived competences and their values. Much of the analysis uses a typology of subject differences which distinguishes between non-vocational arts, vocational arts, non-vocational science and vocational science courses.

The main conclusion to be drawn is that the distinctive features of UK graduates and their entry to the labour market do not disappear when account is taken of subject studied. However, these features are most marked among students from non-vocational arts courses (of which the UK has a higher proportion than most countries) and are least marked among graduates of vocational science courses (where presumably there is likely to be a higher degree of professional regulation in all countries). Thus, 50% of UK graduates from non-vocational arts courses felt their first jobs after graduation were not appropriate to a degree level education compared with 27% of such graduates from other European countries. Among vocational science graduates, only 17% of UK graduates and 10% of other European graduates felt that their first jobs were not appropriate to their degrees.

In terms of graduates' current roles in the workplace, it is graduates from vocational science courses who seem to have greater responsibility, though in general it is the 'vocational' aspect rather than the 'science' aspect that seems to be the more important factor. However, many differences are not substantial and it is the overall differences between countries and their national traditions that remain the more important.

1 Introduction

This report is based on the results of a major international study of graduate employment, 'The Flexible Professional in the Knowledge Society – new demands on higher education in Europe (REFLEX)' which was funded by the European Commission as part of its 6th Framework programme, Priority 7 'Citizens and Governance in a Knowledge Based Society'. The study – undertaken by eleven European countries – was an investigation into the employment experiences of European graduates over the five years following graduation in 2000. Details of the study are contained in [Appendix A](#). The main feature of the study was the application of a large questionnaire to nationally representative samples of the graduating populations in the participating countries and, through this, the exploration of the kinds of work the graduates had obtained, how well they felt prepared for it, its relationship to their higher education studies, the competences they felt that they possessed and were required of them, the nature of the organisations for whom they worked, the changes they had experienced over the five years since they had graduated and their values and attitudes to the higher education they had received.

By design, the survey sampled graduates who had completed their studies with either a bachelors or a masters degree (or equivalent) depending on which qualification was seen as the main 'exit' qualification with which graduates left higher education in 2000 and entered the labour market in each of the respective European countries. In the UK, the sample comprised graduates with a bachelors degree. In most of the other countries, the sample comprised wholly (or mainly) those with a masters degree.

This report is one of six commissioned by the Higher Education Funding Council for England to draw out the main differences and similarities between the experiences of UK and European graduates. The focus of this report is on the importance of subject in relation to graduates' experiences.

The nature of a graduate's subsequent employment is, in considerable part, a function of the subject studied in higher education. Courses in some subject areas prepare students for quite specific jobs in particular areas of employment. Other courses have a much looser link to the labour market, with their graduates dispersed over a wide range of jobs and occupational fields. As noted in other reports in this series, European countries differ in the proportions of their graduates who have taken courses reflecting these two types of relationship with the labour market, the specific and the general. Moreover, labour markets themselves differ in the extent to which particular educational credentials determine entrance to particular jobs.

The aim of this report is to examine national differences in graduate employment when subject differences are taken into account. Various typologies of subjects and higher education courses can be found which attempt to take account of differences in the nature of the relationship between study and work (for example, Brennan and McGeevor, 1988; Brennan et al, 1993; Purcell et al, 2005)¹. Differences tend to relate to the extent to which courses are general or specialised and academic or vocational. The implications of such differences may vary between different academic and employment fields but, in general, it may be expected that courses with a more specialised and vocational relationship to the labour market will exhibit features such as i) greater utilisation of higher education subject content, ii) speedier entry to the labour market and iii) less dispersion of graduates to different parts of the labour market. While in general these features may well be true, they do not take into account factors such as i) overall characteristics of the labour market (e.g. balance between industrial, service and 'knowledge' economies), ii) the overall health of the

¹Brennan, J. and McGeevor, P.(1988), *Graduates at Work*, London: Jessica Kingsley
Brennan, J., Lyon E. S. and McGeevor P.(1993), *Students, Courses and Jobs*, London: Jessica Kingsley
Purcell, K., Elias, P. , Davies, R. and Wilton, N. (2005) *The class of '99: a study of the early labour market experiences of recent graduates* London: Department for Education and Skills

labour market (unemployment levels, skills demands) and iii) history and tradition concerning credentials and opportunity structures. Nor do they take account of the rapidity of change within the world of work and the degree of flexibility needed by workers over a working lifetime.

In examining the extent to which national factors of these kinds alter the relationship between subject of study and subsequent employment, this report will utilise two typologies of subject differences. The first of these is a fairly conventional typology of fields of study (natural science, humanities, etc.), while the second groups types of study programme according to whether they are 'vocational' or 'non-vocational' and 'science' or 'arts'. We have used this latter typology on previous occasions (Brennan and Shah, 2003)². Although admittedly relatively crude, its advantage is that it reduces the numbers of groupings used in the analysis and focuses on factors known to relate to labour market outcomes. Most tables and charts presented in the text will use this four-fold typology of programme type. Some tables covering the larger subject groupings can be found in the appendices. Appendix H details the subjects incorporated in the four programme types used in this report.

There is a potential danger that subjects and course titles can mean different things in different national higher education systems. This is a problem for comparative studies almost irrespective of the particular typology used. As we shall see, while we can identify some clear differences between the effects of subject in the different countries, we have to be cautious in our interpretations of these differences. More qualitative research into what lies behind the statistical differences may be warranted in some cases.

In order to better understand what lies behind subject differences, it is important to be aware of the relationships between subject and other factors known to influence employment outcomes. These include demographics such as gender and age, features of the student experience such as work placements, and status differences – whether related to the backgrounds of the students themselves or to the status of the higher education institutions which they attend. We explore differences of this sort in the opening sections of this report.

Later sections will look at employment outcomes, both immediately after graduation and five years on, at features of the workplaces in which graduates find themselves, at the competencies they feel they possess and at their reported values – what is important to them in their current and future lives.

This report uses data weighted to be nationally representative in terms of subject of study and institution attended. The overall figure for Europe is based on equal weights from each country. Details of the sample can be found in Appendix B.

² Brennan J. & Shah, T. (2003) *Access to What? Converting educational opportunity into employment opportunity* London: The Open University

2 Subject of study and the student experience

In this section, we consider how subject of study affects the nature of the student experience (including work experience) and how this is perceived in retrospect by graduates. One general difference between the UK and most of the rest of Europe that needs to be borne in mind, irrespective of subject, is the generally shorter duration of courses in the UK: three or four years Bachelors programmes compared with five years plus for Masters programmes elsewhere in Europe.

2.1 Average hours of study

In virtually all programme types, UK students seem to spend less time in study than students in other European countries (See Table 1). (Defined in the survey to include lectures, self study and internships.) The minor exception is in vocational arts where students in the Czech Republic spend marginally less than UK students with 28 hours compared with 31 hours per week. Thus, in addition to having shorter courses, UK graduates have spent less time each week in their studies.

Table 1. Average hours spent in study by country

	Europe	UK	IT	ES	FR	AT	DE	NL	FI	NO	CZ	CH
Non-vocational Arts	31	28	32	35	34	31	32	28	28	35	28	33
Vocational Arts	33	31	34	35	39	33	35	31	31	32	28	36
Non-vocational Science	37	32	40	39	44	35	37	35	31	38	32	43
Vocational Science	38	33	39	42	42	39	40	35	37	37	34	46

2.2 Study programme descriptors

Perhaps linked to the smaller number of hours devoted to their studies each week, UK graduates were more likely to report that they found their studies very demanding (see Table 2). The difference was particularly great in the non-vocational science programmes with 82% of UK graduates compared with 70% of other European graduates finding such courses very demanding. But there were important subject differences that were broadly consistent across countries. Thus, just 48% of European and 54% of UK graduates from non-vocational arts programmes reported their courses to be very demanding. And 'science' courses were generally perceived to be more demanding than 'arts' courses.

Table 2. Graduates' perceptions of their course (% 'to a great or very great extent')

	Non-vocational Arts		Vocational Arts		Non-vocational Science		Vocational Science		Total	
	Europe	UK	Europe	UK	Europe	UK	Europe	UK	Europe	UK
The programme was generally regarded as demanding	48	54	49	58	70	82	69	72	57	62
Employers are familiar with the content of programme	22	16	42	37	30	24	51	51	39	29
You were free to compose your own programme	46	28	26	16	30	17	20	19	29	21
The programme had a broad focus	58	59	57	60	53	55	57	57	57	58
The programme was vocationally orientated	16	11	44	40	25	17	51	52	38	27
The programme was academically prestigious	34	47	29	39	42	57	41	52	35	47

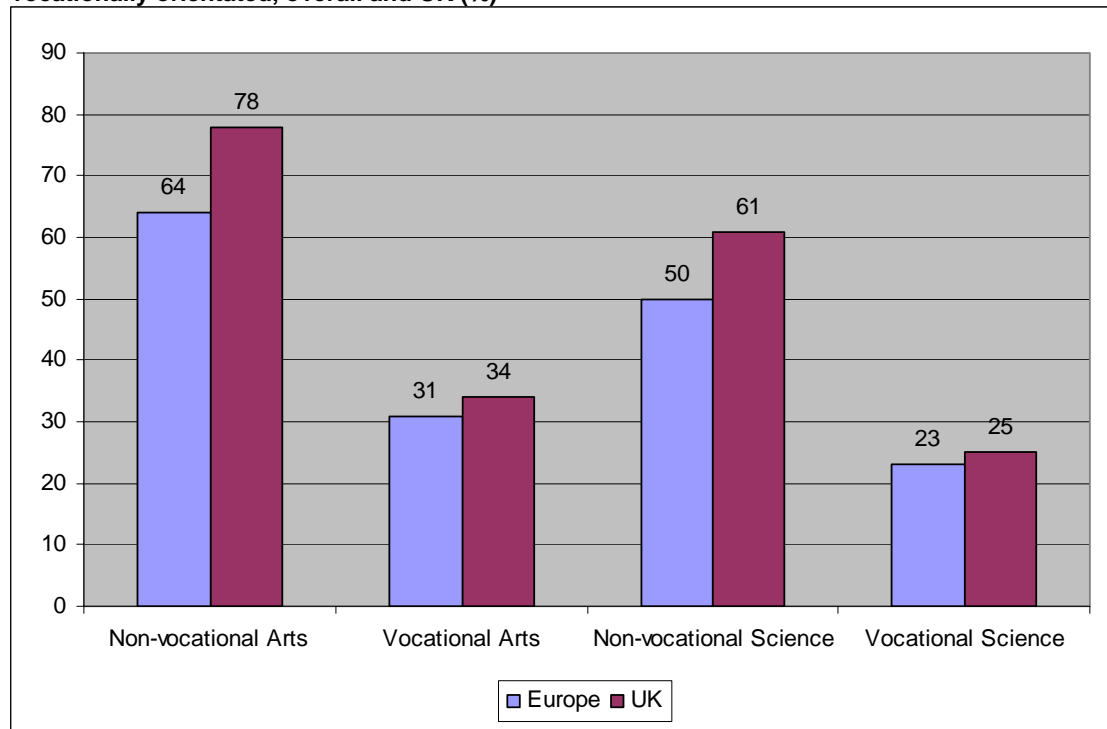
There are also similar (and predictable) differences between programme types in the UK and Europe in the degree of familiarity that employers had with course content. Familiarity is at its highest in vocational science courses (51% of both European graduates and UK graduates reporting familiarity to 'a high or very high extent') and at its lowest with non-vocational arts programmes (22% of European graduates and 16% among UK graduates). However, given the general aims of vocational science types of programme, the fact that nearly 50% of the employers of such graduates were not perceived by the graduates to be familiar with the content of these courses is itself of interest. These rather large differences between types of programme in this respect point to different kinds of relationship between higher education and employment and to differences in recruitment strategies and rationales concerning the employment of graduates from different types of study programme.

We can also note from the above table that, irrespective of country, vocational science students have least freedom in composing their programmes of study. In other programme types, European graduates seemed to have experienced much greater freedom over the content of their programmes than UK graduates. For example, 46% of European non-vocational arts graduates reported having a high or very high degree of freedom compared with only 28% of their UK counterparts.

There were virtually no differences between either countries or programme types in the proportions of graduates who reported that their programmes of study had a 'broad focus', something which arguably might relate to potential flexibility among graduate employees. Around 55% reported that their courses had this feature.

Similar and largely predictable differences between programme types were to be found in the perceptions of programmes as being ‘vocationally oriented’ Non-vocational UK graduates were somewhat less likely than their European counterparts to find this characteristic in their courses, but percentages were less than 20% in both UK and Europe as a whole. But perhaps more interesting here is the fact that, in the UK, 25% of vocational science and 34% of vocational arts graduates did not find or hardly found their courses to have been vocationally oriented (see Figure 1). The proportions were not much different in Europe as a whole (23% and 31%).

Figure 1. Graduates’ perceptions of their course: The programme was not at all/was hardly vocationally orientated, overall and UK (%)



Irrespective of programme type, UK graduates were more likely to regard their study programmes as ‘academically prestigious’. But the pattern of programme differences was similar, with science courses regarded as more prestigious than arts courses in both Europe and the UK and with non-vocational courses slightly more prestigious than vocational ones.

2.3 Study behaviour

Approaches to study were measured by two questions which sought to capture something of the motivation to study as well as study behaviour. One concerned the extent to which students did more than was formally required of them to pass examinations and the other concerned the importance they attached to doing well (in terms of obtaining high marks). Table 3 below summarises the answers to these two questions for UK and European graduates. As we have reported elsewhere (report 1 in this series), there were considerable differences between the UK and the European graduates in respect of the first of these two measures. Irrespective of programme type, UK graduates were much more likely to report that they had done more than meet minimum requirements. They also attached more importance to obtaining high marks, again irrespective of programme type but in this case by a smaller margin of difference.

There was also, however, a pattern to the differences between programme type, at least in Europe. For the European graduates, it was those from non-vocational programmes who reported doing extra work and were more concerned about getting high marks. Differences by programme type were less clear for the UK graduates. Here, graduates who had studied arts programmes appeared to attach more importance to obtaining high marks. There were no real differences between programme types in relation to doing extra work. Just over 50% said they did so, irrespective of programme.

Table 3. Approaches to study according to type of programme (% 'to a great or very great extent')

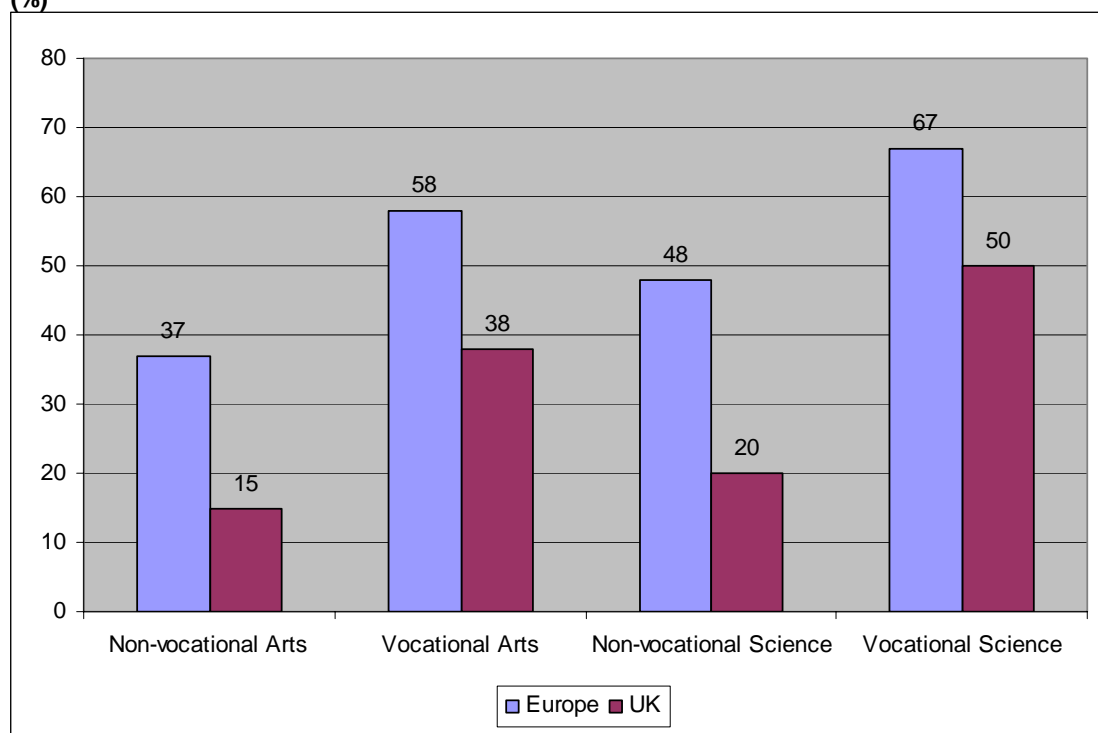
	Non-vocational Arts		Vocational Arts		Non-vocational Science		Vocational Science		Total	
	Europe	UK	Europe	UK	Europe	UK	Europe	UK	Europe	UK
I did extra work above what was required to pass my exams	44	54	36	52	42	51	39	53	39	53
I strived for the highest possible marks	61	66	53	65	57	60	52	59	55	64

2.4 Placements

European graduates were much more likely than UK graduates to have participated in work placements or internships during their studies (see Figure 2). In non-vocational programmes, European graduates were twice as likely as their UK counterparts to have had this kind of experience. Even in vocational science programmes, where 50% of UK graduates had been on work placements, the European figure was 67%. There was a 20% points difference between the proportions of European vocational arts graduates who had taken placements and their UK counterparts. And from a UK perspective, it is surely remarkable that as many as 37% of non-vocational arts and 48% of non-vocational science graduates in Europe had undertaken placements.

There may be something of a pattern to this. As we see later in this report, UK graduates appeared to be less well prepared for their first jobs after graduation than their European counterparts and their employers seemed to be giving them more training and support (and less responsibility). In the European case, it seems that employers are providing more support *during* higher education (through placement provision).

Figure 2. Participation in work placements within different types of programme, overall and UK (%)



2.5 Work experience before higher education

A minority of graduates reported that they had had work experience relevant to their studies before they had entered higher education. As Table 4 indicates, with the exception of vocational science, European graduates were more likely to have had prior work experience than UK graduates. Graduates from the vocational types of programmes were more likely to have had it than graduates from non-vocational programmes.

Turning to forms of work experience prior to higher education that were not perceived as relevant to subsequent study, the differences between UK and European graduates were not great. Around 50% reported having such experiences, with UK graduates slightly less likely to have done so. UK science graduates were less likely than other UK graduates to report prior work experiences, probably reflecting their younger average age.

Table 4. Graduates who acquired work experience before higher education (%)

	Non-vocational Arts		Vocational Arts		Non-vocational Science		Vocational Science		Total	
	Europe	UK	Europe	UK	Europe	UK	Europe	UK	Europe	UK
Acquired study-related work experience before higher education	18	11	30	24	13	9	33	33	26	18
Acquired non-study related work experience before higher education	55	51	58	51	51	46	53	44	55	49

2.6 Work experience during higher education

Turning to work experience gained during the time spent in higher education (Table 5), UK graduates were less likely to have obtained such experience compared with European graduates. This was particularly the case regarding 'relevant' work experience. Overall, 49% of European graduates had had some relevant work experience compared with 20% of the UK graduates. The differences appeared to be independent of programme type although expected differences between vocational and non-vocational programmes were apparent. Thus, across Europe vocational arts and sciences graduates were most likely to have had relevant work experience (50% and 56% respectively) against 27% and 33% for non-vocational arts and sciences. While the pattern was the same in the UK with respect to programme type, all were at a much reduced level – 20% and 27% in the case of vocational arts and sciences and 13% and 15% in the case of non-vocational arts and sciences.

Looking at work experience unrelated to the course of study, both programme and national differences were much less. Overall, 53% of European and 46% of UK graduates had obtained 'non-relevant' work experience during their studies. There were few differences by programme type among the UK graduates although nearly 10% fewer vocational science graduates reported such experiences than did graduates from programmes of other types. The pattern was similar across Europe although there was a very high percentage (61%) of European non-vocational arts graduates (compared with 48% of their UK counterparts) reporting this kind of work experience.

In view of the attention given to work experience and term-time working of all sorts among UK graduates in recent years, it is interesting to note the uniformly lower levels of work experience among UK graduates in comparison to the overall European figures. In some respects these may reflect differences in higher education traditions between different countries as regards links between higher education and employment. But they are also possibly a consequence and a corollary of the continental European pattern of 'stretching' first degree courses over as many as five or six years. This may simply make more time available for other things, including work, than is the case with the shorter UK undergraduate experience. Against this, the generally less intensive approach to study among UK graduates needs to be borne in mind. Whatever the reason, the scale of the differences between the UK and Europe is substantial and perhaps worthy of further investigation.

Table 5. Graduates who acquired work experience during higher education (%)

	Non-vocational Arts		Vocational Arts		Non-vocational Science		Vocational Science		Total	
	Europe	UK	Europe	UK	Europe	UK	Europe	UK	Europe	UK
Acquired study-related work experience during higher education	40	13	50	27	42	15	56	33	49	20
Acquired non-study related work experience during higher education	61	48	54	48	53	46	46	40	53	46

2.7 Conclusion

We see from the above that the UK student experience differs from the European student experience in several respects. It is shorter, somewhat less intensive and much less likely to have involved a period of work experience. Nevertheless, UK graduates were more likely to feel that their higher education courses had been demanding and were more likely to have striven for high marks. Differences by subject-related programme type generally followed similar and relatively predictable patterns between the UK and Europe. Perhaps the relatively high proportions of graduates from vocational programmes (whether arts or science) who had undertaken relevant work experience *before* as well as during higher education is worthy of note. But it is also worth remembering the figure of 37% of European non-vocational arts graduates who had relevant work experience during their higher education. While this report employs a simple distinction between the vocational and the non-vocational study programmes, a greater 'vocationalism' across *all* European higher education is apparent from some of these data.

Before we go on to look at how subject differences affect employment, in the next section we look at how student profiles in terms of such things as age and gender differ by subject or programme type.

3 Student profile

While central, subject of study is not the only factor to affect employability and is itself related to many other factors – for example, gender, age and type of institution attended – which may have implications for graduates' subsequent employment.

3.1 Gender

As we can see from Figure 3, the gender distribution among programme types is quite similar in the UK and in Europe. In Europe arts subjects (vocational or non-vocational) had a clear female majority and science subjects had a clear male majority. However, this rather disguises some large national differences that exist between different European countries (see Table C1). While all but Germany and Switzerland had clear female majorities overall, the gender balance in particular subject types varied quite a lot. That said, non-vocational arts subjects in all countries were female dominated, although from a low of 58% in Norway to a high of 81% in France. In vocational arts subjects, the spread was from a 40% minority in Switzerland to a high of 76% in Finland. In the non-vocational sciences, women were in a majority in Italy, Spain, France and Finland. In the UK there was an even 50:50 split. In vocational science subjects, women were in a majority in Spain, France, the Netherlands, Finland and Norway. But in the science subjects, the female majority tended to be much smaller than in the arts subjects.

Figure 3. Female graduate distribution by programme type, overall and UK (%)

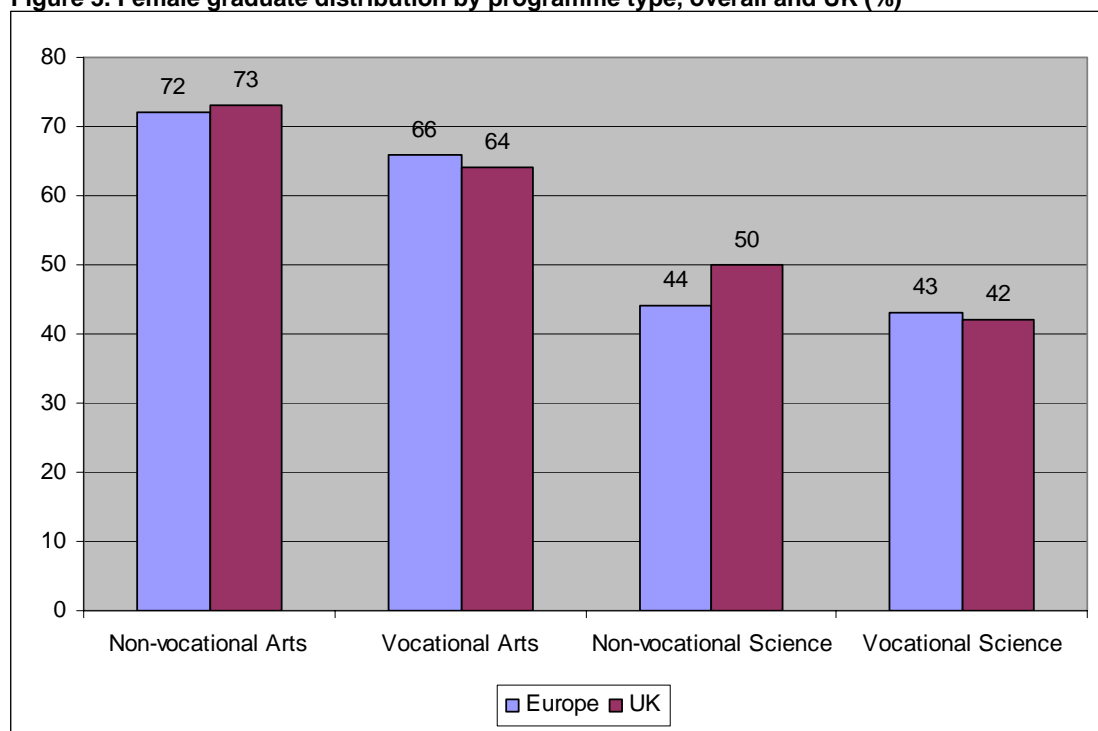


Table C1 in the appendix provides the proportion of male and female graduates in the four programme types for all countries in the study.

3.2 Age

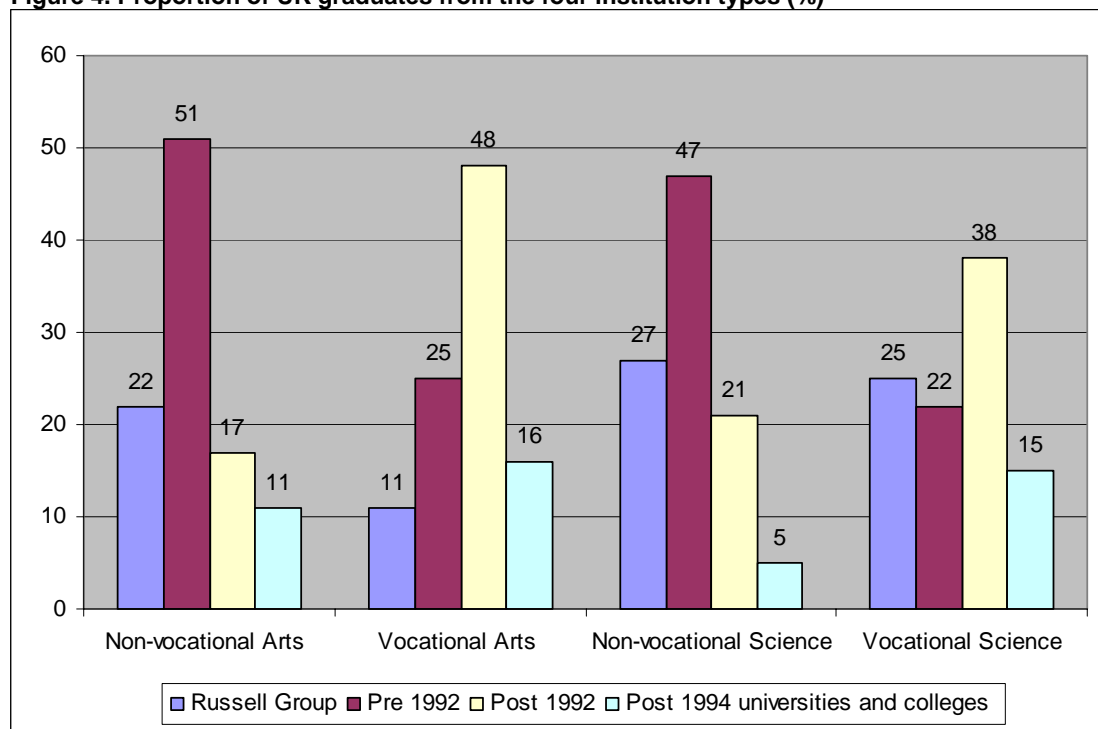
Concerning age, UK graduates were, overall, both younger and older at entry to higher education, with 66% in the 18 to 20 age group compared with 62% across Europe as a whole and with 22% in the 25 and older group compared with 12% in Europe as a whole (see Table C2 in the appendix). The overall pattern is maintained across subject types, although some quite sharp differences can be discerned. For example, graduates in the higher age groups were more likely to have taken arts subjects, irrespective of country. The biggest differences in proportions of mature students between the UK and Europe were to be found in the vocational science subjects (22% aged 25 or over in the UK compared with 8% in Europe as a whole). In vocational arts courses, whereas only 16% of UK graduates were in the 21 to 24 age group when they entered higher education, in Europe as a whole, the figure was 27%.

These differences are important to understanding different employment patterns and experiences, particularly when aligned with the longer duration of courses elsewhere in Europe. The age (and maturity) at which a graduate enters the labour market may have implications for how s/he is treated when s/he gets there, for example in terms of levels of autonomy and responsibility.

3.3 Institution types

Within the UK, it is sometimes claimed that 'where' you studied is more important than 'what' you studied. UK higher education is generally regarded as being more stratified than most other European systems. This is explored in report 2 in the series. The different programme types were not evenly distributed between UK institutional types as Figure 4 makes clear. Nearly three quarters (73%) of all non-vocational arts graduates had attended Russell Group or other pre-1992 universities. On the other hand, 64% of vocational arts graduates had attended post-1992 universities or colleges of higher education. The vocational/non-vocational institutional split was also found in science subjects. Of non-vocational science graduates, 74% had studied in pre-1992 universities (including the Russell Group). For vocational science graduates, the equivalent figure was 47%.

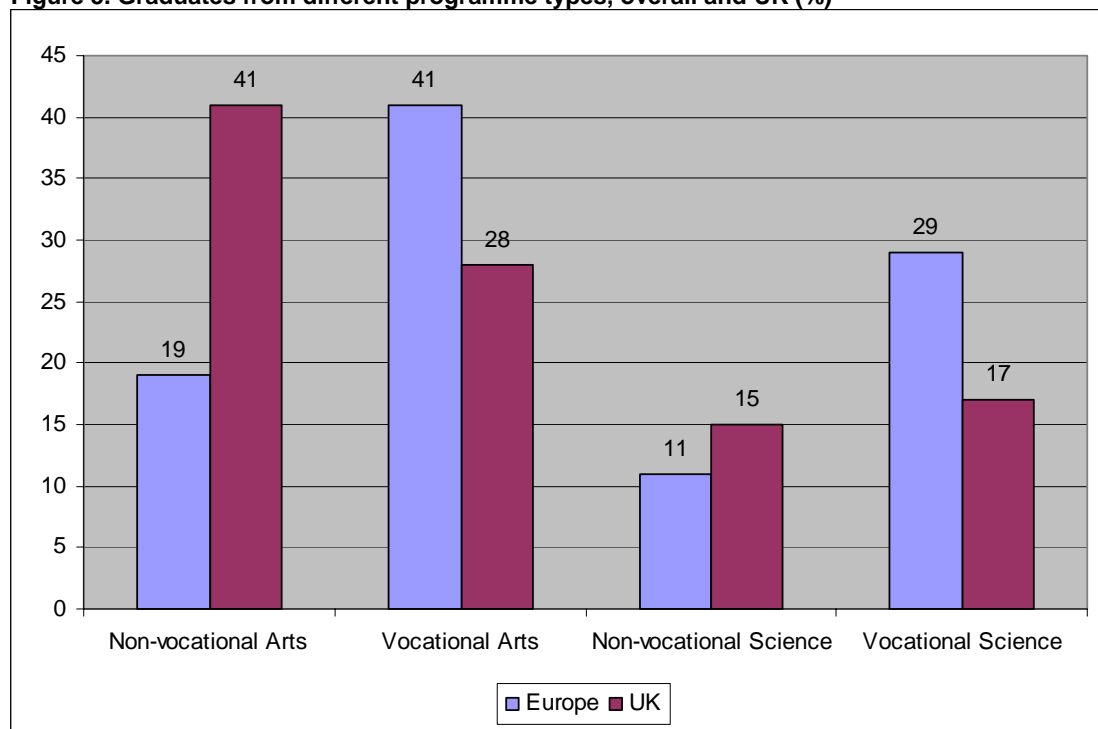
Figure 4. Proportion of UK graduates from the four institution types (%)



3.4 Programme mix

If we look at how the graduates were spread among the four programme types (Figure 5), we find that for Europe as a whole the largest proportion fell within the vocational arts group (with 41% of the whole sample) followed by the vocational science group (29%), non-vocational arts (19%) and non-vocational science (11%). The UK distribution was rather different with 41% in the non-vocational arts category, 28% in the vocational arts, 17% in the vocational science and 15% in the non-vocational science. Table C3 in the appendix provides the details for all eleven countries in the study. No country came near the UK for the proportion of graduates in the non-vocational arts category. Graduates from vocational subjects (both arts and sciences) were in the clear majority everywhere else. In most countries, this meant vocational arts graduates but in Germany and Finland, there was an equal proportion of vocational arts and science graduates.

Figure 5. Graduates from different programme types, overall and UK (%)



Looking at the more detailed breakdown by subject shown in Figure 6, the field of social sciences, business and law accounted for 32% of the UK sample, with humanities and arts accounting for 28%. The other significant field was science, mathematics and computing with 17%. For Europe as a whole, the social sciences, business and law were again the largest field (with 31%) but the humanities and arts were less than in the UK with 11%. Engineering, manufacturing and construction accounted for 17% of the European sample but only 7% of the UK sample. It accounted for 24% of German graduates, 20% of Finnish graduates, 26% of Czech and 20% of Swiss graduates. In Norway, health and social welfare accounted for 31% and in the Netherlands it accounted for 21%. In the UK this field registered just 8%, while in the sample as a whole it was 15%. Table C4 in the appendix provides the details.

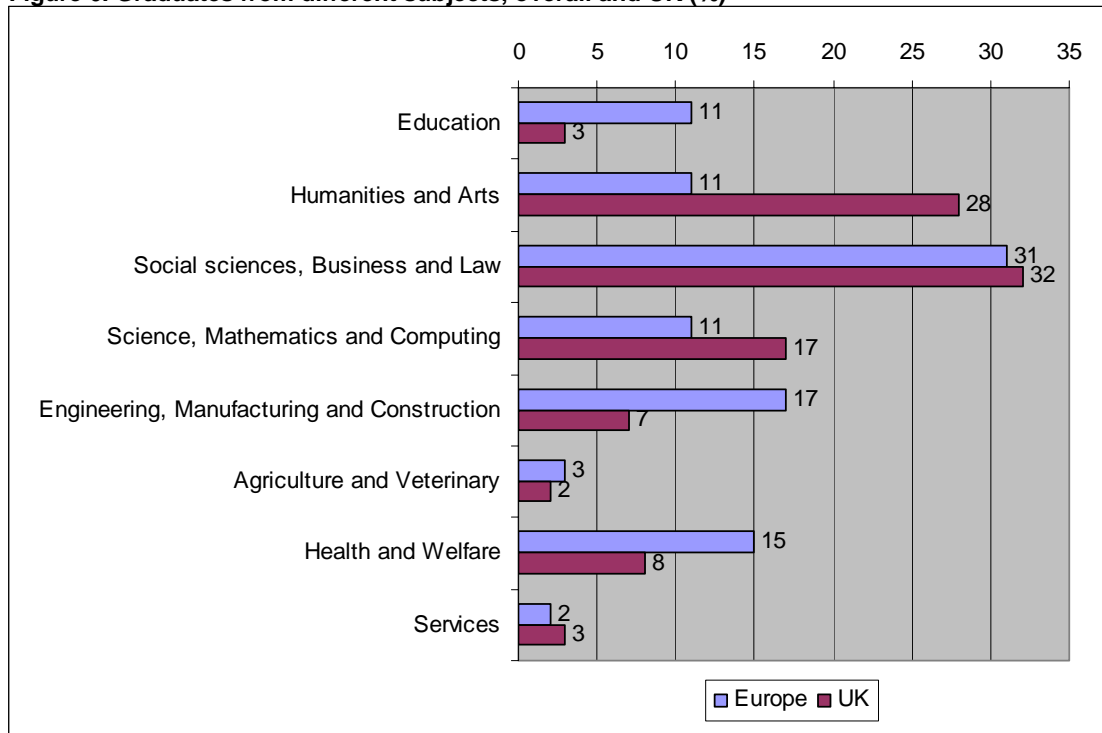
These differences in subject mix are indicative of the different national traditions of higher education and the characteristics of different national labour markets in Europe, as discussed in the second report in this series.³ Countries such as Germany and Finland still have large manufacturing sectors so it is not surprising that their higher education systems produce large numbers of graduates in engineering and related fields. But more generally, the greater vocational/professional focus of continental European higher education systems and the greater role played by educational credentials in regulating movement through the labour market mean that there is a greater vocational specificity in the credentials for entry into specific labour market areas. In contrast, the UK tradition of more generic and transferable competences coupled with the more service orientation of the economy is compatible with the much stronger arts and social science orientations and the generally less vocational emphasis.

It is an interesting question whether the many differences in the employment experiences and situations between the UK and other European graduates can be attributable to these differences in overall subject mix. By examining the effects of

³ Arthur, L., Brennan, J., Hick, R. & Kimura, M. (2007) *The context of higher education and employment: comparisons between different European countries* (to be published)

subject differences upon graduate employment, this report will attempt to provide an answer to this question.

Figure 6. Graduates from different subjects, overall and UK (%)



3.5 Living arrangements

There were no real differences between subject groups in the European sample in terms of their living arrangements during higher education except that non-vocational arts graduates were less likely to live with their parents (23% compared with 29% of the whole sample) and were more likely to live with friends and acquaintances (12% compared with 8%). Please see Table 6 below. Within the UK, vocational arts graduates were less likely to have lived alone during their final year (16% compared with 19% overall) and non-vocational science graduates were less likely to have lived with a partner (15% compared with 20%) but vocational science graduates were most likely to have done so (25% compared with 20%). As with the European sample, non-vocational arts graduates were less likely to have lived with their parents (23% compared with 29% overall). Vocational graduates – both arts and science – were less likely to have lived with friends and acquaintances (7% of both arts and science compared with 12% and 10% of non-vocational arts and science graduates, respectively).

Table 6. Graduates' living arrangements during last year of study (%)

	Non-vocational Arts		Vocational Arts		Non-vocational Science		Vocational Science		Total	
	Europe	UK	Europe	UK	Europe	UK	Europe	UK	Europe	UK
Alone	27	20	26	16	29	20	27	20	27	19
With a partner	32	20	30	20	26	15	30	25	30	20
With parents	23	10	30	17	30	14	30	16	29	13
Other	3	3	4	4	3	3	4	3	4	3
In student accommodation	4	9	3	9	3	7	3	8	3	9
With other relatives, friends or acquaintances	12	38	7	35	10	41	7	28	8	36

Whatever the reasons for these differences, there is some evidence from another CHERI project⁴ that living arrangements during higher education can affect its impact on the individual, for example in terms of the acquisition of subject 'identity', generic and transferable skills and general maturation.

3.6 Conclusion

An arts/science gender bias exists across Europe although there are differences between individual countries. As far as age is concerned, the existence of a clear 'mature student' group in all UK programme types with the exception of non-vocational science is a distinguishing feature. In terms of overall student subject profiles, the much higher proportion of non-vocational arts graduates in the UK – and their concentration in pre-1992 universities – fits the pattern described elsewhere in these reports of looser links between higher education and employment and greater emphasis given to factors of institutional prestige in the UK. Although there are no major subject differences in living arrangements while in higher education, we may note that UK students were far less likely to have lived with either parents or a partner while in higher education. They were three to four times more likely to have lived with other relatives, friends or acquaintances.

⁴ The Social and Organisational Mediation of University Learning (SOMUL) project, part of the ESRC Teaching and Learning Research Programme

4 The transition into employment

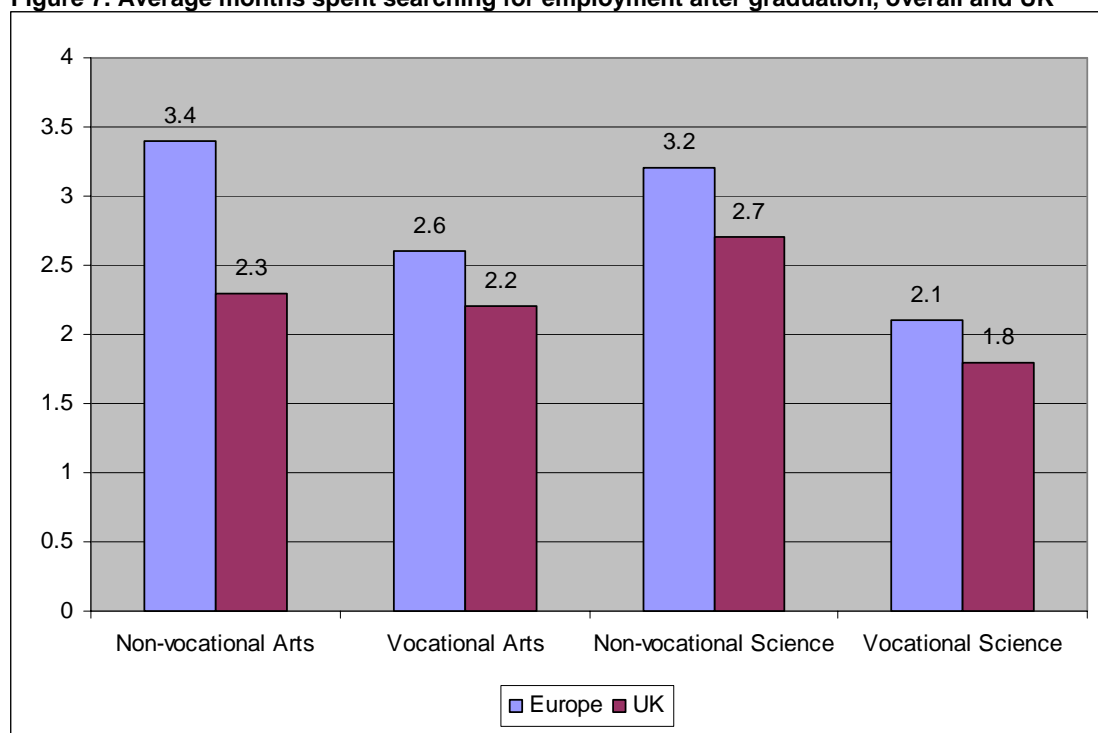
In this section, we look at the early experiences of graduates in employment, including any difficulties in finding work, and at the relevance of subject of study to that employment.

4.1 Speed into employment

The transition from higher education into employment can be a long and difficult period for some graduates. However, the time spent looking for employment after graduation was not long on average, generally between two and three months (Figure 7). For graduates across Europe, the study of a vocational type of course seems to reduce the job search time by about a month.

UK graduates seem to be speedier into employment than European graduates, a few weeks less for each programme type. Interestingly, it is UK graduates from non-vocational programmes who appeared to have the biggest advantage over European graduates from similar programme types. Possible reasons could be the higher proportion of non-vocational graduates coming from pre-92 universities. And the generally speedier transition for UK graduates may be partly attributable to more highly developed careers services within UK universities and colleges.

Figure 7. Average months spent searching for employment after graduation, overall and UK



The effects of university careers services can also be seen in the earlier commencement of job search for some UK graduates, irrespective of programme type but especially for graduates from vocational programmes. However, for UK graduates there are rather larger differences between programme types in the timing of the commencement of the job search (Table 7). Non-vocational arts graduates appear to be far more likely to leave their job search until after graduation. UK graduates were less likely to report that no job search had been necessary (i.e. the

employer had 'found' them) and there were rather large differences between programme types (with graduates from vocational type courses being the more likely to report that no search had been necessary).

Table C5 in the appendix provides the figures of average months spent searching for employment after graduation for all countries in the study.

Table 7. Timing of job search (%)

	Non-vocational Arts		Vocational Arts		Non-vocational Science		Vocational Science	
	Europe	UK	Europe	UK	Europe	UK	Europe	UK
Prior to graduation in 1999/2000	22	29	26	41	22	28	28	53
Around the time of graduation	21	15	23	21	25	23	23	11
After graduation in 1999/2000	38	47	32	27	32	35	27	23
Got work without searching	20	9	19	12	22	5	22	13

4.2 Earnings in first job

The pattern of initial earnings after graduation is similar in the UK to that of the rest of Europe (Figure 8). Earnings are at their lowest for graduates from non-vocational arts programmes (£933 per month in Europe and £1053 in the UK) and at their highest for vocational science graduates (£1226 in Europe and £1344 in the UK). And a non-vocational science course appears to trump a vocational arts course for earnings in both Europe and the UK. Overall, Swiss graduates were top earners while Spanish graduates had the lowest income amongst all countries studied.

Figure 8. Monthly gross median earnings of graduates in first job, overall and UK (Pounds Sterling)

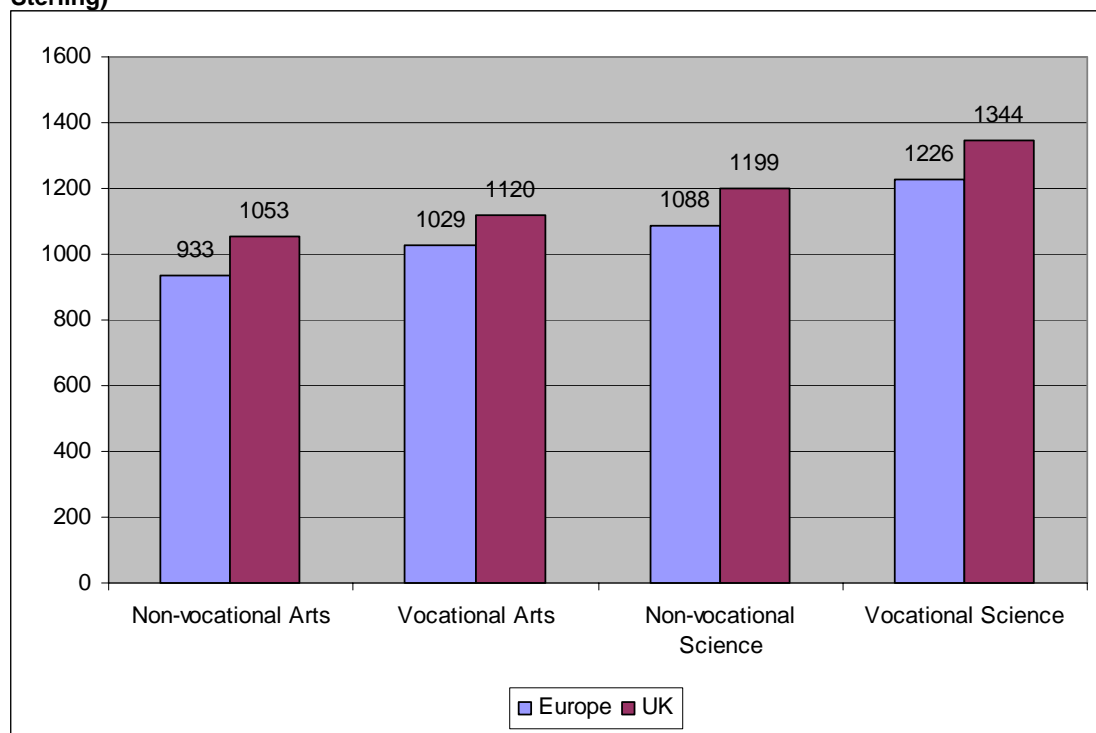


Table C6 in the appendix provides graduates' median monthly earnings in their first job for all countries in the study.

4.3 Initial training

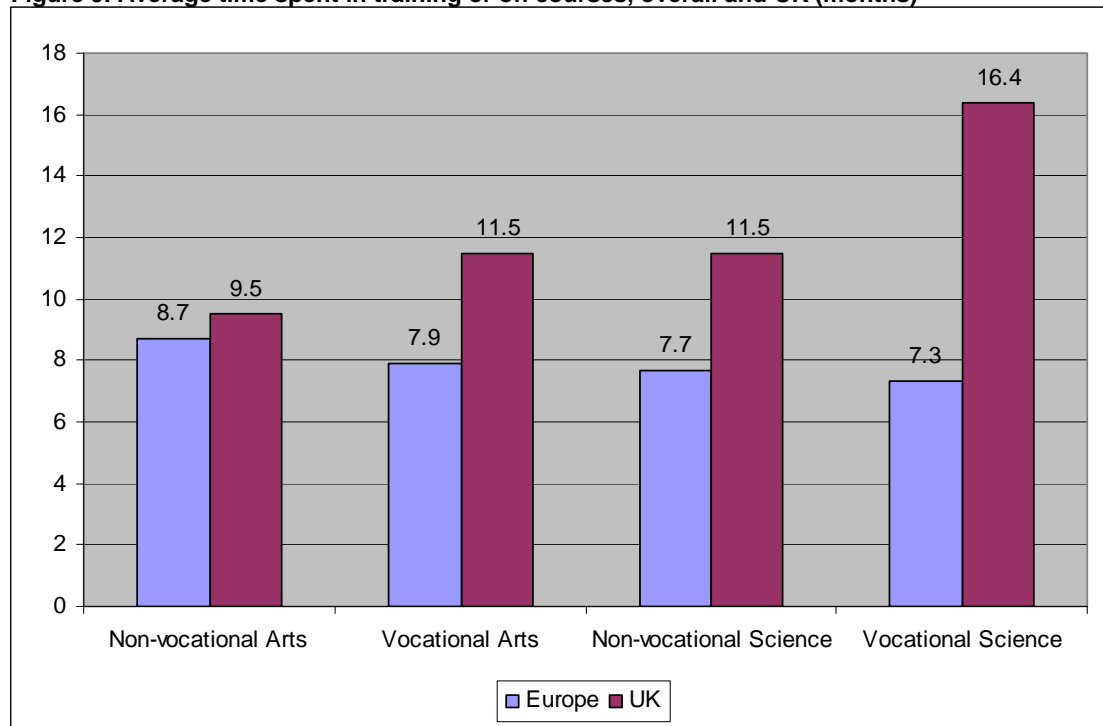
An initial training period (see Table 8) involving a course or other formal activity was more likely to be a feature of the first job of UK graduates, irrespective of programme type. It was more likely to be experienced by graduates from vocational courses. European graduates as a whole recorded more emphasis placed on 'informal learning' on the job.

Table 8. Graduates' first job (%; multiple replies possible)

	Non-vocational Arts		Vocational Arts		Non-vocational Science		Vocational Science		Total	
	Europe	UK	Europe	UK	Europe	UK	Europe	UK	Europe	UK
Involved training or courses	18	23	17	27	18	23	17	27	16	23
Involved informal learning	25	22	28	25	25	22	28	25	29	24

With the exception of non-vocational arts graduates, the period of initial training (Figure 9) was considerably longer for UK graduates, especially from vocational science programmes (16.4 months against a European average of 7.3 months).

Figure 9. Average time spent in training or on courses, overall and UK (months)



4.4 Appropriateness of level and field of education

The stark difference between the UK and other European graduate labour markets is demonstrated by Table 9. While across Europe, it is the masters level which is seen as the most appropriate entry level for around 50% of graduates (slightly more for science graduates), this level is seen as the appropriate one for around 6% of UK graduates. In both Europe and the UK, a masters qualification was seen as most relevant by graduates from non-vocational science programmes. Of course, this difference simply reflects the different traditional status of the bachelors degree within the UK. However, this cannot explain the differences in the proportions of graduates who believed that their jobs did not require tertiary level qualifications at all. In the UK, over 50% of non-vocational arts graduates (compared with 27% in Europe) felt that a programme below tertiary level would be the most appropriate to their first jobs and this was also the view of large numbers of graduates from vocational arts (36%) and non-vocational science (37%) graduates (19% and 16% in Europe). There was even a sizeable 17% of vocational science graduates (10% in Europe) who were of this view.

Table 9. Appropriateness of level of education to first job (%)

	Non-vocational Arts		Vocational Arts		Non-vocational Science		Vocational Science	
	Europe	UK	Europe	UK	Europe	UK	Europe	UK
ISCED 5A/6 specialist degree	2	0	1	0	4	3	4	0
ISCED 5A Master level	50	6	48	4	58	11	55	9
ISCED 5A Bachelor level	18	43	30	60	19	49	29	74
Other (only applicable to Europe)	3	0	2	0	3	0	2	0
Below tertiary level	27	50	19	36	16	37	10	17
Count (n)	3823	678	7492	488	2229	254	5312	283

When we look at the appropriateness of the field of study (see Table 10), as opposed to the level of study, we see a similar pattern of difference between the UK and Europe with UK graduates seeing much less relevance of their studies to their first employment.

Table 10. Appropriateness of field of study to first job (%)

	Non-vocational Arts		Vocational Arts		Non-vocational Science		Vocational Science	
	Europe	UK	Europe	UK	Europe	UK	Europe	UK
Exclusively own field	21	12	32	24	21	15	43	46
Own or related field	42	24	49	38	58	44	48	37
A completely different field/No particular field	37	64	19	38	21	41	9	17
Count (n)	3884	678	7585	484	2250	255	5375	285

Looking first at the pattern for Europe as a whole, we see that an 'exclusive' link between subject field and first job is experienced by 43% of vocational science graduates, 32% vocational arts graduates and 21% of non-vocational arts and sciences graduates. An even higher figure for vocational sciences (46%) is found in the UK, but for the other programme types the UK figures are much lower – 24% for vocational arts, 15% for non-vocational sciences and 12% for non-vocational arts. Nearly two thirds of UK graduates in the non-vocational arts enter jobs which are linked to no particular field of study, compared with 37% in Europe. Taken together, these figures confirm the much looser link that exists between initial higher education and first employment within the UK.

4.5 Knowledge utilisation

Knowledge utilisation is not of course limited to subject specific knowledge. Much has been made in the UK in recent years about the importance of graduates possessing a range of generic and transferable work-related skills and competences. While the figures for UK graduates' perceptions of the relevance of all forms of knowledge and skills are higher than they are for field specific relevance, they are still lower than those of European graduates. Table 11 provides the details.

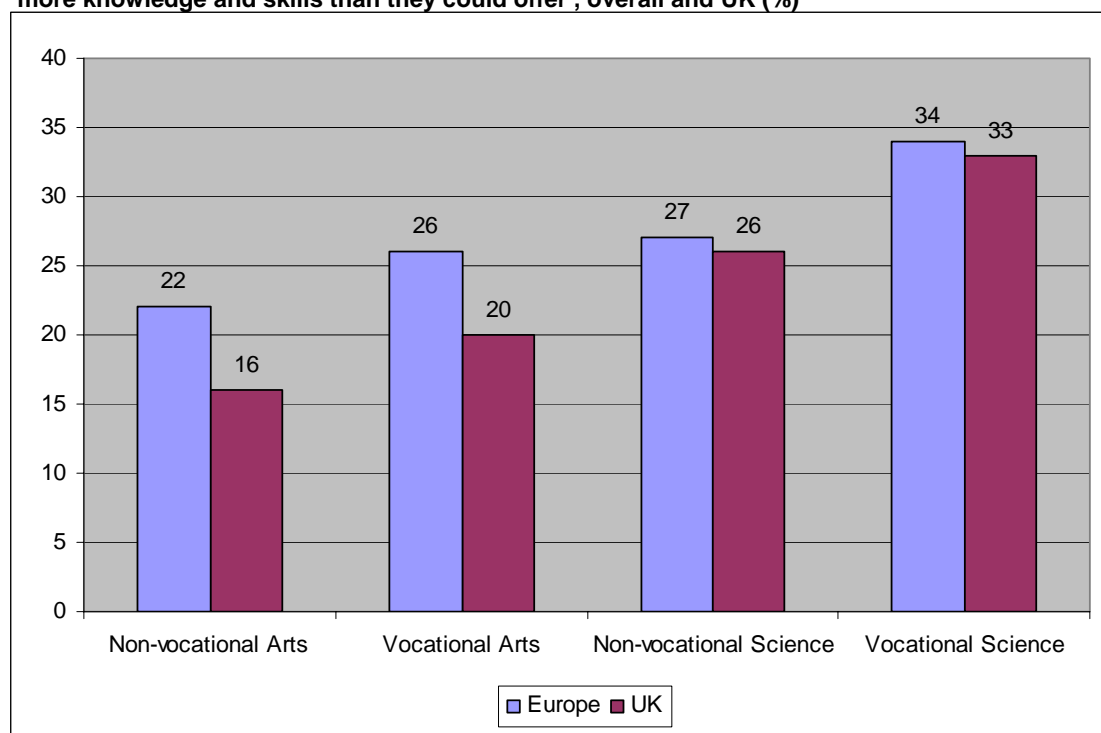
Table 11. Extent to which knowledge and skills utilised in first job (%)

	Non-vocational Arts		Vocational Arts		Non-vocational Science		Vocational Science	
	Europe	UK	Europe	UK	Europe	UK	Europe	UK
Not at all/Hardly	27	43	18	30	21	37	13	15
To a (very) high extent	47	34	57	45	55	44	64	64
Count (n)	3764	685	7438	488	2229	257	5223	290

Once again, it was the non-vocational arts graduates who revealed the differences between the UK and Europe at their starkest. Across Europe as a whole, 47% of these graduates used their knowledge and skills 'to a very high extent' compared to a figure of 34% in the UK, where as many as 43% felt there was 'no utilisation at all' (compared with a European figure of 27%). With the exception of the vocational science graduates, the other programme types reveal similar differences between UK and European graduates.

However, when we look at the demand from employers for knowledge and skills in their graduate recruits, UK graduates from all programme types seem to be less likely to believe that their jobs require more knowledge and skills than they possess (Figure 10). Thus, these data suggest that the low utilisation of knowledge and skills by UK graduates may not represent a problem because employers make relatively low demands on them. (Once again, it is the vocational scientists who break the pattern in believing that they need more knowledge and skills.)

Figure 10. Graduates who believed to a (very) great extent that their first jobs had demanded 'more knowledge and skills than they could offer', overall and UK (%)



4.6 Length of first employment

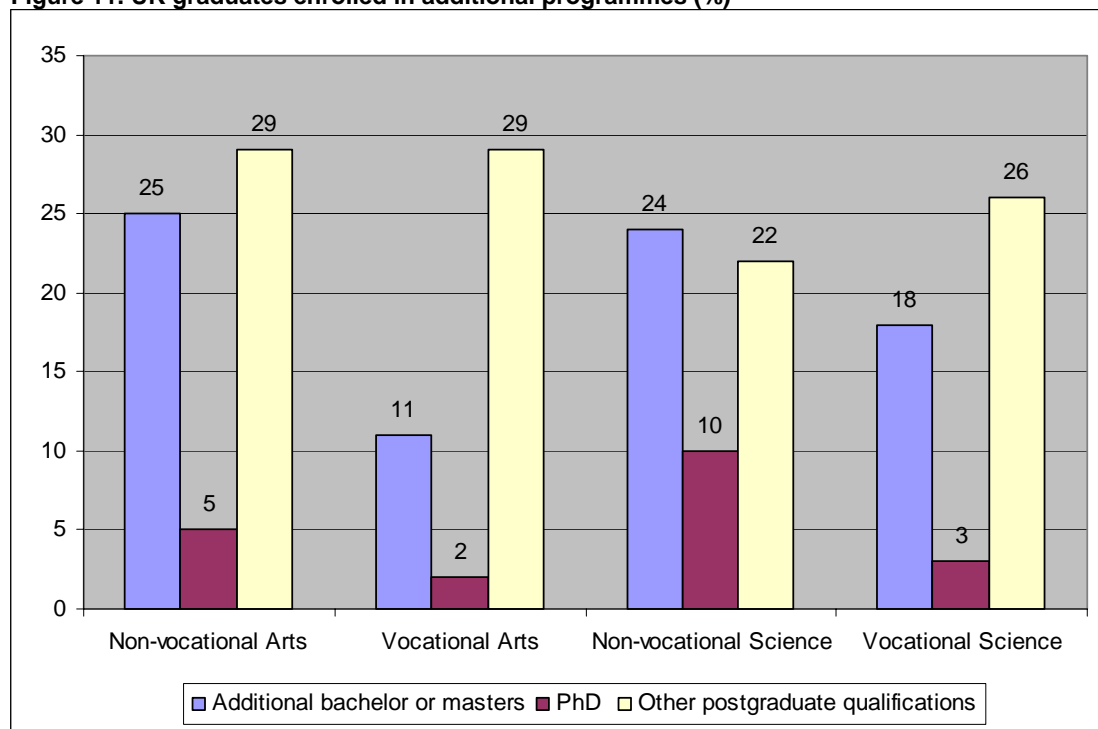
So far we have been considering graduates' experiences in their first jobs after graduation. It is relevant, therefore, to ask how long their first jobs tend to last. Here, we find a remarkably uniform answer, both between programme types and between the UK and Europe. The answer is around 20 months.

4.7 Additional study/training programmes

As noted previously, UK graduates differed from their continental counterparts in possessing a bachelors rather than a masters 'first' degree. However, a minority of them had obtained an additional qualification.

UK graduates with a non-vocational study background were more likely than those with a vocational study background to have enrolled in an additional bachelors or masters programme (see Figure 11). A quarter of arts and non-vocational science graduates had enrolled in a bachelors or masters type of programme compared to 18% of vocational science and 11% of vocational arts graduates. Non-vocational science students were most likely to have enrolled in a PhD programme (10%). Of UK graduates, 28% had enrolled in other postgraduate qualifications.

Figure 11. UK graduates enrolled in additional programmes (%)



4.8 Conclusion

We described in the first report of this series how UK graduates appeared to be less well prepared for their first jobs after higher education than their European counterparts. Further, many UK graduates take up jobs for which their degrees are neither relevant nor required. This pattern is broadly confirmed for all programme types with the exception of vocational science programmes, which are generally closer to their European counterparts in exhibiting a fairly strong link between higher education and employment. However, graduates from these latter types of programme were most likely to actually lack the knowledge and skills required of them in their first employment. Consequently, they were likely to require considerable further training after taking up employment.

However, a first job is just that, a first job. On average, it lasts for around 20 months, virtually irrespective of what and where one has studied. Of much greater importance to an assessment of the employment relevance of higher education are the jobs held in the longer term. In this study, we were able to look at graduates' experiences of employment over a period of five years after their graduation. We turn to this longer time perspective for the remainder of this report.

5 Employment outcomes: success in the labour market

The first few years after graduation are a period of, sometimes difficult, transition for many graduates. This European study provides an opportunity to take stock of the employment and other experiences of graduates five years after they had completed their first higher education degrees. In this section we consider employment 'success' five years on.

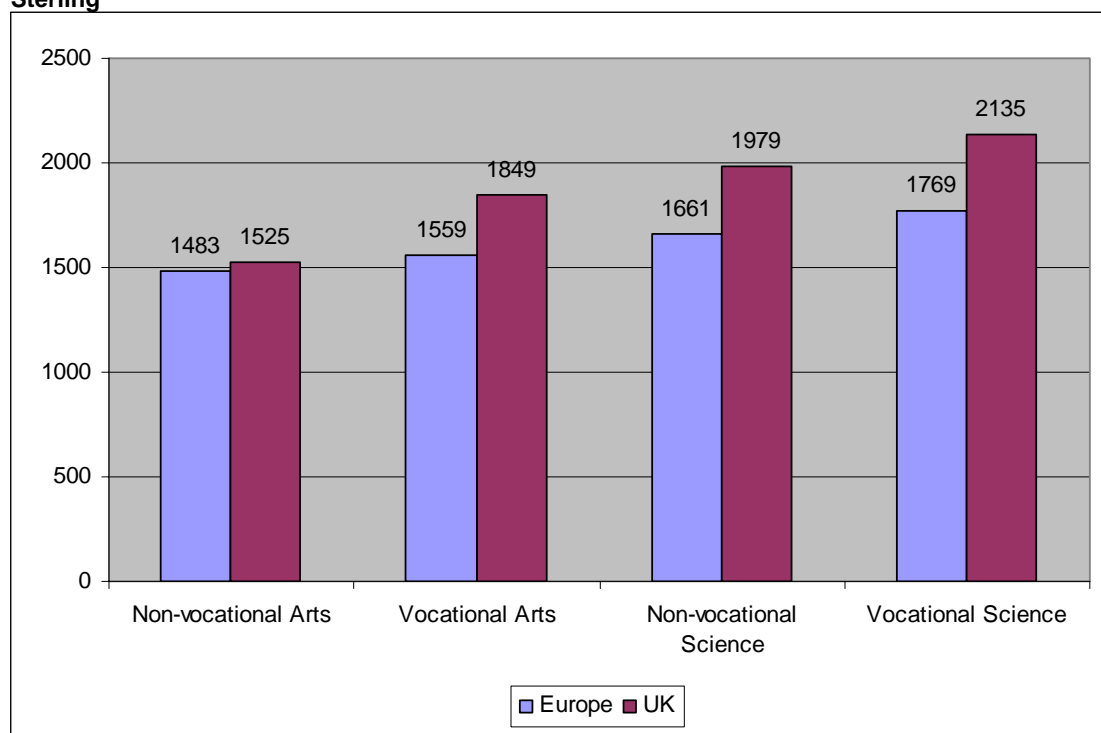
The notion of 'success' is an essentially subjective thing. It is also multi-faceted. So too is subject choice among students. Students select their programmes of study according to their interests and values, among which different aspects of success in the labour market will be more or less important. Students who have selected what we have termed 'vocational' study programmes are likely to have done so because subsequent employment considerations are important to them. As we have already noted, different subjects and programmes have different relationships to the labour market and it is to be anticipated that these will result in different employment outcomes. Although subjective, 'success' is a reflection of the values placed on certain objective characteristics, including for example having a job, the kind of job, and the salary attached to the job. In this section of the report, we consider how certain of these more 'objective' measures of labour market success differ between subjects studied and between countries.

5.1 Success in terms of earnings

As Figure 12 indicates, current earnings are likely to reflect the kind of subject studied in higher education. They also reflect the pattern of earnings reported for first jobs in the preceding section of this report. Using the four programme types, we note that there is a steady increase in earnings as one moves from the non-vocational arts programmes towards the vocational science programmes. Table C7 in the appendix provides earnings data for all the countries participating in the study. The pattern is pretty consistent across all countries. The UK is close to average in earnings for each group with the exception of vocational science where UK earnings are rather better than the European average. There are certain exceptions. High-earning Norway is interesting because graduates from non-vocational arts programmes seem to do particularly well there. Subject of study seems to matter less in terms of earnings in the Netherlands than in other countries.

In relation to specific subject groups, programmes in engineering produce high earners in most countries and health/welfare graduates do particularly well in the UK.

Figure 12. Monthly gross median earnings of graduates in current job, overall and UK (Pounds Sterling)



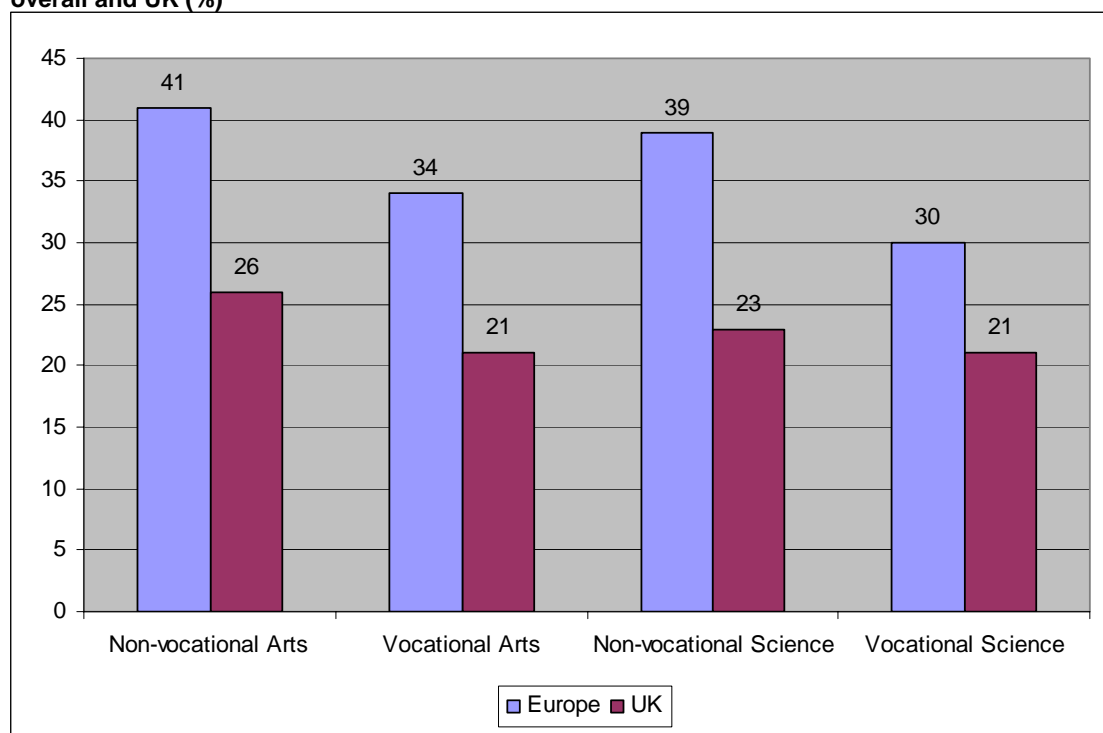
5.2 Success in terms of avoiding unemployment

As can be seen from Figure 13 below, UK graduates appear to be less likely to experience substantial periods of unemployment (i.e. over six months) than graduates in other countries. This appears to be consistent across programme types and in general it is interesting that the incidence of unemployment among UK graduates appears not to be strongly related to programme type. Given the different relationships between subjects and the labour market, this runs rather counter to expectations. Indeed, rather larger differences can be found when one looks at the more detailed list of subjects.

Table C8 in the appendix provides details of differences between individual countries. Non-vocational arts graduates are most likely to encounter periods of unemployment in all countries with the exception of the Netherlands (non-vocational science) and Germany (vocational science).

A more detailed subject breakdown is supplied in Table C9. This shows quite considerable country and subject differences. Thus, the incidence of unemployment among social scientists seems to be particularly high in France (at 49%). Among graduates in health and welfare, it appears to be high in Finland (47%) and Austria (40%). France also has above average unemployment among engineering graduates (39%) and graduates in agriculture and veterinary science (53%). In the UK, the incidence of unemployment is highest among arts and humanities graduates (40%) and science, maths and computing graduates (39%) and it is lowest among health and welfare (16%) and education (20%) graduates. In Europe overall, the incidence of unemployment is highest among arts and humanities graduates (44%), graduates in agriculture and veterinary science (42%) and graduates in science, maths and computing (39%). Overall among the countries of Western Europe, it is Spain where graduates are most likely to experience a period of unemployment in the years following their graduation.

Figure 13. Graduates who experienced more than six months of unemployment since graduation, overall and UK (%)



However, as other success indicators demonstrate, a period of unemployment in the years following graduation is not necessarily fatal to successful employment prospects as measured by other indicators.

5.3 Success in terms of job security

The notion of ‘job security’ is another aspect of employment success that will be more or less important to different graduates. Job security has a number of dimensions, one being the kind of contract of employment the graduate possesses, with a permanent or unlimited contract valued more highly than a fixed-term one. On this dimension, UK graduates compare well with their continental counterparts, with arts, social science, science and maths, and agriculture and fishery graduates well above the proportions with unlimited contracts from similar subjects in other countries. In terms of the four programme types, vocational arts and non-vocational science graduates seem to do particularly well and vocational science graduates less well than their counterparts in other countries. Figure 14 and Figure 15 provide the details.

Figure 14. Graduates with unlimited term contracts, by type of HE programme, overall and UK (%)

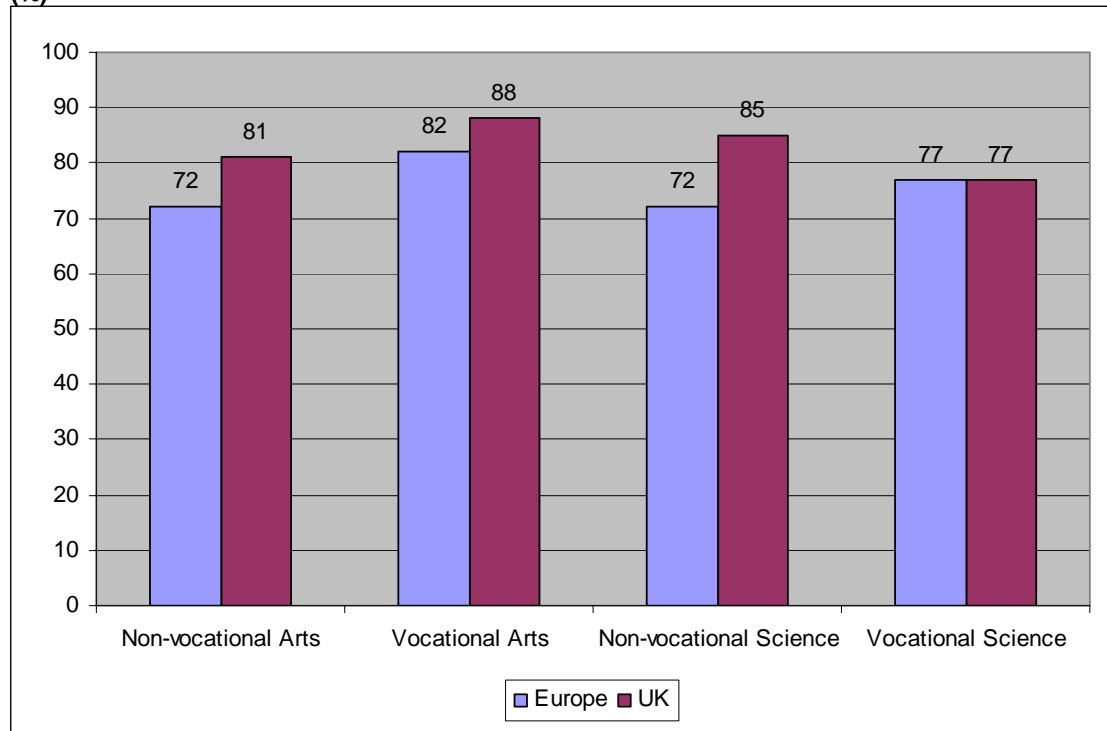
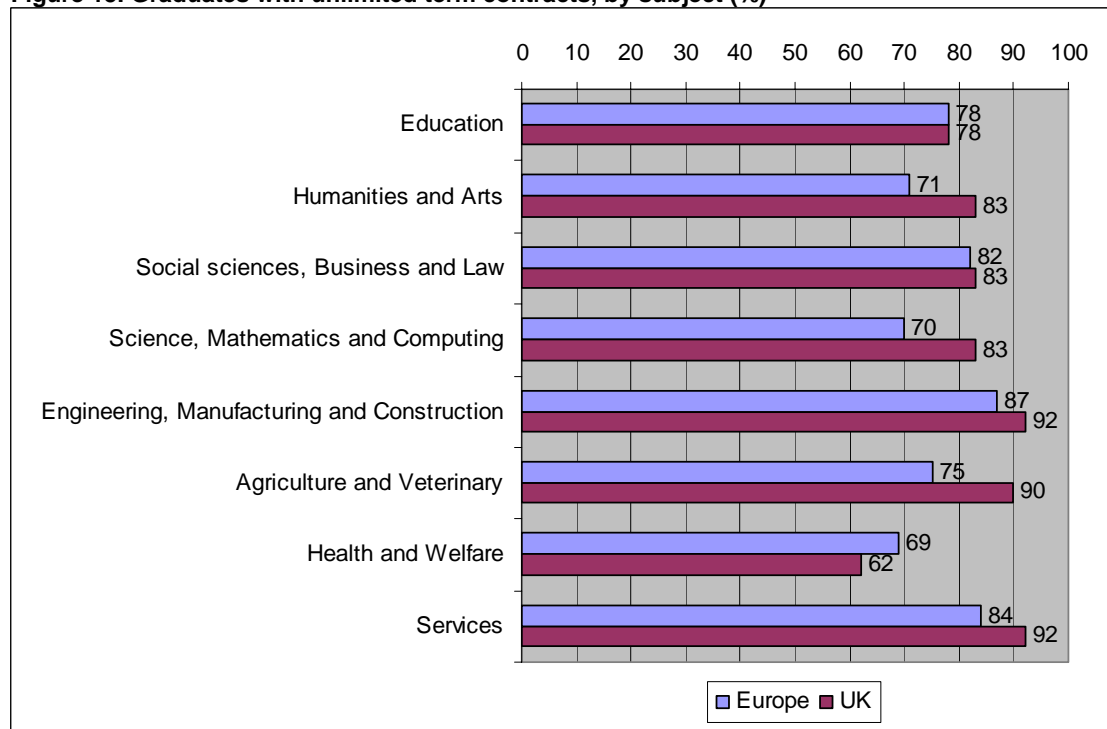


Figure 15. Graduates with unlimited term contracts, by subject (%)



Whether or not employment contracts are time limited, the first years after graduation appear to be marked by considerable job mobility for most graduates, virtually irrespective of what they have studied and the country in which they studied it. Between two and three jobs in the first five years after graduation appears to be pretty normal. Table C10 and Table C11 in the appendix provide the numbers for programme types and for the list of subjects.

5.4 Conclusion

Looking at these different indicators of employment success, UK graduates appear to compare well with graduates from other European countries. Graduates from Norway do particularly well and graduates from Spain do considerably worse than the European average. With the exception of earnings, differences do not tend to follow a subject or programme pattern.

Given the other subject and country differences that are described elsewhere in this report, what this suggests is that labour market factors may be more important than higher education factors in determining graduate employment opportunities. Thus, almost irrespective of the nature of their courses and the skills and competencies achieved, the employment prospects for new graduates may be mostly determined by labour market demand and the strength of the national economy. (This does not, of course, necessarily imply that the graduates will have been well-equipped by their higher education to undertake these jobs.)

Other features of employment outcomes are less easy to relate to the 'success/non-success' dichotomy but they are none-the-less important to graduates. They include such things as the experiences of working life, relationships with colleagues, professional autonomy and one's role within the workplace. These are the focus of the next section of this report.

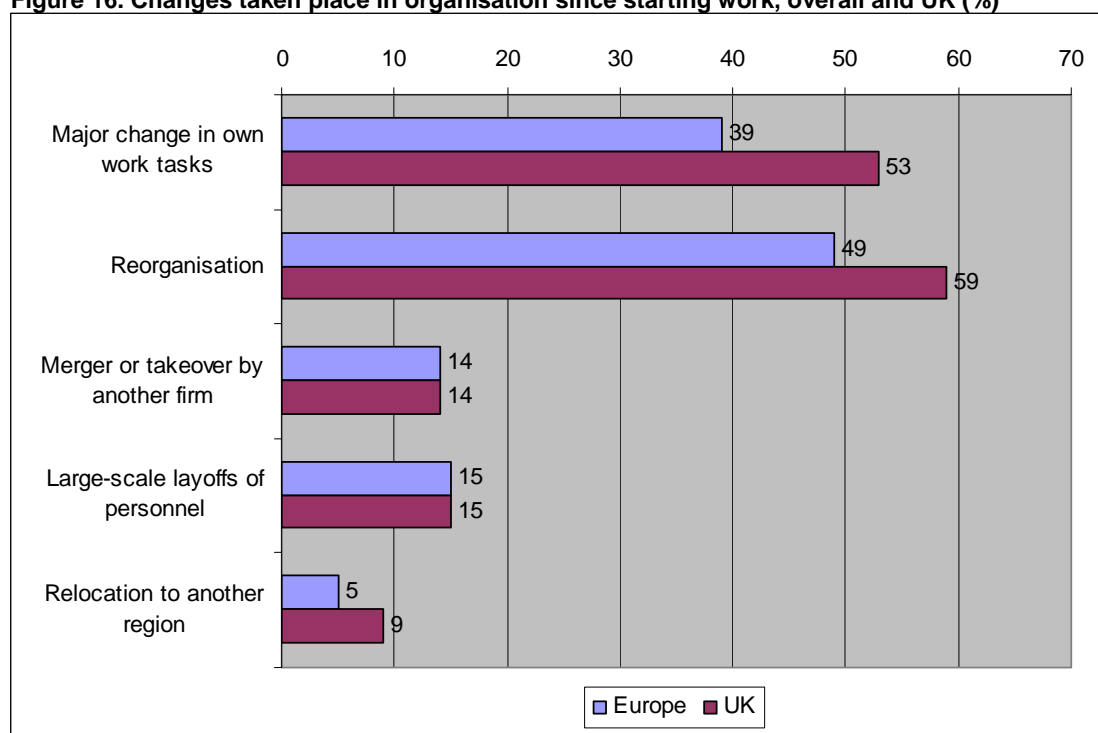
6 Workplace features

One of the underlying assumptions of the European study of which this report is a product was that the nature of work is changing (in the 'knowledge society') calling for new qualities among the workforce (the 'flexible professional'). Thus, the project's questionnaire included a series of questions about the graduates' workplace and their role within it.

6.1 Changing contexts

There were only small differences in the features of the organisations in which graduates were working according to type of programme studied. However, there were significant differences between the UK and Europe overall (see Figure 16). Almost half (49%) of the graduates in the European sample had experienced reorganisation at their workplace since their employment had commenced and 39% had experienced a major change in their own work tasks. In comparison, 59% of UK graduates had had a reorganisation in their company and more than half (53%) had experienced a major change in their own tasks. Subject studied seemed to make little difference.

Figure 16. Changes taken place in organisation since starting work, overall and UK (%)



6.2 Professional and supervisory roles

Five years after graduation UK graduates, whatever type of study programme they had followed, were more likely than European graduates to be in a position where they were supervising other staff members (Figure 17). More than half of the UK graduates with vocational degrees were supervising compared to around 40% of those with non-vocational academic backgrounds. Similarly, a larger proportion of UK graduates than European graduates stated that they were responsible for assessing

the quality of the work of others in their work organisation to a great or very great extent (Figure 18).

In some ways these figures are surprising given the relative 'slow start' of the UK graduate career when compared to its European counterparts, for example in terms of the relevance of studies to employment and the perceived low levels of credentials required. One possibility is that these figures reflect the apparently greater levels of investment by UK employers in the training of their graduate workforce. It may be that the greater experience of supervision and assessment among graduates reflects aspects of UK graduate training schemes offered by employers. Or it may be that there is just more supervision and training going on in UK enterprises.

Figure 17. Graduates who supervise other staff members, overall and UK (%)

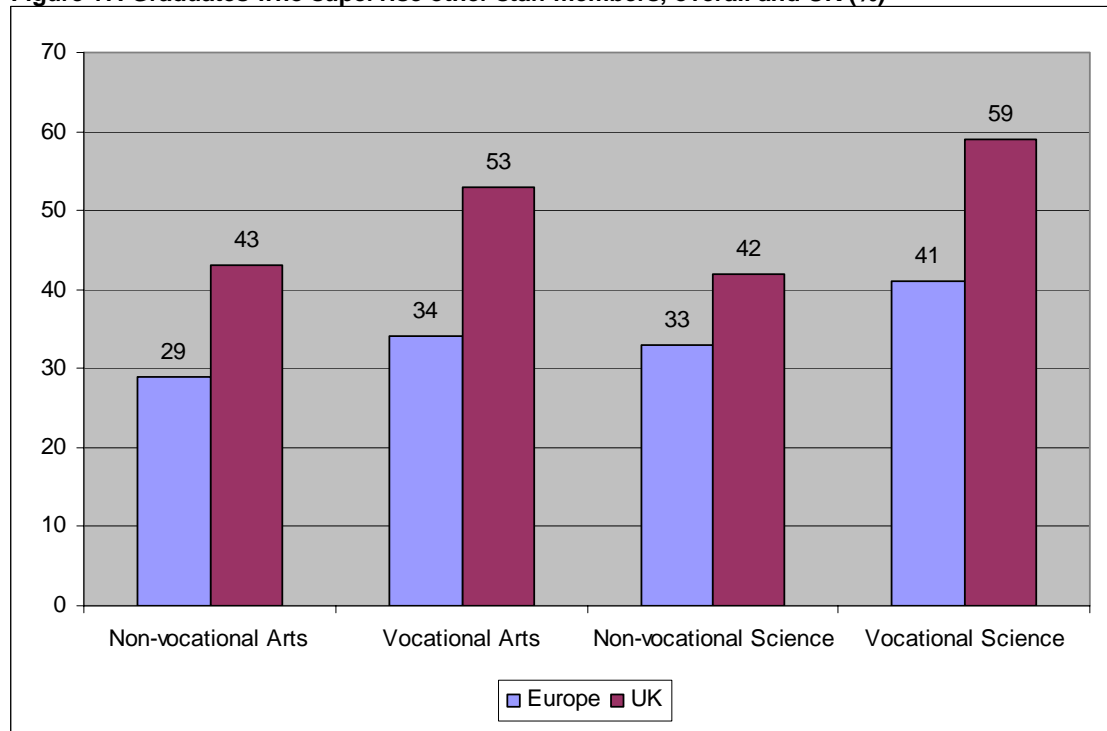
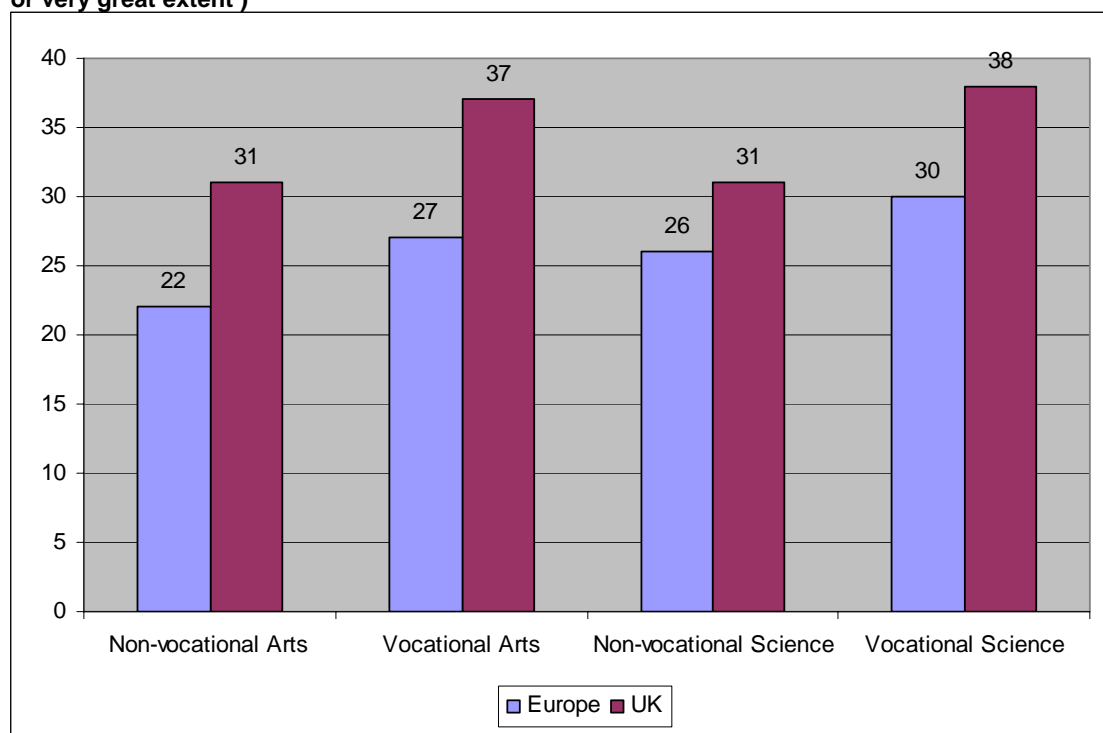
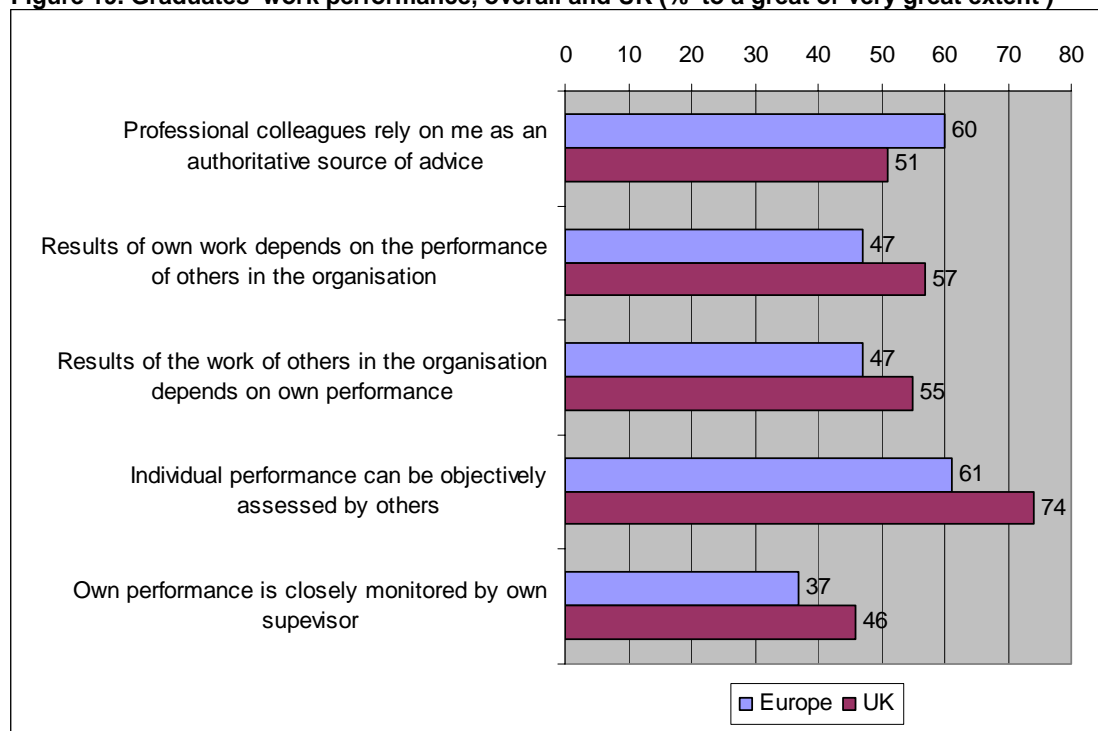


Figure 18. Graduates responsible for assessing the work of others, overall and UK (% 'to a great or very great extent')



Although only one third of European graduates were in a supervisory role, almost double that number (60%) stated that their colleagues relied on them as an authoritative source of advice, compared to 51% of UK graduates (see Figure 19). 47% of European graduates (57% of UK graduates) stated that the results of the work of colleagues were dependent on their own performance but also vice versa. There was a difference between European and UK graduates in terms of being objectively assessed: 61% of European graduates said that their individual performance could be objectively assessed by others, such as supervisors or colleagues while 74% of UK graduates said the same. 37% of European graduates claimed their performance was closely monitored by their supervisor, compared to 46% of UK graduates. There were no important differences between graduates from the four different programme types.

Figure 19. Graduates' work performance, overall and UK (% 'to a great or very great extent')



From the responses indicated in Table 12, there are only small differences between graduates from different programme types when it comes to their responsibilities at work. Graduates from non-vocational science courses seem to be rather less likely than others to be involved in 'setting goals for the organisation' or deciding on 'work strategies for the organisation'. Graduates from vocational courses (arts or science) are rather more likely to be involved in 'assessing the quality of the work of others in the organisation'.

Table 12. Graduates who are responsible for... (% 'to a great or very great extent')

	Non-vocational Arts		Vocational Arts		Non-vocational Science		Vocational Science	
	Europe	UK	Europe	UK	Europe	UK	Europe	UK
Setting goals for the organisation	21	15	26	20	16	14	22	15
Setting goals for own work	76	80	76	77	73	78	72	78
Deciding work strategies for the organisation	23	20	26	24	19	17	23	19
Deciding how to do own job	81	78	83	78	83	76	80	81
Assessing the quality of the work of others in the organisation	22	31	27	37	26	31	30	38

It is apparent that all graduates enjoy a great degree of independence with regards to how they do their job, including what goals they set for their own work. On the other hand, only a minority were in a position to make decisions for their organisation. Comparing UK and European graduates, the latter were rather more likely to be setting organisational goals and work strategies (though fewer than 25% had such experience) and to be deciding on how to do their own job (over 75% in all programme types with UK/European differences, though consistent, quite small). UK graduates were more likely than European graduates to be setting their own goals or assessing the work of others in the organisation – though only among graduates of

vocational courses was staff assessment likely to be a significant part of the job for many graduates.

6.3 Conclusion

While there has been much debate in recent years about the nature of a 'graduate job' and various attempts have been made to move away from elitist conceptions of such jobs, there are several features of the data presented above – notably in connection with the amount of workplace autonomy enjoyed by graduates – which suggest that a majority of graduates continue to enjoy many positive working conditions. In a report being prepared by the Dutch team working on the project, graduates are divided into a four-fold typology: elite specialists, elite generalists, mass specialists and mass generalists. A majority of today's graduates are to be found in the last of these four types, but that should not be taken to imply that such graduates and their jobs lack work quality and recognition.

7 Competencies and study programmes

Leaving aside subject knowledge developed in higher education, what kinds of competencies do graduates bring to the workplace and to what extent do these differ between subjects and types of programme? Such questions are the focus of the fourth report in this series and so will be examined only briefly here.

7.1 Graduate competencies

There seems to be a range of “universal” competencies possessed by European graduates across all programme types (as assessed by graduates themselves), such as ‘ability to rapidly acquire new knowledge’, ‘ability to work productively with others’, ‘ability to use computers and the internet’, ‘ability to co-ordinate activities’ and ‘mastery of own field or discipline’. The competency ‘analytical thinking’ was among the ‘top five’ highly rated competencies only for graduates from the non-vocational science programme type (85%).

As can be seen from Table 13 below, top of the graduate competency list for non-vocational arts graduates was ‘ability to acquire new knowledge’ (Europe) and ‘ability to work productively with others’ (UK). For vocational arts graduates, it was again ‘ability to acquire new knowledge’ in Europe but ‘ability to perform well under pressure’ in the UK. Both UK and European non-vocational science graduates had ‘ability to use computers and the internet’ at the top of their lists. For vocational science graduates, it was ‘ability to work productively with others’ (Europe) and ‘ability to perform well under pressure’ (UK).

Table 13. 'Top Five' competencies possessed by graduates (% 'to a great or very great extent')

	Non-vocational Arts		Vocational Arts		Non-vocational Science		Vocational Science	
	Europe	UK	Europe	UK	Europe	UK	Europe	UK
1	Ability to rapidly acquire new knowledge (88)	Ability to work productively with others (91)	Ability to rapidly acquire new knowledge (87)	Ability to perform well under pressure (94)	Ability to use computers and the internet (93)	Ability to use computers and the internet (95)	Ability to work productively with others (88)	Ability to work productively with others(91)
2	Ability to work productively with others (86)	Ability to perform well under pressure (88)	Ability to work productively with others (87)	Ability to work productively with others(93)	Ability to rapidly acquire new knowledge (90)	Ability to work productively with others(93)	Ability to rapidly acquire new knowledge (87)	Ability to perform well under pressure (87)
3	Ability to write reports, memos or documents (84)	Ability to rapidly acquire new knowledge (87)	Ability to use computers and the internet (85)	Ability to coordinate activities (91)	Ability to work productively with others (86)	Ability to rapidly acquire new knowledge (86)	Ability to use computers and the internet (86)	Ability to coordinate activities (83)
4	Ability to use computers and the internet (83)	Ability to coordinate activities (87)	Mastery of own field or discipline (84)	Ability to use computers and the internet (90)	Analytical thinking (85)	Analytical thinking (85)	Mastery of own field or discipline (83)	Ability to use computers and the internet (83)
5	Mastery of own field or discipline; Ability to coordinate activities (82)	Ability to write reports, memos or documents; Ability to make your meaning clear to others; Ability to use computers and the internet (85)	Ability to coordinate activities (84)	Ability to use time effectively (90)	Mastery of own field or discipline (83)	Willingness to question your own and others' ideas (85)	Ability to perform well under pressure; Ability to coordinate activities (83)	Ability to make your meaning clear to others (83)

7.2 Strong points of study programmes

Table 14 below lists the three main ‘strong points’ of different programme types as assessed by UK and European graduates. For graduates from non-vocational programme types, whether arts or science, ‘analytical thinking’ emerged as top of the list of study programme ‘strong points’. For vocational programme types – with one exception – it was ‘mastery of own field or discipline’. The exception was UK vocational arts where ‘ability to perform well under pressure’ emerged as the strongest point.

Table 14. ‘Top Three’ strong points of study programme as rated by graduates (% of graduates who listed each point)

	Non-vocational Arts		Vocational Arts		Non-vocational Science		Vocational Science	
	Europe	UK	Europe	UK	Europe	UK	Europe	UK
1	Analytical thinking (40)	Analytical thinking (33)	Mastery of own field or discipline (39)	Ability to perform well under pressure (33)	Analytical thinking (52)	Analytical thinking (51)	Mastery of own field or discipline (47)	Mastery of own field or discipline (33)
2	Mastery of own field or discipline (34)	Ability to write reports, memos or documents (30)	Analytical thinking (31)	Ability to work productively with others (29)	Mastery of own field or discipline (40)	Ability to rapidly acquire new knowledge (34)	Analytical thinking (37)	Analytical thinking (30)
3	Ability to write reports, memos or documents (33)	Ability to use time effectively (27)	Ability to rapidly acquire new knowledge (27)	Analytical thinking (28)	Ability to rapidly acquire new knowledge (37)	Mastery of own field or discipline (30)	Ability to rapidly acquire new knowledge (35)	Ability to perform well under pressure; ability to work productively with others (29)

However, the similarities in rankings disguise some subtle differences, as half of European and UK graduates from non-vocational science programme types rated ‘analytical thinking’ as a strong point, compared to roughly one third of graduates from other programme types. But there were also some “programme-specific” strong points. For example, ‘writing skills’ were only mentioned as a strong point of their study programme by graduates from a non-vocational arts background (both Europe and UK).

There seems to be a good match between those competencies for which graduates had rated their own level as being high or very high and those competencies which graduates had rated as strong points of their study programmes (‘mastery of own field or discipline’, ‘ability to rapidly acquire new knowledge’ and ‘ability to work productively with others’). But there were also competencies in which graduates claimed to be proficient to a (very) high extent but which were not listed as strong points of their study programmes (such as the ‘ability to use computers and the internet’ and ‘ability to co-ordinate activities’) and competencies rated as strong points of their studies but their level of command was no longer rated as high or very high (such as ‘analytical thinking’ and ‘writing skills’). One is left to assume, therefore, that certain competencies had been “picked up” along the way after graduation (probably those necessary for employment) and at the same time some competencies acquired in higher education had been ‘left behind’ as no longer required to a (very) high extent.

7.3 Weak points in study programmes

For completeness, Table 15 lists the three 'weak points' of study programmes as rated by the graduates. There is remarkable consistency with 'ability to write and speak a foreign language' and 'ability to assert your authority' topping the lists for both European and UK graduates. However, to underscore the well-known weaknesses of UK higher education and its students in terms of foreign languages, it should be pointed out this comes out as a 'much weaker' weak point for the UK graduates.

Table 15. 'Top Three' weak points of study programme as rated by graduates (% of graduates who listed each point)

	Non-vocational Arts		Vocational Arts		Non-vocational Science		Vocational Science	
	Europe	UK	Europe	UK	Europe	UK	Europe	UK
1	Ability to write and speak in a foreign language (34)	Ability to write and speak in a foreign language (52)	Ability to write and speak in a foreign language (41)	Ability to write and speak in a foreign language (50)	Ability to write and speak in a foreign language (42)	Ability to write and speak in a foreign language (51)	Ability to write and speak in a foreign language (44)	Ability to write and speak in a foreign language (49)
2	Ability to assert your authority (27)	Ability to assert your authority (31)	Ability to assert your authority (25)	Ability to assert your authority (33)	Ability to assert your authority (33)	Ability to assert your authority (35)	Ability to assert your authority (27)	Ability to assert your authority (30)
3	Ability to negotiate effectively (24)	Ability to present products, ideas or reports to an audience (30)	Ability to negotiate effectively (23)	Ability to negotiate effectively (25)	Ability to negotiate effectively (31)	Ability to present products, ideas or reports to an audience (34)	Ability to negotiate effectively (26)	Ability to negotiate effectively (29)

7.4 Evaluation of study programme

Irrespective of programme types, UK graduates in general were less likely than European graduates to believe that their study programme had been a good basis for various aspects of their professional career (Table 16). The onus of the benefits of their study programme was put on personal development. At least two thirds of all graduates across all programme types stated that their study programme had been a good basis for their personal development. In fact, a slightly higher proportion of UK graduates than European graduates stated that their study programme had been a good basis for their personal development. In terms of differences between graduates (both UK and European) from different programme types, those with a degree in non-vocational arts subjects were most likely to say that their studies had been a good basis for their personal development (75%), whilst those who completed a non-vocational science degree were least likely to say so (65%). On the other hand, the former were also less likely than graduates with a degree in other programme types to find their study programme a good foundation for starting work, further learning on the job, performing current work tasks and their future career.

Higher education was least beneficial in terms of providing the means to develop entrepreneurial skills. Less than one fifth of all graduates believed that their studies had provided a good foundation for developing entrepreneurial skills. But those from a vocational arts background were more likely to have found their studies beneficial in this aspect than those from other programme backgrounds.

Table 16. Study programme has been a good basis for... (% 'to a great or very great extent')

	Non-vocational Arts		Vocational Arts		Non-vocational Science		Vocational Science	
	Europe	UK	Europe	UK	Europe	UK	Europe	UK
Starting work	43	37	59	54	56	63	68	48
Further learning on the job	48	38	59	52	57	45	66	66
Performing current work tasks	42	33	52	40	48	37	54	50
Future career	45	44	56	58	48	50	57	67
Personal development	75	75	69	68	64	66	66	74
Development of entrepreneurial skills	13	10	23	27	13	10	17	20

7.5 Conclusion

In many respects, it is the similarities among the lists of competencies and characteristics of study programmes which stand out in the above tables. The strengths of higher education programmes – pretty well irrespective of programme type – come out as academic ones: ‘analytical thinking’ in respect of non-vocational programmes and ‘mastery of field or discipline’ in respect of vocational programmes. The competencies which graduates feel they possess are a more varied set with ‘ability to perform well under pressure’ a particularly strong attribute among UK graduates. In terms of how higher education performs in providing a good foundation for graduates’ future career paths, the overall picture seems to be that higher education has the ability to fulfil desires for personal development but has lesser capability to equip students with skills to benefit their professional career development.

8 Values

We have attempted in this report to present several measures of ‘employment success’, both objective and subjective. All of them, however, beg the question of what is important to the graduates themselves. Therefore, in this penultimate section of the report, we present some data on the criteria that graduates use in assessing jobs, with implications for what would count as ‘success’ to them.

8.1 Important job characteristics

‘Opportunity to learn new things’ remains the top-rated job characteristic for both European (92%) and UK graduates (90%) irrespective of programme type (see Table 17). This is followed by ‘work autonomy’ for the overall European average (85%) and ‘new challenges’ for the UK graduates (85%). ‘Social status’ is rather more important for European graduates than it is for UK graduates, whereas the latter were more concerned about ‘good career prospects’. ‘Work autonomy’ was more important for European graduates than it was for UK graduates. This was true irrespective of programme type. The priority given to these values by the graduates could reflect a movement towards “post-materialistic” values (Inglehart)⁵. The most apparent difference between European and UK graduates was the importance placed on ‘combining work with family’ by the former. Overall, the data indicates some differences between the European and UK sample; however, differences between programme types were minimal.

Table 17. Importance of job characteristics as rated by graduates (% ‘important to very important’)

	Non-Vocational Arts		Vocational Arts		Non-Vocational Science		Vocational Science		Total	
	EU	UK	EU	UK	EU	UK	EU	UK	EU	UK
Work autonomy	87	71	86	74	84	62	85	71	85	70
Job security	78	78	80	82	80	82	82	78	80	79
Opportunity to learn new things	92	89	91	91	92	91	92	91	92	90
High earnings	56	51	64	72	58	60	64	66	61	61
New challenges	78	81	81	88	79	88	80	87	80	85
Good career prospects	64	73	68	84	67	79	67	81	67	78
Enough time for leisure activities	77	80	77	77	75	80	77	79	77	79
Social status	40	31	45	36	36	25	44	45	43	34
Chance of doing something useful for society	72	70	61	53	59	60	61	65	63	63
Combining work with family	72	48	73	43	70	38	73	49	73	45

The differences across subject groups are relatively low, though we might note that only 62% of UK non-vocational scientists rated ‘work autonomy’ as important or very important (compared with 84% of their European counterparts). Comparatively more important for this group were ‘enough time for leisure activities’ (80%), ‘good career

⁵ Ronald Inglehart 1971: *The Silent Revolution in Post-Industrial Societies*. In: *American Political Science Review* 65: 991-1017

prospects' (79%), 'new challenges' (88%) as well as the generally important 'opportunity to learn new things' (91%) and 'job security' (82%).

In addition to the above, the following values were also regarded as important job characteristics amongst European graduates: 'job security' (80%), 'new challenges' (80%), 'enough time for leisure activities' (77%), 'combining work with family' (73%), 'good career prospects' (64%), 'chance of doing something useful for society' (63%) and 'high earnings' (61%) (data are not available for the Czech Republic). However, 'social status' was only mentioned by 43% as (very) important.

UK graduates rated 'opportunity to learn new things' (90%) and 'new challenges' (85%) the top job characteristics. Other values emphasised were: 'job security' (79%), 'good career prospects' (78%), 'enough time for leisure activities' (79%), 'work autonomy' (70%), 'high earnings' (61%), 'chance of doing something useful for society' (63%). At the bottom of important values was 'social status' again which was stressed by only just over one third (36%) of UK graduates.

8.2 Job satisfaction

How did graduates' jobs measure up to their values? Table 18 provides some of the answers. While there are some differences between graduates from different programme types in the extent to which they had achieved jobs which reflected their personally important values, the situation of UK graduates was fairly similar to that of European graduates. The one exception was the 'high earnings' achieved by vocational science graduates in the UK. In general, 'high earnings' was the value least likely to have been achieved, although it needs to be remembered that a lifetime of earnings lay ahead for most of the graduates. With the exception of 'work autonomy' (achieved by around 80% of graduates), most other characteristics had been achieved by between 50% and 70% of the graduates.

Table 18. Graduates in current employment where their (very) important job characteristics applied (% 'to a great or very great extent')

	Non-vocational Arts		Vocational Arts		Non-vocational Science		Vocational Science	
	EU	UK	EU	UK	EU	UK	EU	UK
Work autonomy	81	78	83	75	85	80	81	75
Job security	64	76	69	73	60	69	67	70
Opportunity to learn new things	67	68	66	63	70	67	68	72
High earnings	33	36	35	41	36	43	34	59
New challenges	63	66	62	63	67	68	64	70
Good career prospects	42	57	45	57	44	60	46	65
Enough time for leisure activities	57	58	55	55	54	56	48	44
Social status	57	59	58	60	57	54	62	65
Chance of doing something useful for society	71	78	66	60	61	58	68	70
Combining work with family	62	58	59	52	56	56	49	45

For European graduates, for whom 'opportunity to learn new things' and 'work autonomy' were top-rated values, it seemed that the latter was more achievable than the former. Across all subject groups, 81% and over of those who rated 'work autonomy' as (very) important held jobs where this applied. On a lesser scale,

between 66% and 70% of those who rated 'opportunity to learn new things' as (very) important had obtained jobs where this was applicable.

Important to some European graduates but not applicable to their current work situation were 'social status' and 'high earnings'. Only 43% and 33% respectively of those who found these values to be of personal importance held jobs satisfying these values. There were only small differences between programme types. The overall picture seems to suggest that European graduates are satisfied with their jobs on a post-materialistic level but probably less so on a materialistic level, i.e. with the financial rewards their job brings.

These data suggests that for UK graduates 'work autonomy' and 'job security' were the top two values that were both rated (very) important *and* applicable to the current work situation, with 78% and 73% respectively. However, top-rated job characteristics for UK graduates were the 'opportunity to learn new things' and 'new challenges' but only about one third of those who rated these as (very) important had jobs where they applied (65% and 69% respectively). Other job characteristics both valued by UK graduates and applicable to some of their workplaces were: 'chance of doing something useful for society' (64%), 'good career prospects' (59%), 'social status' (52%) and 'enough time for leisure activities' (50%).

Table C12 and Table C13 in the appendix present a breakdown of these data for the larger group of subjects. Perhaps unsurprisingly, both in the UK and in Europe as a whole, it was education and health/social welfare graduates who were most likely to believe they were doing something useful for society. Engineering and agriculture/veterinary graduates in the UK perceived themselves to be in much lower status jobs than their continental counterparts. Graduates in these two fields were also less likely to believe they had much time for leisure activities, a perception shared with education and health/social welfare graduates in the UK but not in the rest of Europe. (Report 1 in this series examines country differences in graduates' ratings of values.)

8.3 Conclusion

Data such as that presented above are open to several interpretations. For example, the importance attached to 'high earnings' rather depends on how 'high' is 'high'. Nevertheless, such lists are useful reminders of the multi-faceted nature of work and the kinds of balance that we all seek to strike between the different aspects of our lives, both work and non-work. It is also interesting to note how few were the differences between graduates from different programme types.

9 Conclusion

There are a number of distinctive features in the experiences of UK graduates and these are reflected in some of the differences in the ways that the subject of study or programme type influences employment.

We can also note a much looser relationship between the content and level of the course studied and the subsequent employment experiences, especially concerning the first job after graduation. Thus, UK graduates are

- more likely to enter employment that does not require the possession of a degree;
- less likely to be using the knowledge and skills they acquired on their degree.

Yet there seems to be a match between the characteristics of UK graduates and the expectations of UK employers (or at least a process of mutual adaptation). Thus, UK graduates are

- less likely to perceive that they lack knowledge and skills required by employers;
- more likely to receive employer training and to receive more of it.

Differences between UK and European graduates are most marked in the programme types we have described as 'non-vocational arts' and least marked in 'vocational sciences'. And UK higher education seems to have a higher proportion of the former than other countries. These programmes are found disproportionately in the pre-1992 universities.

This suggests that UK employers may use higher education as a 'selection' rather than a 'training' device, as an indicator of 'potential' rather than possession of work-related knowledge and skills. This is suggested by

- the shorter duration of higher education study in the UK;
- the higher proportion of graduates from non-vocational arts subjects;
- the lower prevalence of work experience and placements among UK students.

While there are many differences between the higher education systems of different European countries, it is still possible to discern a clear distinction between Anglo-Saxon and Continental traditions in terms of the characteristics of the undergraduate experience and the transition to working life. Overlain on this distinction are differences which relate to the type of programme and subject of study followed while in higher education.

And yet when one considers the lives of these graduates five years after their graduation, one is perhaps more struck by the similarities between them. Differences, where they exist, may be more attributable to the characteristics of different national labour markets and economies. Many graduates have experienced difficulties along the way, with periods of unemployment (though less prevalent among UK graduates) or non-relevant jobs (more prevalent for UK graduates), but five years on most graduates appeared to be in jobs characterised by considerable autonomy, security and the opportunity to continue learning. And these are all things highly rated by the graduates themselves.

The routes to such jobs may differ according to what and where one has studied and some routes might be better signposted than others. But the majority of graduates, irrespective of what they have studied, have somehow managed to find their way to satisfactory employment after five years.

None of this is to say that the type of programme or subject studied in higher education does not matter. The four programme types used in most of the analyses in this report show a clear pattern to future earnings whereby science degrees trump arts degrees and vocational degrees trump non-vocational degrees. Thus, inside and outside the UK, there is a steady rise in earnings according to whether the graduates possess a non-vocational arts degree, a vocational arts degree, a non-vocational science degree or a vocational science degree. However, for what they gain in earnings, vocational science graduates seem to lose out when it comes to having sufficient time for leisure activities. The multi-faceted nature of working lives needs to be remembered. For many graduates, the non-materialistic appears to be more important than the materialistic. The former also stands a better chance of being achieved.

There is a different subject mix between higher education in the UK and higher education in Europe. However, the most important conclusion to draw from this report is that the subject mix is not responsible for the differences in employment experiences between UK graduates and graduates elsewhere in Europe. Thus, the majority of differences between the UK and Europe reported in the first report of this series are still evident in the data for particular programme types and therefore controlling for the effects of subject differences.

Appendix A: Background to the study

This report is based on the results of a major international study of graduate employment. The study, *The Flexible Professional in the Knowledge Society – new demands on higher education in Europe (REFLEX)* was funded by the European Commission as part of its 6th Framework programme, Priority 7 ‘Citizens and Governance in a Knowledge Based Society’ (and by several national funds). The study was carried out collaboratively by research groups in thirteen European countries (Austria, Belgium-Flanders, the Czech Republic, Finland, France, Germany, Italy, the Netherlands, Norway, Portugal, Spain, Switzerland and the United Kingdom) and Japan. It was co-ordinated by the Research Centre for Education and the Labour Market from Maastricht University in the Netherlands. The UK part of the study was undertaken by the Centre for Higher Education Research and Information at the Open University.

The study had three strands:

- A country study highlighting the main structural and institutional factors that shape the relationship between higher education and work;
- A qualitative study on graduate competences in the knowledge society;
- A survey of higher education graduates five years after graduation.

The results of the survey which are presented in this report covered graduates from eleven of the countries involved in the study, viz. Austria, the Czech Republic, Finland, France, Germany, Italy, the Netherlands, Norway, Spain, Switzerland and the UK. The graduates were selected from the 1999/2000 graduating cohort and were contacted by means of a mailed questionnaire (with the option of completing a web-based questionnaire) in the spring of 2005. Overall, 33,832 questionnaires were returned from these 11 countries, including 1,578 from UK graduates. For the UK sample this represented a response rate of 23%. The overall average response rate was 30%, varying from 20% in Spain to 45% in Norway. (See Appendix B for detail of case numbers for each country.) The samples were selected to be representative of the various national higher education (HE) populations of students enrolled on ‘first degree’ or equivalent programmes considered to be the main ‘exit’ qualification with which graduates left higher education in 2000 and entered the labour market in that country. In the case of the UK, this was taken to be a bachelors degree, but in very many other countries the 1999/2000 graduating sample comprised wholly (or mainly) those with a masters degree. The UK sample also included a (very) small number of graduates from taught masters programmes who had previously completed a first degree in the same broad subject area, had enrolled on a taught masters programme (at the same institution) without loss of time and graduated from that programme in 1999/2000.

Due to data protection issues in the UK it is generally not possible to contact graduates directly. Hence, broad population data for graduates in the year 1999/2000 was provided by the Higher Education Statistics Agency (HESA). The sample itself was drawn either by HESA or the institutions themselves, and was broadly representative of the first degree graduating population.

Key sampling variables were field of study and type of institution. The UK sample was drawn from 43 higher education institutions covering a range of types of institution and locations. The achieved sample (i.e. those responding to the survey) was also broadly representative of the graduating population, though females were slightly over-represented, as table A below shows:

Table A: Comparison of graduating population, initial sample and achieved sample

	Population, %	Initial Sample, %	Achieved sample, %
Full-time	90	89	88
Female	55	53	61
Non-white	12	12	8
23 & under	70	69	64
24-27	12	12	14
28 & over	19	19	23

The extensive questionnaire comprised 11 sections as follows:

- A Study programme completed in 1999/2000
- B Other educational and related experiences
- C Transition from study to work
- D First job after graduation
- E Employment history and current situation
- F Current work
- G Work organisation
- H Competences
- I Evaluation of study programme
- J Values and orientations
- K Socio-biographic data

A copy of the UK questionnaire is available to download from the HEFCE web-site.

This study followed on from an earlier study, Higher Education and Graduate Employment in Europe (CHEERS), also funded by the European Commission (see for example, Brennan et al., 2001⁶; Schomburg and Teichler, 2006; Teichler (ed) 2007).

As in the previous study, the data collected have gone well beyond the topics usually covered by national surveys of this kind. For example, they included questions about the higher education experience and attitudes, values and competences in relation both to employment and to other areas of life. Extensive and complex data checking and cleaning processes have been time-consuming. However, given that the research teams involved were already experienced and most had been involved in the earlier CHEERS study, the project was able to build on previous work. Once again, this large-scale European study of graduate employment used a common cross-national research methodology.

This report is one of six commissioned by the Higher Education Funding Council for England. The full set of reports comprises:

- 1 The employment of UK graduates: comparisons with Europe
- 2 The context of higher education and employment: comparisons between different European countries
- 3 Subject differences in graduate employment across Europe
- 4 Competences possessed and required by European graduates
- 5 Age differences in graduate employment across Europe
- 6 Graduates' retrospective views of higher education

⁶ Brennan, J., Johnston, B., Little, B., Shah, T. & Woodley, A. (2001) *The employment of UK graduates: comparisons with Europe and Japan* London: The Open University

Appendix B: Case numbers of respondents for each country

United Kingdom	1578
Italy	3139
Spain	3916
France	1700
Austria	1821
Germany	1700
The Netherlands	3424
Finland	2676
Norway	2201
Czech Republic	6794
Switzerland	4882
Total (Europe)	33832

Appendix C: Tables

Table C1. Proportion of male and female graduates by programme type (%; unweighted data)

		Europe	UK	IT	ES	FR	AT	DE	NL	FL	NO	CR	CH
Non-vocational Arts	Male	28	27	26	24	19	25	34	23	23	43	31	35
	Female	72	73	75	76	81	75	66	77	77	58	70	65
	Count (n)	5140	593	683	687	405	379	325	366	398	299	623	982
Vocational Arts	Male	34	36	42	26	30	41	39	34	24	28	29	60
	Female	66	64	59	75	70	59	62	66	76	72	71	40
	Count (n)	12787	398	1123	1491	500	123	548	1837	868	891	3134	1274
Non-vocational Science	Male	56	50	46	49	43	68	63	61	48	63	58	83
	Female	44	50	54	52	57	32	37	39	52	37	42	17
	Count (n)	3354	216	339	548	313	187	207	260	279	203	562	240
Vocational Science	Male	57	59	60	49	45	63	66	49	50	38	59	75
	Female	44	42	40	51	55	38	34	51	51	62	41	25
	Count (n)	8925	241	829	994	288	360	558	707	879	708	2280	1081
Female overall %		59	62	56	65	67	55	50	62	64	63	58	41

Question K1: Gender

Table C2. Distribution of graduates by age at entry into higher education by country (%; unweighted data)

		Europe	UK	IT	ES	FR	AT	DE	NL	FL	NO	CR	CH
Non-vocational Arts	18-20	59	67	75	81	53	62	43	63	51	35	56	47
	21-24	26	8	16	13	39	19	37	23	35	38	34	34
	25+	15	26	9	6	8	19	20	14	14	27	10	19
	Count (n)	5589	591	638	671	384	373	319	361	394	293	589	976
Vocational Arts	18-20	60	66	83	78	45	65	35	67	43	27	66	40
	21-24	27	16	13	18	42	23	43	20	38	47	22	43
	25+	13	18	5	5	12	13	22	12	19	26	13	17
	Count (n)	12455	393	1055	1434	475	712	539	1809	862	885	3018	1273
Non-vocational Science	18-20	72	77	87	90	48	83	43	79	58	53	82	59
	21-24	22	11	11	8	48	13	42	17	34	32	16	32
	25+	6	12	3	2	4	4	16	4	8	15	2	10
	Count (n)	3284	212	320	534	304	185	205	261	278	204	541	240
Vocational Science	18-20	68	61	83	86	56	77	38	73	55	32	88	52
	21-24	23	17	13	12	38	18	49	18	32	43	10	40
	25+	8	22	4	3	7	5	13	8	14	26	3	8
	Count (n)	8717	233	785	970	274	355	547	695	867	694	2277	1070
Total	18-20	62	66	82	82	50	69	39	69	50	32	74	43
	21-24	25	12	13	14	42	20	44	20	35	43	18	38
	25+	12	22	5	4	8	12	18	11	15	25	8	20
	Count (n)	31796	1532	2826	3647	1545	1625	1616	3146	2506	2091	6546	4716

Table C3. Distribution of graduates by programme type and country (%; unweighted data)

	Europe	UK	IT	ES	FR	AT	DE	NL	FL	NO	CR	CH
Non-vocational Arts	19	41	23	18	27	23	20	12	16	14	9	27
Vocational Arts	41	28	37	40	33	44	34	58	36	42	47	36
Non-vocational Science	11	15	11	15	21	12	13	8	12	10	9	7
Vocational Science	29	17	28	27	19	21	34	22	36	34	35	30
Count (n)	31,984	1,470	3,109	3,876	1,577	1,821	1,692	3,397	2,563	2,186	6,619	3,674

Table C4. Distribution of graduates by subject and country (%; unweighted data)

	Europe	UK	IT	ES	FR	AT	DE	NL	FL	NO	CR	CH
Education	11	3	3	12	5	13	7	13	7	20	19	3
Humanities and Arts	11	28	14	9	16	14	15	8	13	7	5	12
Social sciences, Business and Law	31	32	41	33	33	39	25	34	26	19	27	33
Science, Mathematics and Computing	11	17	11	14	23	10	11	7	9	8	5	13
Engineering, Manufacturing and Construction	17	7	18	15	10	15	24	12	20	11	23	20
Agriculture and Veterinary	3	2	2	4	1	3	3	2	3	2	4	2
Health and Welfare	15	8	11	12	8	4	13	21	19	31	12	16
Services	2	3	1	1	4	2	2	4	3	4	3	0
Count (n)	33,541	1,566	3,110	3,877	1,672	1,821	1,692	3,425	2,676	2,201	6,619	4,882

Question A1: What subject did you study?

Section 4

Table C5. Average months spent searching for employment after graduation

	Europe	UK	IT	ES	FR	AT	DE	NL	FL	NO	CR	CH
Non-vocational Arts	3.4	2.3	3.3	6.1	5.3	3.4	3.3	2.1	2.7	1.9	2.8	4.5
Vocational Arts	2.6	2.2	3.1	6.6	4.3	1.8	1.9	1.4	2.4	1.0	2.2	2.6
Non-vocational Science	3.2	2.7	4.1	6.1	4.2	1.7	2.2	1.4	3.3	1.8	2.7	3.4
Vocational Science	2.1	1.8	2.7	3.4	2.2	2.3	1.9	1.1	1.7	1.2	2.2	2.3

Question C4: How many months did you search before you obtained this employment after graduation?

Table C6. Median gross monthly earnings of graduates by country, first job (Pounds Sterling)

	Europe	UK	IT	ES	FR	AT	DE	NL	FL	NO	CR	CH
Non-vocational Arts	933	1053	566	450	816	988	869	1000	1156	1756	-	1754
Vocational Arts	1029	1120	612	450	1020	1054	1113	1080	1144	1532	-	2484
Non-vocational Science	1088	1199	663	531	952	1334	1356	1097	1263	1857	-	1702
Vocational Science	1226	1344	680	613	1088	1285	1502	1141	1286	1663	-	2512

Question D7: What were your gross monthly earnings when you started this work or at the time of graduation, if you were already in this job? (No data available for Czech Republic; exchange rate €1=£1.47)

Section 5

Table C7. Median gross monthly earnings of graduates by country, current job (Pound Sterling)

	Europe	UK	IT	ES	FR	AT	DE	NL	FL	NO	CR	CH
Non-vocational Arts	1483	1525	948	884	1088	1497	1905	1613	1667	2561	494	2502
Vocational Arts	1559	1849	1020	876	1361	1769	2177	1581	1636	2123	506	3380
Non-vocational Science	1661	1979	1088	1020	1361	2041	2381	1701	1874	2736	537	2553
Vocational Science	1769	2135	1224	1190	1497	2041	2415	1701	1836	2246	586	3073

Question F7: What are your gross monthly earnings from contract hours in main employment? (Exchange rate €1=£1.47)

Table C8. Graduates who experienced unemployment since graduation by country (%)

	Europe	UK	IT	ES	FR	AT	DE	NL	FL	NO	CR	CH
Non-vocational Arts	43	37	47	72	46	45	38	33	43	33	37	40
Vocational Arts	35	33	35	64	40	35	38	32	37	22	38	29
Non-vocational Science	40	38	45	60	45	29	39	38	25	33	34	27
Vocational Science	30	24	30	51	28	34	60	24	38	15	37	22
Count (n)	20594	1845	1946	1945	1794	1915	1965	1845	1883	1945	1950	1475

Question E3: Have you been unemployed (that is, not employed and seeking employment) since graduation in 1999/2000?

Table C9. Graduates who experienced unemployment since graduation by subject and country (%)

	Europe	UK	IT	ES	FR	AT	DE	NL	FL	NO	CR	CH
Education	31	20	33	68	15	37	34	14	33	21	33	25
Humanities and Arts	44	40	51	78	42	43	36	35	49	44	38	38
Social sciences, Business and Law	38	32	37	62	49	38	41	26	34	24	41	33
Science, Mathematics and Computing	39	39	47	61	44	26	40	42	26	32	31	29
Engineering, Manufacturing and Construction	30	29	31	41	39	33	28	25	17	31	39	25
Agriculture and Veterinary	42	23	42	64	53	34	40	28	33	33	54	34
Health and Welfare	28	16	24	64	12	40	35	23	47	11	29	23
Services	35	40	50	60	29	38	29	27	43	24	45	100
Count (n)	21,418	1,967	1,946	1,948	1,897	1,915	1,966	1,946	1,965	1,958	1,947	1,963

Question E3: Have you been unemployed (that is, not employed and seeking employment) since graduation in 1999/2000?

Table C10. Average number of employers since graduation by programme and country (%)

	Europe	UK	IT	ES	FR	AT	DE	NL	FL	NO	CR	CH
Non-vocational Arts	2.5	2.6	2.7	3.4	2.6	2.5	2.0	2.7	2.3	2.4	1.9	2.3
Vocational Arts	2.3	2.4	2.1	3.2	2.2	2.2	2.3	2.4	2.6	2.3	1.7	2.1
Non-vocational Science	2.1	2.4	2.3	2.9	2.0	1.9	1.6	2.1	1.8	2.4	1.7	1.9
Vocational Science	2.2	2.8	2.2	2.9	2.1	2.1	1.9	2.2	2.1	2.3	1.6	2.1

Question E1: How many employers have you had altogether since graduation in 1999/2000?

Table C11. Average number of employers since graduation by subject and country

	Europe	UK	IT	ES	FR	AT	DE	NL	FL	NO	CR	CH
Education	2.1	1.9	2.5	3.4	1.4	2.2	1.9	2.0	2.1	2.1	1.7	2.0
Humanities and Arts	2.8	2.7	2.8	3.6	2.5	2.5	2.3	4.3	2.9	3.3	2.0	2.4
Social sciences, Business and Law	2.3	2.5	2.1	3.1	2.4	2.3	2.3	2.1	2.1	2.2	1.7	2.1
Science, Mathematics and Computing	2.2	2.5	2.4	2.9	1.9	1.9	1.6	2.1	1.9	2.5	1.7	1.9
Engineering, Manufacturing and Construction	2.0	2.8	2.4	1.8	2.0	1.7	2.1	2.8	1.7	2.4	1.6	1.8
Agriculture and Veterinary	2.4	2.1	2.1	3.6	2.9	2.1	1.9	2.4	2.4	2.5	1.7	2.1
Health and Welfare	2.4	2.7	2.2	3.4	2.5	2.4	2.2	2.5	2.4	2.2	1.6	2.3
Services	2.2	2.2	2.8	2.9	2.6	2.7	1.7	2.2	2.4	2.1	1.6	-

Question E1: How many employers have you had altogether since graduation in 1999/2000?

Section 8

Table C12. Importance of job characteristics by subject (%; responses '4' and '5')

	Education		Humanities and Arts		Social sciences, Business and Law		Science, Mathematics and Computing		Engineering, Manufacturing and Construction		Agriculture and Veterinary		Health and Welfare		Services		Total	
	EU	UK	EU	UK	EU	UK	EU	UK	EU	UK	EU	UK	EU	UK	EU	UK	EU	UK
Work autonomy	87	73	87	70	86	73	84	63	85	58	86	64	86	87	81	70	85	70
Job security	88	92	79	80	76	77	79	81	77	76	82	70	86	83	84	84	81	80
Opportunity to learn new things	91	88	91	89	91	89	92	89	91	94	90	81	93	92	91	91	92	90
High earnings	54	57	52	51	67	66	56	60	66	74	59	56	59	61	61	81	59	63
New challenges	78	83	78	83	80	84	79	87	82	94	78	81	80	83	84	93	80	85
Good career prospects	55	84	60	72	73	81	66	80	70	88	64	75	60	78	63	79	64	80

Question J1: Please indicate how important the following job characteristics are to you personally, and to what extent they actually apply to your current work situation. (Rated on a 5 point scale from 1=not at all to 5=to a very great extent)

Table C13. Graduates with jobs where their values applied (%; responses '4' and '5')

	Education		Humanities and Arts		Social sciences, Business and Law		Science, Mathematics and Computing		Engineering, Manufacturing and Construction		Agriculture and Veterinary		Health and Welfare		Services		Total	
	EU	UK	EU	UK	EU	UK	EU	UK	EU	UK	EU	UK	EU	UK	EU	UK	EU	UK
Work autonomy	87	79	80	72	82	80	85	80	84	67	85	96	78	77	84	72	81	78
Job security	74	85	65	77	66	71	58	64	83	63	83	62	70	79	74	81	72	73
Opportunity to learn new things	66	73	65	67	67	66	69	68	67	67	68	76	68	75	64	26	67	65
High earnings	31	46	31	37	37	41	35	41	36	43	31	54	30	53	30	32	33	43
New challenges	66	81	63	66	62	63	67	68	64	68	62	76	65	71	60	59	63	69
Good career prospects	38	53	42	57	47	57	43	59	45	64	41	61	43	66	43	56	43	59
Enough time for leisure activities	59	42	57	57	54	59	54	56	48	44	49	39	51	41	62	59	54	50
Social status	53	48	53	53	61	66	58	57	58	30	63	36	63	75	62	50	59	52
Chance of doing something useful for society	83	93	71	79	57	63	61	60	51	44	64	80	86	86	72	64	68	64
Combining work with family	68	43	63	63	55	54	55	54	49	36	52	50	53	46	64	40	57	48

Question J1: Please indicate how important the following job characteristics are to you personally, and to what extent they actually apply to your current work situation. (Rated on a 5 point scale from 1=not at all to 5=to a very great extent)

Appendix D: Subject groupings used in this report⁷

Non-vocational Arts subjects
Arts (broad programmes)
Fine arts
Humanities
Religion and theology
Foreign languages and cultures
Mother tongue
History and archaeology
Philosophy and ethics
Social and behavioural science (broad programmes)
Psychology
Sociology and cultural studies
Political science and civics
Economics

Non-vocational Science subjects
Biology and biochemistry
Environmental science
Physical science (broad programmes)
Physics
Chemistry
Earth science
Mathematics
Statistics
Computer science
Chemical and process

Vocational Arts subjects
Teacher training and education science (broad programmes)
Teaching and training
Education science
Training for pre-school teachers
Training for teachers at basic levels
Training for teachers with subject specialisation
Training for teachers of vocational subjects
Music and performing arts
Audio-visual techniques and media production
Design
Craft skills
Journalism and reporting
Library, information, archive
Personal services (broad programmes)
Hotel, restaurant and catering
Travel, tourism and leisure
Domestic services
Hair and Beauty
Transport services
Community sanitation services
Security services
Protection of property and persons
Occupational health and safety
Textiles, clothes, footwear, leather
Material (wood, paper, plastic, glass)

⁷ Individual subjects as provided by survey respondents.

Vocational Science subjects

Biology and biochemistry

Environmental science

Physical science (broad programmes)

Physics

Chemistry

Earth science

Mathematics

Statistics

Computer science

Chemical and process
