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Research paper No. 7

A fast track to management? Early career outcomes for business studies graduates in the 'knowledge' economy

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1. Introduction: the knowledge economy and higher education

The premise that a more highly educated workforce is essential for economic and social prosperity in the emerging knowledge economy has been a cornerstone of economic and political policy of successive UK governments for the last two decades (Thompson *et al.* 2001, Crouch *et al.* 1999). Relatively recent changes to higher education policy, focusing on what Scott (1995) calls the elite-mass paradigm shift, represent an ideological shift from the traditional, liberal ideal of higher education towards the economic ideology of education, as summarised by Salter and Tapper (1994:12):

'Its basic principle is that education is an economic resource which should be organised in a way that maximises its contribution to Britain's industrial development. From this premise it follows that socially relevant, or applied knowledge is more important than pure knowledge, that higher education institutions should be responsive to economic needs, and that it is the responsibility of the state to ensure than these institutions are held accountable for carrying out their economic role correctly'

In particular, the economic rather than the cultural value of higher education has increasingly been prioritised in a way that subtly changes the role of higher education towards the development of 'employability', to prepare graduates for the type of 'high skill' jobs that are said to characterise 'the knowledge economy' (Thompson and Warhurst 2003). With 35 per cent of all young people under the age of 30 in higher education, Britain already has the highest number of graduates amongst the OECD countries and it is current government policy that 50 per cent of this age group should have had 'the benefit of higher education' by 2010.

Apart from recent and projected growth in the professional, managerial and technical occupations which have generally required higher education (Wilson 2001), there is also some evidence that the increase in graduate labour market entrants is fuelling expansion of the knowledge economy, as graduates bring higher level skills into organisations, challenge existing practices and 'grow' their own jobs (Harvey *et al.* 1997). The growth of graduate employees in different types of job and in different areas of employment reflect different

supply and demand drivers (Mason 2001) and while traditional graduate employers report difficulties in recruiting the numbers of suitably-qualified graduates they require in some areas, they also report an over-supply in others (Brown et. al 2002). In addition, as Laudrillard (2002) suggests, the growth in higher education output has fuelled both the demand for knowledge and 'the knowledge industry', for which technology has provided the potential for expansion both within and beyond institutionalised higher education. In line with these contradictory developments, the idea that *'education is the elixir for economic growth'* (Wolf 2003, 14) is debatable on a number of levels (see, for example, Brown and Lauder 2003).

Criticism of higher education expansion policies comes from both labour market and educational perspectives, suggesting that it rests on exaggerated assumptions about the extent of macro-level developments and their impact on work itself (Morris 2004) and the skills demand for knowledge workers (as opposed, for example, to personal service workers). Given the scale of this expansion in higher education, concerns have been expressed that the increased output of highly qualified people may not have been matched by an increase in demand for their skills and qualifications (Battu *et al.* 2000; Wolf 2003). Others have suggested that the major increase in the supply of graduates indicates a growth in credentialism rather than the development and enhancement of human capital (Ainley 1987; Keep and Mayhew 1996, 1997). At the same time, employers in areas requiring certain graduate skills (particularly with reference to numeracy-based subjects) continued to report skill shortages (Mason 1999) and the demand for graduates from employers has continued to exceed the supply and is projected to grow further (*c.f.* Wilson 2001).

A frequent employers' criticism of the graduate labour market is the lack of 'work-readiness', business awareness and employability skills that employers require in order for graduateentry level employees to 'hit the ground running' (Hesketh 2000). For example, Harvey *et al.* (1997) found that employers sought employees who could rapidly fit in to the workplace culture, work in teams, exhibit good interpersonal skills and communicate well: But above all, 'adaptive, adaptable and transformative' employees 'to help them maintain, develop and ultimately transform their organisations in response to, and preferably in anticipation of, change' (ibid: 1). However, as Brown *et al.* (2002) discuss, there is significant room for debate over a satisfactory definition of employability, given what they refer to as the duality of employability: that it has both a absolute dimension (*i.e.* individual characteristics necessary to obtain appropriate employment) and a relative dimension (*i.e.* that any definition will vary according to supply and demand of the labour market). Indeed, Hesketh (2000) questions whether the reality of levels of employer dissatisfaction with their graduate recruits matches the rhetoric found in other studies and policy documents and reflects a 'real' skills gap.

2. Vocational relevance and the rise in business education

The demand for managers (Wilson 2001) has been one of the most consistent areas of growth in employment opportunities and projected future growth (Wilson 2001 *ibid*.). However, despite continued growth in this occupational area, management and leadership deficiencies are frequently cited as a cause of poor productivity, low performance and shortage of high quality skills in these areas throughout the UK workforce (CEML 2002). Traditionally, managers in the UK have been characterised by low levels of technical and specialist expertise (Hollinshead 1999) and to be accountancy-dominated (Scarborough 1999), especially at high levels within organisations (in contrast to Germany, for example, which draws many of its managers from the ranks of technologists and engineers). Furthermore, class structures are still held to exert significant influence on organisational hierarchies beyond the principles of merit; senior British managers have been drawn largely from a narrow class base generally characterised by an elite educational background. Thus, a self-perpetuating system has been created in which cultural capital has counted for more than technical expertise and ability in access to management jobs.

It is also widely alleged that until relatively recently (in contrast to American, German and Japanese managers) British managers have typically received little training in applied technical and business subjects and this has led them to take a predominantly short-term, non-strategic and opportunistic approach to management. Despite increasing recognition of the need for a less amateur and responsive approach to management, under-qualified generalists have still tended to predominate (Hollinshead 1999).

However, along with a growth in management jobs, the qualifications of those holding them has risen in line with the expansion in higher education. An undergraduate education was traditionally a route into a career in management, either directly as a management trainee or indirectly on a career track where progression to management roles was routinely expected. Research undertaken by the Chartered Management Institute (2002) suggests that 49 per cent of HR managers surveyed thought the preparedness of graduates for the world of work had decreased in recent years (albeit based on a very limited sample as is characteristic of much of the debate on graduate labour market trends). Specifically, key skills which employers identified as lacking were commercial awareness, team working and interpersonal skills, problem solving and analytical thinking. Importantly, 69% of employers expected newly recruited graduates to be contributing effectively within 6 months of recruitment: as they say, to 'hit the ground' running. Of course, employers' criticism of the lack of graduate 'workreadiness' for entry into managerial positions partly reflects the difficulty inherent in preparing students for a career in management given the problems of defining the nature of managerial work itself (see, for example, Mintzberg 1976, Stewart 1984) and may reflect unsubstantiated perceptions (and, possibly, changing expectations) rather than hard evidence of changing standards of achievements or potential.

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Winterton *et al.* (2000) examine the ways in which economic, social, political and technological trends appear likely to impact on the role of managers and suggest that the future skill needs include attaching knowledge-based technical specialisms to generic management competences and, in many contexts, will include the requirement for increased awareness of international trends and cultural diversity. Such authors predict that rapid rates of organisational change will require a greater focus within management education on skills such as learning, innovative thinking, managing change and flexibility, rather than the inculcation of discipline knowledge. In addition, necessarily a greater focus for management will be on people management skills and greater individual responsibility for their own career development. Ironically, this should make the traditional core skills developed on undergraduate programmes, regardless of discipline – communication, logical thinking, critical analysis, research skills, problem-solving, information management – increasingly relevant as a preparation for management roles.

Reflecting the need for recruits with the adaptive skills identified by Harvey *et al.* (*op cit.*), Starkey and Madan (2001) argue that:

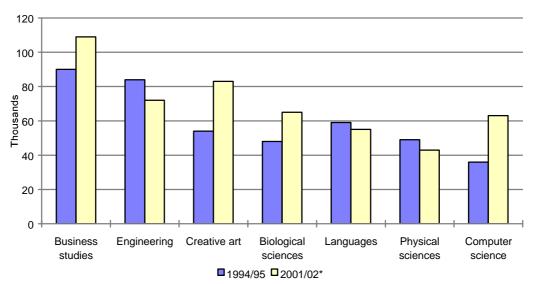
'In this period of transition to a knowledge-based society, universities, and perhaps business schools most of all, are faced with a need to rethink their role... to develop the critical reflection, strategic vision and flexible and adaptable mindsets required by the manager of today and the leader of the future' (Starkey and Madan 2001: 17)

Does this require a different approach to higher education or to graduate recruitment than in the past? Traditional graduate employers recruiting graduates as generalists rather than specialists routinely did so in the past on the assumption that completion of a degree programme demonstrated intellectual and moral achievement and served as a proxy for potential and what we now think of as transferable skills, such as communication and problem-solving abilities (Purcell and Pitcher 1996). 'General traditional graduate occupations' were, generally speaking, jobs that constituted the port of entry for management as strategic leadership roles in operations: for example, senior administrator in the civil service and in large corporations. In many of the newer occupations and job roles filled by graduates, our findings suggest that the latter broader set of demonstrable skills, aptitudes and characteristics are used by graduates (Purcell et al 2003) although a degree may not have been required by the employer. How far the ability to carry out many 'graduate jobs' required three or more years of higher education is questionable (Wolf 2003), but it is not a new question: significant minorities within earlier generations of graduates from the 'elite' higher education system have reported lack of fit between their education and occupational outcomes and the extent to which their skills and knowledge were underutilised (Tarsh 1992, Dolton and Makepeace 1992).

However, the graduate labour supply is different to that of previous generations, with increasing numbers of increasingly specialist vocational undergraduate programmes designed to prepare students explicitly for management and business. Given that employers consistently stress the value of work experience and 'employability skills' (e.g. The Guardian 2003), it should follow that they will prefer to recruit those with such qualifications and will be predisposed towards those who have obtained business studies degrees. Do such degrees, then, constitute a fast track into graduate-level employment in management and business?

Business studies and management undergraduate and postgraduate degrees have been an increasing growth area within higher education. Figures from HESA (2002) indicate that, in the year 2001-02, of all major subgroups of subjects of study at HE institutions, business and administrative studies represents the largest number of undergraduate entrants of any subject area in recent years and included approximately 1 in 8 of all HE students (250,000 in total at both undergraduate and postgraduate level – 165,000 at undergraduate level, as Figure 2 shows. About half of all higher education qualifications in business and management are first degrees, a number which had grown by 20% over the second half of the 1990s.

Figure 1: Student enrolments on full-time first degree HE courses (HEIs only), selected subjects, UK, 1994/95 to 2001/02 (Thousands)



Source: HESA (2002)

The Higher Education Careers Services Unit (2003), emphasising the greater level of employability skills that appear to be acquired on management programmes, links this growth to the finding that six months after graduation employment rates for both accountancy (80%) and business and management studies graduates (79%), have been considerably higher than the average for all subjects (69%) (HECSU 2003; see also CEL 2001). A recent survey conducted by the Association of Graduate Recruiters (AGR 2003) suggests that because of the increase in numbers with degrees, graduates face an increasingly competitive job market. As prospective students think more instrumentally about degree choices and what

advantages they can gain from their decisions, they may perceive that a business degree may provide competitive advantage. Previous findings suggested that a degree in business studies was associated with relatively positive career outcomes and satisfaction (Elias *et al.* 1999: 92-98) and a recent study of graduates from North West higher education institutions revealed that business studies graduates were more likely to be in full-time employment at all stages following graduation and less likely to be unemployed than graduates across all subject areas, particularly in the first 18 months after graduation (Enterprise Centre for Learning and Curriculum Innovation 2000). But did this reflect *appropriate* employment? Green and McIntosh (2002:28) found that, like graduates in social sciences, those with business/management degrees were more likely than average to be over-qualified for their current jobs. The remainder of this paper seeks to explore how far business degrees have enabled graduates to access appropriate employment and in particular, how far they appear to have led to management and related jobs, compared with graduates from other disciplinary backgrounds.

3. Seven Years On: business and management graduates

The information presented in this section draws on a major ESRC and CSU-funded survey of 1995 graduates from 38 UK higher education institutions conducted in 2002/03. The surveybased analysis is supplemented by qualitative material collected in an interview programme with a stratified sub-sample of respondents¹.

Business Studies graduates made up 12.5 per cent of the total seven years on survey sample.² Where the entire sample is roughly split 50:50 in terms of gender, males represent approximately 60 per cent of business graduates. As a sub-sample, they were marginally more likely to have been educated at a comprehensive school (as opposed to a fee-paying school) than the sample as a whole, and were significantly more likely to have studied at a post-1992 university (75 per cent of business graduates studied at a post-1992 university compared to 46 per cent of all graduates). Further, in terms of background, it would appear that business graduates were marginally less likely to come from a professional or managerial background and more likely to be the children of parents classified as 'small employers and own account workers' and those in 'semi-routine and routine occupations'³.

In terms of current employment, business studies graduates were significantly less likely to be employed in the public sector: 82 per cent of business graduates were currently employed in the private sector compared to 59 per cent of the total sample. A more detailed investigation of sector of employment (shown in Figure 2) indicates that business graduates were

¹ 201 interviews were carried with a sub-sample of graduates, of which 33 had studied business and management. ² Except where stated, all analysis is conducted on a dataset where only those currently in employed (full-time, parttime and self-employed) and who graduated under the age of 30 are included. One notable exception is in analysis of current earnings which does not include those in part-time employment for obvious reasons.

significantly more likely to be found in manufacturing, distribution, hotels and catering, banking, finance and insurance and, to some extent, business services: all areas where the employment of graduates has increased significantly in the latter part of the 20th Century.

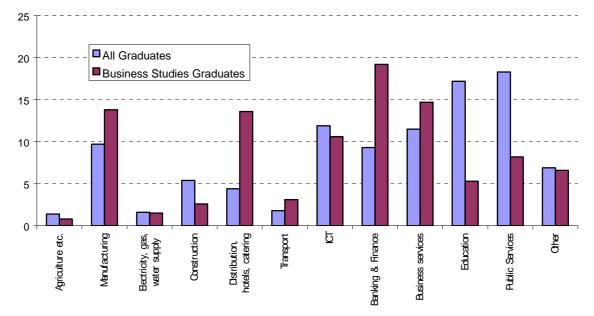


Figure 2: Sectoral distribution of seven years on survey sample*

*All survey respondents Source: Seven Years On: survey of the career paths of 1995 graduates

Notably, 41 per cent of business studies graduates report that they were not in employment for which a degree had been required, compared to 28 per cent in the sample as a whole, which echoes the findings of Green and McIntosh (2002:28). A further 9 per cent did not know whether their degree had been a requirement or not. However, it is important to bear in mind that many of those in such jobs had gained them after experience in jobs for which a degree *had* been required. Seven years on, experience rather than credentials are likely to have been more important to recruiters, particularly in areas where professional qualifications were not required as prerequisites to practice (as is the case in, for example, teaching, legal practice or medicine).

In terms of earnings⁴, business graduates appear to start out in their first main job after graduation earning less than the sample average. Average 'first job' earnings for business graduates were £10282 compared to the sample average of £11992; the lowest average apart from those of arts and interdisciplinary subject graduates. Seven years on, however, the average earnings of business graduates had exceeded graduates from all other subjects

³ NSSEC classification.

⁴ Again, all figures based only on those in full-time employment who had graduated under the age of 30 only

except law and maths and computing. However, these averages mask a significant gender differential for most subjects. For example, on average, female business graduates earn only 81% of their male peers in line with graduates in the sample as a whole; a differential that has remained constant since graduation (See Elias and Purcell 2004b).

Furthermore, if we look at the distribution of earnings seven years on, comparing business graduates to the sample as a whole (see figure 3), we can see that whilst at the higher end of earnings business graduates were doing as well if not better than graduates as a whole there is a significant proportion who were below average. Therefore, the data suggests a polarisation of outcomes for business graduates. This will be further discussed in the next section.

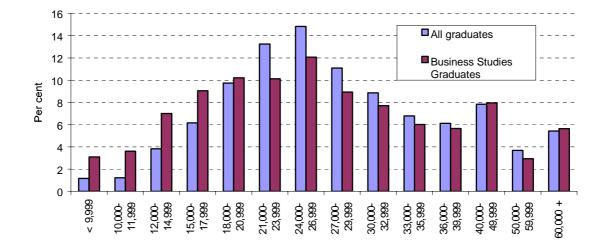


Figure 3: Reported earnings at time of survey*

Source: Seven Years On: survey of the career paths of 1995 graduates

Survey respondents were asked to state what factors they feel were relevant in getting their current jobs. These factors included the subject and class of their 1995 degree, any postgraduate or professional qualifications obtained and previous employment experience. Overall, business graduates reported that their undergraduate (*i.e.* subject, class and professional recognition of their degree) and postgraduate education had been less relevant in obtaining their current job than for the sample as a whole. However, reference to the importance of having achieved professional recognition in a field was marginally higher amongst business graduates and this group was notably more likely to emphasise the importance of experience (in another organisation). Survey respondents were asked whether they had undertaken any postgraduate education or training. Business graduates report less activity, except in relation to professional qualifications, where a significantly higher proportion of business graduates had studied for qualifications such as CIPD or accountancy qualifications (16 per cent of all graduates, 24 per cent for business graduates).

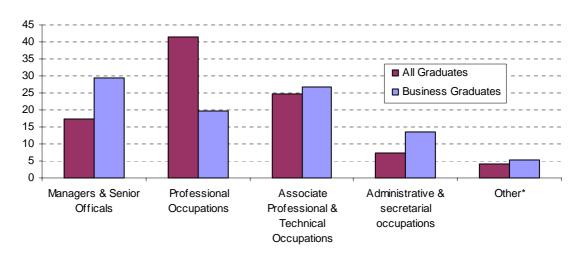
In terms of career and future aspirations, it appears to be the case that business studies graduates have settled into an occupational area and a company career track to a marginally greater extent than graduates overall. They were more likely to see their career opportunities as being 'good within their current employer' and less likely to feel that they would have to change the type of work they do to progress. They thus appeared more likely to be developing careers in organisational rather than occupational labour markets, requiring generic rather than specialist expertise (Green 1999): 'embodied' and 'embedded' skills and knowledge rather than 'embrained' knowledge (Lam 2002). Our findings suggests that among our respondents, business graduates appear to have been more likely to develop numerical skills, management skills and both written and spoken communications, 'a lot' on their undergraduate programmes than those from most other disciplines. They were no more or less likely than others to be in roles where they considered that they had 'a great deal' or 'a fair amount' of influence in deciding what tasks to do or where they were required to plan their own work, and their reported use of computers was similar to the sample as a whole.

4. A Fast track to management?

The question of whether a business education appears to provide a fast track to management can be considered from a variety of perspectives related to the different ways in which we can define 'management' and managerial work. Firstly, we can assess the labour market outcomes of business graduates according to two different occupational classifications and the extent to which their current jobs represent managerial work. Secondly, we can investigate current occupations according to job title and the extent to which these suggested that they were engaged in managerial *work*. Finally, we can attempt an assessment, on the basis of subjective accounts provided in the detailed interviews about job content, of the skills requirements of the jobs that business graduates were actually doing.

A first approach to ascertaining the current employment profile of business graduates with the sample as a whole is to use the major group structure of SOC2000 and examine the extent to which they were employed as 'managers and senior officials'. Figure 4 suggests that business graduates were significantly more likely compared to graduates as a whole to be in managerial or senior official posts. Using this classification enables us to distinguish managerial and professional occupations and shows that, unsurprisingly, business graduates were less than half as likely to be in professional occupations. However, the data also suggests a notable difference in the proportion of business graduates employed in administrative and secretarial occupations when compared to the sample average. This apparent polarisation of experience between those in managerial occupations and those in administrative positions appears to be significant, especially in light of the previously discussed polarisation of earnings.

Figure 4: Occupational Status (SOC2000)

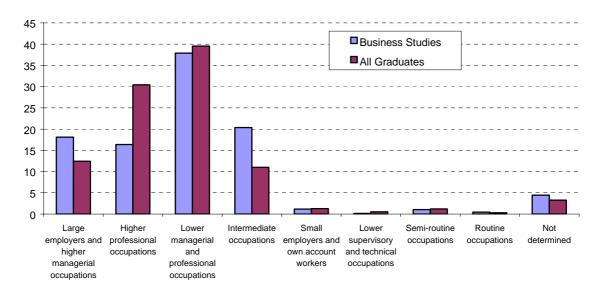


* Other includes skilled trades, personal services, sales and customer services, process and customer services and elementary occupations.

Source: Seven Years On: survey of the career paths of 1995 graduates

However, occupational groups under SOC2000 are to a certain extent heterogeneous and therefore we can also use another occupational classification, NSSEC, which takes account of establishment size. Figure 5 shows the proportions of graduates according to the NSSEC category of their current jobs. Much like analysis by SOC2000, it suggests that approximately 18% of all business graduates are currently employed in the large employers and high managerial occupational group compared to 12% for the sample as a whole (and second only to language graduates at approximately 21%). It is also significant that compared to graduates as a whole, a similar proportion are also employed in intermediate occupations. In terms of lower managerial and professional positions, the evidence is inconclusive given that the split between the two is not known. Therefore, again the data indicates that there is a polarisation of outcomes for business graduates between those in higher managerial positions and those in lower-level occupations.

Figure 5: Social Class (NSSEC) of current job

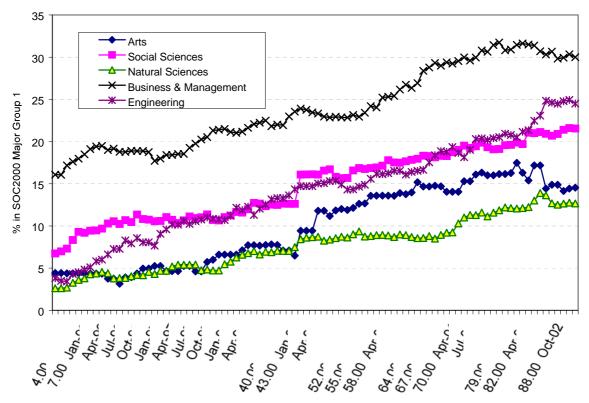


Source: Seven Years On: survey of the career paths of 1995 graduates

So, if, as according to both the NSSEC and SOC2000 classifications, business graduates are more likely overall to end up in managerial posts seven years on, how are they getting there? Are they entering employment after graduation in much the same pattern as other graduates and being 'accelerated' at a greater rate into higher positions? Alternatively, does the possession of a business degree give these graduates a 'head start' and enable them to enter higher level positions at an earlier stage? Figure 6 tracks the movement into managerial occupations of graduates from selected subject areas over the seven years for which we have data. Compared to arts, engineering, social science and natural science graduates, business graduates are significantly more likely to enter straight into a management job straight after graduation and maintain this proportional 'advantage' throughout the seven year period. Therefore this would suggest that whilst a business degree does not necessarily provide a fast-track to management as such (the growth rate of each subject group is largely similar) it does appear to continue to provide a route into management jobs for a higher proportion of relevant degree-holders than from other areas of study, from the start of their graduate careers.

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Source: Seven Years On: survey of the career paths of 1995 graduates

As CIPD (2002) and Thompson and Warhurst (2002) discuss, there are significant problems attached to definitions of knowledge work and in the proxies used in identifying knowledge workers in the economy. For this paper, a useful interpretation of the new economy is offered by Reich (1991) and the idea that three broad categories of work are emerging in 21st century capitalist economies: routine production services, in-person services and symbolic-analytic services. Reich's description is helpful because it is based on the specific content and associated activities of jobs rather than the use of proxies such as level of education or sector of employment to categorise knowledge workers. His conception of symbolic analysts, those who are engaged in 'problem-solving, problem identifying and strategic brokering' (ibid: 177) also limits the depiction of knowledge workers to those working predominantly in the private sector. It can be deduced from both the quantitative and qualitative data that the majority of business graduates have entered such employment, whether at higher or lower managerial or a professional level. However, there is also a sizeable minority of those in lower managerial or professional or intermediate occupations who may be more accurately conceptualised as either routine production or in-person services depending on the nature of the work they actually do, because - as Reich points out - 'traditional job categories - managerial, secretarial, sales and so on - overlap with more than one of these categories' (ibid: 180). Therefore, for those in jobs with 'manager' in the title the symbolic-analytic content in their roles may be limited. However, Reich indicates that a significant factor in symbolic-analytic jobs is not simply the 'mastery of old domains of knowledge' but a 'capacity to effectively and

creatively use the knowledge' most often for commercial gains. By this measure, from the evidence provided by the interview sample, the majority of the 1995 business studies graduates included in the survey appeared to be in such employment.

However, as suggested by both the NSSEC and SOC2000 analyses, there were a significant proportion of business graduates, greater than the sample average, that were employed in administrative and secretarial/intermediate positions. An important question therefore is to what extent does this constitute greater under-employment in non-graduate occupations?⁵ Figure 7 tracks the movement out of non-graduate employment from graduation until the time of the survey, comparing selected degree subject-holders. The graph shows that business graduates were most likely to enter non-graduate jobs and although they steadily moved into graduate-level jobs a higher than average minority (approximately 18 per cent) were still in non-graduate jobs after seven years.

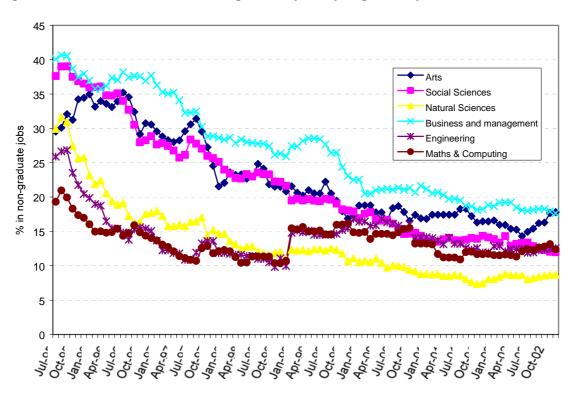


Figure 7: Movement out of non-graduate jobs by degree subject

Source: Seven Years On: survey of the career paths of 1995 graduates

An alternative approach to examining the managerial outcomes of graduates is to select those occupations listed in the standard occupational classification (SOC2000) that clearly constitute managerial jobs on the basis of job title. Overall, approximately 29 per cent of business graduates were thus unambiguously in management jobs; significantly higher than

⁵ For the purposes of this study, non-graduate jobs were defined according to SOC (HE). For full details see Elias and Purcell (2004a) SOC(HE): A Classification for Studying the Graduate Labour Market (Research Paper No.6), on www.warwick.ac.uk/go/glmf

the proportion in the overall sample. Further analysis indicates that business graduates are most likely to be in managerial positions within the SOC (HE) new and *niche* graduate occupational categories; consistent with the growing professionalisation of management over recent years and the lesser extent to which business graduates were likely to enter into managerial posts within the traditional or modern categories (i.e. posts which are more likely to be filled with professional or technical experts who have moved to managerial positions within (or out of) their area of specialism (e.g. maths and computing, law or engineering).

According to a subjective assessment of the extent to which management and leadership skills were required in their current employment (see Table 1), business graduates were notably more likely to say that these skills were required 'a lot'.

Table 1:	Skills required in current employment
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		Not at all	Some	A lot
Management Skills	All Graduates	11.6	43.5	44.7
	Business Graduates	9.3	32.2	58.6
Leadership Skills	All Graduates	11.8	43.5	44.7
	Business Graduates	10.8	36	53.2

Source: Seven Years On: survey of the career paths of 1995 graduates

In terms of supervisory responsibility, a similar pattern was evident with a greater proportion of business graduates indicating that they supervise the work of other 'mostly' (Table 2).

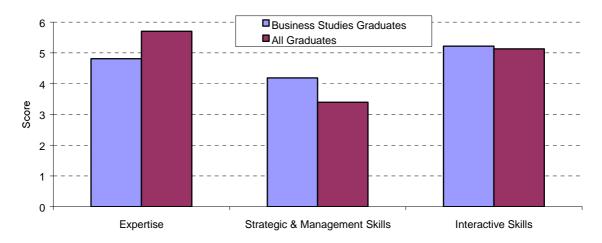
Table 2: Response to the statement: I am responsible for supervising the work of other people

	Mostly	Sometimes	Occasionally	Never
Business Graduates	38.8	23.4	24.7	13
All Graduates	32	30.8	23.7	13.4

Source: Seven Years On: survey of the career paths of 1995 graduates

Finally, we can assess the skills content/requirement of graduate jobs and the extent to which they appear to have had significant management components, based on a detailed analysis of the transcripts of interviews undertaken with 201 graduates. An assessment was made of the extent to which the jobs of this sub-sample required, as an integral part of the occupational role and responsibilities, the exercise of three clusters of skills components: expertise, strategic and management skills and interactive skills⁶. Scores out of ten were given under each heading to each job on the basis of information gained from the interviewee about the range and level of responsibilities and tasks that they perform in the course of their work. By doing this it was possible to look at different types of employment and examine their relational skills content. In examining the mean scores of the sub-sample of business graduates compared to the sample as a whole, an assessment could be made of the importance of these three broad skills areas in the employment which these graduate groups have subsequently obtained.





Source: Seven Years On: survey of the career paths of 1995 graduates

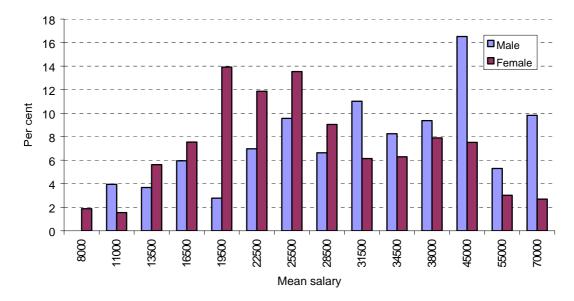
Notably, jobs held by business graduates scored more highly in the use of strategic and managerial skills, which is commensurate with having managerial roles with decision-making responsibility on a day-to-day operational basis or at a strategic level. Unsurprisingly, given the 'generalist' nature of business degrees compared to the specialist, scientific, engineering and ICT degrees which are often entry requirements for particular occupations, business graduates' jobs appeared to be less dependent on specialist knowledge-based expertise compared to the jobs held by members of the interview sample as a whole. Interactive skills were almost identical for both groups, but this masks the diversity of such skills used in employment, given that scores were allocated on the basis on both hard (negotiation, selling, directing others, *etc*) and soft (caring, counselling etc) interpersonal skills.

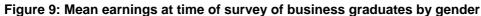
Taken as a whole, these indicators suggest that there is evidence that business graduates were more likely to be in employment where management was a central component of the occupations in question. We approached the question from three perspectives: firstly, according to the occupational classification of current employment; secondly, with regard to the self-reported use of managerial skills and responsibilities in their current jobs; and thirdly, through the interpretation of the skills requirements of their current jobs, according to the accounts given in the qualitative interviews. Both occupational classifications indicate a greater proportion of business graduates in higher managerial employment than in the sample as a whole. Business graduates were more likely than others to report substantial use of managerial skills, leadership skills and supervisory responsibility for the work of others. In terms of analysis of skills requirements of jobs held by the interview subjects, business graduates tended to score higher overall in the need for strategic and managerial skills

⁶ These are fully defined in Purcell *et al.* 2003.

(related to the extent and level of decision-making) than the sample as a whole, suggesting greater managerial responsibility. However, an equally important finding was the proportion of business graduates who were employed in non-graduate occupations after seven years and those in administrative and secretarial work. This suggests there are two contrasting trends among business graduates.

In explaining this polarisation, (in this case regarding the current earnings of business graduates) it appears that a significant explanatory variable is that of gender; a point touched upon in section 3. Figure 9 below illustrates the current (mean) earnings of business graduates.





* Those in full-time employment who had graduated under the age of 30 only Source: Seven Years On: survey of the career paths of 1995 graduates

The graph suggests that the earnings polarisation evident amongst business graduates can, at least partially, be explained according to gender with significantly more women earning below the median salary and higher numbers of men earning at the higher end. Behind this apparent inequality lie a number of further explanations. In terms of sector of employment, women are approximately twice as likely to work in the generally lower-paid public or not-for-profit sectors (approximately 25% of all female business graduates compared to 13% of males). Within the private sector, women were more likely to be employed in business services (17%:14%) or ICT (12%:9%) whereas men were notably more likely to be employed in banking and finance (16%:23%)⁷. In terms of SOC2000, the proportions are remarkably similar. However, as figure 10 illustrates, according to NSSEC, whilst proportions in both

⁷ All those in employment who had graduated under the age of 30 only

higher managerial and intermediate occupations are largely equal, there are notable differences in higher professional and lower managerial/professional positions.

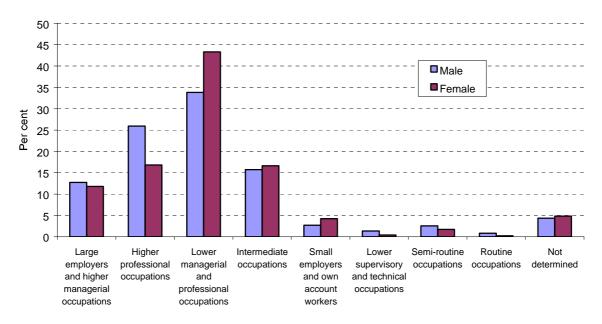


Figure 10: NSSEC of business graduates according to gender

* All those in employment who had graduated under the age of 30 only Source: Seven Years On: survey of the career paths of 1995 graduates

Combined, sectoral and occupational distribution are likely to explain at least part of this gender pay differential which goes to some way explaining the overall polarisation of business graduates experiences in the labour market. Despite this earnings differential, in terms of overall level of satisfaction with career to date, women express greater satisfaction than do men and are rate equally the extent to which their current job is appropriate for someone with their qualifications and their level of satisfaction with that job.

However, gender inequality does not explain why it is that business graduates are more likely than graduates as a whole to be found in intermediate occupations given that roughly equal number of men and women are to be found in these positions. In fact, one partial explanation is that of all those in intermediate jobs from the entire sample 57% are male, and males are 'over-represented' in the business studies graduate sub-sample. Furthermore, a sizeable proportion of business graduates are in *niche* graduate jobs. Of all those in intermediate occupations in the whole sample, approximately one in five are niche graduate jobs (70% are non-graduate). Furthermore, 55% of those in intermediate jobs studied at a post-1992 university (compared to 28% from old universities). Given that approximately 75% of business graduates studied at a new university then this may again partly reflects this over-population in this occupational category.

Overall, type of institution attended appeared to have little impact on business graduates' levels of satisfaction with both current job and career, although those who had attended either a post-1992 university or a HE college were marginally more likely to consider their current job as inappropriate for someone with their qualifications. Business graduates from post-1992 universities or HE colleges also reported lower mean salaries. However, as already indicated, a relatively small proportion of the business graduates had attended old and 1960s universities. Focusing only on the majority who had studied at post-1992 universities, the earnings of business graduates were amongst the highest, second only to maths and computing, with business graduates earning an average of £30340 compared to £26991 for the whole new university sample.

6. Degree Choices and Career Decisions

Up to now, using the survey data, the paper has outlined the broad comparative career trends of business graduates. The following section draws on qualitative material taken from interviews with 33 business and management graduates to tell us more about the range of decisions made by these graduates when entering and upon leaving their undergraduate education and in their subsequent employment. As with graduates from all subjects the extent to which the interviewees felt they were using the degree skills and knowledge in their current job, and the extent to which they valued the subject content of their degree, varied across the sample. However, analysis of interviews with business graduates highlighted a number of areas in which respondents felt that their current employment status and their careers-to-date had been aided by their choice of degree subject.

The specialist vs. generalist choice within the decision to study for a business studies degree (e.g. hospitality management vs. business studies) was a recurrent theme within the business studies sub-sample of interviews. Whether the decision was consciously made prior to study or whether it was a post facto assessment of a less conscious decision, several interviews appreciated choosing a broad business programme:

'The reason I decided to do the degree... I had the choice within the organisation to do the personnel management one and I decided to do this [business studies] degree because it would give me a wider scope of different things, rather than just doing an HR one which would just narrow me into the HR market.' (Interview 95 - Records Production Manager for government agency, studied as a mature student at HE College)

'I'm very pleased that I went for a broad-based degree... I'm glad that I went to a business studies degree as opposed to marketing or as opposed to accountancy and finance or something like that because what I thought I would do wasn't what I ended up doing... [it] gives you more options and it does help you in your work too, it helps you in this field because you understand the broader picture and it will help you get to a higher level. If you don't have that knowledge and those skills at the beginning you're going to have to acquire them later, either by doing an MBA or some other way of doing it, you're still going to have to get that breadth of knowledge' (Interview 150 - Non-employed, previously worked as finance manager for large ICT company, studied business studies at new university)

On other occasions, however, the studying of a general business studies degree was felt to have been a hindrance in career development rather than useful.

'If I had my chance again I'd do just one and I'd do something [like] accounting or chemistry or physics that you had a job or a sector that you went into afterwards, that was clearly defined and not woolly and open' (Interview 122 - Project manager for motoring organisation), studied languages for business at new university)

Even those who had focused on a particular area did not feel as though it had or would act as an impediment to choosing or changing a direction away from the focus of study:

'I think that the accounting qualification is a very good qualification to do just about anything you want and gives you a good grounding, and with that behind me [and my experience] I feel that I can contribute a great deal to a business'. (Interview 115 - Financial Controller working for large finance company, studied financial and legal studies at old university)

Similarly, however, business degrees focused on a specific function were not necessarily seen as being helpful even if the interviewee had entered an associated profession or industry. Even having a degree in a relevant subject area was, in certain circumstances, not seen as having been significant in obtaining a senior role in a related field. Referring to her initial recruitment into her current employer, one business studies graduate said:

'No, it wasn't a graduate job. When I applied I actually went in as an HR assistant. Somebody internal, somebody clerical could have applied for that job... The HR consultant job is a different kettle of fish but I'd actually moved through ranks in order to gain that, it wasn't anything to do with my degree. It was really me looking for an opportunity in HR, and I made sure that I kept my hand in by studying for my certificate in personnel practice because I was actually very frustrated when I left university because I found It very difficult to get into what I wanted to do, so I started from the bottom' (Interview 116 - Recruitment Manager for large international bank, studied public policy and management at new university)

One particular area where a business-related specialist degree is beneficial is when it provides exemption from certain professional examinations. In the following example, it would appear that the employer looked favourably on the degree subject in appointing new employees, whether by active targeting or by viewing the possession of the degree as one means of selection. One graduate, when asked why he felt he had been recruited, said:

'It was down to my degree really. It was a financial services degree which did give me exemption from FPC 1, 2 and 3. The role that I was applying for required those qualifications and experience and that's probably why and in addition, someone else who did the same degree as me also got a *role in the same company*' (Interview 192 - Tax Manager for large finance company, studied financial services at new university)

Another, answering the same question, said:

'It was a graduate job, even though I was post graduation two and half years... but my qualifications fitted the bill, my degree was legal and financial, which is largely where the job is, either legislation or doing computations or semi-accounting work. So I think on the face of it [I got the job] through qualifications' (Interview 61 - Chartered tax advisor for global consultancy, studied business and law at new university)

One perceived benefit from having done a general business degree was simply the range of subjects covered, the skills acquired and the subsequent extent to which many have proved applicable to work, even after seven years:

'Because my job is very varied, it's multi-faceted, we do our own sales, our own admin, we do our own marketing. We have to do proposals for clients, presentations, so there's a lot of IT skills involved, selling skills... financial skills as well. We have to basically have to keep account of the profits and loss that we make on each booking... So I do use things that I did on my course' (Interview 26 - Conference Consultant working for small business travel agency, studied tourism studies at new university)

Generally, the skills acquired on business programmes were felt to have, at least, laid the foundations for subsequent development. This was both in terms of the development of specific skills (e.g. presentation skills, teamworking...) but also the concurrent personal development associated with these.

'Presentation skills, I suppose, things like that; you definitely needed those. We did those on the degree and there were monthly presentations to directors - you needed the presentation skills there; you needed the communication skills to discuss things at that level, to hold your argument and hold your ground and be confident in doing that' (Interview 150 - Nonemployed, previously worked as finance manager for large ICT company, studied business studies at new university)

Part of my degree, a lot of our final year stuff, was group work, team assignments. Here, everything is usually done within your close-knit team - but also with other teams in the organisation. (Interview 48 - Conference manager for Charity, studied business studies at *new* university)

'I think, in a way, my confidence was higher, I felt more comfortable in the office environment than perhaps prior to going. I think, obviously, I covered quite a lot of areas on the course... I'd done a lot of presentations, obviously a lot of statistical work... I just felt that I had a more rounded knowledge and education and felt more of a rounded person. It's hard to be really specific... I couldn't say the actual "what you do in the job" was something I directly learnt at university, if that makes any sense' (Interview 38 - HR Advisor working for financial services organisation, studied business studies at a new university)

Unsurprisingly, several graduates highlighted the fact that, in their experiences, a business degree can only ever lay the foundations for further development:

'I don't know how much what you do at uni really directly links into what you know, how much there is a direct feed of what you've learned and absorbed because you learn so much on the job, don't you? You learn as you go along - and yes, some of the skills you will have already, maybe have been able to begin to explore when you were at uni, but it's taken to a whole different level when you are actually in the work place (Interview 116 - Recruitment Manager with a large banking group, studied business studies at new university)

A further key assessment for several interviewees was that having studied a broad-based business degree, whilst it may not have an overarching applicability to their specific role it had been helpful in contextualising their own work with the work of colleagues and gave them a greater understanding of various organisational and commercial processes.

'We had in our division, a management team of about six of us [and I was one of them] and we had monthly business reviews where we'd go through what was happening, what we were trying to achieve - and it was a really good environment because you could really contribute to that... because I'd studied quite a lot of marketing on my degree: I could understand exactly what the sales guys were saying and what the marketing guy was saying, and I could understand the strategy that the general manager was pushing, and I could relate that to the financial side and those implications, and therefore help them with that strategy' (Interview 150 - Non-employed graduate previously worked as finance manager for large ICT company studied business studies at new university)

'Because the degree gave me an opportunity to dabble in different bits, like marketing, etc, I've got a basic understanding so that I can see how the organisation is working and also how it fits in with the department as a whole. It's been a really good grounding, a kind of understanding. I understand where that's coming from and I understand that these factors feed into that. I've still got my books and although they might be 10 years old [I refer to them] just to refresh my memory on occasions' (Interview 95 -Records Production Manager for government agency, studied business administration at HE college)

One particular criticism or reservation about business education, especially at undergraduate level, is the extent to which it is able to instil any sense of entrepreneurialism into students and prepare them for the 'real world' of management. One particular graduate, when asked what he valued most about his undergraduate education, felt that it was this very quality:

'Well the enterprise degree was, for want of a better term, it might sound corny, but it was a bit of an awakening experience. It was the only aspect of my education that actually took me outside the cocoon of being a student whereby... you don't really realise what's going on outside in the real world. The enterprise degree did take you outside of your student cocoon and, more than anything, it gave you head start as to what was coming outside the door as soon as you'd finished and if you wanted to get anything good out of it, you had to be prepared to put it in and not wait for someone to come along and drop it on a plate: you've got to go and get it. Bringing your head around that realisation has got to be the best thing that I got out of any of the education that I've ever had, I think' (Interview 98 -Director for waste management company, studied business enterprise at new university)

Of course, for many who undertook a business degree, an integral part - and that aspect which was felt to be most valuable - was the work placement; an opportunity to ground theory in practical experience or a chance to 'test the water' of a particular occupation or industry:

'That's where I first really got interested in it and [became] aware about the whole world of human resources, that's what I specialised in and I did my placement in the third year in a personnel department. I suppose that gave me a real understanding if that's what I chose to do, this is what I would be involved in doing: all the different areas that fall under the remit of human resources. It was... understanding the theory but also... I just got to understand what would be required' (Interview 116 – Recruitment Manager for large international bank, studied public policy and management at new university)

As with graduates from many other subjects, it was the act of studying and the attainment of a degree that had proved most valuable for a number of graduates, in terms of the increase in confidence and personal development that it had instigated:

'I think the biggest thing for me is I was a housewife and then suddenly I was a graduate and from a personal point of view I had legitimacy. Even though I was capable of doing this job - whether I had this degree or not would make no difference to me doing this job - it suddenly gave me the right to do this job, in my mind as well as in other people's minds. It's like I thought "I can do this!" It gave me confidence' (Interview 147 - Data Sales Specialist for Telecoms Company, studied business studies as a mature graduate at new university)

Overall, the assessment of business degrees, whether specialist or generalist and from a wide-range of institutions, was generally positive in both the quality of the education and the extent to which the respondents felt it had positively contributed to initial and subsequent labour market outcomes. Of course, this varied between respondents and between programmes.

7. Conclusion

The evidence presented here suggests that completion of a degree in business studies leads to greater likelihood than for the graduating population as a whole that graduates will enter and remain in managerial jobs. We found that business studies graduates were more likely than other 1995 graduates to have started out in such employment after completing their degrees and to be employed as managers or in jobs in which management was a substantial component. It is not surprising that business and management graduates were more likely to seek and find jobs in the area for which their degree programmes were designed to prepare them, or that they were more likely to enter private sector employment than graduates from

other disciplinary backgrounds. It was somewhat unexpected that they have continued to enter such jobs at the same rate as graduates from other backgrounds, who might have been expected to be less likely to enter management jobs but more likely to move into them as their careers progressed.

However, the survey data shows that there was a polarisation of employment experiences and outcomes for business and management graduates. Whilst most were in jobs that they regarded as reasonably appropriate for someone with their skills and qualifications and a significant proportion had obtained managerial level employment, a higher proportion than for the sample as a whole were employed in relatively low-level administrative and secretarial work. In terms of SOC (HE), the new occupational classification designed to analyse change in the graduate labour market, they appear to have been among the most likely of the 1995 graduate sample to be employed in niche graduate jobs, where most members of the occupational category do not have degrees, or in non-graduate jobs that were unlikely to require or to make use of the skills and knowledge they had developed in their undergraduate programmes. This may not indicate the degree of 'under-employment' that it implies. We know from the survey and the detailed interviews that a significant minority of those in apparently 'non graduate' or niche graduate jobs are, in fact, in jobs where their higher education is used and valued - and in some case, was even a pre-requisite for accessing the careers they have developed. One example of a business studies graduate in a niche graduate job that fits this category is a university hall manager who graduated from a 1960s university in hotel and catering management. In response to whether a degree had been a pre-requisite to apply for the post, he said:

'Yes, I wouldn't have been considered without it – a degree or appropriate qualifications: you could have [someone who had] become a member of the HCIMA, the professional body [awarded on the basis of completion of an HE programme of study leading to an HCIMA diploma where a degree had not been the basis of qualification for membership] and that would have been acceptable as well. But one of those two qualifications, both of which are at the same level [sic] would have been acceptable' (Interview 035)

However, most of those in non-graduate jobs *were* likely to have been under-employed. For example, a graduate working as a call centre team leader said of her job:

'I'm in a department with five of us and I'm the only one with a degree...and across the company that is probably the right percentage; maybe only 20 per cent of us at graduate level. [Having a degree] is quite uncommon. A lot of people who have got to team leader came from school and worked their way up. It is very much one of those jobs'. (Interview 133: Team leader with large financial services organisation, did degree in Business Studies at HE college)

The majority of business studies graduates had studied at new universities. We found little difference in the extent to which graduates from different types of institution were satisfied with their current employment or their careers to date, but those from pre-1992 universities

had significantly higher earnings and were somewhat more likely to feel that their current job was appropriate for someone with their skills and qualifications. The analysis so far indicates that, as for the sample as a whole, gender appears to be a significant variable. Female business studies graduates had lower average earnings and were less likely to have achieved earnings at the higher end of the income distribution. In line with the overall findings, women with business studies degrees were more likely than their male peers to be working in public sector employment, but they were more likely than women from most other disciplines to be working in the private sector and somewhat less likely to be working in contexts where their type of job was done exclusively or mainly by women.

There are of course a number of definitional problems with any analysis of what constitutes management work. Analysis by broad classification can be problematic. However, the majority of business graduates, certainly most of those in the interview sample, do appear to be in jobs with a significant symbolic-analytic content (in Reich's terms). Furthermore, the qualitative data indicated that subjective assessment of the balance of benefits and costs of having done a business or management degree were largely positive. Further analysis of this data is planned, to explore differences within the business studies sample: particularly type of business degree – distinguishing between the outcomes and career trajectories of those who had studied specialist and generalist degrees within the broad 'business studies' area, social class and other background variables, and region of study and employment.

References

- AGR (2003) Graduate Recruiters Survey 2003, Association of Graduate Recruiters, available online at www.agr.co.uk.
- Ainley, P. (1997) 'Towards a learning or a certified society? Students in Britain', Youth and Policy, No. 56, pp. 4-13.
- Battu, H., C. Belfield and P. Sloane, (2000) How well can we measure graduate overeducation and its effects? *National Institute Economic Review*, 171, pp. 82-93.
- Brown, P. A. Hesketh, and S. Williams (2002) *Employability in a knowledge-driven economy*, Cardiff University, School of Social Science, Working Paper 26.
- Brown, P. and K. H. Lauder (2003) *Globalisation and the Knowledge Economy: Some* Observations on Recent Trends in Employment, Education and the Labour Market, Cardiff University School of Social Science Working Paper Series 43, November 2003.
- CEML (2002) Summary of Research into the Employment Outcomes of Graduates in the UK 1997-2001, London, Council for Excellence in Management and Leadership.
- CIPD (2002) *Managing Knowledge Workers*, Chartered Institute of Personnel and Development, London.
- CMI (2002) Graduate Key Skills and Employability, Charted Institute of management, available online at www.managers.org.uk/institute.
- Crouch, C., D. Finegold and M. Sako (1999) Are Skills the Answer? The political economy of skills in advanced societies, Oxford, Oxford University Press.
- HECSU (2003) Your *degree in business studies… What Next?* Higher Education Careers Service Unit, available online at www.prospects.ac.uk.
- Dolton, P. and G. Makepeace (1992) *The Early Careers of 1980 Graduates: Work Histories, Job Tenure, Career Mobility and Occupational Choice.* Employment Department Group research Paper No. 79, London: HMSO.
- Elias, P., A. McKnight, C. Simm, K. Purcell and J. Pitcher (1999) *DfEE-CSU-AGCAS-IER Moving On: Graduate careers three years after graduation*, Manchester, CSU.
- Elias, P. and K. Purcell (2004a) 'SOC(HE): A Classification for Studying the Graduate Labour Market', available online at www.warwick.ac.uk/go/glmf.
- Elias, P. and K. Purcell (2004b) 'Higher Education and Gendered Career Development' (Research Paper No.4) available online at available online at www.warwick.ac.uk/go/glmf.
- Enterprise Centre for Learning and Curriculum Innovation (2000) *What do business and administrative studies graduates do?* Manchester, Enterprise Centre for Learning and Curriculum Innovation.
- Green, A. (1999) The market value of generic skills: Skills Task Force Research Paper 8, DfEE, Suffolk.
- Green, A. and S. Mclintosh (2002) *Is there a Genuine Underutilisation of Skills amongst the Over-qualified? SKOPE research Paper No. 30*, ESRC Centre on Skills, Knowledge and Organisational Performance, Oxford.

- Guardian, The (2003) Ticket to the top, Tuesday May 28th 2002, accessed online at <u>www.guardianunlimited.co.uk</u> on 9th July 2003.
- Harvey, L, S. Moon and V. Geall (1997) *Graduates Work: Organisational change and students attributes*, Birmingham, Centre for Research into Quality/AGR.
- Hesketh, A. J. (2000) Recruiting an Elite? Employers' perceptions of graduate education and training, *Journal of Education and Work*, 13:3, pp. 245-271.
- HESA (2003) *On-line Statistics*, available at *www.hesa.ac.uk*, accessed on 15th September 2003.
- Hollinshead, G. (1999) Management, in Hollinshead, G, Nicholls, P. and Tailby, S. (1999) *Employee Relations*, Prentice Hall, Harlow.
- Keep, E. and K. Mayhew (1996) Economic Demand for higher Education A Sound Foundation for Further Expansion? *Higher Education Quarterly*, 50:2, pp. 89-109
- Keep, E. and K. Mayhew (1997) British Education and Training Policies and Competitive Performance, in Buxton, T. Chapman, C. and Temple, P. (eds.) *Britain's Economic Performance*, London: Routledge.
- Lam, A. (2002) Alternative Societal Models of Learning and Innovation in the Knowledge Economy, *International Social Science Journal*, Vol.171, pp. 67-82.
- Laudrillard, D. (2002) Rethinking Teaching for the Knowledge Society, *Education Review*, 37:1, pp. 16-25.
- Mason, G. (1999) The Labour Market for Engineering, Science and IT Graduates: Are there Mismatches between Supply and Demand? Suffolk: DfEE.
- Mason, G. (2001) *Mixed fortunes: Graduate Utilisation in Service Industries*, Discussion Paper, 182, National Institute of Economic and Social Research.
- Mintzberg, H. (1976) The manager's job: Folklore and fact, The McKinsey Quarterly, Spring 1976, pp.2-25.
- Morris, J. (2004) The future of work: organisational and international perspectives, International Journal of Human Resource Management, 15:2, pp. 263-275.
- Purcell, K. and J. Pitcher (1996) Great expectations? The new diversity of graduate skills and aspirations. Manchester: CSU.
- Purcell, K., P. Elias and N. Wilton (2003) *Education, Skills and Economic Restructuring* (*Research Paper 3*), available online at www.warwick.ac.uk/go/glmf.
- Reich, R. (1991) *The work of Nations: Preparing ourselves for 21st century capitalis*m, Simon and Schuster.
- Salter, B. and T. Tapper (1994) The state and higher education, Essex, Woburn Press.
- Scarborough, H. (1999) Knowledge as Work: Conflicts in the Management of Knowledge Workers, *Technology Analysis and Strategic Management, 11:1,* pp. 5-16.
- Scott, P. (1995) *The Meanings of Mass Higher Education*, Buckingham, Open University Press.
- Starkey, K. and P. Madan (2001) Bridging the relevance Gap: Aligning Stakeholders in the Future of management Research, *British Journal of Management*, 12, pp. 3-26.

- Stewart, R. (1984) The nature of management? A problem for management education, Journal of Management Studies, 21:3, pp. 323-330.
- Tarsh, J. (1992). 'Higher education and changing employment patterns in the United Kingdom' in OECD *From Higher Education to Employment*, Vol. IV. Paris: OECD.
- Thompson, P., C. Warhurst and G. Callaghan (2001) Ignorant theory and knowledgeable workers: Interrogating the connections between knowledge, skills and services, *Journal* of *Management Studies*, 38:7, pp. 923-942.
- Thompson, P. and C. Warhurst (2003) *Doubt is the key to knowledge: Problems in mapping and measuring a 'knowledge-driven' economy and work*, paper presented at European Sociological Association conference, Murcia, Spain 23-26 June 2003.
- Wilson, R. (2001) Projections of Occupations and Qualifications: 2000/2001, DfEE, Sheffield.
- Winterton, J., M. Parker, M. Dodd, M. McCraken and I. Henderson (2000) *Future Skills Needs* of managers, Research Brief 182, Nottingham, DfEE.
- Wolf, A. (2003) *Does Education Matter? Myths about Education and Economic Growth,* London, Penguin.