

## **Transforming Work Experience in Higher Education**

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## **Transforming Work Experience in Higher Education**

### **Abstract**

It has frequently been claimed that work experience can contribute to higher educational standards in schools and in higher education and contribute to the development of a flexible, highly-skilled and enterprising labour force. This potential was endorsed by the Dearing Report on higher education, although there is little research evidence about the contribution of work experience to the higher education curriculum. This paper reports on four empirical studies of work experience in higher education, which suggest that work experience is related to a more positive view of the learning experience and to higher employment rates. However, retrospective views of graduates tend to be more positive than those of current undergraduates and there appear to be distinct subject variations in the impact of different types of work experience. It is argued that the potential is more likely to be realised where work experience placements have six characteristics of good practice and where the higher education curriculum consistently encourages students to reflect well on their own learning.

## **Work experience, the curriculum and human capital**

In Britain, as in many other countries over the past 40 years, there has been endemic concern about economic competitiveness. Some of the proposals for enhancing competitiveness draw upon human capital theories in arguing that higher educational standards are conducive to greater national wealth. In this context 'higher standards' tends to mean higher scores on international measures of academic achievement *and* wider adoption of educational goals that enhance employability in complex, competitive and dynamic economies. This paper, focusing on Britain alone, concentrates on the second sense of 'higher standards', specifically on the view that work experience enriches higher education curricula and contributes indirectly and significantly to national economic well being.

The National Committee of Inquiry into Higher Education (NCIHE) placed considerable emphasis on work experience in its final report, concluding, amongst other things, that 'students can benefit from experience in many different settings, structured and informal, paid and unpaid. Their academic experience should help them understand how experience relates to their personal and future development' (NCIHE, 1997, para. 9.30). The Committee's Chairman, Sir Ron Dearing, knew from his earlier work on the school curriculum that work experience has frequently been advanced as a powerful way of raising standards in primary and secondary schools and that there have been repeated calls for the curriculum to be more work-related.

The claims that are made for work experience, whether as a part of the school or higher education curriculum can be summarised under the following headings:

1. *Changing teachers' attitudes.* Work experience arrangements should symbolise that the world of work is something to be taken seriously. It is also hoped that workplace concerns will 'rub off' on some teachers.
2. *A more relevant curriculum.* Work experience might influence the curriculum in two ways. Directly, because it becomes a part of the curriculum, which, if nothing else, is a symbol that the world of work is a legitimate part of learning. More directly still, as when the work experience contributes towards summative assessment. And indirectly, where the world of work 'leaks' into other parts of the curriculum, so that there is more sensitivity throughout a programme to the development of those qualities and skills that employers seek in new hires.
3. *Informing employers.* Involvement in work experience schemes can make employers more aware of what higher education does and of the circumstances under which it operates.
4. *An employability signal.* On-the-job learning can be seen as intrinsically valuable by employers, who often seek evidence of it during recruitment in the belief that a range of workplace experiences will better equip graduates for the flexible workplace of the future (Harvey *et al*, 1998).
5. *Motivating learners to achieve higher grades.* This can be seen in terms of a 'pull' and a 'push'. The pull is where work experience gives the learner a career direction, which can enhance the motivation to get the necessary grades. The push was frequently

seen by one of us who used to run a school-based work experience scheme. After a week on work placement, a noticeable minority of students said something like: 'I'm really going to study for my exams now, 'cos I know if I don't get them, then that's [the work experience job] what I'm going to end up doing'.

It might also be claimed that work experience has an important place in the development of students as lifelong learners. It can establish the idea that the workplace is an important site for the life-long learning which is increasingly identified as a key to the well-being of a knowledge-based, high-skill, flexible economy. In sum, work experience can be seen as a 'missing ingredient' in undergraduate education, which is certainly the perspective of employers (Harvey *et al*, 1997). This paper addresses the impact of work experience upon student learning and employability and notices some curriculum implications that need attention if its potential as a component of transformative learning is to be realised.

As the *Graduates' Work* study (Harvey *et al*, 1997) revealed, there is significant anecdotal evidence about the efficacy of work experience in general, and of embedded work placements in particular. With hardly any exceptions, strategic managers, recruitment personnel and recent graduates regarded course-linked work experience as an important, if not crucial, element in their undergraduate experience. These two quotations from informants in that study illustrate the point.

A lot of courses have a year out which I think is very powerful, both in terms of the learning experience for the students and in terms of self-reliance and people skills and mixing with different cultures. There is also the business motivation bit, it equips them to make an informed career choice. So I think that it is a positive thing that could be encouraged.

(vice-president, multi-national food manufacturers)

Placements were optional at my university and we got a qualification from it at the end. It was quite noticeable those that went on the industrial year tended overall to get better degree results than those that hadn't been on the industrial year. I think it is because they had a real world experience and in lectures and discussions and things you could see things come out of people, that's because they had been out in the environment for a year — reading the press experiencing what actually goes on in day-to-day firms that deal with the sort of things that you want to do.

(recent graduate, large public financial institution)

There is, though, a lack of quantitative evidence about the impact of different work experience programmes on different groups of learners. This lack of information makes it hard to know how to get the most out of the investment of time, resources and cash in work experience programmes. Since the NCIHE suggested that work experience should be a part of the experience of all undergraduates, this would appear to be a serious omission.

Some rather dated, somewhat limited work has been done in North America. Hayes and Travis (1974) carried out a comprehensive US study of employer experience with co-

operative programmes, which provide students with workplace experiences. The study was intended to provide a cost-benefit analysis of co-operative education, and obtained data from 70 employers based on their experience with several hundred co-op students between 1964 and 1974. Results suggested that 'recruitment yield' (proportion of people hired as a percentage of those interviewed) was thirteen times higher for co-op students than for college graduates in general, and that recruitment costs were on average dramatically lower for graduates of co-op programmes than for other recent college graduates. Somers and Bridges (1982) investigated the effects of co-operative programmes on post-graduate success of students, including personal development, subsequent employment opportunities, and involvement in continuing education and graduate study. Results were equivocal, finding co-operative learning broadly comparable with traditional programmes..

Breathnach (1983) studied 22 co-operative programmes and 16 conventional programmes and identified the following benefits:

- links between theory and practice gave a greater meaning to study;
- student motivation for study was enhanced;
- students achieved a greater degree of personal independence, responsibility, and maturity;
- students showed greater interpersonal skills;
- students were better able to understand the demands of the work situation;
- there was greater access to higher education by a broader range of students;
- there were closer contacts between academics and employers, with resultant benefits for curriculum planning;
- there was more efficient utilisation of institutional resources in higher education;
- co-operative education provided a means for business to attract and screen potential employees.

he studies described in the next four sections bring fresh data on British practices to the discussion and show the importance of seeing work experience in a differentiated and fine-grained way. Important though the distinctions are, it is possible to offer some generalisations in the form of a template of good practice in work experience provision. That should help to ensure that placements are more likely to have beneficial results.

## **Study 1. Impact of sandwich education**

### ***Method***

The study is based on the analysis of first-destination employment returns, provided by the Higher Education Statistics Agency (HESA), for all degree qualifiers from all higher education institutions in the United Kingdom in 1995–96 (Bowes and Harvey, 2000). The results of the study are based on aggregated figures and, thus, are only indicative of graduate activity. The first-destination returns are collected only six months after graduation and the statistical analysis, based on HESA data, is subject to the following caveats:

- the activity of graduates six months after graduation may not reflect the longer-term pattern of graduates from a subject area;
- the reliability of the database is dependent on accurate returns from institutions;
- employment rates should be treated with caution because it was not possible to distinguish whether graduates were employed in their career of choice or in relatively unskilled positions, earning lower than average salaries.

Statistics were provided for all subjects taught on either a full-time or a thick-sandwich or thin-sandwich basis. Thick-sandwich courses have a single continuous block of work experience. Thin-sandwich courses involve a series of short work-experience usually designed to develop or enhance professional competence. All those subjects taught on a full-time basis only were removed from the sample as were those taught on a thin-sandwich basis only (such as nursing). Subject areas that had small numbers of sandwich students were removed. After excluding residual categories and combined and general studies, an operational sample of 33 subject areas remained for this analysis involving 74,922 graduates, most of whom studied on full-time, non-sandwich courses.

### ***Findings***

The first study shows that, overall, graduates from sandwich courses have higher post-graduation employment rates (69.1%) than students on equivalent non-sandwich courses (55.3%). Furthermore, thick-sandwich students usually out-perform those on equivalent thin-sandwich courses. Sandwich students appear to have an advantage in the labour market, at least in the early part of their careers, although the extent of this advantage is dependent on subject area: science and language sandwich graduates for instance do not enjoy a significant advantage but most built environment, business, engineering and social science sandwich graduates do.

The First Destination Returns enable the calculation of the full-time employment rate and the unemployment rate. The unemployment rate is not simply the inverse of the full-time employment rate because graduates may be employed part-time, go into further study, travel abroad, or otherwise be occupied but not be in full-time employment. Both the *full-time* employment rates and the *unemployment* rates of graduates from thick-sandwich courses were compared with those from standard full-time courses (Table 1).

Overall, there were only 12 of the 33 subject areas where the full-time students had the *highest* employment (Table 1, column 1). And only in four cases did they also have the *lowest* unemployment rate (Table 1, cell 1). Indeed there were only 9 subject areas in total where the full-time students had the lowest unemployment rate (Table 1, row 1).

Furthermore, absolute levels of full-time employment and differentials between sandwich and full-time students varied considerably between subject areas. Within the built environment, for example, there were considerable differences in the impact that sandwich courses seemed to have. In architecture, full-time students (52.1%) had much higher employment rates than thick-sandwich students (37.6%). In town and country planning thick sandwich students (74.2%) considerably outperformed full-time students (53.0%). In environmental technologies, on the other hand, the difference between full-time (47.8%) and thick-sandwich students (47.2%) was marginal.

**Table 1: Comparison of employment and unemployment rates for 33 subjects taught on a thick-sandwich and standard full-time basis**

	<i>Column 1: FT Employment highest</i>	<i>Column 2: Thick employment highest</i>
<i>Row 1: FT unemployment lowest</i>	<ul style="list-style-type: none"> <li>• Financial management</li> <li>• General engineering</li> <li>• Chemical engineering</li> <li>• Economics</li> </ul> <p style="text-align: right;"><i>Cell 1</i></p>	<ul style="list-style-type: none"> <li>• Chemistry</li> <li>• Business and management studies</li> <li>• Politics</li> <li>• Marketing &amp; market research</li> <li>• Catering &amp; institutional management</li> </ul> <p style="text-align: right;"><i>Cell 2</i></p>
<i>Row 2: Thick unemployment lowest</i>	<ul style="list-style-type: none"> <li>• Environmental technologies</li> <li>• Aeronautical engineering</li> <li>• Biology</li> <li>• Architecture</li> <li>• Balanced combinations within social economic &amp; political studies excluding law</li> <li>• Accountancy</li> <li>• Balanced combination within languages</li> <li>• Other or unspecified modern languages</li> </ul> <p style="text-align: right;"><i>Cell 3</i></p>	<ul style="list-style-type: none"> <li>• Building</li> <li>• Physics</li> <li>• Sociology</li> <li>• Anthropology</li> <li>• Town and country planning</li> <li>• Electrical engineering</li> <li>• Mechanical engineering</li> <li>• Civil engineering</li> <li>• Electronic engineering</li> <li>• Production engineering</li> <li>• Balanced combination within engineering and technology</li> <li>• Psychology (without significant element of biological science)</li> <li>• Industrial relations</li> <li>• Land and property management</li> <li>• Transport &amp; other business &amp; admin studies</li> <li>• Other European languages, literature and culture</li> </ul> <p style="text-align: right;"><i>Cell 4</i></p>

Column 1 lists all the disciplines where full-time employment rates are higher. Column 2 lists the disciplines where thick-sandwich employment rates are higher. Unemployment rates are not the converse of employment rates as some students undertake further study and are not categorised as employed or unemployed. Row 1 lists all the disciplines where full-time unemployment rates are lower. Row 2 lists the disciplines where unemployment rates of thick sandwich students are lower. Each cell provides an indication of the subjects on both dimensions. Thus Cell 4 lists all the subject disciplines where thick-sandwich employment rates are higher *and* unemployment rates are lower than the comparable full-time courses.

Some areas also had thin-sandwich provision as well as full-time and thick sandwich, although relatively few students were on such programmes. In six subject areas — economics, politics and four areas of engineering— thin-sandwich students had higher full-time employment rates than either the thick-sandwich or full-time study equivalents.

Students on thick-sandwich courses had a clear advantage on average across the comparable major subjects. However, there were subject areas where full-time students had higher full-time employment rates and others where thin-sandwich provision appears to offer an advantage.

## Study 2. Work experience and engineering students

### *Method*

A questionnaire was mailed to engineering departments in 44 British universities and 1176 completed responses were received by students who had completed them in their own time. It comprised 33 fixed-response questions that had been designed by two of the authors who had completed several projects exploring students' career choices. The design was also informed by engineering employers and a market research firm. Questions explored the whole process of job choice and students' perceptions of the match between their own knowledge, skills and qualities and employers' requirements. Data were analysed using SPSS routines.

### *Findings*

The first set of findings describes these students' understanding of the significance for employers of work-related skills and consider how far the students think that they have strength in these qualities and skills. That paves the way for the subsequent exploration of the relationship between placements and work-related skills.

As might be expected with a sample of students following a highly vocational subject, respondents recognised the importance of work-related skills. Responses were elicited on a scale where a score of five indicated a judgement that a skill was very important, or that the respondent had a very good command of it. All skills were rated as important (a score of 4.00 or more) and that respondents had good opinions of their proficiency with these skills (Table 2).

**Table 2: Respondents' perceptions of command of work skills and of the importance that employers attach to those skills**

<i>Work-related skills</i>	<i>Importance to employers</i>	<i>SD</i>	<i>Rating of own command</i>	<i>SD</i>
Teamwork	4.69	0.53	4.37	0.63
Motivation	4.62	0.54	4.41	0.66
Problem-solving	4.58	0.57	4.26	0.63
Oral communication	4.56	0.60	3.99	0.70
Self-management	4.40	0.61	4.22	0.71
Written communication	4.30	0.64	4.02	0.68
Learning new material	4.26	0.67	4.28	0.62
Independence	4.25	0.72	4.43	0.64
Numeracy	4.12	0.70	4.26	0.70
Information technology	4.11	0.66	3.97	0.77
Managing others	3.91	0.78	3.80	0.81

It is beyond the scope of questionnaire methods to probe the realism of respondents' judgements of their skills, although reference might be made to Cowan's (1998) examples of engineering students believing they have a skill when, in fact, they have but a fraction of it. We are also aware of employers' repeated complaints about graduates' command of such key skills (Harvey with Green, 1995), complaints that are frequently strongest with respect to oral and written communication skills and to students taking 'hard' subjects such as natural sciences and engineering. On the basis of Table 2,

employers should anticipate that most engineering students will claim to have a good grasp of work-related skills and that it would be wise to test those claims energetically.

Closer examination of the data showed that there were minor variations between engineering specialisms in the importance students believe that employers place on the different skills. The difference between the lowest and highest rankings of the importance of written communication is 12 percentage points (a difference of 0.6 in the means). In all other cases the difference is smaller for example, differences of nine percentage points in numeracy and motivation, and seven in the rating of oral communication. The same is also true of their ratings of their own command of these skills, with the range between the mean judgements of students following different engineering specialisms spanning just five percentage points. There is also a fairly good fit between employers' wishes and students' judgements of their levels of attainment in these skills.

Data were also analysed according to respondents' commitment to a career in engineering. Three groups were identified: loyalists (68.3% of the sample), who were bent on an engineering career; rebels (7.7%), who intended to work outside the engineering sector; and waverers (24.0%), who were keeping their career options open. Loyalists and waverers together had better academic scores than rebels on entry to higher education and expected to get a better class of degree. However, neither their ratings of the importance of work-related skills nor of their command of these skills showed any variation by commitment to an engineering career.

Responses from engineering students show:

1. A high level of interest in work experience. On a five-point scale the mean interest level was found to be 4.23
2. Some 19% of respondents were hostile or indifferent to work experience, rating it at points 1-3 on the five-point interest scale
3. Almost half had participated in a work experience scheme.
4. Of those who had *not* had work experience 53.6% had tried to get it, which suggests that student demand for placements outstrips supply.
5. A quarter of engineering students had not tried to get work experience. Waverers were the least likely to seek it.

The *Graduates' Work* study (Harvey *et al.*, 1997) had shown that, unlike most graduates interviewed, some engineering graduates had reservations about placements, as this quotation from one of the informants indicates:

*What do you think of having a placement in the degree?*

Probably quite a good idea. Well, certainly over the summer vacation, that sort of time. I don't think I would want to take a year out, because of the learning thing. coming to work you are learning different things, it is not academic, and I think you would lose the academic momentum. Same reason for not having a break between A levels and university.

(electrical engineer, small medical lasers manufacturer)

**Table 3: Work experience in relation to respondents' perceptions of their command of skills**

<i>Students' ratings of their own skills command</i>	<i>Students with work experience</i>	<i>Those with no work experience</i>	<i>Sig.</i>
Oral communication	4.06	3.92	0.05
Written communication	4.06	3.99	n/s
Problem-solving	4.30	4.21	n/s
Numeracy	4.30	4.22	n/s
Information technology	4.00	3.93	n/s
Teamwork	4.40	4.35	n/s
Self-management	4.20	4.24	n/s
Learning new material	4.27	4.28	n/s
Specific vocational skills	3.61	3.45	0.01
Managing others	3.85	3.74	n/s
Motivation	4.44	4.38	n/s
Independence	4.45	4.40	n/s
<b>Total skills command</b>	<b>45.88</b>	<b>45.10</b>	<b>0.05</b>
<i>Work experience benefits</i>			
Increased technical expertise	4.18	4.12	
Clearer career focus	4.07	4.09	n/s
Identify individual strengths/weaknesses	4.18	4.11	n/s
Company's match with your careers intentions	4.16	4.02	n/s
Increase employability	4.43	4.31	0.05
Pay off/reduce debts	2.93	2.95	

Comparison of the perceived workplace skills of those who had work experience with those who had none showed little difference (Table 3).

Those with work experience rated their *overall* level of workplace skills rather more highly than those who had no work experience. Although self-ratings were higher for the work experience group, the only statistically significant differences at the level of individual skills were engineering-specific skills and oral communication. Surprisingly, there was also little difference between the two groups in terms of their beliefs about the benefits to be had from participation in work experience placements.

There was some difference, though, in the attitude of the two groups towards the engineering profession (Table 4). It is not possible to say whether the difference was caused by work experience, was a factor accounting for getting work experience, or the effect of some other cause. Those with work experience were less worried about the impact of recession on the sector and were more aware of the directions in which engineering careers could develop. Although they were more realistic and did not believe that engineers have higher starting salaries than other professions, they thought that their experience would increase their employability and would raise their starting salary.

**Table 4: Work experience and respondents' perceptions of the engineering profession**

<i>Views of the engineering sector</i>	<i>Experience</i>	<i>No experience</i>	<i>Sig.</i>
More interesting work	3.78	3.71	n/s
More graduate vacancies	3.41	3.36	n/s
Higher starting salaries	2.76	3.12	0.01
Limited to working in engineering	1.84	2.03	0.05
Engineering hit by recession	2.63	3.00	0.01
UK engineering hit by global competition	2.87	3.15	0.01
Engineers make good managers	3.72	3.76	n/s
Prior work experience enhances employability	4.21	4.08	0.05
Prior work experience enhances starting salary	3.02	3.23	0.01

Taken together, the data in Tables 3 and 4 suggest that work experience may not make a big difference to undergraduates' self-ratings of their employability skills but it is associated with small and significant differences in their attitudes to the engineering profession. It seems that the main value of work experience is professional orientation and professional socialisation. In other words, although these students have a positive view of the benefits to be had from work experience, there are few differences in the self-perception of employability skills ratings of those who have had work experience placements as compared to those who have not. Even had the differences been greater, which might have reasonably been expected, it would not have been clear to what extent, if at all, work experience had contributed to it.

However, this lack of difference may be because the respondents are undergraduates and lack experience of the world of work. As one *Graduates' Work* engineering graduate noted:

I don't know if I would have liked one at the time but retrospectively it would have been of excellent benefit also in terms of looking for work a year's experience goes a long way.

(junior design engineer, small private design consultancy)

The lack of difference in the view of undergraduates does not match the views reported by employers and graduates. For example,

I can imagine I would have been very green coming out of university going into a job if I hadn't had that year out on work experience. The year out also helped with the fact that you come into your final year knowing more about industry and actually having a case study that you can relate your lectures to especially in engineering. If a lecturer is talking about systems that go into companies you can pull on your own experience from what you have seen in your year out to understand it better. So that definitely was a major benefit. It also gives you a bit of a chance to practice things and to get an idea of how it all works and how to react to people. It gave me a lot more confidence, it was very useful because engineering is practical.

(graduate trainee, multi-national electrical products manufacturer)

Study 1, above, revealed that engineering is an area where sandwich courses appear to have variable impact on post-graduation employment rates. For aeronautical engineering the full-time students had the highest employment rates. For mechanical engineering, general engineering, electronic engineering and chemical engineering, thin-sandwich students had the highest rates of employment and for civil engineering, production engineering, electrical engineering and combined engineering and technology the thick-sandwich students prevailed (Table 1). It would therefore be prudent to notice undergraduates' general blasé position on work experience and to accept that their views do not tell the whole story. Nevertheless, the caution is timely, given the unquestioning assumptions that all work experience is a good thing and accepted as such.

### **Study 3. Work experience and art and design graduates**

#### ***Method***

The study was based on a partnership of 14 institutions across the UK and gathered responses from nearly 2000 graduates (Blackwell and Harvey, 1999). A common questionnaire explored the activities that graduates have been undertaking since graduation. The survey also explored the perceptions of course content, skills' acquisition, work placement during the degree, reflection on the experience of the degree, and aspirations for the future. It was mailed to art and design graduates who left these institutions between 1993 and 1996. It did not track graduates who left before 1993 because of the difficulty of locating these graduates and because of the low response rate in the pilot survey of graduates who had left more than four years ago. This is the largest, recent sector study of graduates that provides longitudinal information about different subject areas within art and design.

Findings are not directly comparable with those from the engineering study because of differences of instrumentation and because the respondents were not students but graduates looking back on their undergraduate education. Far from being a drawback, the addition of these complementary perspectives enriches the analysis of work experience.

#### ***Findings***

The survey reports that there is little opportunity for art and design graduates to be involved in significant work-experience opportunities that are integral to the course. The views of art and design graduates suggest that the art and design sector is one that could and should do more in this respect. Graduates who did do work experience during their course regarded it as very useful and important.

Work experience has a positive impact on art and design graduates. Respondents who had undertaken a work experience placement had higher rates of full-time permanent employment after graduation, a more favourable view of the undergraduate programme, and a belief that their employability skills had been more strongly developed in the undergraduate years.

Only 29% of respondents had undertaken work placement(s) as part of their course. This varied across the subject areas — 13% for fine art graduates to 58% of fashion and

textiles graduates. Of the 29% who had done work placements, 59% had a total placement time of less than six weeks and only 7% (that is 2% of all respondents) had work experience of 35 weeks or more. Forty-four per cent of the work placements were relevant to the work that respondents were doing at the time of the survey.

The majority of respondents (69%) who had undertaken placements found them useful (score of 5 or more out of 7) and only 17% considered them not to have been much use (score of 3 or less). The more the placement was related to current work the more useful and the more important respondents considered their experience to have been (Table 5).

**Table 5: Usefulness and importance of work experience to art and design graduates by whether it is related to current work (%)**

<i>Relationship to current work</i>	<i>Useful</i>			<i>Important</i>		
	<i>Related</i>	<i>Not related</i>	<i>Total</i>	<i>Related</i>	<i>Not related</i>	<i>Total</i>
Mean score	6.06	4.65	5.28	6.11	4.75	5.33
Mean score as %*	84	61	71	85	63	72
Sample size (n)	232	292	524	197	271	468

*Usefulness: chi-square, p = 0.00. Importance: chi-square p = 0.00.*

*\* Mean score as % converts 1–7 scale to more intuitive 0–100 scale.*

*Source: Burrows and Harvey (1999, p. 109).*

Graduates who had been on a placement that was relevant to their work at the time of the survey retrospectively rated the work experience more highly than other respondents. For example, 87% of those whose placement related to their current work said that they had been useful, compared to 54% of graduates whose placement had no relevance to their current work. The mean usefulness score for those whose placement was related to their work at the time of the survey was 6.06 out of 7 (= 84%) compared to 4.65 (= 61%) for those whose work was unrelated to their placement.

Closer analysis showed that the longer the placement had been the more useful respondents considered it to have been, although some caution is necessary here since most placements (59%) had lasted less than six weeks. Sixty-eight per cent of those on placements in excess of 45 weeks said it was very useful compared to 24% of those on placements of less than six weeks. The mean usefulness score (out of 7) tended to increase as the placement length increased from a low of 4.6 (= 60%) for short placements to an extremely high score of 6.6 (= 93%) for the longest placements (Table 6).

**Table 6: Usefulness of placement to art and design graduates by time spent on work experience**

<i>Length of placement</i>	<i>1–5</i>	<i>6–12</i>	<i>13–24</i>	<i>25–34</i>	<i>35–44</i>	<i>45+</i>	<i>Totals</i>
Mean usefulness score	4.6	5.7	6.3	5.8	6.2	6.6	5.3
Mean score as %*	60	78	88	80	87	93	72
Sample size (n)	303	112	43	29	13	25	525

*Chi-square, p = 0.00.*

*\* Mean score as % converts 1–7 scale to more intuitive 0–100 scale.*

*Source: Burrows and Harvey (1999, p. 110).*

Taken as a whole, work experience placements were associated with three sets of outcomes, although they cannot be shown to be the cause of those outcomes. For example, those who had work experience were, in retrospect, more satisfied with their undergraduate degree programme's contribution to the development of their presentation skills. While work experience might account for the difference, it might also be explained by the fact students taking programmes that treat presentations very seriously (such as fashion and textiles courses) were the most likely to have had work experience placements. Yet, given the contrast between their ratings and those of the engineering students, it is reasonable to allow the idea that work experience did contribute to the development of students' employability.

In general, and unlike the engineering students, art and design graduates who had work experience attributed significantly greater levels of skill development to their undergraduate programmes than did those who had no work experience. There was a set of skills and qualities — written communication, flexibility, initiative, self-confidence and self-motivation — where ratings of the perceived importance of the development of the skills was not related to participation in work experience placements. However, work experience students placed more importance than their non-work experience counterparts on the development of all other skills and, in nearly all cases, were significantly more satisfied with the development of these skills (Table 7).

**Table 7: Graduate perception of skills by work experience\***

<i>Attribute</i>	<i>Work experience</i>	<i>Non-work experience</i>	<i>Significance (p=)</i>
Communication (written)	(4.3)	(4.2)	.20
Communication (oral)	<b>4.7</b>	4.4	<b>.00</b>
Presentation	<b>5.3</b>	4.9	<b>.00</b>
Teamworking	4.2	(3.8)	<b>.00</b>
Interpersonal skills	<b>4.6</b>	4.2	<b>.00</b>
Flexibility	4.5	4.4	.43
Adaptability	<b>4.7</b>	4.6	<b>.04</b>
Problem solving	<b>5.0</b>	4.8	<b>.03</b>
Craft/technical skills	5.2	(4.9)	<b>.01</b>
Visual skills	<b>5.5</b>	5.4	<b>.04</b>
Creativity and innovation	<b>5.6</b>	5.3	<b>.00</b>
Initiative	<b>5.3</b>	<b>5.1</b>	<b>.03</b>
Self-confidence	<b>4.7</b>	<b>4.5</b>	<b>.02</b>
Self-promotion	<b>4.3</b>	3.9	<b>.00</b>
Self-motivation	<b>5.1</b>	<b>4.8</b>	<b>.00</b>
Time management	<b>4.7</b>	4.3	<b>.00</b>
Independent and critical judgement	<b>5.1</b>	5.0	.18

Mean satisfaction score on a 1–7 scale: 1= very dissatisfied with skill development, 7= very satisfied with skill development. Scores in parentheses indicate that the attribute was regarded as unimportant by respondents, scores in plain type that the skills were important and scores in bold type indicate that the respondents regard the skill as *very* important.

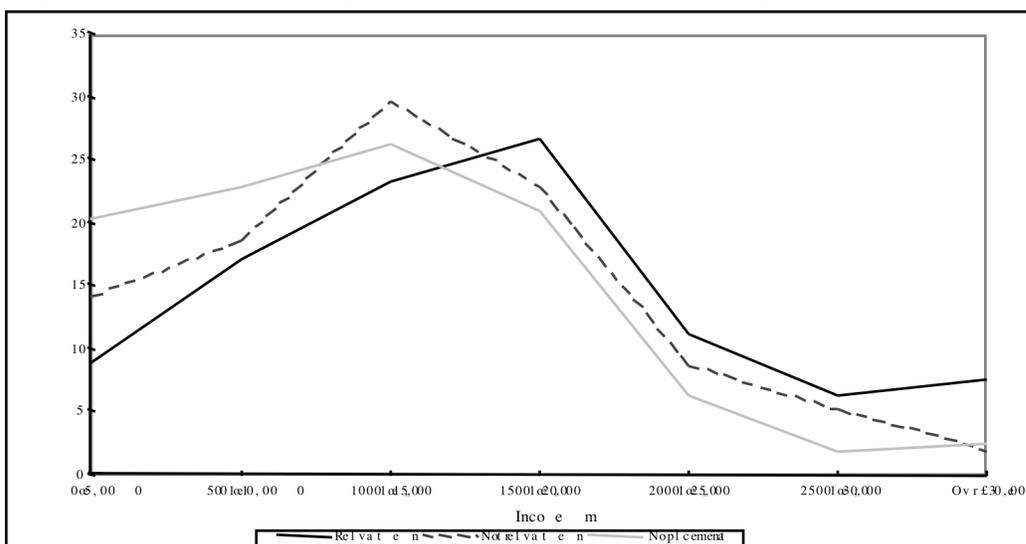
Bold significance levels (p) are those where there is a significant difference ( $p < 0.5$ ) in the mean perception of skill development between work experience and non-work experience graduates.

Those who had some form of work experience were significantly more likely to have subsequently worked in full-time permanent employment and less likely to be on part-time, fixed-term contracts at the time of the survey. Whereas 31% of those whose work

experience was relevant to their current occupation had been unemployed or seeking work at any point since graduating, the corresponding figures were some 10% higher for the others. Those who had work experience that was related to their current job also tended to have higher incomes (Figure 1). These outcomes are mirrored in the *Working Out?* study:

The relevance of work experience in gaining appropriate employment is one of the key findings of the survey. Nearly 48 per cent of graduates felt that relevant work experience in a similar organisation was an important factor in enabling them to obtain their job. (Purcell *et al.*, 1999, p. 16).

**Figure 1: Income by work experience and its relevance to current job**



Chi-square 75.4, 12df,  $p = 0.0$

Source: Burrows and Harvey (1999, p. 112).

In retrospect, work experience, and non-work experience graduates differed in their views about the importance of most aspects of the programmes of study they had followed. Those who had work experience that was related to their current work placed more importance on their main subject area than did those who had no work experience. They also tended to value more highly other elements of their course, particularly business and professional study, external projects, placements, employer-related visits and career guidance provision.

This study suggests that work experience could contribute to students' learning and to graduates' retrospective appreciation of their undergraduate programmes. Work experience is also associated with differences in post-graduation employment, including levels of self-employment, and higher incomes.

It also appears that some placement provisions were more powerful than others, which implied that it would be valuable to identify the characteristics of better placement designs.

#### **Study 4. Good practices in work experience placements**

##### ***Method***

The study was designed to explore what can be done to increase the opportunities for undergraduates to gain work experience and how the learning from these experiences can be maximised. It involved descriptive work to identify current practices and terminology; the analysis of examples of work-based learning in practice in order to understand better how it can develop students' qualities, skills and knowledge; and a critical-reflective stage that examined stakeholder views of the role of work-based learning and led to an assessment of the impact of work-based learning at a personal, organisational and system level. Research methods included visits, telephone interviews and literature reviews to establish a picture of a vast range of work experience initiatives currently being undertaken and of their impacts on the range of stakeholders (Harvey, Geall and Moon, 1998).

##### ***Findings***

The study identified three main types of work experience: organised work experience that is part of a programme of study; organised work experience that is external to a programme of study; and *ad hoc* work experience that is external to a programme of study. The study concluded that the temptation to think that there is only one ideal form of work experience should be avoided because different forms may offer different benefits. Neither work experience, nor any form of appeared to be intrinsically beneficial. Quality of work experience depends upon its fitness for purpose as an aid to learning and it is the learning that comes from it that is important.

Informants said that successful work experience depended upon academic staff accepting that learning also takes place outside the formal academic setting. Academic staff, they said, need to value all types of work experience as a significant element of student learning and help students to discover how they can learn from work and articulate this learning. They said that students, too, need to appreciate that academic prowess alone is insufficient for a successful career and benefit from recognising that work experience has the potential for developing a range of skills, attitudes and abilities which are needed in the workplace. Informants said it was important for students to take responsibility for their own transformative learning.

These views have been organised into six themes. What follows is a summary of what informants said about each of them. They are informants' suggestions.

1. *Purposefulness*. For work experience to be a valuable learning process it needs to be purposeful and all stakeholders - students, employers, academic staff and employees - should appreciate the underlying intentions.
2. *Quality monitoring*. The quality of the work experience is intrinsically tied to its relevance, structure, organisation and intentionality. All stakeholders must be committed to the process. The quality of work experience is greatly enhanced by:
  - prior induction and briefing for all concerned;

- facilitation of ongoing reflection;
  - debriefing, reflection and identification of outcomes.
3. *Accreditation*. It can be strongly suggested that for work experience to be taken seriously it needs to be accredited, either towards the programme award or as a separate award of the institution or of an external body.
  4. *Assessment*. Summative or high stakes assessment needs to be recognised as fair and trustworthy, which can cause technical difficulties and be costly. Low stakes or formative assessment does not have to meet these standards since it does not yield grades or marks. Consequently, it can be a better basis for a dialogue that can shape the process of learning from work experience and be a means by which on-going reflection can be supported.
  5. *Work-experience portfolio*. Students should be encouraged to build up a work-experience portfolio through which they can substantiate learning claims that they may wish to make. Where they have had a variety of work experiences, then the portfolio can be a means to develop links so the experiences are not seen as isolated pockets of learning. Rather, the learning from one experience may input into the next experience.
  6. *Reflection and articulation*. Although students can readily describe their experiences, it is the articulation of what has been learned that is key. That, in turn, depends upon initial purposefulness and then upon regular reflection that involves others. It is enhanced where students are used to thinking metacognitively and have learned routines that help guide their reflection so that it is something more than simply thinking about what has happened.

### **Implications for work experience in the undergraduate curriculum**

The lack of work-experience provision that was found in the engineering and art and design studies is surprising, given the vocational nature of engineering and of design, which place a high premium on that ability to deploy understandings in complex, contingent settings. Given official enthusiasm for the extension of work experience, there is also cause for unease at the reported impact of work experience upon engineering undergraduates. Whether or not undergraduates are correct in their perceptions of their abilities and the effect that work experience might have, this perception will influence their choices and expectations. Curiously, these perceptions are also reflected, as Study 1 showed, in the impact that sandwich courses have on the employment rates of engineering graduates.

For art and design students, the lack of work-related opportunities is a significant problem. The single biggest area that was regarded as absent from courses was the link to the business world (Blackwell and Harvey, 1999, p. 82):

We should also have been more fully involved in industry in a work-experience capacity: it makes sense for everyone!

(Graphic design graduate)

Work placements would have been useful and would have shown there were other options than school teaching for mature students.

(Visual communications graduate)

Although the art and design data indicate that work experience placements had, by and large, an effect on those students' learning, and although there were some reported effects of work experience on engineering undergraduates, it is an impact that was not invariably felt. However, much of the work experience was of short duration and there was clear evidence that the longer work experience opportunities were reflected in much more positive views about the usefulness and importance of work experience.

The fourth study shows that there are widespread beliefs about the nature of a good quality programme, and it may be plausibly suggested that these were not features that had been apparent in the placements of all of the engineering and art and design respondents. In other words, if work experience placements are to be more than exercises in image management, they need to be designed with the quality signals that we have identified very much in mind.

Good placement design does, of course, rather assume that students have the wherewithal to gain from the experience. It has repeatedly been suggested that the quality of students' reflection is fundamental to the quality of learning. Cowan (1998) has indicated that students may think that they know what skills they have and that they can be wrong. If that is the case, the question is how whole degree programmes can be designed to help students to be better at thinking about their own thinking (metacognition) and at abstracting learning from experience (reflection). That is a big question and only two answers can be sketched here. The first is that programme-wide action is called for, although recent trends towards semesterised, modularised, bite-sized course design has made it increasingly hard to think about the continuity, coherence and progression that are prerequisites for the systematic development of metacognition and reflective habits. The second is that it is not enough to proclaim the importance of reflection, although it is necessary. If reflection is to be an aid to students engaging in work experience then they need to be able to distinguish reflection (in the sense of deep and wide analysis of thinking and action) from commonplace, casual and superficial thinking. It raises questions about how students learn to reflect and how higher education teaches them to do it better.

There are clear logistical implications for institutions that want to maximise the quality of work experience through matching it to students' interests, by providing longer rather than shorter placements and by designing placements that have the six features of good practice identified by our stakeholder informants. Were such placements to be compulsory components of all programmes in engineering and in art & design, there would be considerable new resource demands to be faced by employers, institutions and academic staff alike.

In summary, the research studies, while far from definitive, point to the following conclusions:

- work experience is repeatedly related to higher graduate employment rates and possibly to higher subsequent incomes;

- work experience also is also regularly related to a more positive view of the learning experience of the programme in general and the placement in particular;

However, the positive outcomes of work experience are mediated by three factors:

- retrospective views of graduates tend to be more positive than those of current undergraduates;
- there appear to be distinct subject variations in the impact of different types of work experience;
- work experience needs to be of good quality, in particular, enabling students to reflect on what they have learned. A period of reflection may also account for why graduates tend to have a more positive attitude to work experience than undergraduates.

Further research needs to be carried out at the national level to investigate:

- The nature of the work that graduates, with and without work experience, undertake six months post-graduation.
- Why employers favour sandwich graduates and why thin-sandwich graduates are favoured over thick-sandwich graduates in certain professional areas.
- What other kinds of work experience, apart from embedded placements, provide a labour market advantage for graduates.
- What factors influence students' views of work experience and their reactions to it.

## References

Blackwell, A. and Harvey, L. (1999,) *Destinations and Reflections: Careers of art, craft and design graduates*. Birmingham, Centre for Research into Quality.

Bowes, L. and Harvey, L. (2000) *The Impact of Sandwich Education on the Activities of Graduates Six Months Post-Graduation*. London, National Centre for Work Experience and the Centre for Research into Quality.

Breathnach (1983) University-industry cooperation in Canada. Unpublished manuscript, Organisation for Economic Co-operation and Development, Paris

Cowan, J. (1998) *On Becoming an Innovative University Teacher*. Buckingham: Open University Press.

Harvey, L. and Green, D. (1995) *Employer Satisfaction*. Birmingham CRQ.

Harvey, L., Moon, S. and Geall, V with Bower, R., 1997, *Graduates' Work: Organisation change and students' attributes*. Birmingham, Centre for Research into Quality (CRQ) and Association of Graduate Recruiters (AGR).

Harvey, L., Geall, V., and Moon, S. with Aston, J., Bowes, L. and Blackwell, A., 1998, *Work Experience: Expanding opportunities for undergraduates*. Birmingham, Centre for Research into Quality.

Hayes and Travis (1974) *Employer experience with cooperative education: Analysis of costs and benefits*. Detroit: Detroit Institute of Technology Cooperative Education Research Center.

National Committee of Inquiry into Higher Education (NCIHE), 1997, *Higher Education in the Learning Society*. London, HMSO.

Purcell, K., Pitcher, J. and Simm, C., 1999, *Working Out? Graduates' early experience of the Labour Market*. Manchester, CSU.

Somers and Bridges (1982) *Post-graduate success: The relationship between experiential learning programmes and liberal studies - An exploratory model*. Michigan Consortium for the Evaluation of Nontraditional Education