

Industrial sponsorship: undergraduate students' expectations and achievements

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Abstract: *In recent years, there has been an increasing emphasis in the UK on the development of employability skills in our graduates and for more employer involvement in Higher Education to ensure the needs of industry are understood and reflected in the curriculum. Sponsorship of students during their degree studies is one way of bringing industry closer to education. Sponsorship is an opportunity for employers to maintain a close relationship with students and be involved in the education and initial training of professional engineers. The methodology for a research project being undertaken to determine the impact of sponsorship on students, academic departments and industry partners is presented. The results of a series of surveys of final and first year students are also presented and preliminary conclusions drawn on the impact of sponsorship on student choice of programme, its contribution to the achievement of learning outcomes, the correlation of sponsorship and students' employability, and students' expectations of sponsorship. In general, more than 94% of students indicated that they have benefited from the sponsorship element of their programme and that they recommend sponsorship to the other students.*

Keywords: employability; engineering education; industrial placements; industrial sponsorship; industry-academic link.

Introduction:

The teaching of transferable skills and the involvement of industry in the education of students have been a high priority in the UK for a number of years. Universities need to recognise the changing requirements of industry and develop their programmes accordingly. Programmes with relevant industry input will attract students, maintain their engagement and provide them with practical and problem-solving skills to work effectively in industry on graduation. Industry input into the curriculum is also a requirement of accreditation by professional bodies in the UK. (Roberts, 2002; Leitch, 2006; and The Royal Academy of Engineering, 2007). Partnerships between industry and academia have three stakeholders; students, academics and industry practitioners, and all parties must benefit for the collaboration to be successful and sustainable. A pedagogic research programme in the Centre for Excellence in Learning and Teaching (CETL) aims to collect evidence and build models of practice that can maximise the benefit for all parties and ensure sustainable engagement (Dickens, 2006).

Centres for Excellence in Teaching and Learning (CETLs) were introduced in 2003 and are the largest ever funded programme for teaching by the Higher Education Council for England (HEFCE) with total funding of £315M over five years. The Engineering Centre for Excellence in Teaching and Learning (engCETL) at Loughborough University was set up in March 2005 as one of the 74 CETLs, with

recurrent funding of £2.5m over five years and a capital grant of £1.65m. The centre focuses on industry and education relations and links with seven departments including Civil and Building Engineering. It focuses on skills needed within industry, and captures current practice from both the university curriculum and sandwich placements. Current research projects in the centre include: the impact of work placements on transferable skills; the impact of industrial sponsorship on students, academia and industry; and appraising the benefits of Project-Based Learning in engineering design.

This paper reviews the successful sponsorship schemes used in the Civil & Building Engineering Department at Loughborough University over a number of years. It then briefly outlines the research being conducted in this area and presents initial findings of students' perceptions and expectations of sponsorship.

Sponsorship

The UK is facing an increasing shortage of high quality engineers entering industry (The Royal Academy of Engineering, 2007). There are concerns about the type of graduate engineer that companies want to recruit, as well as their quantity. It was estimated that there would be 370,000 new job openings over the next ten years, therefore, shortages of suitable engineers and skill gaps could impact on UK businesses' performance. The National Employers Skill Survey stated that 95% of manufacturing and engineering firms have found it difficult to recruit graduate level engineers, and skills shortages have a negative effect on their business (Bowen, 2007).

Industrial sponsorship, with its inherent link to future employment, could encourage students to study specific subjects and courses so it could help to increase the number of students entering courses in shortage areas. It also keeps them interested in the industry relevant to their chosen course. Sponsorship is an opportunity for employers to maintain a close relationship with students and be involved in the education and initial training of professional engineers. To ensure a supply of well-trained engineers and employees, and being able to recruit enough engineers in the future have been identified as main reasons for companies to sponsor students (Gordon, et al 1985).

The sponsorship of engineering students is also an effective way for students to gain work experience, industrial training during their courses, financial support, and enhanced job opportunities on graduation.

Sponsors' consortiums

The extent of industrial input into taught and the sponsored programmes at undergraduate level are distinctive features of the engineering degree programmes at Loughborough University. The department of Civil and Building Engineering has formed a consortium with 24 industrial partners to sponsor students on the MEng Civil Engineering, BSc Construction Engineering Management (CEM) and BSc Commercial management and Quantity Surveying programmes (CMQS). The CEM and CMQS programmes were created in 1991 as a partnership between Loughborough University and fifteen large construction organisations. Initially it was a condition for all students admitted to the programmes to be accepted by a sponsor as well as the university but now students are registered who just meet university requirements.

In 2001 this consortium model was extended to the MEng Civil Engineering programme and employers such as consulting engineers have been included to reflect the different employment destination of these graduates. Including more

consulting engineers and expansion of the scheme to the BEng Civil Engineering programme are the future developments of the scheme to reflect the current growth in industry demand of sponsoring students (Dickens, 2006).

Through sponsorships, the sponsors provide the student with a bursary (approx. £1500), maintain contact with them during their studies, and provide vacation work and sandwich placements. In general, graduate employment follows, but this is not guaranteed, or always wanted by graduates.

Methodology

This paper presents part of a study which is investigating the impact of sponsorship on students, academic departments and industry in order to develop sustainable models of effective practice for further dissemination. The research aims to capture existing practice across sponsored and non-sponsored programmes within the Engineering Faculty at Loughborough, evaluate the benefits to the three stakeholders, assess the barriers that inhibit further sponsorship, and propose strategies for future developments.

At the first stage of this project, the following groups of undergraduate Civil Engineering students have been surveyed:

- Final year students at Loughborough University together with those at Southampton University and students sponsored through the Institution of Civil Engineering (ICE QUEST scholars), to find out their experiences, achievements and views on the sponsorship scheme.
- First year students at Loughborough University to find out their reasons for applying for sponsorship, together with expectations and views on sponsorship schemes. Follow up surveys will monitor the changes in their views during different years of their study.

A six-point rating scale was used in measuring and analysing responses. The first thought was to use ten-point rating scale to gather more perceptive data. However, by considering the difficulty of the labelling of the individual points and the confusion that might be caused, it was decided to choose the six-point rating scale. This scale gives more efficient discrimination between positive or negative views of students rather than neutral views (Brown, 2006).

In addition to the quantitative data, respondents were able to add qualitative statements in response to open ended questions such as, *'What have you gained most from the sponsorship scheme?'* and *'What benefits do you think your sponsor company has gained from the sponsorship scheme?'*

Results and discussions

The results of a set of questionnaires designed to collect data from groups of first year and final year undergraduate civil engineering students as described in the Methodology section are presented in the following sections. All the results are based on the completed questionnaires.

The areas investigated included the

- impact of industry sponsorship on students' choice of programme,
- impact of industry sponsorship on learning outcomes of the undergraduate programme and students' employability,
- benefits to students and sponsor companies,
- relationship between students and company contacts.

Profile of first year students

Forty one questionnaires were sent out to the first year students. Sixty eight percent (28/41) of questionnaires were completed and 71% (20/28) students applied for sponsorship. Among these students who applied for sponsorship, 18 received an offer from the sponsoring consortium. Of those who are not in the scheme (either did not apply for sponsorship or applied but were rejected), four have alternative sponsorship, either through direct application to a company, by receiving sponsorship offer after industrial placement or sponsored through other organisations such as the armed forces. Overall, 79% (22/28) of the responding group have sponsorship. The departmental statistics shows that 26 first year students received sponsorship from the consortium last year.

Profile of final year students

This section presents the profile of a group of 143 final year students, described in the Methodology section. Forty two percent (61/143) questionnaires were completed and 82% (50/61) students applied for sponsorship during the first year. Eighty eight percent (44/50) of these students received an offer from the sponsoring consortium. Of those who are not in the scheme (either did not apply for sponsorship or applied but rejected) ten already have sponsorship, either through direct application to a company or by receiving sponsorship offer after industrial placement. Overall, 89% (54/61) of the responding group have sponsorship.

The impact of sponsorship on students' choice of programme

Students were asked to rank the impact of availability of sponsorship on their decision when choosing their programme. Results show 81% of first year students in the group considered that sponsorship influenced their decision, which shows a major difference from the results of the final year students. Only 29% of final year students considered that sponsorship influenced their decision, which had been taken five years ago. Increased tuition fees could be a reason for increasing the impact of sponsorship on the students' choice, however further surveys will be conducted to collect more evidence.

Reasons to apply for sponsorship

Industrial experience was identified by 100% of the first year and 78% of the final year students as the main advantage of sponsorship, followed by *practical skills*, *future career*, and *extra funding*. *Professional contact with industry*, *better understanding of the role of a graduate*, *a link to professional bodies*, *placements*, and *professional skills* have been identified as other benefits of sponsorship (gained or expect to gain) by students.

Students' perception of benefits to sponsor company

To enhance the company's ability to recruit high quality graduates, *a well trained labourforce*, *increased company reputation*, and investment in company have been mentioned as the main benefits to the sponsor companies from the sponsorship scheme by most of first and final year students. The students also perceived that they are a source of 'cheap' labour to the company even though they are being paid the market rate for their experience. It is thought the students do not take into account the cost to the company of their sponsorship and placement training.

Industry contacts

The result shows over 70% of first year students agree that the following factors are important about their contact, supervisor, and line manager in industry: is easy to approach and talk with, motivates them to perform at their highest level, treats them with dignity and respect, supports exceptional academic performance, answers their questions clearly, and offers practical help and support. However, the final year

students' experiences show while 60% agree that they have been treated with dignity and respect, only 36% stated that industry supports exceptional academic performance.

The results appear to show that employers do not seek exceptionally high academic performance which reinforces the finding of other surveys of employers that rate employability skills above academic performance (Dickens, 1996). Also, students expressed that a better communication between industry contacts, students and university, and better mentoring would improve the sponsorship scheme.

Sponsorship support of selected programme learning outcomes

Figure 1 shows the first year students' perception of how sponsorship should contribute to their attainment of selected learning outcomes of their degree programme. The response demonstrates that the students have a high awareness that their links to a sponsor have a major impact on the development of the learning outcomes linked to employability skills. The majority of the first year students expected that sponsorship support the attainment these learning outcomes quite a lot.

Most of the final year students agreed that sponsorship supported the attainment of these learning outcomes in some way or quite a lot. Figure 2 shows the final year students' perception of how sponsorship has contributed to their achievement of selected learning outcomes of their degree programme.

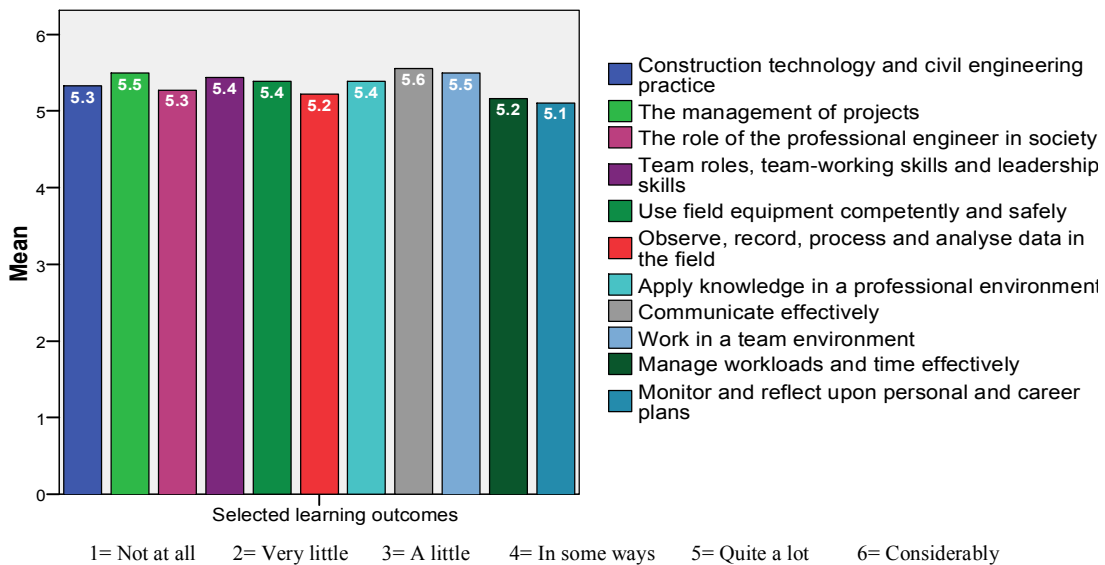


Figure 1: The first year students' perception of sponsorship support of selected learning outcomes of degree programme

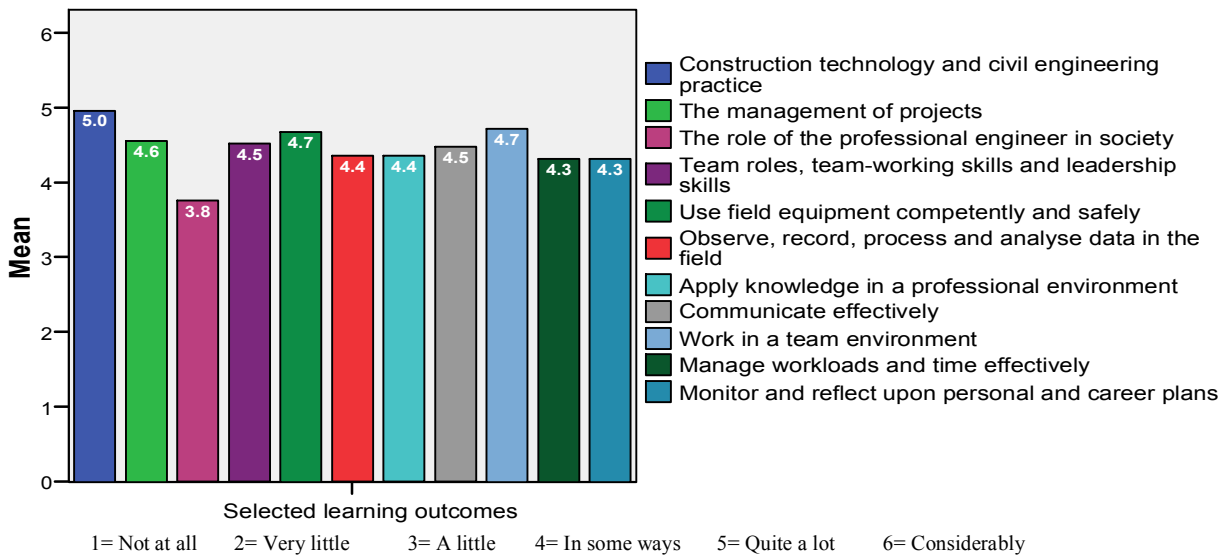


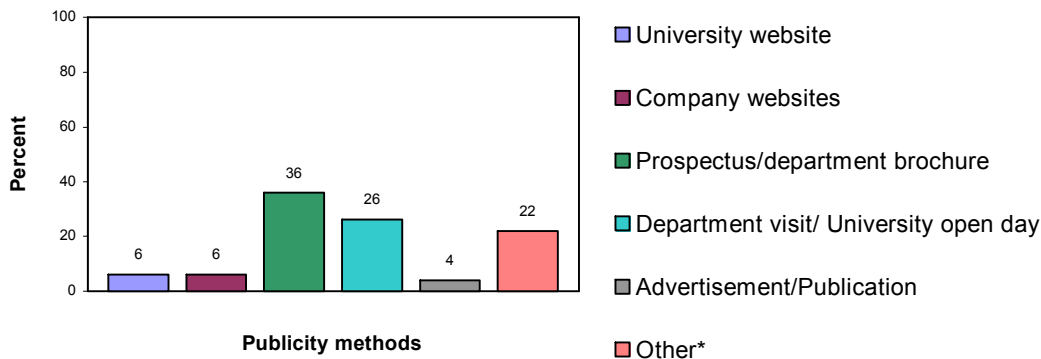
Figure 2: The final year students’ perception of sponsorship support of selected learning outcomes of degree programme

Although the trend of rating seems to be similar in the first and final year students’ answers, i.e. all of factors have received high and close equal rating; final year students used a slightly lower ranking than first year students. This might be linked to difference between expectation and reality. As first year students have less experience of sponsorship hence having idealistic expectations, however final year students have more experience hence having more realistic views.

Understanding of sponsorship

Results show the majority of both first and final year students did not have a clear understanding of the sponsorship scheme before coming to university (67% and 70% respectively). The situation is even worse for students who did not apply for the scheme (74% and 90% respectively). This response suggests that the publicity material for the scheme should be reviewed, although it already has a high profile in departmental marketing material.

Students were asked how they first heard about the sponsorship scheme and responses for final and first year students are shown in figures 3 and 4 respectively.



* Students mentioned lecturer, friend or family, and word of mouth as other sources.

Figure 3: Sponsorship publicity (Final year students)

Comparing Figures 3 and 4 reveals a sharp increase in the department visit/ university open day in last the 4 years, from 26% to 55%. Although this would suggest that open day and department visits could play an important role in introducing the sponsorship scheme, the level of understanding of the scheme for

both first and final year students is still very low. Therefore more investment in publicity might improve the scheme.

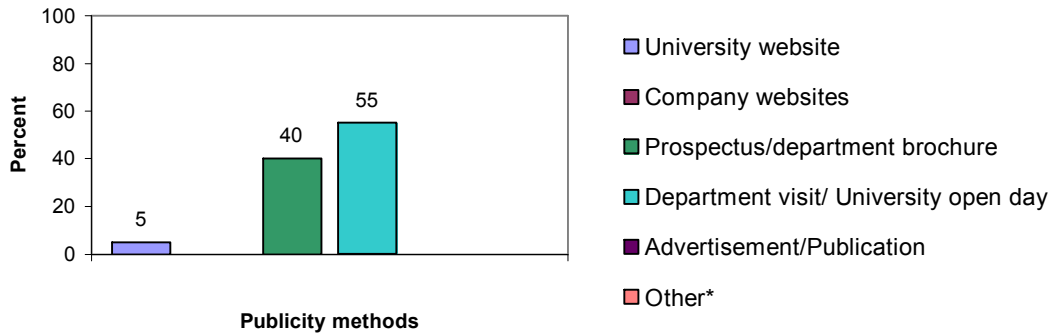


Figure 4: Sponsorship publicity (First year students)

The benefit of sponsorship to students in general

In general, 92% of first year students expect to benefit in some way from the sponsorship element of their programme and all of them would recommend the sponsorship scheme to other students.

Ninety eight percent of final year students agreed that they have benefited in some way from the sponsorship element of their programme. 93% of students would recommend the sponsorship scheme to other students, which has an important influence on the future students’ choice.

The Correlation of sponsorship and job offer

Results show 76% of final year sponsored students have received a permanent job offer from their sponsor (or another) company whereas only 43% of non-sponsored students have received an offer at the time of the survey. The employability of sponsored students could have a considerable impact on the attractiveness to future students to apply for sponsorship and sponsored programme.

Conclusions

The data shows that sponsorship was not a major factor in the final year students’ choice of programme; just 29% of final year students considered that sponsorship influenced their choice, but 81% of the first year students considered that sponsorship influenced their choice. More investigation is needed to find out the reasons for increasing the impact of sponsorship on the students’ choice of programme.

On average, more than 80% of the final year and 67% of the first year students did not have a clear understanding of the sponsorship scheme before coming to university. So there is a need to find out what exactly they did not understand in order to provide clearer information about sponsorship.

The data shows that the students have a high awareness that their links to a sponsor have a significant impact on the attainment of the learning outcomes linked to employability skills. In general, 94% of total students agreed that they have benefited (or expect to benefit) in some way from the sponsorship element of their programme. Over 96% of total students would recommend sponsorship to the other students. They ranked industrial experience, practical skills, sandwich training, extra funding, and guaranteed job on graduation as important advantages of sponsorship.

The results so far look promising and interesting. The work is to be continued by surveying different groups of students, interviewing sponsor/non sponsor companies, and other Engineering departments. We intend to highlight the benefits to the three stakeholders and identify the weaknesses of sponsorship which limit further dissemination. The final stage will be to develop strategies for effective industry involvement which support sustainable engagement.

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