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Student Mobility

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THE INTERNATIONAL DIMENSION THROUGH STUDENT MOBILITY

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Introduction

It is a truism that, not only is the process of integration within Europe continuing apace, but the process of globalisation of industry is proceeding perhaps even faster. There are two consequences impinging directly on Engineering Education. In the first place, the working environment and opportunities for the current generation of students will be very different from those for the author's generation - and, indeed, for most of those generations between. Secondly, the number of students choosing to spend all, or part, of their studies abroad is steadily increasing.

Within the European Community the common internal market requires that there shall be free movement of goods, capital and labour. Of course, the reality is still far from this desired state, but is progressing. For the present paper the topic of interest is the mobility of engineers and, more specifically, the mobility of engineering students in Europe. At a global level the development of industry and the liberalisation of trade give rise to the same questions of mobility on a wider scale, albeit organised and regulated in a less coherent way than within Europe. The starting point for this paper is to remark that a significant, and increasing, proportion of engineers will move away from their home country for at least part of their professional career. Given this, universities should be looking to fit their graduates as well as possible for this new pattern of career.

The second point, that an increasing proportion of students will spend some, or even all, of their university career outside the home country is, in part, a consequence of their perception of the future labour market. It is also a phenomenon encouraged by the European Commission (for example, through the Erasmus and Leonardo programmes, and their successor strands of the Socrates programmes), and by the Universities for a host of other reasons. Not least among these last are the financial and other advantages to the institution of recruiting foreign students to compensate for falling numbers from the home country.

The International Dimension

There are a number of ways in which universities can encourage and develop an international outlook in students. To some extent this is already part of the ethos of universities, for admission has traditionally been a rather open process, candidates from all sources being welcomed, and with any selection being based on intellectual ability. Of course, the proportion of students from abroad is usually small, certainly when considering the total enrolment at an institution, and the proportion from any one cultural group is much smaller. Thus, the attitudes and cultural awareness of the incoming students will normally be modified more than those of the indigenous students. To increase further their attractiveness to foreign students some European

countries, especially those with a less widely spoken language, are offering courses in other languages (for example, courses in Engineering given in English, German or French are available in Hungary, courses given in English are to be found in

Germany, and more are being developed). Another possibility, not to be developed further here, is for staff to be recruited from abroad, either on a permanent basis, or through short-term exchanges. Where staff teach abroad on a permanent basis they appear to adapt to the culture of the host country, so the internationalising effect on the students is rather limited. Where staff are on exchange their teaching is likely to reflect more of their home culture than that of the host. The material taught can be mainstream engineering, in which case there can be problems (for example, a French engineer lecturing in the UK might well find difficulty, or find students experiencing difficulty, because of the very different mathematical traditions of the two countries). Alternatively the teaching could be part of a programme of cultural studies; either way it is not likely to have more than minimal influence.

Of more relevance to the present paper are cases where a complete period of study is spent in another country. The period is normally a semester (or trimester, if that is the system in the host country), a year, or a complete course; this last is now most likely to be a 3- or 4-years Bachelors course, or a 1- or 2-year Masters. There are a number of problems which can arise; many of these will be considered elsewhere in this Conference. Among the problems may be mentioned (i) questions of recognition of the Degree or Diploma, (ii) questions of allowing credit for studies abroad when awarding the home Degree, (iii) arranging or finding a good enough match of curricula and syllabi between the home and the host universities and (iv) making any allowance found necessary for the disadvantage of studying in a foreign language. Although these points are mentioned as problems, they should not be regarded too negatively, for progress is being made in overcoming them. At the European level there are rules on the equivalence of qualifications, the larger employers, at least, seem quite ready to take on staff from other countries, and there is a forum (ESOEPE - the European Standing Observatory for the Engineering Profession and Education), which arose from the work of the earlier Thematic Network, H3E, to facilitate the comparison of qualifications. As far as the other three 'problems' are concerned, both universities and students who wish to participate in student mobility can be extremely inventive and resourceful in finding ways around them. In this context the European Credit Transfer System (ECTS) should be mentioned; as currently implemented it is far from perfect, for it relates mainly to quantity of study, rather than questions of quality, but does start to provide a framework for easing mobility.

A second form of student mobility is where a work placement (or sandwich year, internship, stage or Praktikum, depending on country) is taken abroad. For UK students this is particularly advantageous, as it makes minimal demands on language knowledge. There are fewer academic problems than for mobility within a course, but they still exist, particularly where the foreign students go into industry at a stage very different from the home students. For example, the work placement in the UK is usually done after two years of Bachelor's studies have been completed, whereas it is

common in France or Germany for students to undertake their final project, after having completed 5 years of academic study, in industry; clearly the expectations of students and of industry are very different in the two cases. This difference also leads to differences in the normal length of period in industry - from as little as a few weeks, to as long as a complete year. In general a placement intended to give the student international, as well as work, experience should last several months, for otherwise it is little more than a holiday. More significant problems arise in financial matters. The way of financing studies varies quite widely from country to country; in some cases students on industrial placement are treated as though they continue to receive their normal funding, so the industry pays nothing, or only a nominal sum; in other cases the students' normal funding ceases while they are in industry, so it is necessary for an adequate wage to be paid by the employer or some other fund. A further problem arises in connection with social security and insurances. In some countries (for example, France, Spain, Greece) the student on placement is regarded as being the responsibility of the university, so employers do not pay the very high social security charges a regular employee would attract; the status of foreign students is often quite unclear, or may require private insurance at high cost.

Costs

The motivation for studying abroad will be discussed further below. However, mobility cannot be achieved without significant costs, both to the student and to the university. For the student there are clearly the higher costs of travelling further from home (in the longer term this must be true, although at present low-cost air travel calls the statement into question!). Moreover, the cost of living will usually be higher, either because the host country is intrinsically of higher cost (e.g. at the time of writing most exchange students going to the UK or Finland find this to be so) or because lack of familiarity with local conditions leads to the visitor paying more than the norm. Further costs arise, especially for short stays, when payments, such as for accommodation, have to be made in both countries.

There are other less obvious costs to the student. For example, the total study time may be extended, perhaps because of the need to become familiar with the language of the host country, or because the courses offered in the host and home countries do not match very well, so that too little credit can be earned, or even because the home university just does not allow full academic credit for the time spent abroad.

For the university the costs are also increased. Most universities now have an International Office to staff and maintain. Liaison with partner universities may be undertaken mainly by staff from this office, but will often also involve other academic staff, through whom many of the formal exchange agreements arise; the costs of such academic involvement are hard to quantify, for academics have notoriously elastic working schedules. Further costs which are difficult to quantify are the provision of examination transcripts in a different format, for the benefit of institutions abroad, or the additional staff time needed to evaluate transcripts from abroad. In principle the spread of certificates such as those provided under the ECTS should reduce this burden, but there is still much progress to be made. Other costs are more easily

identifiable. For example, provision for the teaching of foreign languages is now much greater than it was a few decades ago, and the number of students participating is also greater; such provision is usually available both to home students planning to go abroad (but often to others as well), and (primarily in the home language) to foreign visiting students.

A final cost to the university, and one with which the author is especially familiar, is that of finding and administering work placements for students. As a rough guide a placement for one year in Europe arranged by the author's university costs around £4500, approximately double the cost of placements in the UK. In part these costs are high because the university devotes considerable effort to visiting the students on placement, and it is the additional time as well as travel costs which contribute to the difference. It can be argued that the practice at the University of Surrey is unusually expensive, but true quality rarely comes cheaply. Even with arrangements costing less it is likely that the European placements would still be about twice the cost of those in the UK, which are usually found within 100km of the University.

Motivation for Mobility

This paper arises from the author's involvement in student mobility, both as a coordinator for Erasmus programmes and as a Placement Tutor for the industrial year. Clearly one does not become involved in such work without believing it to be worthwhile, and so presenting that point of view, for such activity has little reward in terms of academic career advancement. But the real question to be asked is of the students - namely, why participate in such programmes, given the costs and problems mentioned above? The views reported here have two quite separate sources. One is a survey carried out at the Université d'Angers, France. The other is a symposium organised by the Board of European Students of Technology (BEST) in Chania, Crete.

Université d'Angers (ISTIA)

Students of ISTIA, a part of the university in Angers, are normally required to spend some part of their course abroad, be it studying or gaining work experience (for the majority it was for work experience or undertaking a project, either individually or as a member of a team). An enquiry was sent to graduates and existing students soliciting their views on the desirability of gaining experience abroad. The document reminded the recipients of the involvement of ISTIA in piloting international team projects (specifically, ISTIA was one of the main contributors to the JEEP Teams component of the Socrates Thematic Network H3E), and mentioned a recently floated suggestion to develop –virtual— project teams, using the internet. Beyond this there were no points or questions to which answers were sought; in this way it was hoped to obtain unbiased views. A good proportion of the enquiries were sent to graduates who were away from Angers, and no longer had much contact with their former fellow students. What was remarkable was that, despite the lack of collusion among the respondents, or the lack of prompting by carefully phrasing of questions, the views were consistently positive, and that the same few points were made in most replies. Indeed, there was only one negative comment, pointing out the costs, and even then the experience was judged

worthwhile. Five respondents (out of a total of about 40) had not had experience abroad, but still made the same points (without, it must be admitted, stating that they felt greatly disadvantaged!).

The most frequently mentioned benefit of going abroad was to learn a foreign language and, inevitably with globalisation, the preference is for English. This can be done in the home country, or with brief visits abroad, but is so much better done during a few months spent living among native speakers. Further benefits mentioned as important were the chance to gain familiarity with another culture and, closely coupled to this, learning to adapt to, and to become tolerant of, another culture. Further down the list were the development of personal qualities, such as self-reliance, independence and adaptability. Enhancement of one's CV, so improving employment prospects was mentioned by one or two, as was the value of gaining technical skills and knowledge of industrial processes and organisation. The point is that the benefits quoted are so much more easily obtained by spending several months in an appropriate country that the case for mobility is made.

BEST Symposium, Chania

The Symposium in Chania was attended by 22 students, from 8 countries. 2 Academics were also present, but they took the role of observers or of moderators. It covered two discussion topics, running concurrently, with all participants dividing their time between them. In contrast to ISTIA, the mobility being considered was exclusively for study abroad, usually for just part of a course. Several participants were, or had been, on ERASMUS exchange programmes. In an initial brain-storming session a number of expectations of students were identified. Then a system of secret voting was used to rank the expectations in order of perceived importance. The greatest expectation was to become more open minded, and enlarge one's perspective. Developing a European cultural outlook, followed by learning or consolidating a foreign language were also seen as important. Interestingly becoming familiar with the local culture was regarded as less important, below some academic expectations, such as the availability of courses not on offer in the home university, and exposure to a different, possibly better, way of teaching, or a new approach to the subject studied. It was also thought beneficial to prove oneself, by adapting to study abroad. In the subsequent discussion the ranking was analysed, and was confirmed to be the agreed view of the meeting. Any differences between these views and those of the ISTIA students were explained by the different purposes for the mobility.

The main problem cited by participants was the cost of mobility - there are additional costs, mentioned above, which are now only partly met by the grants available (in this respect the Erasmus programme has been too successful, for the number of participants has increased far faster than the money available). There is also a problem of bureaucracy, especially when all matters such as obtaining funding, finding accommodation and making travel arrangements are added onto the academic matters such as getting credit transferred. However, as for the other group of students, there was no question about the need to go abroad to realise the educational expectations and objectives.

Conclusion

The two most important international components of education for most students appear to be (i) acquiring total command of a second language (in practice, for the majority, English) and (ii) in developing a greater cultural awareness. These are both best done by living abroad for a period of at least several months, though it probably does not matter much whether the time is spent in study or in work experience which is organised as part of a course of study. In all cases there are additional costs, both to the student and to the university, yet these are usually judged well worthwhile.

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