

More Interdisciplinary Theses

IN the past couple of years, academics in Britain have been urged by the Science Research Council to look at the style of postgraduate education provided by the Massachusetts Institute of Technology (MIT) and to think seriously about transplanting some of its best features to British universities. Particular attention has been drawn to the extensive course work done in the first year or two at the postgraduate level, the subsequent examination, success in which has been necessary before a thesis could be ventured into seriously, and the (by British standards) free-flowing interdisciplinary character of much of the work that a student would do. But how does MIT see its own intellectual future—is there to be more innovation in postgraduate education or is the present mixture regarded as about right?

MIT administrators see a variety of trends as both restricting and demanding future change. There is a general feeling that the shape of postgraduate education in terms of requirements is satisfactory and should not be tampered with. But the content is another matter; defence and space were the two big customers for MIT PhDs and for research projects at the institute in the 1960s, and this wave has now broken. Present day and near-future demands on science and engineering research are much more closely related to what one person described as 'ways of engaging reality', such as increasing industrial productivity, solving energy problems and looking at questions in biomedical engineering and in transportation. These are interdisciplinary problems *par excellence* and there seems general agreement that the interdisciplinary revolution at MIT has not yet run its course. There is a pretty clear lesson here for some of the narrow self-regarding departments in British universities.

New commitments to multidisciplinary research and education are bound, however, to come up against the severest of financial and administrative obstacles. A report last summer by an MIT committee charged with looking at the institute's research structure painted a generally gloomy picture of federal support levels which have stagnated for several years, and of the research environment, which many believed had declined in recent

years largely as a result of increasing pressure on faculty to raise research funds and a concomitant drop in flexibly-available resources. The committee endorsed the singular mix which MIT had evolved of departments, inter-departmental research programmes and specific laboratories and saw, in particular, research centres on campus as a way to proceed for the next decade; such concepts would be bound to influence the content of the education provided.

But if there are still new academic horizons, however shaky the funding prospects, there is one factor which is causing a lot of worry: changing levels of student enrolment in the next twenty years. Projections for the next ten years by the National Center for Education Statistics of the US Office of Education see a steady growth in bachelors degrees awarded in science and engineering up to 1985, with all the growth taken up in engineering, the life and the social sciences. But thereafter demographic trends take over. The number in the postgraduate age group (22–25) in 1995 will have dropped by 20% compared with 1985. This means not only that some inferior colleges will probably have insufficient students to justify their continuation, but also that even the big names in education will find themselves competing fiercely by 1990 to attract students to justify staffing levels.

And even before 1990 the PhD emerging from an American university is likely to find the world much changed from its present scene. Allan Cartter, in his book *PhDs and the Academic Labor Market*, projects US academic needs for junior faculty for the next twenty years. Whereas before 1970 academe could gobble up every PhD produced, by 1985 on the most optimistic projections (assuming faculty take early retirements and so on) there will only be an academic job for one PhD in every six produced in the United States. The moral is fairly obvious; discourage right now those who believe three or four years research is an admission ticket to a cosy faculty post somewhere; and go on broadening the scope of the PhD so that it becomes a very widely acceptable qualification. Hence the continuing talk of interdisciplinary postgraduate education. □