Planned education or shortage of skills?

In the first of a monthly series of articles, Richard Pearson of the Institute of Manpower Studies outlines the case for planning the supply of skilled students to meet predicted demands.*

ALTHOUGH unemployment in Britain shows no sign of falling, complaints about the shortage of skilled recruits are getting louder. In information technology and microelectronics, employers cannot get the highly qualified staff they need, in biotechnology the "brain drain" is under the spotlight, and universities cannot fill their "new blood" appointments with the quality of staff they would like. In higher education, demand for places by would-be students is at its highest ever level, yet the number of places is being cut back. Can we identify the needs of a successful economy for skilled people and should higher education be geared to meeting those needs?

The fashionable view is that manpower planning does not work and therefore higher education should relate to social needs and student demands. In other words, let the seventeen-year-olds determine the future supply of technical manpower and hence the rate at which we develop the new technologies.

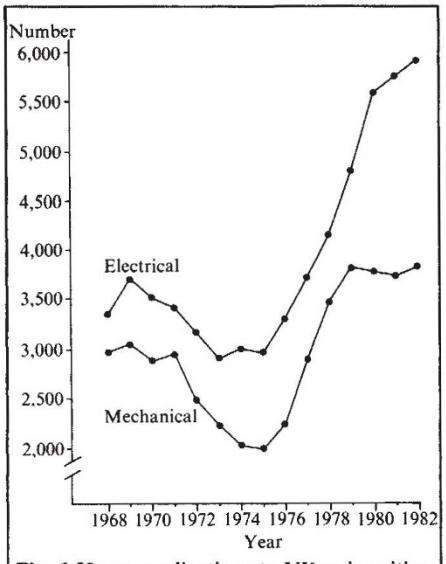

Fig. 1 Home applications to UK universities, 1968–82, for selected engineering subjects. Source: Universities Central Council on Admissions.

Nevertheless, higher education is the route into most skilled technology-based jobs and clearly, with its huge costs, higher education cannot be divorced from economic reality. The recent cuts are forcing educational institutes to look outwards for finance and support. The government, through the "new blood" and "new technology" initiatives, has provided extra, selective support, while the recent report from the Advisory Council for Applied Research and Development highlighted the need for more collaborative ventures. Do we need to be more positive about setting priorities? The answer must be "yes".

In setting priorities in higher education, we should be thinking of a selective group of key disciplines which will probably only account for perhaps one in three of the places. These should be our concern when seeking to relate education to economic or manpower needs. The remaining places can then be set according to social requirements, student demand or other criteria. Providing the places is, of course, not sufficient in itself. They need to be filled by suitable students, which in turn may require us to look at the funding of students, perhaps with differential grants, awards or sponsorships for key subject areas. It also means a stronger commitment by industry to demonstrate its belief in its future, by improving reward structures, and improving its "image" with students and educationalists.

The field of engineering is an example of the "cycle of mismatch" that can develop between supply and demand for skills. The early 1970s brought a cyclical recession; demand for newly-graduating engineers fell dramatically, and some companies were accused of withdrawing job offers; industry was being seen as undesirable and unreliable. Market signals "worked" and the level of application for engineering places fell dramatically (Fig. 1). By 1976 the "great debate" had been initiated, the Finniston report was in preparation, there was a dearth of good engineers, and industry began offering differential starting salaries for graduates, with premiums of up to £1,000 or more being paid for good engineers. Market signals "worked" again and applications began rising.

However, the consequences of the earlier fall were only then beginning to be felt. For example, with a significant decline in the numbers of students qualifying in electrical engineering (Fig. 2), the severe "shortages" of 1978–80 coincided with the low point in the supply cycle. Student numbers were, however, rising again and the output from universities in 1982 had finally recovered to the level of ten years earlier. Although demand has slackened since 1980, companies still have severe shortages of engineers with three to six years experience, essentially those who applied to colleges in 1973–76 and graduated between 1977 and 1980. Thus we have a classic "cobweb" cycle of supply responding to market signals but being four years out of phase, with the negative signals being transmitted particularly quickly.

At least public policy over the 1970s was pushing in the right direction, with pressures to expand the number of places and with innovations such as the enhanced degrees. The 1980s show us the consequences of our decentralized system of priorities. Notionally, engineering and technology were protected in the cuts. Yet with each institution relying on natural wastage and financial belt-tightening, electronics engineering, where costs are high and lecturers can easily find alternative jobs, has declining graduate numbers right up to 1985 (Fig. 2), a time when demand will be growing significantly if there is any marked economic recovery. Shortages will be back with a vengeance, strengthening the need to set national priorities. We need to invest now in manpower and training to meet our technological needs through to the year 2000 and beyond.

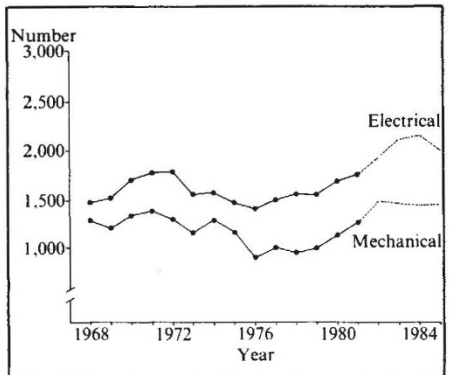

Fig.2 First degree graduates (home students) from universities in 1968-85. Source: Institute of Manpower Studies projections.

Defining these priorities will not be easy; we need better information, and links between employers and those planning higher education. At the same time, we need more flexibility within higher education to allow these priorities to be adjusted to changing needs. There will be costs involved, but the penalties of under-supply must be worse than those of oversupply.

From this perspective, I intend in the months that follow to deal with issues that include the extent and pattern of current shortages, the prospects for future employment and direction for public policy. □

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