

Technicians need new skills

from Richard Pearson

Two recent reports from the Institute of Manpower Studies indicate that the adoption of new technologies in the workplace introduces the need for, but benefits from, retraining of staff, particularly technicians.

A FAILURE to adopt new technology is seen as the one sure way for declining competitiveness in the world economy. The lesson applies equally well for companies and nations, while individuals who do not understand and adapt to the skill needs of the new technologies are also becoming increasingly disadvantaged in the labour market. While the shortage of professional level scientists and technologists has been the focus of many reports in recent months, skill constraints at technician level have been highlighted in the latest Government Skill Shortages report. It says that industry needs to recruit and train twice as many technicians as at present. Equally important is the need to consider the requirements of employees when introducing new technology. Even high-tech pharmaceutical companies are not immune to such difficulties. Thus a research laboratory with all the latest instrumentation for monitoring and analysing data from experiments recently had great difficulty in upgrading the skills of its maintenance staff to enable them to handle the electronics in the new air conditioning and other changes in the plant.

In the United Kingdom the training system has historically been geared to initial training, taking place at the start of an individual's working life, through apprenticeships or higher education, and on and off the job training. However, new skills are needed not only by those just entering the labour market but also by those already in employment. Last month's *Employment* column showed how poorly the United Kingdom compared with its major competitors in relation to investment in such training.

A recent Institute of Manpower Studies (IMS) report¹ has shown the massive increase in skills training likely to be needed when industry does adopt the latest technology. The report, which looked at the adoption of new technology since 1980 in nearly 1,000 companies, shows that so

Table 1 Impact of new technology on skills

	Not at all	Limited	Large
		extent	
Technician	17%	60%	23%
Draughtsmen	44%	46%	10%
Supervisors	13%	69%	18%
Craftsmen	18%	58%	24%

Source, ref. 1.

far the new technologies have had only a limited effect on the skills of employees, as there was still a very low take-up of new technology in areas such as research and development, and in office and administrative functions. While most companies had made some such investment in the production area, very few were yet able to draw on the potential of microelectronics technology in order to integrate several functions across the company, for example, by linking design with production and with sales and materials planning.

The impact on skills has been only limited so far because many employers have sought technology that could be handled by their existing workforce, or the changes involved were marginal or gradual. In addition, some employers had yet to think through the skills implications. The groups most likely to be affected were the technicians, supervisors and foremen, who often experienced an enhancement in status, and engineering craftsmen (Table 1). For these groups a key need was for multi-skilling, a pressure that was increased by recession-induced organizational change which sought to give the companies greater flexibility and reduce job demarcations. To obtain these new skills, the majority of companies had retrained their own staff, a course adopted by over two in three, while one in four sought to recruit such skills from the labour market, and a few used agency staff or temporaries (Table 2). For some groups of workers, especially those with job-specific skills, the new technologies led to de-skilling.

A separate IMS study² shows the experiences and lessons from ten organizations who have successfully adopted microelectronics and retrained the necessary staff. It highlights many of the issues to be resolved, including the identification of training needs, selection of trainees and resourcing the training. Perhaps most interestingly, this study shows how a small injection of training, very often involving courses of no more than five days' duration, provided major benefits. For individuals the returns included increased job satisfaction and improved job prospects, while it also gave them the flexibility and ability to cope with future change. The benefits for the employers included in one case the survival of the company, for others the rapid utilization of new technology, increased competitiveness and the release of high-level skills.

Finding people and organizations to do

the training was not a problem: on the job and off the job training in the company, equipment suppliers, private and public training organizations, colleges and distance learning were all used. Perhaps most interesting was the use by employers of a trade union, the EETPU, which has developed electronics training courses for electricians. These are run at its own training centre and via a mobile instructor service at employers' premises or in local union offices. The courses, which have been attended by over 2,000 trainees from over 200 sponsoring companies, are seen as highly successful because they are practical and geared to electricians who may not have received any formal training for ten years or more. The technology itself is now also becoming a major aid to training, especially computer- and video-based learning, which allows flexible training provision and can let trainees learn at their own speed and at times convenient to them.

The lessons of the case studies are that retraining, as well as improving skills and job performance, can boost employee confidence and commitment to change, and through job redesign increase the utilization of some higher-level skills and reduce

Table 2 Source of new skills

	Retrain	Recruit	Other
Technicians	64%	29%	7%
Draughtsmen	64%	23%	12%
Supervisors	91%	9%	—
Craftsmen	72%	22%	6%

Source, ref. 1.

job demarcations. For retraining to aid the successful introduction of new technology, it does, however, require that top management commitment and employee involvement should be there at the start, and a strategy developed to cope with the long-term need for retraining and continual change.

The costs of retraining need not be high, while the benefits accrue in both the short and the long term. A failure to invest in retraining and change by individuals, employers and nations is, however, a failure to invest in the future. □

1. *Training and Recruitment Effects of Technical Change* (Gower, Aldershot, 1985).

2. *Retraining for Electronics* (NEDO, London, 1985).

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