

TECHNOLOGY AND THE SIXTH-FORM BOY

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THE Oxford University Department of Education has conducted an enquiry* into recruitment from schools into higher scientific and technological education in England and Wales, and has made an attempt at a comparison with the situation in Sweden, Holland and West Germany.

It is sometimes said that boys tend to read some form of applied science or engineering only when they cannot get a place in faculties of pure science, that is, that the best boys read the pure sciences, and the applied sciences get the rejects. The evidence from the enquiry seems to support this view, and to show that in Great Britain pure science attracts three times as many top-grade boys as does engineering, and that the position is reversed in the case of the lowest grade boys; three times as many read for engineering degrees or Diplomas in Technology as for degrees in a pure science. The question was first considered at a colloquium held in March 1961, the members being drawn from schools, universities, colleges of technology, industry and Government departments. This was followed by a one-day conference of school and university teachers in June 1961. Data were then obtained from three main sources: a study of Advanced Level results, questionnaires completed by sixth-form boys, and interviews in schools. The enquiry covered 121 schools and was concerned with 1,459 boys who had taken the Advanced Level examination. Statistics from these examination results showed that about 65 per cent of boys in the top Advanced Level grading went on to read for degrees in pure science and only about 20 per cent to read engineering. In the lower grades, 2-6, the latter percentage rises through 25 per cent for grade 2 to 60 per cent for grade 6, whereas the percentage reading pure science falls from 60 per cent for grade 2 to 20 per cent for grade 6. These figures fully support the view which the enquiry set out to investigate.

However, some agree that it is best for the future technologist to have a basic education in pure science at the university, followed by a practical training in the particular technology in which he is going to work: "The more intellectually able he is, the later should be the stage at which he moves from the field of pure to applied science". Those who take the opposite view say: "for some of the ablest minds the best approach to applied science is a course where problems of application feature strongly at quite an early stage—this may even be the best approach for some of the best pure scientists".

The latter view assumes that there is adequate practical training provided by industry for pure science graduates. It is doubtful whether this is so, and many industries prefer to take future graduates for a year's training before they go on to university. It would be interesting to know what percentage of these trainees, who had chosen pure science as their university course, change to applied science after this year of industrial experience.

The enquirers were also concerned with the reasons for this state of affairs and attempted to discover these by means of questionnaires, interviews, etc. They sought to

find out at what stage boys make the choice between arts and science, and then at what stage they choose a career in pure or applied science. The results showed that the great majority of boys do not seem to make the latter decision until they are in the sixth form. The external factors influencing the choice are listed, and percentages are given of boys who had discussed their careers with parents (94 per cent), subject master (37 per cent), headmaster (34 per cent), careers master (29 per cent), friends (27 per cent), and youth employment officers (17 per cent). Only 12 per cent of the sample said that their choice had been influenced by previous knowledge of the career, that is, through reading, hobbies, vacation work, courses, lectures, etc. Boys' knowledge of technology was vague: on the whole, they think technologists are the products of technical colleges, and confuse them with technicians. Very few knew the abbreviation "C.A.T."

The conclusion seemed to be that a major factor in a boy's choice is the 'public image' of the two careers: scientists, boys believe, are educated at universities, and go on, if they are fortunate, to 'do research'; research is glamorous, interesting, leads to exciting discoveries, is not really 'work' and may well make you famous. Technologists, on the other hand, are educated at technical colleges, have lower social prestige, are less intelligent and well paid, and their work is 'boring'. The authors have been at pains to find out what a boy means by saying that a job is 'interesting' or 'boring' and came to the conclusion that "in most cases, the terms are simply grunts of approval or disapproval and are probably related to the degree of ignorance of the job concerned".

The Right Hon. W. F. Deedes, Minister without Portfolio, thinks parents are largely to blame for the social attitudes and prejudices which govern the choice of professions and careers in Britain. Speaking at a school prize-giving recently, he said that high status was attached to careers in the Foreign Office, the law, the City and natural science. Lower status attached to being an electrician, a salesman or an engineer. "These prejudices are landing us in difficulties. We are becoming chronically short of able young men in the technical professions. There is much talk of the so-called 'brain drain' from science. We have more cause to worry over the failure of British engineering to attract the best young brains."

One thing is very clear. At this critical stage in a boy's life, the transition from school to higher education, the sixth-former is in very serious need of more information, counsel and guidance. Every school with a sizeable sixth form should have a careers master who is given the facilities to do the job properly, that is, time-off and secretarial assistance. He could probably not teach more than half a timetable, if that. Headmasters, form-masters, house-masters have not the time to make themselves knowledgeable in this field, nor to pass on the necessary information to the boys. Lectures, films, visits, short courses in the holidays, in addition to repeated personal interviews with each boy during the whole of his sixth-form period, are needed.

Britain's need for technologists is well known; are the amateurish and haphazard ways in which boys enter technological training equally well known?

* *Technology and the Sixth Form Boy: a Study of Recruitment to Higher Scientific and Technical Education in England and Wales*. Pp. 1+57. (Oxford: Oxford University Department of Education, 1963.)