

Our educational system and the attitudes and values upon which much of it has been predicated, has, in my view, for centuries been disjunctive with the real needs of an industrialised society. Yet it is beyond dispute that industrialisation on the whole yields enormous benefits and a much more comfortable standard of living. One has only to look now at Third World nations where semi-starvation, if not total starvation, is the lot of many unfortunate souls, to be reminded of hardships suffered wholesale in pre-industrialised Britain.

Whilst, I suppose, it can be rightly claimed that classical education benefitted those whom we sent abroad to rule the Empire, with considerable success, it is also true, as Snow pointed out, that:

'If our ancestors had invested talent in the industrial revolution instead of the Indian Empire, we might be more soundly based now. But they didn't.'

Twenty five years ago, C.P. Snow wrote his famous essay entitled 'The Two Cultures', in which he described the sharp distinction between arts and science based education as we know it in Britain, and particularly the problems that arise when science and applied science are treated as second rate academic pursuits. Snow's thesis has come to be interpreted as being about our educational system rather than about the 'rich and poor', which was the concluding emphasis that Snow made.

Is it still applicable today?

To retreat much further back in time to the early seventeenth century, Francis Bacon (a great thinker of his time who became Lord Chancellor) wrote about his conception of a technological society; others echoed his views in later years. Bacon, a great philosopher of industrial science, spent much of his life seeking to promote and institutionalise science. However, he thought that Universities, as he knew them, were unsuitable for this purpose because they were strongholds of orthodoxy. Now, in twentieth century Britain, we have excellent technology faculties in our Universities and colleges, and moreover they have sufficient autonomy to decide their own academic curricula.

Now, we have no Empire to worry about, we have a manufacturing industry of the 'smokestack' kind that is declining, an Information Technology/Micro-electronics industry that is growing at an accelerating rate, and an educational system that needs a renaissance.

The future will be characterised by rapid change causing severe social and political problems. Already we have over three million people unemployed and before this transient effect (hopefully it is transient) dies out, more will suffer the same indignity. New industries are beginning to emerge and new work styles will develop as a result of new technology. For example, vast improvements in telecommunications will enable decentralisation since people will be able to work in more dispersed and smaller groups, perhaps from their own homes, on account of effective communications being available. All of this has started to happen. What kind of educational system is appropriate?

In my opinion, Snow's message is even more applicable now than it was 25 years ago, since to meet the needs of a more technologically based society, we need people to be 'literate' in the humanities and the sciences. At junior level the three R's will need to be expanded to include computing/micro-electronics but over-specialisation is the great bogey. This must be avoided by curricula design which includes components from both cultures - a blend of humanities and technology is needed to cross the cultural divide.

Furthermore, education needs to be seen as a life-long process which can be accessed on a number of occasions throughout life, and not as it is now for most students terminated at the age of 16.

All of this implies the need for funding to buy equipment, to retrain staff, to write new learning materials, etc. A number of important initiatives have already been successful in Britain - I shall mention two:

According to the Guardian (18.12.84), Britain's schools now have more than 100,000 computers which amounts to more per head than is found in any other nation. By February '85 more than 97 per cent of primary schools will have at least one microcomputer, and the average numbers per secondary school will have passed 10.

The Government began its micros in schools campaign in April '81, aiming first at secondary schools and eventually extending the scheme to primary schools. Central government provided half the cost and local education authorities or other local sources the rest.

The success of this project indicates positive political will at institutional level, and individual interest in meeting the challenge of new technology. It is consistent with the current rate of home ownership of computers, and incidentally videos, by the British public, which is reported as being greater than for any other nation.

One outstanding example of success in the field of continuing education is the Open University, which in very recent years, having established their undergraduate program, have now offered many one-off courses ranging across the whole academic spectrum from humanities to science and technology. Some of these could be classified as of broad educational interest, whereas others are intended to meet very special particular needs, e.g. professional updating in some area of science or technology. Examples of the latter are two M.Sc. courses (The Industrial Application of Computers, and Manufacturing), both of which were designed and created jointly by the Open University and the Science Engineering Research Council. This is an interesting example of co-operation between two national institutions and is a pointer for the future - we need co-operation and integration at a national level.

What Bacon wanted has to a large extent been achieved - we do have excellent institutions for science and technology, though it must be emphasised that the status accorded to these hitherto in Britain, particularly England, has been inferior, and this is a reflection of the two culture syndrome which still exists today despite many advances.

What Snow wanted has not been achieved and now it is most important that we address the two culture problem.