

'To provide for the Nation'

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Anthony Wood is a consultant and the project manager for 'Understanding Industry' (UI). This article is an abridged version of a presentation given to 'STEEL' (Science, Technology and Engineering Education in Lancashire) earlier this year. The theme of the conference which was principally attended by teachers was 'science and technology education in secondary schools, post 1984, with special reference to micro electronics'.

The title of this brief piece is taken from John Ruskin's writings, in which he argues that the role of the manufacturer and the trader in society is to 'provide for the nation' — just as the physician's role is to 'keep it in health' and the soldier's to 'defend it'.

If the generation now going through school is to be properly equipped to 'provide for the nation' each student needs to be told, and to believe, what previous generations were never told and certainly do not believe — namely that Britain is a trading nation and that we sustain our civilised way of life by being able to pay for it. Given that we must import 40% of our food and are largely deficient in raw materials (except, to a limited extent, coal and oil) this means we have to use our native wit and skill in the production and sale of goods and services.

The purpose therefore of these thoughts is to examine what qualities and skills our young people will need in order to execute this task successfully and to survey, briefly, the kind of curriculum the teaching profession should be championing.

The list of possible skills is, of course, exhaustive but I would like to comment on those I feel are important. All of them assume a basically sound education, devoid of what Sir Keith Joseph has called 'clutter' and quite some way away from a purist academic approach to knowledge. First, there has to be an obsession with the standards. In manufacturing terms this means quality; quality of product and quality of service.

Next, our young people need to be adept at the skill of innovation — not in theory — but in practice. This is largely an attitude of mind and requires practice and the right conditions to flourish.

Many of those achieving aca-

demical success will become, perforce, the managers and leaders of our organisations. They will need to develop the skill of leading from the front, of being regularly seen down the pit, on the manufacturing floor, on the site.

We live generally in an anti-business culture and this in turn generates apathy to the key business skill of enterprise. This apathy contrasts oddly with what we know in our hearts namely, that the only adequate solution to unemployment is for a million of the next generation of young people to start small businesses and employ as few as four people each. Reckless, dangerous, risky? Of course, if it were not so it would not be an 'enterprise' activity, but a soft option for everybody. Finally, on skills, we should start to build the gentle art of 'problem solving' into the development cycle of all students.

Alongside these skills our young providers will need certain qualities. Flexibility; good effective human relations; belief in the worthwhileness of the cause; a sense of service to the customer (not to be confused as it so often is with servility) and the confidence to make decisions, are the kinds of personality traits that the commercial world requires. How different from those demanded by the examiner. Set out in the table below are the hallmarks of educational attainment compared with the equivalent for the commercial sector. It is worrying to see the sharpness of the contrast.

Academic Success involves

Largely solitary study
Generally uninterrupted work
Concentration on a single subject
Much written work
A high analytical ability

Commercial Success involves

Working with others
Constant distractions
Different levels across different disciplines
Mainly verbal skills
Problem solving and decision making

By this time the reader may be daunted by the extent of the demands being made. However the irony is that it is in the development of these skills and qualities that education can find itself.

We clearly need to revolutionise the educational system so that it genuinely caters for the

98% of the student population who will not go on to Higher or Further Education. This means fundamental changes to the present curriculum, which is University dominated and designed to bring on as fast as possible the already talented 2% minority.

Is it all worth it? Is this 'revolution' with all the uncertainty as to its success and the challenge it presents to vested interests, really required? Yes — for three reasons:

- 1 The students need it.
- 2 The system has failed our 'trading nation'
- 3 The change will come anyway.

In education, as in all aspects of our Society 'the moving finger writes and having writ moves on, Nor all your piety or wit can change one line nor all your tears wash out one line of it'.

Before discussing just a few of the curriculum initiatives which the business world would wish to support, I must make it clear that style of presentation is as important as content. That is to say that the curriculum must be confidence building rather than, as now, a continuous exercise in fault finding. Every lesson and every day must have a purpose. It is very easy for educators to lose sight of an essential ingredient of successful teaching, namely, 'the promotion and maintenance of the desire to learn'. Students do not necessarily want to learn — however interesting the topic appears to the tutor. Subjects should not be contained in watertight compartments; cross-curricula studies, such as design, should feature. Interestingly enough the CNA is currently considering design as a mandatory subject for some of its degree courses.

Essential to the new curriculum will also be the maintenance of science subjects for all children to the age of 16. It is simply not possible for any 'educated' young person to operate in our society without having an adequate grasp and 'esteem' for the technical dimension. The next point follows on logically from this. Alone of all the major industrialised countries we force our young people to specialise too early. Neither the French *Baccalaureat*, the Japanese leaving certificate or the German *Abiteur* do this. They leave specialisation as late as possible and this must make sense when we consider

that young people are more mature in their late teens and the factual content of many subjects is changing so fast. Other than in some of the universities that is little argument with this view point and it is in the interest of education and commerce alike that the proposed Advance Supplementary Level (AS) is fully developed and comes to fruition.

Finally, our young people need a curriculum which pays less attention to written work and more to verbal skills. In adult and business life only a small percentage of our effectiveness is dependant on written work. Most of what we do (and what we are) is communicated by the spoken word. If we do not continuously develop this skill in our young people we send them out into the adult world 'half-naked'.

The project which I am fortunate enough to manage (Understanding Industry) is committed to helping those who continue with education after 16 plus to make the transfer into the working world as successfully as possible. To this end we have recently published our new book entitled *Understanding Industry Today* and this is being greeted with enthusiasm and interest by both students, teachers and managers. If the thoughts set out in this article contribute in some small way to the same cause then that is all to the good.

In conclusion I would like to comment upon the strangest aspect of the 'schools/industry links' phenomenon. So often the two sides appear to be in conflict but, I would like to suggest, that at the heart of the matter they are not. They are both interested in the full development of the individual. As someone recently said 'the centre of economics is man'. Similarly Sir Hector Laing talking about social responsibility said 'Whilst profits are of course an essential operating requirement of business, they are not its sole purpose — the ultimate responsibility of business is to serve society'. We could add — by providing for it.

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