PARTNERSHIP: EDUCATIONAL INSTITUTIONS AND INDUSTRY

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The Commonwealth Asian Regional Seminar on Technical Education and Industry held in Hong Kong in October 1976 put forward a comprehensive range of recommendations relating to partnership between technical education and industry. In the short time that has elapsed since then the issues identified at that seminar have sharpened. In developing and developed countries alike, the need for changes in educational systems are even more clearly recognized than before, and it is accepted that systems and models that have been regarded traditionally as necessary no longer satisfy the changing needs of society. The acute shortages of skills and of technicians, coupled with under-employment in the developing countries, have their counterparts in developed countries. They, too, have a chronic shortage of skills in some areas, and unemployment, especially amongst the young and the less able.

Criticism of education for not delivering the goods is much more in evidence than it was; there is no longer a willingness on the part of politicians or the general public to give an almost unquestioned social priority to education. The aims and objectives, and especially the cost effectiveness of education, come under increasingly close scrutiny. If it can be said that there is one common theme in the questioning of education it is that the education service should be responsive - responsive, that is, to the needs of society, to personal needs, and to the needs of industry. Response and responsibility are the two key requirements of education. A good part of that response and responsibility has to be seen as a search for a partnership with the various interests that education serves.

In the United Kingdom in recent months there has been a wide-ranging debate on objectives and methods in schools, culminating in the publication of a consultative document Education in our Schools. There has been a discussion document on Education, Industry and Management sponsored by four government departments. The Manpower Services Commission has initiated a substantial programme to help alleviate problems of youth unemployment and has made proposals for dealing with training for skills in areas of vital need. There has been an important government report on demographic trends in higher education, and a significant report on management of higher education. Each one of these initiatives would be impressive in itself; coming together, they indicate not only a new and challenging climate for education and training but an emphasis upon the need for partnership. This paper attempts no more than a brief survey of some of the concerns that relate to partnership between educational institutions and industry and some reference to some of the relevant steps that have been or are being taken in the United Kingdom.

The Schools

The so-called "great debate" on education in the UK, which still continues in the consultative phases, was basically concerned with issues of curriculum and especially with the relevance and applicability of knowledge and attitudes engendered through the curriculum. The recent Taylor Report on governance and management of schools has made strong recommendations for much greater involvement by parents and by those who might be said to bring into schools something of the dimensions of the world of work. The recommenda-

tions do not go as far as seeking to take away from teachers the control of curriculum but, inevitably, they move in a direction in which there would be greater questioning of curriculum by outside interests. What is apparent, both in the "great debate" and in the issues discussed at length in the Taylor Report, are concerns about standards in schools, about curriculum and about relationships between schools and society. The three most essential questions seem to be: One, are standards adequate? Two, does the curriculum provide the right balance of content and skills to fit young people to meet the demands that will be placed upon them? Three, how can schools develop and maintain those necessary relationships with the community and society at large to ensure that they are responsive to need? Faced with questions like these it is easy to take refuge in generalities and platitudes, and to draw up demands that would place intolerable burdens upon teachers and administrators alike. Indeed, it is possible to point to too many instances, in too many countries, of generalized recommendations aimed at improving the curriculum in schools, or interaction between schools and industry, that have come to nothing precisely because they were too generalized or lacked the means for effective follow up. I will refer to three initiatives in the United Kingdom, not because it should be claimed that these are applicable in other countries but because they seem to identify areas of general concern and illustrate a practical, although limited, response to those concerns.

Schools Curriculum

The first set of initiatives is in relation to the schools curriculum. Action here has been at two levels. Firstly, the need has been recognized for developing in schools a better understanding of industry in relation to society. Both the Schools Council and the Confederation of British Industry are actively at work producing teaching materials which, it is hoped, will be of benefit to schools in bringing about a better appreciation of the basis of our industrial society, the social effects of technology, and the importance of industry to the economy as a whole. It is not remarkable that, in an industrial society, the need should be felt to indicate in some way the nature of that society in the schools curriculum. What is remarkable is that it does not seem to have been done before.

These initiatives need not necessarily relate to the basic curriculum. It is here that work of the Engineering Industry Training Board, amongst others, is of significance. The Board has proposed examples by which the basic mathematics curriculum can be related directly to engineering. This work is important in that it illustrates how effective bridges may be built between theory and practice at a non-sophisticated level. It could be said that this is precisely what good teaching has always meant. Perhaps that is so, but there have been too many examples in recent years of a divorce between the basic curriculum and its application. The EITB initiative is a good example of the sort of partnership between industry and schools that illustrates how help may be given in practical yet imaginative ways. In the same connection reference should be made to a survey carried out of the use of basic numeracy skills in industry. In other words, what arithmetical, mathematical tasks are called for in the world of work? This question is an important one for all employees and particularly for the well-being and the job satisfaction of young employees. The survey - which was a limited and inexpensive one - has rightly emphasized the factors that the curriculum ought to reflect rather than the examinations that so often dominate the curriculum.

Schools and Industry

The second set of initiatives is concerned with both curriculum and attitudes.

The Standing Conference on Schools Science and Technology, through a number of regional organizations, is bringing about a wider appreciation of the need for more bridges between schools and industry. The results of the work of these organizations is to be seen in curriculum projects, in project work in industry, and in joint studies of curriculum by staff from schools and industry. The British Institute of Management has sponsored a number of "twinning" arrangements in which a senior manager links with the head of a school so that the two organizations are brought closer together in an understanding of mutual problems and needs. This is not a device for helping in the recruitment of staff for industry: it is an arrangement that helps to form attitudes which close the unfortunate and unnecessary gap between schools and the world of work.

Teacher Training

The third set of initiatives is aimed at opening up the closed cycle of teacher training. Far too many teachers, especially those in school, have no experience of a work situation outside of education. The cycle from school, to college or university, and back to school is a closed one. However open and receptive teachers may be, all too often they have a very limited understanding both of the demands of industry and of the working environment outside of education. Some efforts are now being made to bring about a better understanding by having students in a teacher training course spend a period of time in an industrial setting (regarded as a part of the total training period within the course) and by placing lecturers from the colleges in industry for curriculum development projects. The latter placements are additionally important in helping to bring together the teacher trainees and the training staff from industry. Exchanges of opinion on pedagogic methods used in training in industry and in teaching in colleges and schools are certain to be fruitful, even if initially they are a little difficult.

The Post-Secondary Sector

The initiatives mentioned above are important because they are based on practical co-operation at a level at which co-operation brings about better mutual understanding. When the post-secondary system is considered, many examples of partnership between industry and education can be seen. Indeed, by the very nature of many of the courses, there has to be a much more direct relationship between education and the world of work. But before considering the post-secondary system, let us stop to ask ourselves about the nature of the partnership between education and industry. For it is a partnership that is challenged in some quarters on two grounds. The first of these is that it is not the task of education to produce fodder for machines. That may seem a crude way of putting it, but the argument is often put crudely. Put another way, the claim is that in seeking to meet the needs of employers (whether these are private or the state) the freedoms that must be inherent in education are circumscribed and the opportunities for personal development are curtailed. Or, at another level, the claim is that vocationalism results in crabbed and restricted curricula. The second ground upon which partnership is challenged lies in the failure of manpower planning to forecast future needs correctly and with confidence. The claim made is that there are great dangers in gearing the education system to meet the future needs of the economy as they are perceived now, since this will mean educating for unemployment. Expectations will be aroused that cannot be met given the impossibility, using present techniques, of accurately forecasting future manpower needs.

Both of these arguments must be taken very seriously and they must be answered; indeed, they can be answered, and the answers will show us

something of the nature of the partnership that should exist between education and industry.

The Need for Partnership

In considering the arguments for partnership, let us very briefly begin by referring to some of the considerations that are basic to post-secondary education. First of all, there can be no evasion of responsibility for application of knowledge and techniques. Those who teach techniques and skills, those who impart knowledge, and those who discover new knowledge, must in teaching these things to mature adults accept a responsibility for the ways in which these things will be applied. It would be foolish to claim that teachers must accept total responsibility. That is not what is being said. But, at the very least, there must be an understanding of what is happening in that world outside of education, and a concern about the way that knowledge and skills are put to work. That requires some continuing contacts, some effort at mutual understanding. Indeed, where the professions are involved, there must be a deeper and greater responsibility. Professional competence is certified, apart from the teaching profession itself, by authorities outside of education. But those who teach for a profession have a direct responsibility for the standards of that profession.

Second, in whole areas of interest, especially in the technologies and the professions, advances in knowledge and the development of skills take place outside educational institutions. If teaching staff were cut off from direct contact with the world of work, they themselves would quickly become hopelessly out of date and their teaching would become unreal. Indeed, there are too many instances where this does happen. Individuals, as well as the curriculum, become out of touch, stale and unimaginative. Third, it is undeniable that a high proportion of those students who enter post-secondary education do so in order to obtain saleable skills. Indeed, many claims are made by those who recruit students into post-secondary courses about the value of the saleable skills provided by their courses. Such claims can only be sustained if those who make them have direct relationships with the market they are claiming to serve. Fourth, there is an argument of accountability. The post-secondary system, where it is financed by public money (as it usually is) is accountable for its spending. There are many arguments about the nature of that accountability. But it is not acceptable for post-secondary educational institutions to take public money and then proceed in isolation from the society that provides it. There can be claims for freedom, yes, but not claims for isolation. There must be interaction, and there must be an account given of the stewardship of public money.

Even when the interests of industry are not taken into account, a partnership between education and the world of work is necessary to keep teaching staff well motivated and effective in their teaching and to keep course curricula up to date and alive. This needs to be said because, all too often, there is a reluctance to recognize the true nature of the necessary partnership between education and industry. It is indeed a partnership, not a master-servant relationship or a demand-supply relationship. Having said this, let us return to practicalities. What initiatives in the post-secondary sector might be of interest and value? Again, examples are taken from the UK for no other reason than that these are the ones the writer is most familar with. It is hoped that they illustrate some principles of general applicability.

Course Validation

My first reference may be considered surprising by some, given the emphasis in some of the more stirring exhortations to develop relationships between

education and industry. It is concerned wtih validation of courses.

It is common enough for colleges to set up advisory committees, with a strong representation from employers, to advise upon the development of courses. Such committees can play a useful role in encouraging relationships between colleges and the world of work. But it is a limited role, although a most necessary one. In the UK a clear distinction is made between the advisory functions excercised by advisory committees (in which there will be, often enough, a substantial industrial presence) and validating functions that are concerned with authorizing a course in terms of its standards, its content and its resources. That authority is largely vested (apart from the involvement in some courses of professional bodies) in three national bodies: the Council for National Academic Awards, the Technician Education Council, and the Business Education Council. The first is responsible for the award of degrees and postgraduate qualifications on a massive scale in non-university institutions; the other two are concerned with qualifications at technician level. In all three there is a substantial involvement of persons from industry and commerce and from the professions. In making decisions upon standards and content, and in regularly monitoring them, those from industry, commerce and the professions come into regular and direct contact with teaching staff and with the colleges. The value of this partnership in developing curricula and course objectives cannot be over-rated. This direct relationship with the colleges is different from the partnership relationship existing, for example, in and through the City and Guilds of London Institute, for that body is largely concerned with prescribing curriculum and standards, a most valuable and valued activity but one which does not involve such a direct relationship with teaching and with the development of resources as do the other bodies. Validation in the non-university sector in the UK is dependent, therefore, upon a substantial involvement of those from industry, commerce and the professions. Without this involvement, the validation process would lose credibility.

However, external validation is not the only activity in which those who are directly involved in education are involved. Increasingly, colleges, and especially the polytechnics, are calling upon outside advisers, from industry, to be directly involved in the initial planning of courses. This involvement is valuable because it brings in, at a very early stage of thinking, the views of those outside the institution who are professionally involved in the subjects under discussion. The assistance of outside contributors has been particularly helpful in the development of multidisciplinary courses.

Education and Training for the Less Able

A great deal of attention has been focussed over the past years upon the transition from school to work. In any society, this can be difficult, particularly so for the less able young person. Where there are well developed training schemes in industry, with associated courses of post-secondary education, these are generally for the more able. It is with the needs of the less able in mind - those who have not generally received any systematic training or regular post-secondary education - that a number of current initiatives in the UK are concerned. Of considerable interest among them are pilot schemes of unified vocational preparation now being worked out and implemented by a number of colleges in association with representatives of industry and with the help of the Manpower Services Commission, the careers service, and industry training boards. The significant features of these schemes is that they combine educational elements with training. Work experience runs alongside basic relevant education, and all that is done is seen to be relevant to a job. Such schemes can work only by being based upon the closest co-operation between employers and a college and by

having a close analysis of job needs. Motivation of the student is all important and teaching staff, too, must be fully committed to teaching students not previously recruited into colleges. These schemes are helped by the work of the Further Education Curriculum Review and Development Unit, which has been established by the Department of Education and Science to provide a central focus for aspects of curriculum development in the post-secondary sector.

Visiting Staff

It is common practice in colleges to make use of visiting staff who undertake teaching as a part-time activity whilst having a major commitment in some other area of employment. All too often such staff are made use of in a somewhat restricted role and do not participate in a significant way in the development of curriculum or of policy for academic development. Also in many cases, opportunities for strengthening contacts with industrial and other organizations, through visiting staff, are not pursued with any determination on either side. This is a great pity. The presence of visiting staff, many of them having positions of responsibility in industrial and commercial organizations, should be looked upon as a great asset to be nurtured and made use of for mutual benefit. Such staff should be brought more into curriculum and course development, and their views and help should be sought, on a more regular basis, to strengthen relationships between a college and the various interests it serves. Where this has been done in colleges in the UK - for example by a direct involvement in course planning committees, in advisory committees, and by creating opportunities for visiting staff to meet with senior management of the college - a great deal of benefit has accrued.

Short Courses

In one particular area of activity, partnership between education and industry and the professions has been found to be essential. This is in providing short courses for updating purposes. These courses are an important means of bringing people from industry and the professions into colleges; they also bring together teaching staff and their professional counterparts from outside education; and they may well be a source of considerable income which may be put to work elsewhere within the college. However, these courses must be planned carefully in terms of resources, staff development and areas of need. Some colleges and polytechnics in the UK have found it helpful to have a small central unit concerned with the planning and provision of short courses. Others leave the task to teaching departments, whilst maintaining a close central monitoring on what is achieved year by year. What is clear is that a considerable service can be offered to industry, commerce and the professions through short courses, and that involvement in short courses can make a significant contribution to staff development within the college. In a similar way, consultancy by staff from industry can contribute both to the needs of industry and to staff development. Again, some colleges have found it helpful to centralize some part of their activities in this field.

Sandwich Courses

Sandwich courses (and part-time courses) have long been regarded as the epitome of partnership between industry and education. There are now in the UK some 55,000 students following sandwich courses in higher education, and there is some evidence to indicate that the capacity of employers to provide training places (alongside their other very considerable commitment to training) is approaching the point of saturation. Partly because of this, and also in order to ensure that those involved with sandwich courses are

able to make the best decisions about their future development, the Manpower Services Commission in the UK, after discussions with the Department of Education and Science, has established a Sandwich Course Information Committee. This small, national committee will assist and advise the Manpower Services Commission in making available an analysis of relevant information and statistics on industrial and educational trends. The committee has only recently been established, and it will be some months before its first bulletin is published. It is hoped, however, that the information and analysis it will provide will enable colleges and employers to be more aware of trends that must influence the availability of training places, the demand for places, new industrial needs, and other issues that have a direct bearing upon the provision and development of sandwich courses.

These examples of partnership between industry and education in the post-secondary sector in the UK are intended neither to be exhaustive nor to be held up as examples for others to follow. They are illustrative of the kind of initiatives that, in one way or another, must be developed to involve employers, colleges and national bodies. They have been referred to in order to underline the need for a variety of actions to be taken in strengthening the necessary partnership between education and industry. The very diversity of action taken indicates the range of needs to be met. These needs are significant, whether we are concerned with a buoyant growth in high technology, a stagnant industrial economy, or a developing economy with its changing mix of labour-intensive and capital-intensive needs and limited base of existing technician and craft skills. At the earlier meeting in Hong Kong a number of significant recommendations were made which have yet to be acted upon firmly and in their entirety. Much remains to be done to restore or to establish the primacy of vocational education. This is a task which has to be undertaken imaginatively, sympathetically and with vision at all levels of education. We, who are concerned with education and training of technicians and of craftsmen, are not desirous of putting education into a strait-jacket of utilitarianism. Our tasks are to liberate education from a narrow and abstract isolation, to encourage flexible attitudes and skills, to provide for full personal and national economic development, and to ensure a responsiveness to the needs of society. These tasks are ongoing and demanding; they call for continual re-appraisal of methods, content and relationships. In this reappraisal, we can, by sharing our experience, help to promote a closer partnership between education and industry throughout the Commonwealth.

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