

## V. THE COSTS OF EDUCATION AND THE SUPPLY OF TEACHERS

Education absorbs a substantial proportion of public expenditure in every country. The amount of public funds devoted to institutionalised formal education frequently reaches five per cent of the gross national product and in some countries may represent more than a quarter of the government's annual recurrent expenditure. In addition to this there are numerous other inputs to education from a range of international aid agencies and foundations, local government authorities, voluntary groups, commerce, industry and private individuals, predominantly parents. Beyond these tangible inputs are the opportunity costs of education, the value of work and services not undertaken because of the allocation of human and material resources to education. Education in Commonwealth countries is also the largest single employer of educated manpower. In the developing countries perhaps ninety per cent of the output from post-primary education returns to serve in the educational system; even in Britain two thirds of all graduates are employed directly or indirectly by the government, mostly in education.

The returns are not clear cut. In the developing countries this huge expenditure may well be devoted to paying an underqualified teaching force to teach half the child population, half or whom may drop out before the end of the basic course. In the more industrialised countries improved educational provision pushes up entry qualifications for employment and results in disappointment and disillusionment among those whose investment in education does not appear to have paid off in terms of obtaining employment commensurate with expectations.

Ten years ago the concept of education as an investment enjoyed a renewed popularity; its most optimistic manifestation was probably the report of the Ashby Commission in Nigeria, which took Investment in Education as its title. Unesco conferences of the same period looked forward to universal primary education in every country by 1980 as an essential contribution to economic growth. By 1968 the prospect had already clouded when African states met in Nairobi to review progress. In 1972 the World Bank concluded that it was impossible to measure accurately the economic returns accruing to any country as a direct result of expenditure on education. Economic growth and education may be interdependent but there is no longer general agreement about the degree to which each inspires the other.

Education, it is true, is more than an instrument to speed the rate of economic growth, but the reaction against high expectations in this area can prejudice the development of education for broader purposes, for individual fulfilment and social improvement. The need now is more urgent than ever to ensure the maximum use of available resources.

### The costs of education

Perhaps no country knows what education costs; each contributor knows his own input and may be aware of one or two others, but the overall commitment to education directly, indirectly and in benefits foregone presents a complex picture which it may be impossible to determine in every detail.

The Fifth Commonwealth Education Conference, meeting in 1971, noted the desirability of each country establishing with as much accuracy as

possible the scale of overall costs of its educational provision but accepted that some disadvantages could result from the undertaking this operation and the publication of findings. Unless similar comprehensive costings for other areas of public expenditure, especially on other social services, are available for comparison, the impression may be given that education absorbs an undue proportion of national wealth. A practical problem, too, has arisen in at least one instance when a developing country undertook such a costing and was subsequently refused financial assistance by an international agency which suggested that greater efficiency within the existing resources would obviate the need for external assistance for the project in question. The country appeared in this case to suffer from its enterprise.

In essence, it is true that the problem for most countries, developing and industrialised, is less one of seeking additional resources than redeploying existing resources to the best effect to meet current and anticipated needs. An essential function of the educator and the teachers' organisations is to advise governments as to how national education objectives can be met and national education policies implemented within the constraints of the existing resources. Since education consists of the interaction of learners with their teachers and teaching materials, and is supported by other resources both human and material, effective redeployment requires that each of these be considered separately and as a whole.

(a) Education objectives

The effectiveness and economy of education can be assessed mainly in relation to declared ends. In the past, and increasingly in recent years, those responsible for creating educational policies have striven to keep pace with a rapidly changing situation, often failing to recognise the inevitable time lag in education between the creation of policy and the emergence of the first output. Medium and long-term strategic planning appear essential for the economic operation of an educational system, with inbuilt provision for ongoing moderation and periodic cross-sectional evaluation to enable adjustments to be made. Too many development plans have been allowed to run their full courses before any assessment of their success has been attempted. This inflexibility can only lead to a wasteful use of resources.

(b) The cost of teachers

Education is a labour-intensive undertaking and if it is to fulfil the wider roles expected of it then it will remain labour-intensive. This being so, the greatest proportion of educational expenditure can be expected to be absorbed in staff costs, with expenditure on capital facilities and material resources figuring less prominently. Means could be sought, however, to ensure that the maximum effective use is made of the resources devoted to staff.

Paying teachers inadequately is counter productive. If teaching as a profession is seen to be underpaid, it will not attract the best quality of entrant and both the profession and the service will suffer. Yet, in the developing countries, unbalanced income structures between those working in the modern and the traditional sectors of the economy lead to severe problems of paying teachers enough to maintain their prestige without being disproportionate to their service to the community. Better qualified teachers cost more than the less qualified, but the relative returns from their work is not always easy to measure. Large classes in developing countries are

usually regarded as a necessary evil, and efforts to reduce pupil/teacher ratios may not be realistic. It may well be more profitable to consider the support that can be given to hard-pressed teachers in terms of structured materials and auxiliary staff.

It must be assumed in most countries of the Commonwealth, more and less developed, that the educational standard of new entrants to teaching will rise as educational systems develop. These teachers will expect benefits commensurate with their qualifications and should therefore be deployed to the best purpose. Good teachers, resourceful and self-reliant, skilled and competent, have a "multiplier" effect in that they produce higher quality school leavers and can diffuse their influence widely through their profession as well as through the community in which they work. In turn, good teachers can be produced only if good training facilities and competent teacher educators are available; and these, too, cost money.

Concern is sometimes expressed at the rate of wastage from the profession. In some of the more developed countries, for example, the average professional life of an infant's teacher on her first entry to the profession is less than three years. This is not necessarily an uneconomic investment. In addition to her personal benefit from her further education and professional training she has an added competence in bringing up her own children and may well return to teaching later. To some extent the professional training of teachers must be regarded as an element in the overall educational provision of the country. What is less defensible educationally and must militate against the quality of the product is the rapid rate of turnover of staff in less attractive schools and areas - remote rural areas and inner city districts, especially - which leads to the situation that the pupils most in need of stability and competence in their education receive a succession of inexperienced young teachers, those least able to help them. This situation can be resolved only by a realistic appreciation that teachers serving in special circumstances may require compensation for so doing.

One other form of wastage should be noted. In many countries the only way in which the value of competent teachers can be recognised is by advancing them to a different type of job. Salary structures should be sufficiently flexible to provide motivation for effective teachers to remain in the sort of post where they can serve best. Outstanding classroom teachers, for example, in some countries are recognised and reimbursed as "master teachers" and made responsible for the guidance of less experienced colleagues.

Most developing countries still have time to reduce the future burden of teachers' pension costs. At present many teachers leave the service before qualifying for pension; of those who do qualify many are untrained or of low professional standing and so receive only modest pensions. Were countries to establish without delay pension funds, perhaps with a substantial initial investment, it is likely in many cases that the funds would acculuate to considerable dimensions before they became subject to substantial claims. In any case, the burden of paying pensions from recurrent revenue would be reduced.

### (c) Material Resources

On average, about eighty per cent of the costs of schooling are absorbed in salaries and allowances and it is debatable whether this

proportion can or should be materially altered. The problem is therefore to make the best use of available resources for buildings and equipment.

(i) Buildings

Much useful work has been carried out in the design of educational buildings in order to achieve a reasonable balance between function and cost. Modular construction, elements of prefabrication and local materials have been investigated and found useful. Reconsideration has been given to the numbers and type of buildings required in an educational complex and to the optimum size of various institutions. In some places, educational establishments share a common site and facilities. Economy has been found possible without prejudice to the quality of education. Occasional bonuses have been found, too, as when otherwise unemployed young people are trained to erect prefabricated buildings and local industry is developed to produce standard components. The information with regard to educational buildings currently available through Unesco and the Commonwealth Secretariat provides practical guidance to governments and other agencies responsible for educational buildings.

More intensive use could be made of many educational buildings, from the use of universities in the vacation for training courses, conferences and conventions to the use of schools for adult education or community activities. The concept of the village college, now forty years old, still has much to offer.

Other educational buildings absorb considerable funds. The provision of housing for teachers may be a prime means of encouraging service in difficult areas and capital may have to be used for this purpose, although many governments now expect teachers and government officers to house themselves. A greater use of local materials can often help to reduce costs while maintaining acceptable standards. Science laboratories and workshops absorb considerable capital; indeed, one of the main reasons why scientific and technical subjects have not gained greater prominence is because they cost so much more to provide. It is not infrequent for expenditure on specialist provision to be unnecessarily excessive, because facilities suitable for the most advanced techniques are often incorrectly considered to be a standard requirement. The provision of boarding accommodation for students should be reviewed from time to time as facilities become available for them to live outside the institution in acceptable conditions; many countries are now moving towards a minimum of residential accommodation.

(ii) Equipment

Recent experience tends to show that sophisticated technologies rarely reduce unit costs of education even though they may help to improve educational quality. Before educational authorities devote resources on a large scale to such technologies they should make sure that optimum use is made of simpler aids, beginning with books and printed material.

The local production of books can lend increased meaning to the content of teaching and may not be uneconomic even for short runs provided that simple printing processes are used. In many cases, cheaper books which can be replaced regularly are of more benefit to education than indestructible books which militate against syllabus revision. A major problem in developing countries is that too few authors offer themselves; this is an area in which teachers can be encouraged to contribute to economy

and efficiency in the system. Difficulties in terms of resources and adequate rewards ought not to be created unnecessarily.

More sophisticated technologies, including techniques of mass communication and systems of self-education, can serve an important instructional role but cannot substitute for the general educational experience, or the face to face contact of teacher and student, or peer group interchange. Such technologies probably have significant roles to play, especially in some aspects of adult education, in-service training and technical instruction. Apart from the educational aspects, however, many countries will wish to avoid moving markedly towards capital intensive educational programmes when a major problem for their planners is to absorb effectively into employment increasing numbers of qualified people. On economic as well as educational grounds education should remain labour-intensive.

#### (d) Educational reorganisation

When seeking to effect economies in education it is easy to confine consideration to changes which might be carried out within existing structures. This may serve a purpose in the short term; for the longer term the structures themselves should be re-examined.

Accepting children into school at a later age has been shown in some countries to reduce the time necessary to complete a basic course; on the other hand, accepting them earlier may compensate for difficulties which inhibit learning later. Regression to illiteracy is not uncommon among children who leave school while too young to gain employment. In the face of these varying problems it seems essential that educational provision should be linked with the work of other authorities in the fields of social welfare at the one end and employment generation at the other.

When seeking economies, outside observers not infrequently suggest more intensive teaching periods, shift working, larger classes and reduced wastage. All of these have superficial attractions but some educational defects. The intensity of teaching must be related to the pupil's attention span. Shifts may be possible, using separate staffs in the same buildings at different times of day, but is unrealistic in many developing countries when afternoon shifts have little educational value because of the climate. The intensive use of buildings, too, is possible only where the population is sufficiently concentrated to be accessible to the site. Larger classes are not possible or advisable where schools are already overcrowded and teachers frequently untrained; specialist classes only, however, may be merged if highly capitalised resources such as laboratories are found to be underused.

The problem of wastage, dropout and repetition is more complex. At one extreme it appears futile to devote educational resources to a pupil who leaves the course even before literacy is established; on the other hand it may be an experience which will induce him to return to seek further education later. Two areas may be usefully explored in this connection. Little is known in many countries of the numbers of malnourished and mildly handicapped children who drop out from school because their condition is not recognised or the effect of their condition on their learning capacity is not appreciated. Simple feeding schemes may repay their cost in improved learning rates. If every teacher during training learned to recognise the symptoms of mild physical and mental handicap, simple compensatory measures would be possible in many cases and the incidence of wastage probably reduced.

As educational reorganisation proceeds and as growing numbers bring increased pressures on resources, some consideration will have to be given to restructuring institutional staffing. Teachers have striven for many years to achieve a recognition of the unique contribution of the fully trained teacher and would be rightly reluctant to accept dilution of the profession. As has been suggested earlier when considering the making of a teacher, however, it may be that the teacher's role as an individual with sole responsibility for his students may evolve into a new role as the organiser of learning experiences for his students, using a range of resources, human and material. The teacher's status and professional contribution may be enhanced by this development; overall economies may also be introduced into the system. In addition, the local community may be drawn more directly into the service of the school, whereas in the past they may have been asked only for financial contributions or voluntary labour.

National policies will determine the direction and pace of change, including the decision as to whether to concentrate on the production of a small number of highly qualified people on whose existence efficient administration depends or whether to concentrate on providing some schooling for all. These choices, it should be noted, need not be mutually exclusive. At least one Commonwealth country has accepted the desirability of establishing centres of excellence as practical demonstrations of the quality to which all should aspire. In this, as in other situations, for true economy to be achieved it seems essential for more effective means of testing, measurement and prediction to be developed so that the wastage from the limited number of available places is kept to a minimum.

#### Devising new strategies

Educational provision can be made only within existing resources. The ends of education are best served, therefore, if those resources are used to the maximum effect through the most effective deployment. Efficiency and economy are not opposed but mutually reinforcing.

Changing patterns of life and employment demand new strategies of education and, while seeking to do the best possible in the short term, the vision of those engaged in the provision of education should not be so clouded as to prevent their planning for the longer term. Universal primary education may have proved disappointingly elusive but it remains a valid goal; it may be, however, that alternative approaches to formal schooling may have to be adopted in some cases, such as working with adults and out of school youth to achieve a rapid multiplier effect.

The key to educational efficiency lies in using existing resources to the best advantage and ensuring by means of continuous reappraisal that the ends sought are likely to be attained. In the broader view, education serves the needs of the community as a whole and when new strategies are devised the claims of recurrent and lifelong education should not be overlooked. Allocating resources to this area may help to reduce the pressure on the schools, improve the efficiency of the teacher and stimulate the need for more and better teachers at new levels of education.