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ABSTRACT

This monograph deals with the problems of educational planning at its preparatory stage and during implementation. It is presented in three parts: analytical examination of trends and problems in the field of educational planning, preparation of an educational plan, and implementation of this plan. However, the document provides no explanation of the methods of drawing up a plan; no descriptions of new administrative techniques, such as cost-benefit analysis or operational forecasting; and only touches briefly on specific educational problems and educational policy formation. After an historical outline of educational planning, the document explores the evolution of the concept of educational planning, educational expenditures, educational planning authorities, the inadequacies of past action, and future planning difficulties. It next considers the determination of educational aims and policies; social and economic development; and the relation of educational development, technical and practical problems in educational planning, educational strategies, and research in educational planning. The final section deals with educational administration, resource allocation, educational finance, and the training of an educational planning staff. (Author/DN).

Educational planning

A world survey of problems and prospects

Unesco

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Preface

Ninety-five countries, eight international organizations, eight intergovernmental organizations and thirteen non-governmental organizations attended the International Conference on Educational Planning which was convened by Unesco and held in Paris from 6 to 14 August 1968.

The conference considered that the working paper that had been presented at the session brought up a number of problems that were common to all the Member States and therefore hoped that it would be published by Unesco, taking due account of the observations made by the participants.

The document in question is a collective work, the result of several successive contributions. A questionnaire, drawn up by experts at the request of the Director-General of Unesco and addressed to the Member States, resulted in eighty-five replies, on the basis of which it was possible to establish the main outlines of the text. Further information, supplied by the International Institute, the regional centres for educational planning, and the various organizations of the United Nations system, was included in this plan. Finally, several meetings and seminars, organized in 1967 and 1968 either by Unesco or by the International Institute for Educational Planning, or by the National French Commission or the appropriate authority of the United Kingdom, produced a number of reports, the essential points of which have been included in the body of the document finally submitted to the conference.

The present work is in three parts, corresponding to the three items on the agenda of the International Conference on Educational Planning: analytical examination of trends and problems in the field of educational planning, taking into account both educational development and general development; preparation of an educational plan; implementation of this plan.

It does not therefore deal with education in general but with the problems of educational planning, at its preparatory stage and during implementation. It was difficult, however, to establish a strict distinction between educational planning on the one hand and educational policy or specific educational problems on the other. The conference stressed the fact that it was no longer possible to

prepare a plan of education without defining long-term objectives (educational policy) and that the crucial problem of output made it necessary to consider the aspects of structure, content and methods (specific educational problems). Thus it was inevitable that this work should encroach upon sectors such as that of educational policy and the very substance of education. These aspects, however, are only touched upon in so far as they directly affect planning. There is, therefore, no occasion for surprise if certain problems, which are nevertheless extremely important (lifelong education, reform of curricula, institutional pedagogy, etc.), are only dealt with very rapidly.

Further, it should be pointed out that the present work does not claim to be a manual of educational planning. It provides no explanation of the methods of drawing up a plan nor description of the new administrative techniques, such as a cost-benefit analysis or operational forecasting.

It is obvious, on the other hand, that the 125 Member States of Unesco present considerable variations in their educational planning, whether it is a question of problems to be solved or of practices in current use. What is important for one country is less so for another, and vice versa. Some readers may, therefore, think that this work lays too much emphasis on certain matters and not enough on others: this danger was more or less inevitable and it was not easy to strike a balance between the different possible points of view.

Considerable differences may, therefore, be seen between education systems, according to whether they are centralized or decentralized. Now, the actual language of planning often seems to imply centralization; may it be said here once and for all that many countries have evolved an excellent educational planning system without having a central planning unit, nor even in some cases a ministry of national education. No administrative, political or cultural organization has the monopoly of educational planning. It is not automatically associated with technocracy or bureaucracy; in fact the experts seem to be more and more conscious of the fact that realistic and efficient educational planning implies information and consultation with society as a whole and that it constitutes in itself an instrument of democracy and education.

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Introduction

The past ten years

In the past decade the whole world participated in a spectacular educational 'explosion'. In many countries—rich and poor—enrolments doubled; educational expenditures rose sharply while multilateral assistance and, on a more massive scale, bilateral aid played a substantial role in support of educational projects; the supply of class-rooms, laboratories, books and other educational media grew considerably; the educational profile and potential productivity of the labour force improved; education became accepted by economic policy-makers not merely as a desirable social service but as an essential sector for over-all national development.

In this same period comprehensive educational planning took shape and became widely accepted as being vital to the orderly and efficient development of education. Unesco declared educational planning one of its, top priority fields of activity, developing its programme mainly through ministers' conferences and technical meetings, by supplying educational planning experts to more than eighty countries, and by establishing regional and international training and research centres. Regional organizations and national institutions likewise contributed much to the development of new concepts and methodologies.

Such is the bright side of this highly dynamic decade for education. It all occurred in the context of world-wide revolutionary developments of several sorts—extraordinary advances in science and technology, the emergence of dozens of newly independent states, a demographic explosion still in process and a revolution of rising expectations that fired great masses of people everywhere. Long-muted human rights came to be openly declared[1] and vigorously pursued, including the right to education. Social mobility quickened, making headway against age-old barriers.

1. *Birthright of Man*, Paris, Unesco, 1969 (a selection of texts prepared under the direction of Jeanne Hersch).

With triumphs went disappointments, however, and opposite the bright side of education's decade there was a dark side.

Despite spectacular educational expansion, hundreds of millions of the world's children—whether in school or not—are still not getting the education they need and can profit by. And millions of adults—workers, farmers, mothers, professional people—are not yet getting the special training, the updating and improvement, or the chance for literacy which they need to raise their productivity and welfare.

These gaps are accompanied by equally serious problems arising from the failure to adapt adequately educational systems to a rapidly changing environment. Thus, often enough, high enrolment ratios reflect the statistically significant large numbers of children who will never succeed in receiving a minimum of education. The main impulse has been, in fact, to do on a larger scale what was done before, which frequently meant doing it less well, whereas the times called for accompanying great quantitative expansion with equally great changes in structure, content and methods. This failure to adapt helps to explain a paradoxical situation. While economic growth in many countries continues to be handicapped by shortages of specialized manpower, there is simultaneously a growing problem of finding jobs for the increased number of graduates at the different levels that education is producing. These manpower imbalances are indicative of the lack of adaptation of educational systems to the needs of society.

Not surprisingly, the new efforts at educational planning also suffered from serious deficiencies. There was, and there remains today, a great gap between words and deeds—between policies proclaimed by ministers attending conferences and the actions taken in their countries; between the methodologies prepared by theoreticians and their application in the actual planning process. The many new educational planning units created by governments often remained understaffed, without effective links with the various regions of the countries concerned, isolated from the main stream of educational decision-making, and isolated also from such economic and social development planning as existed. Meanwhile, in the absence of over-all integrated planning, basic educational priorities vacillated—jumping from primary education at first, to vocational training, teacher training, secondary general education, higher education and finally to adult literacy training and lifelong education. The inevitable result was the emergence of wasteful imbalances, both within the educational system and between the system and its environment.

Where conditions were more favourable and the process of educational planning began to work, things improved, but the heavy focus of attention was on quantitative expansion; educational planning had not yet been able to deal fully with the important qualitative aspects. It thereby risked accelerating the enlargement of an inappropriate educational system which would be that much more difficult to alter later on.

This imbalance was clearly felt by a meeting of Latin American educators ten years ago. Recognizing the inadequacies of earlier piecemeal, short-range and unintegrated educational planning, they wrote a new prescription. It said that educational planning should have: (a) comprehensive coverage, embracing all

levels and parts of the educational system in a single view including quantitative and qualitative aspects; (b) a longer time perspective, reaching beyond a single year to at least several years and, where possible, covering a period comparable to the length of formal education itself; and (c) that educational planning should be fully integrated with the planning of economic and social development.

Ten years later the broad contours of this prescription remain valid but a fourth principle should now be added that educational planning should give more emphasis to innovations in structure, contents and methods. But from conception to realization and from paper plans to implementation is a very long distance. Covering this distance remains the vital business of the next ten years.

If one seeks dispassionately for the reasons why education was not more successfully adapted in the past ten years to actual and future needs, and why educational planning did not progress even more than it did, the main explanation is to be found in a combination of external and internal constraints. These vary from country to country. The following is a list of the most common negative factors found: (a) the basic inertia and social conservatism of educational systems, which results in a growing and alarming gap between the relative rates of renovations within the educational system and change in society; (b) a half-hearted attitude towards the idea that education is an essential investment in national development, and to the idea of planning itself; (c) the lack of continuity of leadership in education resulting in fluctuations of basic educational policies and goals, and abandonment of plans already approved; (d) a socio-psychological resistance towards planning on the part of many administrators; (e) the failure of educational planning to become integrated with related planning activities, where they did exist or—in terms of communication and commitment—with the decision-making and implementation processes of the educational establishment itself; (f) the lack of parallel planning efforts for the economy as a whole, for manpower, and for social development, needed to provide a proper framework for educational planning; and in other situations; (g) weak educational administrations ill-suited to the enormous development tasks now thrust upon them and whose educational officers, lacking an understanding of planning, feared that it might usurp their own responsibilities and prerogatives; (h) economic resource limitations, frequently made more severe by disappointingly low rates of economic growth; (i) uncertain availability of resources owing to difficulty in obtaining pluri-annual financial commitments from public sources; (j) lack of reliable and up-to-date facts by which to appraise recent trends and present educational conditions; (k) teacher-training schemes that do not offer continuous professional renewal and career development for all teachers; (l) shortage of qualified personnel and use of ill-suited methodologies for educational planning.

All of the foregoing factors, on both the bright and dark side of the past ten years, hold valuable lessons for the future. Among other things, they provide a clearer conception of what educational planning can and must become. They also foreshadow many of the major problems with which the specialists concerned with educational development will be forced to grapple in the coming ten years.

A view of educational planning today

A survey of problems and prospects must begin with a reasonably clear concept of what educational planning is, and what it can become.

Concept of educational planning

It is perhaps best to begin by saying what educational planning is not. It is not a miracle drug to cure all the ills of ailing educational systems. It is not a standardized formula to be imposed on all situations regardless of their vast differences. It is not a conspiracy to destroy the freedoms and prerogatives of teachers, administrators and students, nor a device for enabling a small group of technocrats to usurp the power of choice and decision over educational aims, policies and priorities of a society. Nor is it an exercise in planning for its own sake, which neglects the fundamental characteristics of education, and the all-important fact that man and the full life of man is the ultimate end of education.

Educational planning is, on the other hand, the application to education itself of what real educators seek to instil in students: a rational, scientific approach to problems. Such an approach involves identifying objectives and available resources, examining the implications of alternative courses of action and choosing wisely among them, deciding on specific targets to be met within specific time limits, and finally developing the best means of systematically implementing the choices thus made. In this perspective, educational planning is much more than the drafting of a blue-print; it is a continuing process. The process entails the following succession of interdependent actions.

The clarification of educational objectives. Without a clear idea of its objectives an educational system is as a ship at sea with no destination; it cannot plan its course and can end up simply turning in circles. A nation's educational objectives, reflecting society's idea of its own future, must be decided by the society as a whole and its chosen leaders. This idea of the future should embrace basic human values, ethical, cultural and aesthetic, and also the various roles the individual will be required to play in society, as a citizen, worker and member of a family. In translating these over-all goals into educational objectives those responsible for educational planning can help. They can help by insisting also that there be reasonable consistency and an order of priority among various objectives, since not all of them can be pursued at full speed simultaneously. They must make sure that the definition of objectives and their priority rating is understood as a continuing process that should be periodically reviewed.

The diagnosis of present conditions and recent trends. To chart a rational course toward its objectives, once they are decided, one must know where the educational system is starting from, and what discernible forces in the recent past are likely

to affect its future. For such a diagnosis, educational planners must use the best facts and analytical instruments at their disposal. These need not be anywhere near perfect before a useful start can be made. But obviously if there are major blind spots and a wide margin of possible error in what is known about the educational system itself, it will be seriously handicapped in plotting a reliable future course.

The assessment of alternatives. The future courses of an educational system are limited by a variety of constraints, such as those listed earlier. There is little point in building a 'dream model' or of setting 'bold' targets that are patently impossible to realize. The object of planning is to get as far as possible within the area of manoeuvre defined by the constraints, and where possible, to overcome certain of them. What is to be emphasized is that the constraints are not merely physical and economic; they are also political, sociological, administrative and psychological. The planner who neglects to take the main constraints into account is inviting disappointments and frustration.

This said, what is important next is to identify the major alternative courses of action that are available within the boundaries of likely constraints, so that their respective pros and cons and implications can be intelligently weighed by decision-makers before making a choice. There are usually a good many feasible options: the task of the planner is to identify the chief ones. Again it is worth emphasizing that planning is not simply a matter of projecting the past into the future along a straight line; its object is to change the future to do things better than they have been done before. Thus the central question is not: how quickly can we expand what we are now doing? Rather it is: what are our alternatives, and which of these will take us farthest ahead most quickly, given our inescapable limitations?

The translation of plans into action. A plan is a basis for action but it does not in itself produce action. A 'national educational plan' is no more than a rough thumb-nail sketch until it is broken down into well-conceived specific programmes, fitting specific activities and geographic areas, and until the programmes are in turn translated into specific well-designed projects consistent with the general plan. Then the over-all plan can be implemented, if it was realistic to begin with, if the administrative capabilities are there, and if no unforeseen difficulties arise. Both the building of a general plan in the first place, and its subsequent translation into action, are a more complex affair in a federal system than in a centralized system of education compared to a purely public one. But in any case there must be a constant interplay and communication between levels. Ideally perhaps, an over-all plan should be built from the bottom up, within a general 'framework' of prescribed resource limitations, objectives and priorities. Even when this is not fully feasible, central planners must none the less keep the local scene and capabilities, and above all local differences, very much in mind, if their over-all plan is to be implementable.

Evaluation and adjustment. No planner can read the future with precision. The one thing he can predict with full confidence is that there will be many surprises, good and bad. He can be forgiven many an honest error of judgement about future trends and possibilities, but what he cannot be forgiven is failure to correct an error once it has become apparent. An education plan, therefore, must be subject to 'rolling adjustment' as the future reveals what today still hides from view. But if such adjustments are to be made, and made in time, there must be ample means at hand for checking performance, progress and failures all along the way.

The various 'stages' of the educational planning process just sketched in have a logical progression, but in practice they are all likely to be going on simultaneously. An earlier plan is being implemented and steadily adjusted as a new one is in process of development. Clearly, it is no simple matter to establish an effective planning process. It requires years for such a process to grow and mature, though long before then the efforts invested can begin to yield good dividends.

Strategy in planning education

In pursuing the long-term objectives, an educational planning process—whatever its own state of development—requires a clear strategy to guide it, a strategy which inspires the whole of educational development and fits it to the special circumstances of the particular country.

There is no standardized strategy prefabricated to fit all countries; each must fashion its own. A country's stage of development and its rate of development will have a strong bearing on what its strategy should be. A nation or an area within a nation at an early stage of development and with limited resources, for example, might find it necessary to adopt a strategy which, for the time being, places heavier emphasis on work-oriented adult education as against general cultural education for adults; on secondary education as against primary (for example in order to bring the two into better balance); and greater emphasis on science teaching in secondary education and on engineering training in the universities to favour scientific and technological development. The appropriate emphasis for a more developed country on these matters might be quite the reverse. But a well-conceived strategy is a more comprehensive guide-line as it will involve new approaches to achieve long-term objectives.

However their strategies may differ in other respects, there is one objective which the educational strategies of all nations must emphasize in the years immediately ahead. They must all give major attention to improving the efficiency and productivity of their educational systems. These matters are closely linked.

The performance of an educational system, looked at from the inside, is directly related to its internal efficiency—that is, to the relationship between the resources it is using and the educational results it is getting. A system, for instance, can improve its efficiency by adopting new ways which enable it to get more and better educational results without a proportionate increase in resources.

The performance of an educational system, looked at from the outside, by society or by former students, is directly related to its external productivity—that is, to the relationship between the resources invested in education and the whole resulting benefits accruing later on to the students and to society as a whole in response to its long-term objectives. The difficulty of measuring the external productivity of an educational system lies in finding measures of benefits which will correspond to the many aspects of educational objectives; moreover the difficulty is often seriously increased because of inconsistencies between proclaimed economic objectives and social aspirations. However, if an educational system is teaching many things that are irrelevant or of little value to the future lives of its students or to the development and enrichment of society as a whole, if it fails to respond to social and technological change, that system has a low productivity. The way to improve its productivity in such a case is to change what it is teaching.

Thus educational planners who in the past have been more often preoccupied with making the old educational system bigger than with improving its internal functioning and content will hereafter need to give urgent remedial attention to matters of structure contents and methods. The reason is that nations require perforce to use scarce resources efficiently and productively. The day of reckoning on this issue is close at hand. Educational planning must sharpen its concepts and analytical instruments for examining efficiency and productivity—and ways to improve both—in every aspect of the educational system. In this respect, planners may find such techniques as unit-cost analysis, operations research, systems analysis, and programmed budgeting, valuable.

What has just been said about efficiency and productivity is another way of saying that to a considerable extent, though not entirely, it is up to educators themselves to ensure that 'education is a good investment' in economic growth and social development. This simplistic generalization—now widely accepted, and endorsed by eminent economists, needs to be looked at harder. There can be no doubt that education—in developing human resources—is a necessary preinvestment for enabling all other sectors to make their full contribution to national development. But it does not follow that any and every expenditure on education is a 'good investment'. Some are and some are not. By improving its efficiency and productivity at every opportunity, education can be made not merely a good investment (taken over all), but a progressively better investment.

Imperatives for tomorrow

The kinds of educational planning and strategies just described will be sorely needed to cope with the tasks ahead for educational systems everywhere, owing to a combination of forces already strongly in motion and clearly discernible.

The prospects appear to be these:

- A continued rapid rise in the social demand for education, beyond that which educational systems are equipped to satisfy during a period in which the pro-

portion of younger people to be educated, trained and employed will increase by more than 10 per cent a year.

A tightening economic squeeze on educational systems—contingent on a moderate rate of economic growth—exerted from two quarters: a probable slow-down in the rate of expansion of resources available for education and a continuing rise of unit costs.

Growing maladjustment of educational systems to their environment, unless far more energetic action is quickly taken to adapt curriculum content and student flows to the exigencies of the labour market and to the changing conditions in which today's students will live tomorrow.

Growing unemployment of the educated, in many developing nations, partly because the economy is not functioning efficiently, partly because education is providing it with the wrong kinds of 'products' and partly because educational attainment levels are often expected to correspond automatically to very high levels of responsibility in employment in the absence of appropriate vocational guidance.

Growing discontent of youth before educational structures, programmes and methods which, they feel, do not in many cases correspond to proclaimed democratic aims of society, to the real economic, social, cultural and emotional situation of our time or to sane and efficient communications practice.

There is, of course, a brighter side to the outlook. In many ways, managers of educational systems are much better equipped today to deal with their problems and to make necessary adjustments than they were ten years ago. Moreover, they now see much more clearly what their problems are and what kinds of adjustments are required. None the less, the main point stands: educational planning will have its plate full of enormous problems. It will need to move from a decade of formation to a decade of increased action—action involving not merely the application of what has already been learned about educational planning and management, but of new things yet to be learned and with a renewed attitude.

We indicate hereunder some of the fields where action seems most necessary.

Research and development

The conclusion seems inescapable that if education is to make its proper contribution to society's development, then educational systems everywhere—applying modern scientific methods—must undergo a sweeping revolution, such as agriculture, medicine, industry and other fields have already done and are continuing to do.

The next ten years must see the initiation of major changes in virtually all aspects of existing educational structures and institutional models, for many of these models and structures were never designed to do what they are now called upon to do. They will crack under the pressure if change is not introduced soon.

But how is innovation in educational systems going to take place on this vast scale when the institutional means for innovating are so inadequate? As things

stand, educational innovations are usually sporadic and episodic, depending on accident, rather than being the product of a systematic, continuous process. The only solution is for education to engage in some 'institution-building' of its own—to create and to staff strong facilities for critical self-examination, for spotting problems and opportunities that need attention, then applying analysis, research and experimentation to these situations in order to develop a large flow of major improvements in the processes of education. While it will obviously need its own appropriate set of arrangements, education could find many useful clues by examining large-scale development programmes in other fields, to see how they managed to progress so dramatically. Certainly, some of them had far more money for the purpose, and education will need more too to be well spent; but there was much more to it than money.

The research-and-development techniques which have accomplished so much in other fields are no strangers within educational systems. The talents of their own universities did much to create these techniques and the scientific knowledge behind them. The need now is to focus a fair share of these inventive talents of the universities upon the problems of education itself and to favour their close co-operation with the ministries of education. Universities never had so great an opportunity to be of service to their own educational family, nor a more interesting and exciting set of challenges from the viewpoint of research and scholarship.

But what is needed now is very different from the 'educational research' of the past, much of it of a fragmentary, descriptive and too often theoretical variety which had—with notable exceptions—little impact on the course of events in education. Educational research must now be squarely aimed at finding solutions to unsolved problems, at creating ways and at devising new media to meet certain functional needs which have never been met before, at finding better processes and content than those currently in vogue. It cannot be simply 'library' research; it must be research and development, tied to action. In this connexion, industry might also prove a valuable partner to make full use of technology for new solutions.

Where do educational planners fit into innovation? They cannot be the innovators of the whole educational system; this is also the business of numerous other specialists and of teachers themselves. From their special vantage point, however, with its wide horizons, educational planners can help put the needs for innovation in clearer perspective and thus help guide the research priorities and the allocation of effort, in addition to phasing the implementation of reforms resulting from research. They can help to analyse the implications of alternative innovations and they can help to develop new institutional arrangements for innovating and get them adequate support. Pending all this, they can help persuade people that broad-scale innovation is now an imperative, by demonstrating what the consequences will be in its absence.

Strengthening finances and efficiency of education

To avoid being seriously handicapped by an economic squeeze, educational

administrators must move vigorously to find supplemental revenue sources if they can, and to find ways to get larger and better educational results from the resources they already have.

On the first—finding new revenue sources—they can get useful clues from practices in other countries. A wide variety of fiscal measures—both public and private, and at every level of government—are in use around the world to collect revenues for education, some of them new and ingenious. Outlays for education are, furthermore, not necessarily limited to strict financial resources but can include a variety of services and other means. Needless to say, it will not be easy to tap new financial sources; it never is, and any such effort is likely to collide with one or another 'basic principle' cherished in the particular cultural and political setting. But there is no choice in the matter. In many cases, educational systems will need more money than their present revenue sources will be able to yield—even in some cases just to keep doing what they are already doing, and no more. Industrialized countries, which have the resources, can plan the increased financial provisions needed for their future educational systems. Developing countries can look for a certain amount of financial help from the outside—with the added benefit of technical advice in building new institutions.

But here, two growing problems must be noted. First, financially strained educational systems will more and more find they cannot 'afford' outside financial 'aid', because they cannot meet the requirements of external assistance agencies for 'local participation' in proposed projects. Second, external aid risks sometimes to launch artificially projects which have a low priority from the country's point of view.

Some of the difficulties could be eased by an expanded supply of loans with easy terms, a long repayment cycle, very low interest, liberal grace period and an option to repay a substantial portion in local currencies. The difficulties arising from 'local participation' requirements might be eased if lending agencies and borrowers were to search imaginatively together for possible alternative ways to achieve the legitimate objectives of these local participation requirements which would not be self-nullifying in particularly difficult situations. There is no avoiding the basic fact, however, that both the above problems of external aid are rooted ultimately in the low economic level and slow growth rate of many developing countries. Thus, for the time being, education must give high priority to doing whatever it can to spur economic growth, so that its own financial resources can be more generous in the future.

Even the stoutest efforts to supplement educational income, however, whether from domestic or foreign sources, will not solve the basic economic plight which most educational systems face today. These systems must therefore resort also to the second line of strategy—to make a strenuous and continuing effort to improve their internal efficiency and external productivity in every possible way. This in the long run is their best hope, both for improving education and for making it economically viable.

What can educational planners do to improve efficiency? They cannot impose

solutions, even if they had them ready made; but they can help lead the way to such solutions. They can do this by showing analytically where present resources are going, how they are being used, and thus where the greatest potentialities exist for economies. They can then, in collaboration with others, examine these potentialities more closely, in search for ways of doing things more cheaply but at least as well. Beyond this they can assemble evidence on what other educational systems have done or tried to do to raise efficiency, and how they have succeeded. Planners can also take the lead in scrutinizing the relevance and utility of what is presently being taught, and in collecting evidence on the fitness—or lack of fitness—of the educational system's output to the development needs of individual students and of the whole nation for its social and economic goals. Changing the curriculum and altering the pattern of student choices and flows are perhaps the quickest routes to improving educational productivity.

Improving the effectiveness of external assistance

Any developing country which has a well-thought-out educational plan is in the best position to call its own tune on external assistance—to ask for the right kinds of help, to make the best use of it and to be master of its own educational destiny. Lacking a clear idea of where it wants to go and what it needs to get there, a nation may be pushed badly off course by simply requesting everything and accepting anything. One of the cardinal aims of external assistance should be to reinforce a nation's own educational plan, with strategic forms of help which at the moment it is least able to provide for itself. 'Donors' and 'recipients' alike therefore need 'strategies of aid' aimed at meeting this objective.

Two ways in which planning can especially help to improve the situation, and which now require greater attention by planners, concern overseas study and the harmonizing of external assistance coming from different sources. Where there is a hit-or-miss approach to foreign study, unplanned in terms of domestic educational and manpower needs and capabilities, the flow may result in promoting the country's 'brain drain' more than its development. By the same token, better techniques of planning and of organization are needed to bring greater order out of what sometimes looks more like chaos in the rendering and receiving of external assistance. One possibility in particular which merits exploration and experimentation is the use of a sound national educational plan as the basis for joint consultation among 'donor' agencies, and between them and the 'recipient' country, resulting hopefully in a better division of labour among donors and a more productive use of their collective assistance.

Modernizing educational management

If innovation and actions to improve efficiency and productivity are to become a regular way of life for educational systems, the main initiative must come from the managers of educational systems. Many, however, are already overburdened

just trying to make the old system work; they were not trained in the tradition of the techniques required for innovation. More serious, the inherited system of administration which they serve—its rules and procedures, its organizational arrangements and staffing, its inbred attitudes and self-conception of its role—all these are most often ill-adapted to dealing with the management tasks and challenges which now confront educational systems. The obvious conclusion then is that the improvement of educational efficiency must be accompanied by the modernization of educational management.

The starting point must be a redefinition of the role of educational management, and of the kinds of specialized personnel and teams required to make it function well. In earlier and simpler days, the main preoccupation of educational administration in most countries was with the setting of rules and 'standards' and with the supervision of their observance. It was essentially a regulatory and caretaker role. Today, in contrast, the preoccupation of educational management must be with the development of education, and with unleashing and mobilizing the human energies, the ingenuity and spirit, and the physical resources required for this purpose—both inside and outside the educational system. This in a sense involves the very antithesis of rigid and uniform rules and procedures, which so often stifle initiative and imagination all down the line, instead of unleashing them. Educational development is not fostered by the tidiness of uniformity but the creative interplay of diversity. There are risks, of course, in such educational diversity, and there must be reasonable limits to it; but at this stage far greater risks reside in the perpetuation of inhibiting, archaic uniformities.

This implies not only strong and well-informed leadership at the top of the educational system—reinforced by the competent teams of specialists—but the encouragement of strong and creative leadership throughout the system, among local administrators, teachers and students themselves. This in turn requires three other things.

The first requirement is to instil a set of attitudes quite the opposite of the excessive traditionalism and defensiveness of the old and fear of the new, which educators—rightly or wrongly—are so often accused of harbouring.

The second is a more adequate 'information system' and stronger tools of analysis that will provide all parties concerned with a better understanding of how well or how poorly the educational system and its various parts are functioning and hence with a more rational basis for making decisions and taking action.

The third essential is an appropriate system of recruitment, training and continuous in-service growth for all who partake in the management of educational systems, together with a structure of rewards and promotional opportunities that will attract in sufficient supply the calibre of talent needed. This talent must be of many sorts, because the complexities of educational management have grown beyond the ability of even the ablest 'generalists' to handle by themselves. There must, then, be a variety of training sources to build the management teams required, and a variety of types of research to put strong substance into all such training.

It is a startling fact, however, that many national educational systems today —having become one of their nation's 'biggest industries'[1]—still have virtually no provision for the professional training of their administrators, other than teacher training and class-room experience. Yet many such systems offer advanced management training for other fields. Even where training programmes in educational administration do exist, they have tended to remain intellectually isolated from management training and from new research and practices in other fields of management. They have tended therefore to refine and perpetuate yesterday's practices, rather than shaping new ones for tomorrow.

The logical locus of primary leadership for strengthening training and research in educational management is the universities. But here another startling fact emerges—a majority of the world's universities (again with a growing number of notable exceptions) are even now without a coherent, modern system of management themselves. They lack too often the means to examine themselves critically as institutions, to plan their own self-renewal, reform and future development, to implement such plans in orderly fashion, to make decisions or commitments as institutions, such as to help a struggling sister university in a developing country. This helps explain why so few national educational planning efforts to date have included higher education; if individual universities cannot plan their own future, how can the whole of higher education be rationally planned, and how can universities take the lead in helping the rest of the educational system to plan itself?

The present unhappy condition with respect to research and training in educational management should be susceptible, however, to fairly rapid improvement. It will require added financial resources, but much of the brain power needed for the purpose already exists in the universities and elsewhere in the educational system, and much relevant and valuable experience awaits harvesting outside the system, in fields where management practices have made conspicuous advances in recent years. What is needed is a strategy to mobilize this brain power and potentially valuable experience, and the will to place it at the service of education itself. While their specific circumstances may differ widely, the principles and techniques of effective educational management can have wide validity and application. It is a subject deserving of priority attention in all programmes of international co-operation and assistance.

Strengthening educational planning

Within the broad framework of educational management there is the need to strengthen training and research in educational planning itself—for educational planning is the fundamental component of modern educational management. Good progress has been made in recent years, especially at the international and regional levels; but much more progress is needed here and especially at the

1. Lê Thàn Khôi, *L'Industrie de l'Enseignement*, Paris, Les Editions de Minuit, 1967.

national level. Unesco-sponsored centres, at present representing a large portion of total training capacity in this field, have not the capacity to handle world requirements for training in educational planning over the next ten years; in fact they should focus on the training of high-level personnel, which means that initial training must be undertaken more and more within each country. Training in educational planning will be needed for more than the full-time technicians of planning; an understanding of it must become an integral part of the professional training of all who will play a role in the management of educational systems, including teachers. As for research, international and regional centres will have to give continued attention to research topics of wide interest which extend beyond the borders of a single country, and to helping individual nations to equip themselves for more effective research into their particular local problems.

Research in the problems and methods of educational planning and development needs organization. If available research talent and resources are to have the greatest impact, they cannot be scattered aimlessly in all directions at once; they must be concentrated on selected problems with sufficient intensity to break through to significant new knowledge and practice. Much of the effort must be directed at solving the specific practical problems and needs of practising educational planners and managers in the shortest possible time. By the nature of subject, such research must draw strength from a variety of academic and professional subject fields. It must give heavy attention to comparative analysis of the experiences of many countries, and much of it must therefore take place in the 'field' rather than in academic offices and libraries. The strategy that guides such research and sets its priorities must be fashioned by the 'producers' and 'consumers' of research together, and if the results are to be useful, they must be communicated promptly and reliably to the 'consumers' in straightforward terms which they can readily understand to apply.

Involving the community in educational planning

But all intellectual, financial and administrative efforts would be useless if interested parties—teachers, students, parents—and society as a whole did not agree on the objectives of the plan or its priorities and were not prepared to support it. Education, by its very nature, cannot be imposed; educational planning, a part of education, participates in the nature of education; it cannot be enforced only by law; it must be understood and accepted. The greatest difficulties met by planning are socio-psychological resistance, inertia, lack of enthusiasm. There is, therefore, a developing feeling that educational planning cannot be effective if teachers, students and the community at large are not always better informed and consulted. Efficient planning nowadays is an essentially democratic process.

A final note

One conclusion seems inescapable. Education and its resulting human-resources

development remains an essential preinvestment for over-all economic and social development, but it will be a far more remunerative investment as it becomes better planned and as it adapts itself more rapidly to the changing world around it. If the last ten years have been a productive period of formulation for modern educational planning, the next ten must be a period of action—a period not merely of making plans but of implementing them. And whereas the hallmark of the last decade of educational development was quantitative expansion, the hallmark of the next one must be major selective growth accompanied by greater adaptation, change and innovation, all of it reinforced by even greater international co-operation.

Thus, parallel to the need for national strategies, there is need for a world-wide strategy to guide nations in their common efforts towards educational development. The purpose of a world-wide strategy would not be to impose standardized solutions to the problems of different countries, but to help reinforce each country's chosen strategy without interfering with it. It could, for instance, provide guidance for international co-operation in such aspects as the following:

Further clarification of universal educational objectives and practices as a follow-up of international recommendations.

Co-operation in research for educational development and increased interchange of information and experience.

International and regional co-operation for the training of personnel in educational planning and administration.

Re-examination of the nature, methods and terms of multilateral and bilateral assistance, with a view to better co-ordination and more efficient use.

The International Year of Education, envisaged by the United Nations for 1970, and the second Decade of Development (1971-80) would be frames for the discussion, elaboration and implementation of this international strategy.

I Trends of educational planning

1 Historical outline

Planning is a natural process in human societies, and examples of the application of planning to education can be detected in the history of the remotest times. Twenty-five centuries ago Sparta set up an educational system exactly suited to certain military, social and economic purposes which were precisely defined[1] and Plato, in *The Republic*, proposed a scheme in order to make school the servant of society. China of the Han dynasties, Peru of the Incas and many other civilizations planned their education with greater or less rigour.

Particular interest was attached to educational planning in periods of great intellectual and social change. It was the case at the time of the Renaissance when John Knox described a national system of education which would lead the Scots to spiritual and material well-being and when Comenius outlined a plan of school organization and administration which would bring about national unity. Similarly, at the close of the eighteenth century we find numerous works entitled *An Educational Plan* or *The Reform of Teaching*; the best known is the *Plan d'une Université pour le Gouvernement de Russie* drawn up by Diderot at the request of Catherine II. Adam Smith and many other economists in that century indicated the relation between education and economy.

Educational planning before and after the Second World War

When institutional education was developed in Western countries during the nineteenth century, there always was some sort of planning in building schools and training teachers. But 'planning' in the sense of the systematic definition of objectives and assessment of alternative ways of allocating resources by means of specialized techniques, in order to co-ordinate the development of education with over-all economic and social development, is a modern concept.

1. Xenophon, *The Lacedaemonian Constitution*, Chapter II.

The first systematic attempt at educational planning[1] dates back to 1923, the year of the first Five-Year Plan in the U.S.S.R. One may think that it is largely thanks to planning that this country, in which two-thirds of the population were illiterate in 1913, ranks today among those in which education is the most highly developed and where vocational training matches most precisely the needs of the labour market.[2] Soviet Russia's example, however, was not followed, and the subject of planning in general remained one giving rise to passionate debate between Marxist economists and champions of liberal traditions. Yet little by little, non-Marxist economists such as Mannheim and Tugwell began to stress the importance of planning in the field of social policy; fractional experiments in economic planning were made in France (the Tardieu Plan of 1929 and the Marquet Plan in 1934), in the United States (the New Deal planning of 1933), in Switzerland (the Wahlen Plan for Agriculture, 1941) and in Puerto Rico (1942).

After the Second World War the upheavals resulting from the conflict, increasing social ferments and an unexpected demographic explosion led more and more countries to plan their educational systems. Naturally, all the new Socialist countries adopted planning. But they were not alone: in the United Kingdom the Education Act of 1944 made it mandatory for each of the 146 local boards of education (now 'local education authorities') to draw up a development plan. France, which had not included education among the fields covered by its First Plan in 1946, set up in 1951 a Commission du Plan d'Equipement Scolaire, Universitaire, Scientifique et Artistique, and education became an integral part of the national plan in 1953. One after another, most European countries adopted some form of planning. There were, of course, important differences in the scope of planning in countries where the government exercised a large degree of control over the use of human and material resources, and those with a smaller sphere of government influence, between countries with a highly centralized system of government and administration, and federal countries with a high degree of local autonomy, but despite differences in political structures there was widespread acceptance of the principle of educational planning.

Meanwhile, from 1950 onwards, countries having just won their independence began to perceive the prospects opened up by planning as a means of furthering educational development. In the first Indian Plan (1951-55) education had its

1. Over-all surveys on educational planning are found in the following publications: International Bureau of Education/Unesco, *Educational Planning*, 1962 (IBE Publication No. 242); Unesco, *Elements of Educational Planning*, 1963 (*Educational Studies and Documents*, 45); Unesco, *Unesco and Educational Planning*, 1965; Unesco/International Institute for Educational Planning (IIEP), *Fundamentals of Educational Planning* (a series of monographs); Regional Unesco Office for Education in Asia, *Educational Planning in Asia*, Bangkok, 1967; *World Survey of Education*, Vol. V (1968) (chapters on administration, financing, planning, legislation, etc.); *Educational Planning*, New York and London, 1967 (*The World Yearbook of Education*); Unesco, *Bibliography in Educational Planning*, 1963; Unesco/IIEP, *Educational Planning: A Bibliography*, 1964.
2. S. Strumilin, 'The Economy of Education in the U.S.S.R', *International Social Science Journal*, Vol. XIV, No. 4, 1962, p. 633-40.

place within the framework of economic and social development: also in 1951, Ghana launched an eight-year general development plan in which education figured prominently. Burma promulgated a four-year educational plan in 1952. Others followed in the succeeding years: Colombia in 1957, Morocco and Pakistan in 1958, Tunisia in 1959, etc.

Major regional conferences (1956-65)[1]

From its inception Unesco had acknowledged the need for educational planning. During the past ten years it has given the subject increasing attention, promoting its study by organizing (in several cases in collaboration with the Regional Economic Commission concerned) a series of regional conferences bringing together, in most cases, both ministers of education and ministers in charge of economic development. At these conferences the participating Member States took decisions of considerable bearing on educational progress.

Latin America

The Inter-American Seminar on Overall Planning of Education (Washington, D.C., June 1958), the first of these major conferences, was organized jointly by Unesco and the Organization of American States, following a recommendation of the Second Inter-American Conference of Ministers of Education held at Lima in April-May 1956. It marked the inception of planning within the framework of the Major Project on the Extension and Improvement of Primary Education in Latin America. Its recommendations deal mainly with problems of organization and methods in the field of educational planning and with related problems of administration and finance.[2]

The Santiago de Chile Conference (March 1962) was convened by Unesco, the Economic Commission for Latin America and the Organization of American States, following a recommendation of the Washington Seminar, in order to study the relationship between education and the economic, social and demographic situation in Latin America, and to define the objectives of a ten-year plan of educational development in the region. Among the recommendations it adopted appears the 'Santiago Declaration', which envisaged an increase in the proportion of national income earmarked for educational investment to 4 per cent by 1965.

1. The outcome of the regional conferences on educational development has been published by Unesco either in the form of *Reports* or under various titles: *The Needs of Asia in Primary Education*, Unesco, 1962 (Karachi Conference (*Educational Studies and Documents*, 41); *The Development of Higher Education in Africa*, Unesco, 1963 (Tananarive Conference); *An Asian Model of Educational Development: Perspectives for 1965-80*, Unesco, 1967 (sequel to the report of the Bangkok Conference).
2. The seminar's technical documentation is mainly based on Colombia's experience. See: *Informe del Proyecto para el Primer Plan Quinquenal Educativo*, 5 vols., Bogotá, 1957.

While the above conferences were mainly concerned with quantitative factors, the Conference of Buenos Aires (June 1966) concentrated its attention on questions of content, methods, yield and evaluation. It adopted recommendations on the orientation of Unesco's programmes in this region after the termination of the Major Project.

Asia

The Karachi Conference (December 1959 to January 1960) dealt only with primary education. It approved a 'Working Plan' aimed at instituting throughout Asia universal, free and compulsory primary education of at least seven years' duration within a maximum period of twenty years (1960-80) and adopted recommendations urging the creation of national services for educational planning.

The Tokyo Conference (April 1962) had the particular mandate of reviewing both the progress achieved and the difficulties encountered in executing the Karachi Plan, and also of studying reports submitted on the development of primary education in the wider framework of general educational planning and of socio-economic planning. It adopted the 'Tokyo Resolution', which recommends that Asian States should seek to reach a ratio of 5 per cent of GNP for educational investment by 1980.

The Bangkok Conference (November 1965) carried on the work performed at Karachi and Tokyo and adopted a draft 'Model for Educational Development' for Asia for the period 1965-80.

Africa

The Conference of Addis Ababa (May 1961) was convened jointly by Unesco and the Economic Commission for Africa. It had as its object to enable African States to formulate their priority needs in the field of education, based upon the priorities set by themselves for the economic expansion of the continent. The conference adopted an 'Outline Plan for the Development of Education in Africa' which stipulated *inter alia:* an annual increase of 5 per cent in school enrolment of children having reached the age of compulsory schooling; a rise of enrolments into secondary schooling from 3 per cent in 1961 to 9 per cent in 1966; an increase in the proportion of GNP earmarked for education from 3 per cent in 1961 to 4 per cent in 1965, 5 per cent in 1970 and 6 per cent in 1980.

The Paris Conference (March 1962) met to pursue the work begun at Addis Ababa. It took note of the deficits to be covered in order to meet the targets set in 1961 and proposed urgent measures to reduce the cost of secondary schooling while recommending the creation or improvement of educational planning bodies.

The Abidjan Conference (March 1964) reviewed the results achieved since Addis Ababa and studied the impact of the recommendations of the Tananarive Conference on the Development of Higher Education in Africa (1962) on the

general planning of education. It recommended that planning should also cover adult literacy work and scientific research.

The Nairobi Conference (July 1968), made an assessment of the output of education in Africa during the ten previous years with special attention to wastage (drop-out and repetition) problems; it also examined rural education and technical and scientific training.

Arab States

The Beirut Conference (February 1960) was responsible for the creation of the Regional Training Centre for higher teaching staff with a view to the formulation, execution and continuous adaptation of educational plans in the context of over-all development; it also proposed, *inter alia*, an inquiry into manpower needs in the Arab States.

The Tripoli Conference (April 1966) was called to review the progress achieved since the Beirut meeting and gave particular attention to the aims and priorities of education in the framework of general development. Its recommendations relate to planning, to the quality of education, to literacy work and to regional co-operation.

Europe and North America

In October 1961, the Organization for Economic Co-operation and Development (OECD) held a conference in Washington on policies of economic growth and of investment in education, which discussed on the one hand the needs of States members of OECD, and on the other, assistance to underdeveloped regions.

Among other important conferences or seminars mention should also be made of an international round table on educational planning organized in Paris in 1959 by the French National Commission in co-operation with Unesco; a conference on the economic aspects of educational development in Europe, organized at Bellagio in July 1960 by the International Association of Universities and the Ford Foundation; and an International Conference on Educational Planning organized by the Deutsche Institut für Entwickslungspolitik at Berlin-Tegel in July 1963.

It should also be noted that the twenty-fifth International Conference on Public Education, convened by the International Bureau of Education (IBE) and Unesco in July 1962 at Geneva, studied the nature and bearing of educational planning and issued a number of conclusions in IBE Recommendation No. 54.

The development of educational planning

The last few years have seen in all the less-developed countries tremendous efforts in the educational field, and it would appear that in this field above all others the first United Nations Development Decade has recorded its most signal success.

the first United Nations Development Decade has recorded its most signal success.[1]

Not only have school enrolments risen in a spectacular manner, but there has been a determined effort to marshal this increase in a rational way and to relate it to the needs and prospects of economic and social development. We shall see below that educational planning, in 1955 the concern of a few governments only and of a handful of specialists, is now a necessity recognized by all, educators and economists alike.

In this development of educational planning, bilateral and multilateral assistance has played a sizeable role. One might mention, for instance, the Mediterranean Regional Project (MRP) and the Educational Investment Programme (EIP) started around 1962 by OECD.

We shall examine here more closely Unesco's participation in this joint effort. In 1958 Unesco began to give systematic assistance to Member States in the field of educational planning. In 1961, a section for educational planning was set up within the Department of Education. This became an Office of Educational Planning in 1964 and in 1967 a Department of Educational Planning and Financing, incorporating a Division of Planning and Administration of Education (which includes a school-building section) and a Division of Financing specially responsible for programmes conducted jointly with the International Bank for Reconstruction and Development (IBRD).

The process of planning calls for specialists, and it quickly became apparent both that most of the countries concerned did not have the required qualified personnel and that the methodology of planning itself was still far from perfect. Accordingly, beginning in 1958 and in collaboration with various organizations or Member States, Unesco organized a series of study courses and seminars for specialists, such as the Inter-American course on over-all educational planning held at Bogota in 1959 (convened by the Organization of American States (OAS) in conjunction with Unesco), the courses on educational statistics held in Madrid in 1960 (in co-operation with the Spanish Ministry of National Education), the courses on school administration at Khartoum in 1961, at Leopoldville in 1962, etc. There was, however, a further need for permanent institutions of training and research, and few countries, especially among the less developed, were in a position to create such institutions on a purely national basis. The General

1. Publications of the Unesco International Institute for Educational Planning (IIPE) include case-studies of educational planning in various Member States, including a series *African Research Monographs* (Ivory Coast, Nigeria, Senegal, Tanzania, Uganda, etc.), *Problems and Strategies of Educational Planning: Lessons from Latin America*, *Educational Planning in the U.S.S.R.*, and *Education and Economic and Social Planning in France*.

OECD has published reviews of educational planning in various European countries (Austria, Ireland, Netherlands, and Sweden) as well as a report on the Mediterranean Regional Project, *An Experiment in Planning by Six Countries*, *A Technical Evaluation of the First Stage of the Mediterranean Regional Project*, *Problèmes de Planification des Ressources Humaines en Amérique Latine*, and a study, *Education, Human Resources and Development in Argentina*.

Conference of Unesco, at successive sessions, accordingly decided to set up or develop four regional centres designed to undertake the training or further training of specialized personnel and to promote and co-ordinate research. These units are:

The Regional Centre for Educational Planning and Administration for Arab Countries (Beirut, 1961).

The Asian Institute of Educational Planning and Administration (New Delhi, 1962).

The Educational Planning Section of the Latin American Institute of Economic and Social Planning (Santiago, 1962), which became the Regional Institute of Educational Planning and Administration for Latin America and the Caribbean in 1968.

The Educational Planning Section of the Institute for Economic and Social Development (Dakar, 1963). This section became in 1965 the Regional Educational Planning and Administration Group.

In December 1962 the General Conference approved the creation, in Paris, of an International Institute of Educational Planning (IIEP) which, while remaining part of the structure of Unesco, was granted a large measure of intellectual autonomy. The principal task of this institute is the training of educational planning specialists at the highest level and the stimulation and co-ordination of research on the international plane. It began operations in May 1963. In January 1968 the United Nations Special Fund agreed to assist Member States in the training, at the national level, of educational planning and administration personnel. A first project is now in operation in Chile under this new programme.

Until such time as each country could count upon having all the qualified staff it needed, Unesco made avialable to Member States, at their request, such advice and such expert assistance, individual or grouped, as would facilitate the organization of planning services or the solution of particular problems. To begin with the main effort was directed at providing short-term missions consisting of several experts, both educators and economists, whose task was to carry out preliminary inquiries into educational planning as a component of national programmes of economic and social development. Between 1959 and 1965 Unesco sent sixty such planning missions to countries which had requested them, the cost falling either to the Regular Programme or to Technical Assistance funds. As from 1961 a similar formula was applied in a different context, and with different aims, through joint Unesco/World Bank missions, some to effect general exploration, some to select priority projects to which the Bank or the International Development Association (IDA) might grant financial assistance, some to prepare the details of projects due for financing, some to evaluate results, and so forth. From 1964 onwards many such joint missions have been dispatched to Member States under the new co-operative programme. Finally Member States, in framing their programmes for technical assistance, give a high priority to long-term experts in educational planning. In March 1968 a total of eighty-two States had received aid from one or more missions, while forty-two experts were still in the field,

frequently working as members of teams which included experts in other disciplines.

The concept of educational planning is thus now generally accepted and has, moreover, become universally applied. Yet the geographical extension, so to speak, of educational planning is only one feature of the history of the past few years, and it has been possible to observe at the same time a steady broadening and enrichment of the concept itself: planning tends to consider not only school age but lifelong education; to be applied to all school levels and to all types (formal or informal) of education; to involve all population categories (women, rural population, handicapped children); to take into account aspects of structure, of content and of methods as well as purely quantitative problems (enrolment and costs); and to be more and more linked to general development, not only economic but also socio-cultural.

2 Evolution of educational planning

Out of 98 countries under review,[1] 80 have drawn up education plans (Africa, 17 out of 20; Latin America, 11 out of 14; Asia plus Australia and New Zealand, 21 out of 25; Arab States, 10 out of 11; Europe and North America, 21 out of 28. In 10 per cent of the positive cases this is their first plan).

Among the 21 countries which have no education plan at this time, however, six have a plan in preparation and one other is on the point of undertaking the task.

Broadening the field of planning: from compulsory education to lifelong education

The extension of the range of educational planning varies from one country to another. All the countries answering the ICEP questionnaire on this point have included in their plans primary education and general education at the secondary level. Almost all of them also include technical training and second-degree vocational training, but there is a drop in agricultural training at the secondary level (minus 15 per cent), though this, in the statistical returns of some of these countries, may be confused with technical training. Teacher training at the secondary level (for the primary level) is specified in 67 replies, with 8 negatives. This is a relatively high proportion, but it may appear strange that countries which plan their primary teaching do not plan the corresponding teacher training.

As regards higher education, university teaching and higher teacher training are taken into consideration in 62 cases, while other types of higher training such as the *grandes écoles*, various institutes, etc., figure in 47 cases. Altogether

1. Replies to the International Conference on Educational Planning (ICEP) questionnaire numbered 87 (out of 130 countries addressed); replies to the questionnaire for *World Survey of Education* numbered 2; and information derived from other sources came from a further 9 countries.

82 per cent of countries include higher education in one form or another in their educational planning.[1]

Adult education is taken into account in 63 plans, sport and cultural activities in 52.

All these figures relate to public education. Private schooling is included (and in most cases only partly) in 15 per cent of the replies only.

Interesting as they may be, these returns give a poor account of such development as has already taken place, or of emerging trends, whereas it is precisely that development and those trends which represent the most meaningful factors in the situation.

Planning at the three levels of formal education

Some countries have drawn up partial (or sectoral) plans for the secondary level, and even for higher education, without first introducing a plan at the primary level; but as a rule, planning begins at the primary education level and continues into the secondary and higher levels.[2] It is significant that the 'first flight' of regional conferences of ministers of education (up to 1960) concentrated attention on the development of compulsory education, whereas the 'second flight' (Addis Ababa in 1961, Santiago in 1962, Tokyo in 1962) took secondary and higher education into consideration. All countries which replied to the ICEP questionnaire include general secondary education in their planning, and almost all also include technical and higher education.

Higher education

Universities have constituted, in the past and in many countries, a relatively independent sector. Nevertheless, demographic explosion, social demand and problems of employment are imposing more and more the need for planning in this sector. In countries where universities are autonomous (India, most of Latin America, the United Kingdom and United States), planning, if any, is done at the level of each institution; but even in this case autonomous universities have begun to associate in commissions for co-ordination and planning of higher education at provincial or national level. In more centralized systems, planning is done by the corresponding ministry, such as a ministry of higher education (United Arab Republic), a ministry of higher and specialized secondary education (U.S.S.R.), or a ministry of education in general. One should also note cases of regional university planning, as in East Africa where three universities, Dar es

1. Congo (Brazzaville), Mali, Nepal and Panama, which do not include university teaching in their educational planning, nevertheless include higher teacher training and other forms of higher education.
2. The main reference work for the pre-1962 situation is the report submitted to the twenty-fifth International Conference on Public Education, *Educational Planning* (IBE document No. 242).

Salaam, Nairobi and Kampala, have jointly prepared a three-year plan of development.

Technical education and vocational training[1]

Provision of technical education and out-of-school vocational training are closely related to the problem of trained manpower requirements, and it is generally for this reason that they figure in economic development plans. There is a great variety in the nature of the official bodies responsible for planning in this area. A technical meeting of experts on the organization and planning of vocational training, organized by the International Labour Organisation (ILO) at Geneva in 1967,[2] drew attention to this diversity of responsible bodies, and observed 'that it might lead to a lack of co-ordination between some or all of those concerned and between these bodies and those involved in economic and social planning'. In effect, the degree of integration of technical education and vocational training in the plans depends in the first place upon the power and efficacy of the means of control at the disposal of the central planning authority.

Special plans relating to technical education were drawn up in several countries (Ireland, Italy, Japan, etc.) between 1950 and 1960. But it can hardly be said that technical education has been incorporated into the general educational plans. It is noteworthy that the recommendations drawn up by Unesco and ILO in 1962 insist on the need to include technical education in the national development plan—without mentioning the educational plan. Nevertheless, what we have styled the 'second flight' of regional conferences (after 1962) all gave special attention to this problem; the replies to the ICEP questionnaire all show that great progress has been made,[3] and that technical education has become one of the priorities of educational planning. It is far and away the most frequently quoted problem which should receive special attention in forthcoming plans.

A few examples may be quoted. In the United States there is close co-operation in this respect between the Federal Government, the States and the local authorities. Every State has a Vocational Training Council which draws up an educational programme. Before they can receive federal funds States have to obtain the approval of the U.S. Commissioner of Education to a plan for giving operational effect to their programmes. In Tunisia much attention is given to the vocational training of adults (specialization and retraining) and youth in the 'Perspectives Décennales de Développement 1962-71' and in the 1965-68 four-year plan. Brazil

1. See: Hugh Warren, *Vocational and Technical Education*, Paris, Unesco, 1967; *Education for a Changing World of Work*, Washington, U.S. Department of Health, Education and Welfare, 1963 (Report of the Panel of Consultants on Vocational Education); S. G. Chapovalenko, *Polytechnical Education in the U.S.S.R.*, Paris, Unesco, 1963.
2. Geneva, 20 November to 1 December 1967. See in particular documents TMVT/1967/II and III on Latin America and on Gabon, Madagascar, Chad and Togo respectively.
3. To the question, 'Does the plan cover ... secondary technical education?', there were 73 affirmative answers out of 76 (agricultural training 62, vocational training 71).

has two bodies, connected with private enterprise, the SENAI (National Service for Industrial Apprenticeship) and the SENAC (National Service for Commercial Apprenticeship) which undertake the planning of specialized manpower training. Funds are supplied by the private sector at the rate of 1 per cent of gross revenue.

Technological advances, shrinkage or closures of whole branches of industry, the consequent unemployment and the need to transfer manpower from one sector to another have placed the whole problem of technical and professional education in the limelight. There has now emerged a form of education aimed at reconversion, which grows *pari passu* with changes occurring in the structures of production. Training with a view to reconversion is becoming a powerful weapon with which to combat technological unemployment and to solve the problem of regrouping of labour. Planning in many countries is beginning to take this element into account.

Another novel feature is that of refresher training (*recyclage*), which meets the growing need for a type of professional and technical training capable of providing constant supplementation and renewal of the knowledge of adults in terms of scientific and technological progress. Experiments in this field are multiplying,[1] although they are not yet clearly apparent in national planning but are found rather within the programmes of some large undertakings or under the aegis of a few universities acting in co-operation with industry.

The training of adults

Training facilities for adults are provided by a great variety of public and private bodies, and the field is so complex that problems of co-ordination are wellnigh insoluble and militate against any attempt at planning.[2]

It should be noted that in some countries adult education is not the responsibility of the ministry of education but of the services in charge of community development (e.g. in Ghana and Malaysia), while practically all the technical ministries (agriculture, mining, industry, health, labour, information, etc.) are involved. In addition the resources earmarked for adult education vary considerably from one country to another: 19.1 per cent of the education budget in one Asian country, less than 1 per cent in a Latin American State.

Adult literacy[3] is now no more than a marginal educational activity in those countries where the spread of primary education has sealed the sources of illiteracy;

1. See: *Policy Conference on Highly Qualified Manpower, Paris, 26-28 September 1966*, Paris, OECD, 1967, which provides numerous examples.
2. Amid a number of international conferences held to discuss the general problems of adult education, the Elsinore (1949) and Montreal (1960) conferences will be remembered. Their working papers and final reports are available at Unesco Headquarters. See also: *Literacy and Adult Education: Research in Comparative Education, Twenty-sixth International Conference on Public Education, Geneva, 1964*. Geneva, International Bureau of Education/Unesco, 1964
3. Replies to the ICEP questionnaire indicate that 47 countries out of 88 include literacy work in their education plans, namely 10 African countries, 11 in Latin America, 10 in Asia, 8 in Europe and 8 Arab States.

the problem here is merely to retrieve or absorb particular population groups, such as migrant workers. But adult literacy remains a major undertaking in countries where schooling has only recently developed and still stands at a low level.[1] Although a number of mass campaigns conducted under particularly favourable political conditions have succeeded brilliantly, in many other cases the mass approach has failed to produce the desired results, notwithstanding the means put into action. The World Congress of Ministers of Education on the Eradication of Illiteracy, meeting at Teheran from 8 to 19 September 1965 under the auspices of Unesco, recommended a new, selective and functional approach to the problem, under which the strategy of literacy work is linked with that of development as expressed in the national plans.[2] This new approach directs efforts towards the most receptive groups of the population and towards those priority sectors in which illiteracy acts as an immediate stranglehold on development.

The experimental World Literacy Programme, inspired by Unesco with the help of the United Nations Development Programme, is giving effect to these recommendations through a growing number of national pilot projects. Literacy work is integrated with agricultural or industrial development projects and the expenditure involved is regarded as an investment of funds. This experimental programme, whose results will be systematically evaluated, represents at this stage a highly important test-bench of planning, as applied to one sector of adult education regarded as a component of general development planning. By the end of 1967 planning missions had been dispatched to thirty countries to assist in the preparation of experimental projects, while the Special Fund had agreed to assist six countries: Algeria, Ecuador, Guinea, Iran, Mali and Tanzania. Other projects are being or will be financed solely out of national resources or with the help of bilateral assistance.

Compensatory and complementary education is intended for those adults who have been unable to follow the normal school programme regularly and who wish to pursue their studies without abandoning their professional work. It is sometimes associated with vocational training and may also, at the primary level, be the normal sequel to having become literate. Given the daily time-tables to which the immense majority of adult workers are subjected, this type of education usually takes the form of evening classes or, to a lesser extent, of correspondence courses.[3] Planning in this field of education is still very limited, for in many countries it is for the most part provided by private undertakings, often of a commercial character.

1. *Statistical Data on Literacy*, Paris, Unesco, 1965 (Minedlit 5); *Unesco Statistical Yearbook*, 1965.
2. *Literacy as a Factor in Development*, Paris, Unesco, 1965 (Minedlit 3); *World Congress of Ministers of Education on the Eradication of Illiteracy, Teheran, 1965—Final Report*, Paris, Unesco, 1965.
3. Teaching by correspondence is at present booming, particularly in Australia, Japan, the U.S.S.R., the United Kingdom and the United States, as well as in some developing countries (India, Lebanon, Malaysia and others).

There is nevertheless some tendency towards co-ordination, and this may in due course be of some assistance to the planners.

Another form of adult education, liberal, general and non-professional, neither compensatory nor complementary, and unburdened by examinations or diplomas, has emerged since the close of the last century; it was first seen in the United Kingdom—in association with workers' education—and in Scandinavia where it was linked with the peasant movement and the 'folk high schools', the first of which opened in Denmark in 1844.[1] An increase in the financial assistance of the State, coupled with a strengthening of State supervision, might well bring about a beginning of a concerted and elastic form of planning which would maintain the independence and specific characteristics of 'Peoples' Universities' and similar institutions.

Adult education uses more and more mass communication media (press, radio, television). In Australia, Canada and New Zealand correspondence courses have been completed by regular radio broadcasting for a long time. The same occurs in Japan where radio since 1951 and television since 1961 are essential elements of studies by correspondence. In Italy the Centro di Telescuola broadcasts complete courses for the first three years of secondary education and a literacy programme (*It is Never Too Late*) which enjoys a great success. Unesco has assisted several countries—Poland, India, Senegal, Togo—to implement pilot-projects for adult literacy through radio or television.[2]

Planning of cultural activities

Some 77 per cent of the countries which reacted to this item in the ICEP questionnaire stated that cultural activities were incorporated in their educational planning.

Books and libraries. Millions of the self-taught achieve their education through books—a basic element in professional betterment; one of the principal tools of the research worker, if not, in some fields, the only one; and in the school-room, the teacher's best help. Development economists know how important is the book, which is often taken as an indicator of the 'typology'; and the book is beginning to win its place both in educational planning and in economic planning.

Several expert meetings, in particular those held at Quito in 1966 and in Ceylon in 1967, gave special attention to the planning of library services within the general educational planning framework.[3] The serious problem of school textbooks, again,

1. S. G. Raybould, *Trends in English Adult Education*, London, 1959; H. Ruge, *Educational Systems in Scandinavia*, Norwegian University Press, 1962.
2. H. R. Cassirer, 'Audio-visual Media for Adult Education in Africa: the Dakar Pilot Project', *Unesco Chronicle*, Vol. XII, No. 2, 1966; Ignacy Waniewicz, 'Television and Higher Technical Education of Working People', *Meeting of Experts on Mass Media in Adult Education and Literacy*, Paris, Unesco, 1967. See also the series published by Unesco: *Reports and Papers on Mass Communication*, particularly Nos. 33, 38, 42, 43 and 50.
3. See: C. V. Penna, *Planning of Library Services*, Paris, Unesco, 1967.

has led to consideration of the wider problem of books in the developing countries. Regional conferences have studied the problems of book promotion and distribution in Asia (Tokyo, 1966) and in Africa (Accra, 1968). For many countries, the build-up of a national book industry related to the need for school books is a major source of concern.

Museums. The former museum of treasures, the mere warehouse of works of art and of curios, is more and more being replaced by the educational museum. An investigation carried out by the American Association of Museums in 600 museums of art in the United States reveals that 8 million children and 4½ million adults attended lectures and conferences organized by those museums in 1966; and that 90 per cent of the museums in the United States of America have educational programmes. In the Union of Soviet Socialist Republics some 60 million children visit each year the 900 static museums of the country, to which must be added various ambulant museums travelling through rural areas. Spain's second educational plan provides for the creation of 15 popular musuems. Reference must also be made to the outstanding success of the Mexican Educational Museum. In an increasing number of developing countries the museum is considered in the first place as an agent of popular culture. Another striking example is the National Museum of Niamey in Niger.

Theatre, music, cultural centres. A number of countries operate State-subsidized theatres, but their direct educational impact is in most cases limited. On the other hand, recent years have seen the emergence of 'theatres of the people', not immured in one building but visiting schools, villages, barracks, even prisons. An example is the recently created Teatro Popular Ecuatoriano.

In music mention must be made of the outstanding Jeunesses Musicales organization, which has rendered untold service in bringing the young to the concert hall.

But whether in theatre, music or art in general the institution which—with radio, television and the cinema—has undoubtedly done most in recent years to bring culture to the masses is the cultural centre or 'House of Culture'. Most Latin American countries now have such centres. In France their development has been rapid in the last ten years, and there are now 31 principal Maisons de la Culture. In the United States, 175 centres have opened since 1957; Hungary has 1,324 cultural centres with 82,000 members. These centres not only offer stage performances and concerts; they call upon the population to participate actively, and some 2½ million Hungarians thus take part each year in artistic activities such as choir-singing, orchestral playing, stage acting and dancing.

The mass communication media (radio, television, cinema, press) exert a considerable educational influence. Planning in this field up to the present has aimed chiefly at placing the necessary equipment at the public's disposal, particularly in the developing countries.

Cultural activities may be the direct responsibility of the national ministry of education, or of a distinct ministry. They may appear in one chapter of the education plan, or in the general development plan. What is essential is that there should be a cultural policy and a policy for leisure,[1] and that both should be coherent and closely linked with school and out-of-school education. The inquiry carried out by Unesco into 'The Role of the Human Factor in the Development of the Newly Independent Countries'[2] shows the importance of such integration.

Out-of-school education

In addition to all the training activities carried on outside the school walls, out-of-school education includes everything that is education given outside formal limits, in the street, in the family circle, in various groupings of youths or of adults, etc. The field it covers is conterminous with society as a whole, in all its manifestations. It is therefore clear that the very nature of out-of-school education imposes certain limits upon many attempt at planning, and that the planners can only grasp those aspects which are to some degree structured and institutionalized.

Having briefly referred to cultural activities (museums, theatres, television, etc.) above, we shall here examine only two aspects of out-of-school education, namely family education and youth activities.

The family, whatever changes it has undergone in the modern world, retains an incalculable educational role. There is thus a pressing need to strengthen the non-formal type of education it is able to impart in a qualitative manner, while taking due note of current transformations. An interesting development in this context is the French 'School for Parents' system, which can also be found in the United States, in Belgium, Cameroon, Hungary, Mali, Mexico and other countries. These experiments, although in many cases they benefit from considerable assistance out of public funds, are not as yet included in the education plans.

Family education is sustained and completed by pre-school education, which is given in infants' schools and kindergartens, still regarded by some as luxury establishments, but which are nevertheless given a high priority, together with everything connected with child welfare, in the plans of several countries (Hungary, Kuwait, Poland, Syria and others). On the international level Unicef dispenses considerable assistance in this field.

The educational needs of youth differ from those of adults, and the contrast sharpens as the young increasingly assert their particular being, which is sometimes in opposition to the adult world. Nevertheless the aims and methods of youth education on the one hand, and of adult education on the other, cannot be sharply kept apart, and indeed it is found that they tend to amalgamate into an over-all

1. See: *Adult Education and Leisure in Contemporary Europe*, Prague 1966 (document prepared by the Czechoslovak National Commission for the conference organized with Unesco's participation and held at Prague, 29 March to 6 April 1965).
2. See document Unesco/SHC/5, 28 April 1967.

educational process. Out-of-school education for the young is mostly dispensed through the agency of youth associations (cultural, sports, etc.), and the degree of planning present is essentially dependent upon the nature of these associations and the attitude of the State regarding them. In several Socialist States, for example, youth organizations are considered as autonomous public bodies, increasingly liable to be called upon to take over certain functions of the State. Often they become the promoters of major public works in which large numbers of young people participate voluntarily. Creative works of this type have not only educational value but distinct economic importance. Elsewhere the role of public authorities varies considerably. National plans sometimes provide for the creation of organs of guidance or control, but are mainly concerned with the supply of installations and equipment for the young.[1]

Towards permanent education

This brief survey shows that planning of out-of-school education, where it exists, is seldom integrated with the planning of school education.[2] This absence of integration is met very precisely in the concept of continuing education, which has won considerable attention in recent years.[3] In this new perspective it is held that education cannot cease with childhood and adolescence but that it is a continuous process lasting throughout the duration of life; hence none of its general or particular aspects, and notably that of vocational training, can remain distinct or indeed opposed, but must be harmonized with a view to a total, creative form of training. Only in this way can education meet the current needs of man in a society the evolution of which is proceeding at such an increasing speed. To meet the demands of this rapid evolution, education must become a process of dynamic adaptation and cannot be confined to the early years of the individual's existence.

In stressing the unity and totality of man's development the concept of continuing lifelong education goes beyond the traditional notion of adult education and makes

1. See: *International Youth Conference, Grenoble, 1964—Final Report*, Paris, 1964 (Unesco/ED/211) (see in particular the bibliography appended to the paper by Léopold Rosenmayer); Council for Cultural Co-operation of the Council of Europe, *Leisure-time Facilities for Young People*, Strasbourg, 1965 (Series III, *Out-of-school Education*, No. 4); *Jeunes d'Aujourd'hui*, Paris, La Documentation Française, 1967 (report of an inquiry by the Ministry of Youth and Sport); Ministry of Education of Cuba, *Report to the XXXth International Conference of Public Education at Geneva*, Havana, 1967; *New Trends in Youth Organizations, a Comparative Survey*, Paris, Unesco, 1960 (*Educational Studies and Documents*, 35).
2. The ICEP questionnaire included a question on the existence of co-ordination between school and out-of-school teaching to which, out of 73 countries, 46 replied in the affirmative (Africa, 10; Arab States, 6; Asia, 6; Europe, 16; Latin America, 8).
3. Yugoslavia is one country in which adult education and continuing education tend to merge. See: M. David, *Adult Education in Yugoslavia*, Paris, Unesco, 1961; S. Tonkovic, *L'Edification du Système de l'Education des Adultes dans les Conditions Actuelles du Développement Social et Technique*, Opatija, 1964 (report on the International Seminar on Systems of Adult Education) (mimeographed).

a deep impact upon the whole educational structure, which should henceforward provide for periods of training between the ages of 30 and 50.[1] It thus exerts a growing influence upon the planners by encouraging them to incorporate all forms of education into their over-all plans.[2]

Extension of education to all population categories

The General Conference of Unesco at its eleventh session (1960) adopted a Convention against Discrimination in Education. Meanwhile the planners, engaged in preparing exacting surveys of the existing situation, revealed more clearly than before that inequalities persist in the matter of access to education. As a result the education plans of many countries contain special provisions designed to ease access to educational facilities for categories of people hitherto inhibited in this respect, to a greater or lesser extent, and accordingly entitled for some time to come to benefit from specially favourable treatment. In the 80 returns considered, such special provisions are found: in 51 cases regarding the education of women, in 53 cases regarding rural education, in 33 cases regarding particular social groups such as racial minorities, nomads, dispersed populations, inhabitants of new towns, etc., in 64 cases regarding financial assistance for students, and in 45 cases regarding 'special' education (handicapped persons, etc.)

Education of women

Unesco has at all times defended the principle that there should be no discrimination whatever as regards access of girls and of boys to education. It has carried out studies, some of which have been submitted to the United Nations Commission on the Status of Women;[3] it has organized regional conferences of specialists in Africa (1960), in Asia (1962) and in the Arab States (1964); it has seen to it that all the regional conferences of ministers of education underlined the importance of this problem, which has also been high-lighted before a number of conferences on higher education, particularly at the Conference of Ministers of Education of European Member States on Access to Higher Education held in Vienna in November 1967.

1. The total duration of education would be extended by the inclusion of such additional periods of training. In view of the indirect advantages of retraining (decrease in expenditure on unemployment and old-age benefits), such further education in industrialized countries might be financed, for example, through the social security systems. See Malcolm S. Adiseshiah's opening address at the first National Seminar on Educational Planning organized by the Finnish Commission for Unesco, Helsinki, June 1967.
2. See: A.S.M. Hely, *New Trends in Adult Education from Elsinore to Montreal*, Paris, Unesco, 1963; P. Lengrand, *L'Education Permanente*, Paris, Peuple et Culture, 1966.
3. *Higher Education* (1958); *Out-of-school Education* (1960); *Access of Women to the Teaching Profession* (1961); *Elementary Teaching* (1962); *Education in Rural Areas* (1963); *Secondary Education* (1966); *Higher Education* (1967); *Technical and Vocational Education* (1968).

The problem of the education of women becomes particularly acute when viewed from the standpoint of educational planning linked with economic and social planning. For women, even when they do not play a direct role in production, are an important element in consumption and, because of their dominant position in family life, can exert a decisive influence on the creation of an atmosphere propitious to development.

Rural education

A considerable proportion (sometimes over 90 per cent) of the population of developing countries resides in rural areas and depends upon agriculture for its living. Two problems, complementary rather than contradictory, arise, of which Member States are fully conscious: on the one hand it is important to adapt rural education (particularly primary education, the first phase of secondary education and adult education) to the special circumstances and needs of the environment; on the other hand it is necessary to ensure that rural school pupils shall have equal access, given equal capacity, to secondary and higher education elsewhere.

Higher education

Equality of access to higher education is a basic condition for the full employment of the intellectual capital of any population on behalf of its economic, social and cultural development, and also a condition of access on equal terms to positions of command in society, hence and necessarily, a pre-condition of effective democracy. In co-operation with the International Association of Universities, Unesco published in 1965 a study on *Access to Higher Education*, which defines the status of this problem in twelve countries.

The Conference of Ministers of Education of European Member States on Access to Higher Education which met in Vienna in November 1967 adopted a series of recommendations in this field, among which may be mentioned one on the organization of continuing guidance at the secondary level, one on social assistance to pupils, one on rules of admittance based on genuine aptitude rather than on formal qualifications, and another on the development of general and vocational training for adults.

Special education

The question of special education has been debated on many occasions by international organizations, in particular at the international conferences on public education (IBE) between 1936 and 1960. The General Conference of Unesco, at its fourteenth session in 1966, again examined the problem from both its humanitarian and its economic aspects. The degree of attention which States can accord to the education of the handicapped obviously depends upon the resources available to them and upon the level of general education they have attained. Returns show

that 16 European countries out of 27 make provision for special education in their educational plans, 7 Arab States out of 10, 11 out of 18 in Asia, 6 out of 11 in Latin America and 5 out of 17 in Africa.

From purely quantitative planning to the consideration of factors of yield, structure, content and methods

The replies of Member States to the ICEP questionnaire show that 59 countries include in their plans provisions relating to the qualitative aspects of education, while 6 only confine their planning to purely quantitative factors. Some (Hungary, Iran, St. Vincent, Tunisia) state that qualitative improvement is now their chief concern. Others include among the problems under study the improvement of content and methods (Albania), improved yield (Brazil), adaptation to the environment (Gabon), integration of the separate educational levels and introduction of new teaching methods (Kuwait), modernization of curricula especially in the field of technical education (United Arab Republic) etc.

Concern over problems of quality is certainly not new, nor are the reforms undertaken in that context; but until quite recent times reforms and planning were kept entirely separate and most of the early educational plans were of a strictly quantitative character (estimates of enrolment totals, numbers of teachers to be trained, buildings to be erected, cost of the various operations, etc.). The new feature is the fusion of planning and reform, now that the planners have become conscious of the importance of such problems as wastage and retardation, the economists of the need to give attention to school curricula if education is to be effectively adapted to the demands of socio-economic development,[1] and the politicians, lastly, of the necessity of matching the content of curricula to the national environment.

Problems of yield

During the past ten years or so it has become more and more clear that problems of wastage and retardation reach in many developing countries such high proportions as to threaten to cancel out, or at least to retard very considerably, the increase in enrolments won at the cost of heavy financial effort. According to a study carried out by the Unesco Regional Office for Education in Asia[2] the following wastage and retardation rates were found in 19 countries furnishing usable data: less than 15 per cent, 5 countries; 15 to 25 per cent, 2; 26 to 35 per cent, 3; 36 to 55 per cent, 3; 56 to 80 per cent, 4; over 80 per cent, 2.

1. See for example the conclusions of a working group of experts: *Methods of Integrating Education and Economic and Social Development with Special Reference to Asian Member States*, Bangkok, September 1967.
2. 'The Problem of Educational Wastage', *Bulletin of the Unesco Regional Office for Education in Asia* (Bangkok), Vol. I, No. 2, March 1967.

These figures relate to primary school enrolments between 1958 and 1960. They are highly approximate since they merge two very different phenomena, abandon and repetition, but are nevertheless all the more telling in that wastage appears to rise in inverse proportion to the school attendance rate and to the level of GNP. In other words the poorest countries and those in which schooling is least developed suffer most from wastage.

Figures submitted to the Conference of African Ministers at Nairobi (1968) are no less disturbing. Earlier conferences (Addis Ababa, etc.) had been conscious of the gravity of the problem and had adopted as a target the reduction of the wastage rate in primary education to a maximum of 10 per cent per school year. At Nairobi, however, it emerged that the rate had remained far higher, at an average of 21 per cent per annum for the African States under consideration taken together. Table 1 indicates retention rates from the first to the sixth year of schooling.

TABLE 1. Retention rates, in African States, from the first to the sixth year of schooling

Year	1960/61	1961/62	1962/63	1963/64	1964/65	1965/66
First	100					
Second		90 (66)[1]				
Third			81 (57)			
Fourth				73 (46)		
Fifth					66 (37)	
Sixth						59 (32)

1. Figures in brackets are the actual returns; the first figures represent the targets aimed at.

These figures, however, only indicate apparent wastage and cannot be taken to mean that out of 100 African children who began their primary schooling in 1960, 32 were attending school for the sixth year in 1965/66; for we also have to allow for those who had to repeat a year's study. Some figures have been gathered from four African countries which indicate retardation rates between 1964 and 1966 (Table 2).

TABLE 2. Retardation rates in four African countries between 1964 and 1966

Country	1st year	2nd	3rd	4th	5th	6th
	%	%	%	%	%	%
A (1965/66)	33	31	29	26	32	55
B (1964/65)	21	21	19	24	46	24
C (1965/66)	14	14	16	16	17	36
D (enrolments 1959/60-1964/65)	38	28	31	26	25	19

For Africa as a whole it would appear that in recent years the rate of increase in repetitions for the six years taken together was higher than the first-year rate;

in other words retardation rather than school attendance is on the increase![1] Given such a situation, it is understandable that Unesco's Member States should give the utmost attention and the highest priority to these problems. Most of the countries that replied to the ICEP questionnaire have carried out an investigation of school wastage and retardation.

Reform of structure, contents, methods and teacher training aimed at improved yield

As regards reforms of structure three main tendencies can be discerned: the single-teacher primary school, the foundation of the spread of compulsory education in Europe and North America, has been adopted in numerous countries, particularly in Latin America, as a solution to the problem of rural education; in secondary education, specialization tends to be postponed for as long as possible. This is the basic principle of the Swedish 'global school',[2] of the French guidance classes and of the Ecuadorian *ciclo basico*; there is an increasingly keen awareness of the need to broaden the traditional framework of formal education and to replace it by a global system incorporating school and out-of-school education, the teaching of children and that of adults.

The reform of curricula has, in recent years, been the object of discussion at several international and regional conferences[3] and the subject of numerous publications.[4] But, although curriculum reform is the topic most frequently discussed, it is interesting to note that the boldest reforms are often attempted in countries where formal school education is relatively little developed and is accordingly unencumbered by traditions, good or bad. If reforms affecting the whole curriculum are still seldom seen, note should nevertheless be taken of substantial progress achieved in the fields of mathematics, science, geography and history.

The reform of teaching methods poses similar problems. 'Active' schools, although recommended over many years, are still far from being found everywhere. This system gains support, however, from the spread of programmed instruction[5] which has already found a solid footing in some of the highly developed countries, in particular in the United States. Seminars organized by Unesco at Ibadan (Nigeria), and at Ramallah (Jordan), in 1963 provided an opportunity of

1. See also: Institut du Développement Economique et Social (IEDES), *Les Rendements de l'Enseignement du Premier Degré en Afrique Francophone*, Vol. III, Paris, 1967.
2. *La Politique et la Planification de l'Enseignement, Suède*, p. 55 ff., OECD, 1967.
3. Twenty-ninth International Conference on Public Education, 1960: discussion on secondary education curricula; Meeting of Experts on Basic General Education in Technical and Vocational Training, Paris, Unesco 1966; Meeting of Experts on Teacher Training, Paris, Unesco 1967; Meeting of Experts on the Content of General Education, Moscow, Unesco 1968.
4. Particular mention should be made of: E. B. S. Bloom, *A Taxonomy of Educational Objectives*, New York, 1964; J. Alles, *Curriculum Development and Evaluation*, Ceylon, 1967; OECD, *La Réforme des Programmes Scolaires et le Développement de l'Education*, Paris, 1966.
5. S. Spaulding, *L'Enseignement Programmé, un Répertoire International*, Paris, Unesco, 1967.

measuring the progress achieved with this new technique in certain West African and Middle Eastern countries.[1]

The qualifications of teachers, especially in the developing countries, raise a vital problem to which all the regional conferences have drawn attention. An expert committee on the training of teachers for general education at the primary and secondary levels was convened at Unesco Headquarters in Paris in December 1967. While much remains to be done in this field there is an undeniable trend towards improvement. For example, data collected for the purposes of the Nairobi Conference showed the evolution of the situation in Africa indicated in Table 3.

TABLE 3. Qualifications of teachers in Africa, 1960/61 and 1965/66

Levels of teacher training	1960/61	1965/66
	%	%
Secondary education plus three years of vocational or general training	6.3	8.2
Primary education plus four years of vocational training	38.7	41.7
Primary education plus at least two years of vocational training	55	50.1

Introduction of new educational media (television, radio, films and teaching machines)[2]

The use of radio, television and films in teaching has increased steadily in recent years, both in schools and universities and in adult or out-of-school teaching.

These new media serve the following general purposes: to improve the quality of education where the number of qualified teachers is inadequate; to make teaching available to children who are not able to attend school and, at the higher level, to provide university teaching to those who cannot attend courses; to train teachers; and to introduce new material or new concepts into the curricula (e.g. in mathematics and in the teaching of living languages).

As regards the improvement of the quality of teaching we may quote examples in Samoa, in Hagerstown (United States) and in Niger, where much use is made of television.

The Hagerstown example is particularly interesting on two grounds: first because the efficacy of television, which has been in use for over ten years, has been assessed with great precision; and secondly because unlike Samoa, where the development of school television was motivated by the lack of qualified teachers, television was here brought in to meet the insufficiency of schools at a time of increase in the numbers of school-age children. Up to the present, pupils of 46 primary and secondary schools in Washington County have profited from

1. P. Kenneth Komoski and Edward J. Green, *Programmed Instruction in West Africa and the Arab States*, Paris, Unesco, 1964 (a report on two training workshops).
2. In: Unesco/IIEP, *New Educational Media in Action: Case Studies for Planners*, 3 vols., Paris, 1967, *The New Media: Memo to Educational Planners*, Paris, 1967; *Nouvelles Méthodes et Techniques d'Education*, Paris, 1963.

this form of teaching; the courses cover 12 years' study, with 28 programmes a day, most of them live transmissions, and all are followed by classes directed by the teachers.

The Niger experiment is no doubt the most revolutionary so far: the object is to provide complete instruction for beginners in such subjects as French, reading, writing and arithmetic. Launched in 1964, the system is of a mixed character using both television and a stimulator.

Elsewhere radio and television are used with increasing frequency to provide education to those who are deprived because of a shortage of schools or of places in school, or simply because they are unable to attend classes. Examples will be found in Australia and New Zealand, Japan, Italy, in the Chicago City Junior College, etc. Mention should also be made of the joint Unesco/Polish Government pilot project using television in combination with other media at the higher education level.

Although the new teaching media have not been greatly used hitherto for purposes of teacher training, an adequate notion of the possibilities they offer can be derived from experiments carried out by the Algerian Government and by the United Nations Relief and Works Agency (UNRWA).

These new media are already in current use for the teaching of living languages and are also being applied to the teaching of modern mathematics and physics. Since 1962 the Department of Education of Nova Scotia, in co-operation with the Canadian Broadcasting Corporation, has provided televised courses in mathematics. In the United Kingdom, the BBC provides initiation courses in mathematics for children aged 11-12 years. In physics, the Canadian Association of Broadcasting has recently carried out an experiment aimed at assisting teachers with a programme one-third of which consists of practical demonstrations. An inquiry made to assess the value of this experiment showed that teachers found it of great use and considered it superior, as a method of presenting the latest advances, to anything that could be provided by books.

Finally the social sciences figure more and more prominently in televised and broadcast educational programmes. Examples are the weekly broadcasts of the Czechoslovak radio and the Zambian radio programme on civics, intended for the higher stages at both the primary and secondary levels.

Besides radio, television and film, a beginning is being made in the most developed countries with teaching machines properly so called. As their general use lies in the future, however, the issues they raise will be discussed in the second part of this paper.

Integration of educational planning with general development planning

Some of the earliest endeavours in educational planning were already closely linked with socio-economic development. Nevertheless, and as a general rule,

planning of education after the Second World War was a separate exercise having no substantial links with the other chapters of the general development plan. Such links first took shape in a financial context, since it was necessary to reconcile expenditure on education with outlays in other sectors. Educators found themselves forced to demonstrate that education was not only a consumption commodity but that it represented an investment or pre-investment, vital to economic development; they thus became more conscious of the relationship between education and the economy. The economists for their part began to take a greater interest in education; as from 1960, basic studies on the economic role of education became numerous. Educators and economists acquired the habit of discussing their problems together, notably on the occasion of the major regional conferences organized by Unesco and the United Nations Regional Economic Commissions.

Education plans and economic development plans

Out of 98 countries for which data are available,[1] 86 have plans for economic and social development; 80 have an education plan; and in 70 cases, the education plan is an actual component of the development plan.

A concern to link education with the economy, which was absent from the earliest plans, is visible in all the current plans. The link is particularly evident in the cases of Afghanistan (Third Plan, 1967-71), Brazil (Plan of 1967), China (long-term plan), India (*Report of the Education Commission*, 1964), Iran (Fourth Plan), Malaysia (Plan of 1965), Pakistan (Third Plan) and others.

Educational planning and forecasts of manpower needs

The first indications of a link between education and the economy were in most cases the result of an attempt to match training to the forecasts of manpower needs, and here a tribute should be paid to the pioneer work in this field of ILO (International Labour Organisation) and of OECD.[2]

Answers to the ICEP questionnaire indicate that 65 education plans out of a total of 76 were drawn up after an investigation of manpower needs, carried

1. Data derived in 87 cases from the ICEP questionnaire, in 2 cases from the questionnaire for the fifth volume of *World Survey of Education*, in 9 cases from other sources.
2. The *International Labour Review* has devoted no less than eighteen papers to these problems since 1964. Mention should also be made of working documents prepared by the ILO for various conferences on employment (Asian Advisory Committee, thirteenth session, Singapore, 1966; eighth Conference of American Member States, Ottawa, 1966; African Advisory Committee, third session, Dakar, 1967). See also: Unesco/IIEP, *Manpower Aspects of Educational Planning, 1968*; Herbert S. Parnes *et al.*, *Planning Education for Economic and Social Development*, Paris, 1963 (a study prepared in connexion with the Mediterranean Regional Project of OECD); and *Manpower Report of the President and a Report on Manpower Requirements, Resources, Utilization and Training*, Washington, D.C., U.S. Dept. of Labor, 1967.

out in most cases for the first time between 1964 and 1967. The complexity of the method used and the degree to which results are put to effective use vary considerably from one country to another. In all the Socialist countries of Europe, but elsewhere also (China, Tanzania, Uganda, etc.), forecasts of employment, drawn up under rigid conditions, govern the planning of education in its entirety. But in other cases forecasting may sometimes be confined to a quick survey carried out on behalf of the ministry of labour or of planning and concerned solely with the needs for supervisory staff in the most up-to-date sectors of production; and while the result may indicate a general trend, it in no way provides a basis for genuine planning.

Nevertheless, in every case the forecasting of manpower needs has led to an awareness, novel and of the highest importance, of the existing disequilibrium between training and employment possibilities. India and the United Arab Republic have both given attention to the problem of unemployment among graduates. 'Training and employment' committees have been set up within the general planning agency in Madagascar, and within the educational planning organ itself in Burundi, in both cases with the object of suiting secondary education, both general and technical, and higher education to the needs for qualified staff in government service and the private sector. In addition to quantitative estimates, systematic analyses are beginning to be made of the exact character of every post, with a view to adapting training to the individual demand; this is the specific function, for example, of the Brazilian national service for the training of qualified workers (SENAI).

Over 60 per cent of the countries stating that they have made inquiries into manpower needs proceeded, at the close of these inquiries, to reassess their school statistics in general secondary education (30 per cent of these countries), technical secondary (45 per cent) or higher education (35 per cent).

It is also becoming increasingly clear that in order to make full practical use of employment forecasts it is essential to set up a continuous guidance system throughout the full educational range.

The twenty-sixth International Conference on Public Education (1963) studied the question of the organization of school and vocational guidance, while the Conference of Ministers of Education of European Member States on Access to Higher Education (Vienna, 1967) laid stress on the importance of the same subject.

In France there has recently been created a national information office for teaching and vocational guidance and a national institute for studies, training and research, which latter is to train some 2,000 'teacher-advisers' to take charge of regional and local centres. In the Ivory Coast, the Planning Law of 1967 pays particular attention to school and vocational guidance. In several other countries, including Algeria, Congo (Brazzaville), Morocco, etc., guidance services have been attached to the educational planning authorities.

Educational planning and scientific policy

It was only after the Second World War that the first outlines of a scientific policy began to appear in a few industrialized countries, and much later in some developing countries. In most cases these policies were concerned only with certain aspects of research (for example, in ministries of health, industry, agriculture, education, or in governmental agencies responsible for nuclear or space research, etc.). The notion of co-ordinating these scattered efforts with a view to overcoming the scarcity of financial and human resources took shape in the decade 1950-60, but it was only after this latter year that agencies were created to thrash out coherent national scientific policies and to advise governments in this field.

At the present time there are in Europe, Asia, Oceania and the Americas some forty national bodies[1] directing scientific policy. In the great majority of cases they are attached to the staff of the head of State or prime minister, but in a few instances they take the form of ministries of science or are linked with a ministry of planning, finance or education.

The expansion of scientific activity is beginning to have an impact upon educational systems. Studies of the development of institutional infrastructures and of the general development of programmes of science teaching have been carried out, in particular by the National Science Foundation in the United States, by the National Council for Scientific Policy in Belgium, by State committees for science and technology and academies of sciences in several Socialist countries, etc.[2]

At the higher education level it is often difficult to make a distinction between education policy and scientific policy. Thus the development plan for higher education in Belgium is prepared by the national body responsible for scientific policy (CNPS), which is answerable to the Prime Minister directly. In some Anglo-Saxon countries, in particular the United Kingdom and Australia, the very recent creation of ministerial departments for education and science reveals a concern to harmonize the two policies in question, or at least certain sectors of them (for in the United Kingdom there is also a ministry of technology which plays a part in the elaboration of national scientific policy).

The introduction of the concept of research planning into educational planning can also be illustrated by the example of France, where, some ten years ago, a commission for scientific and technical research was added to the other commissions (including one for education) working for the Commissariat Général au Plan. These two commissions, for education and research, have overlapping memberships, thus ensuring the co-ordination of both plans.

1. See: *World Directory of Organizations Responsible for National Science Policy*, Vol. I, *Europe and North America*, Unesco/Francis Hodgson, 1966 (Vols. II for Asia and Oceania and III for Latin America are in course of publication).
2. See, in the series *Science Policy Studies and Documents*: Nos. 1 (Belgium), 2 (Czechoslovakia), 4 (Norway), 7 (U.S.S.R.), 8 (Japan), 9 (Yugoslavia) and 10 (United States of America). (The latter two are in press.)

Of the countries replying to the ICEP questionnaire on this issue, 70 per cent include in their education plans an assessment of needs for scientific personnel, the training of such personnel and the financing of the national scientific policy.

Educational planning and agricultural development

In many developing economies, agriculture is recognized as one of the key elements in achieving a faster rate of economic growth and social change, and the link between education and training, viewed as a lifelong process, and modernization of the agricultural sector is of crucial importance. Thus the planning of education and training is now recognized as a matter of common concern among national and international agencies responsible for research into agricultural policy. With a view to strengthening co-operation, the three United Nations Agencies involved in the field of agricultural education, namely, Unesco, the Food and Agricultural Organization (FAO), and the International Labour Organisation (ILO), have recently expressed their desire and determination to work together towards a fully co-operative programme on the basis of complementarity and co-operation, in the field of agricultural education, science and training.[1] An example of such co-operation is the forthcoming World Conference on Agricultural Education and Training, planned as a joint undertaking, to be held in 1970.

Educational planning and general development

Important as they may be, employment and scientific research are nevertheless only two of the many aspects of economic, social and cultural development. It is only because the lack of balance was here most striking, and indeed most shocking, that attention was first focused on these two points. But it has since become increasingly clear that a form of educational planning confined, for example, to the single issue of labour demand would be incomplete. This is one of the conclusions of the Meeting of Experts on Methods of Integrating Education in Economic and Social Development with Special Reference to Asian Member States, held at Bangkok in 1967. The new programmes in Algeria, for instance, take into account not only training for employment but problems of health and nutrition; in many newly independent States the build-up of national unity and the fostering of a civic spirit appear as major concerns; in Japan educational planning stresses the balance to be achieved between economic and social objectives.

From short-term programming to long-term planning

In most countries, and particularly in the developing countries, planning began with short-term programmes related, for example, to an annual budget. The

1. An *aide-mémoire* to this effect was signed by the directors-general of the three organizations on 3 May 1968.

extension of planning to cover all types and levels of education, both in and out of school, the link-up with economic development and with scientific policy, the increasing attention given to qualitative factors, have all compelled the adoption of a concept of planning covering an increasingly long period.

Replies to the ICEP questionnaire indicate that 65 per cent of the countries dealing with this subject now cast their planning on a five-year cycle. But we find a two-year plan (Bolivia), three three-year plans (Brazil, Dominican Republic and Somalia), eight four-year plans (Liberia, Malaysia, Peru, Philippines, Spain, Tunisia, United Arab Republic, Venezuela), four six-year plans (Bahrain, Burundi, Cameroon, Kuwait), one seven-year plan (Jordan), one eight-year plan (Panama, fractional plan), three ten-year plans (Ecuador, Gabon, Sudan), one twelve-year plan (Mexico, primary education only), two fifteen-year plans (China (Taiwan), Laos) and one 'long-term' plan (Denmark, running up to 1980).

It should be noted that the plans do not always provide for the identical duration at all stages of teaching; in the United Arab Republic, for example, the secondary education plan is of four years' duration (1966-69), while higher education is planned for seven years (1966-72). In addition most Socialist countries in Europe have plans covering a very long period, usually twenty years, broken down into five-year segments and annual targets. Hungary, for instance, has a long-term plan covering the years 1961-80, a current five-year plan (1966/72) and a 1968 schedule. Attention should also be drawn in this connexion to the 'caterpillar' type of planning, of which Sweden offers a striking example: a medium-term budget for five years is drawn up each spring by readjustment of the previous budget and by the addition of one year. This method has the merit of avoiding sudden upheavals in the plan. Finally some countries, among them Peru, stipulate in their legislation that educational plans must be drawn up periodically.

3 Educational expenditures

Expenditures for education vary greatly from one country to another, and comparisons at the international level are exceedingly difficult to make, in the first place because of differences in the calculation of rates of exchange, and in the second because countries do not all include the same items of expenditure under the same headings. Nevertheless some simple conclusions can be drawn from the data available, in particular that the costs of education are high and increasing steadily: one estimate for the world as a whole gives some 90,000 million dollars for 1963 and some 115,000 million for 1965.

Volume of expenditure on education

Education budget as a percentage of total public expenditure

The replies of Unesco Member States to its questionnaire on statistics of educational finance and expenditure show that the proportion of educational expenditure in the total State budgets[1] has increased between the years 1960 and 1965. According to these returns, countries supplying valid data spent in 1965 an average of 15.5 per cent of their total budgets on education, compared with 13.5 per cent in 1960. Comparison between the various regions of the world showed North America with the highest ratio (15.6 per cent in 1960 and 17.6 per cent in 1965), while the lowest ratios were found in Oceania in 1960 (10.4 per cent) and in Asia in 1965 (13.2 per cent) (Table 4).

A comparison will show, somewhat surprisingly, that developed countries do not on the average spend a higher proportion of their budgets on education than the developing countries. The most highly developed show ratios of 13.6 per cent

1. It should be noted that these proportions are not always fully significant, by reason of considerable differences from country to country in the structure of financing, such for example as the important part played in some cases by local authorities and/or private education. See also Part III, Chapter 2.

TABLE 4. Public expenditure on education as percentage of total budget (current market prices), 1960 and 1965

Region	1960		1965	
	Percentage of budget	Number of countries[1]	Percentage of budget	Number of countries[1]
Africa	14.5	23	16.4	36
North and Central America	15.6	10	17.6	18
South America	12.6	7	15.4	10
Europe, including U.S.S.R.	13.5	13	15.0	23
Asia	11.8	17	13.2	28
Oceania	10.4	4	15.7	10
World total	13.5	74	15.5	125
Developed countries[2]	13.6	15	15.9	15
Developing countries[2]	13.2	30	15.5	30

1. Including territories.
2. The criterion of distinction adopted is the *per capita* GNP around 1965: developed countries, over $1,000; developing countries, under $300.

Source. Friedrich Edding and Dieter Berstecher, *International Developments of Educational Expenditure 1950-1965.* Paris, Unesco, 1969 (*Statistical Reports and Studies*, ST/S/14).

in 1960 and 15.9 per cent in 1965. For developing countries the corresponding figures are 13.2 per cent and 15.5 per cent. Hence both developed and developing countries remain very close to the world average.

Public expenditure on education as percentage of national income

A second calculation will show the extent of governmental efforts in terms of the economic resources of the country. According to the returns to the Unesco questionnaire on financing and expenditures already referred to, the world average rose from 3.6 per cent in 1960 to 4.5 per cent in 1965. Regionally, Africa stood lowest in 1960 with 3 per cent, while in 1965 Asia and South America both stood at 4 per cent (Table 5).

TABLE 5. Public expenditure on education as percentage of national income (current market prices), 1960 and 1965

Region	1960		1965	
	Ratio	Countries	Ratio	Countries
Africa	3.0	21	4.3	22
North and Central America	3.9	15	4.1	14
South America	3.1	11	4.0	11
Asia	3.3	16	4.0	16
Europe, including U.S.S.R.	4.2	25	5.3	24
Oceania	3.7	2	4.4	2
World total	3.6	90	4.5	89
Developed countries	4.7	20	6.2	20
Developing countries	2.9	30	3.8	30

Source. Friedrich Edding and Dieter Berstecher, *International Developments of Educational Expenditure 1950-1965,* Paris, Unesco, 1969 (*Statistical Reports and Studies*, ST/S/14).

The above table shows that the more developed countries spend on the average a much higher percentage of their national income on education than do the developing countries.

Capital and recurring expenditure

A comparison of recurring and capital expenditures shows that the former stand very much higher than the latter. According to the returns to the Unesco questionnaire on statistics of educational finance and expenditure, the world average ratios were 85.8 per cent in 1960 and 85.2 per cent in 1965 for recurring expenditures, as against 14.2 per cent and 14.8 per cent respectively for capital investment. These percentages, however, varied considerably from one region to another; for example, South America in 1960 put only 4.6 per cent of its total educational expenditure into capital investment[1] (Table 6).

TABLE 6. Public expenditure on education (current market prices): capital and recurring expenses, 1960 and 1965, as percentage of total expenditure

Region	1960			1965		
	Capital	Recurring	Countries	Capital	Recurring	Countries
Africa	16.8	83.2	17	15.6	84.4	24
North and Central America	8.6	91.4	13	9.5	90.5	11
South America	4.6	95.4	8	7.8	92.2	9
Asia	14.5	85.5	27	15.6	84.4	24
Europe including U.S.S.R.	18.0	82.0	23	18.1	81.9	23
Oceania	15.9	84.1	3	15.8	84.2	3
World total	14.2	85.8	91	14.8	85.2	94
Developed countries	21.2	78.8	15	20.9	79.1	15
Developing countries	9.8	90.2	30	14.2	85.8	30

Source. Unesco questionnaire on statistics of educational finance and expenditure in 1960 and 1965.

The above table shows that in general, the more developed countries spent a higher proportion of total education expenditure on capital investment than the developing countries (20.9 per cent as against 14.2 per cent in 1965).[2]

1. This relatively low rate may be explained partly by the incompleteness of the data provided. Statistics of the educational expenditures of local authorities which very often finance capital investments are, in many cases, not available in South American countries.
2. It should be noted that investment expenditure can vary considerably in one given country, and particularly in a developing country, from one year to the next.

Source of funds

Public national sources

In general, education is a responsibility upon public authorities, national, federal, provincial or State, cantonal, municipal, etc. Accordingly it is financed for the greater part from public funds, or sometimes through taxes levied explicitly for educational purposes.[1] The various public authorities financing education may do so directly, or may transfer the financing burden in whole or in part to other authorities, regional or local, which then become responsible for both expenditure and administration; the procedure varies according to the political structure of the country and its financial mode of administration. The fact that the central government transfers considerable sums of money to be administered at a lower level introduces complications and a source of possible error in calculations; care has then to be taken not to cumulate the same amounts granted at the national level but expended at the municipal level.

In Brazil, for example, education is financed at one and the same time by the national federation, the States, the *municipios*, private sources and external funds, either multilateral or bilateral. According to a report of the World Bank the share of each of these sources of finance was as shown in Table 7 in the period 1961-65.

TABLE 7. Distribution of educational finance in Brazil (percentage of total)

Level contributed to	Federal Government	States	*Municipios*	Private sector [1]
Primary education	15	65	9	11
Secondary education	25	45	3	27
Higher education	75	17	1	7

1. 'Private sector' includes external assistance, but the amounts are small.
Source. Report of IBRD mission to Brazil, 1967: *Economic Growth of Brazil*, Vol. VI.

In considering the above table it is however necessary to remember that the amounts granted by the federal government under the heading of primary education are in large measure transferred to the states, who themselves pay over a varying proportion to the *municipios*. The situation becomes even more complicated when it is realized that some of the sources of finance are shared between the states and the federation. The example of Brazil has been chosen because it is highly typical; but analogous situations can be found in Argentina, the Federal Republic of Germany, India, Nigeria, the United States and other countries.

Private sources

Private initiative plays an important role in education in very many countries. Private educational institutions are either self-financed or receive government

1. Spain in particular, where the entire yield of income tax is earmarked for education.

funds, or both sources may coincide. Educational expenditure met out of private sources is far from negligible: in 1965, for example, it accounted for 24.7 per cent of the total national expenditure on education in India, 22.5 per cent in Cameroon, 18.7 per cent in the United States and 15.7 per cent in Venezuela.[1]

External assistance

In many developing countries, especially in Africa, external assistance stemming from international or bilateral sources, often highly varied, must be added to the national public or private means of finance. According to the ICEP questionnaire, 26 out of 47 countries replying to this question receive external aid for financing their educational system, the percentage of total expenditure so met varying between 10 and 90. It is, however, extremely difficult to assess the amount of external assistance, since some countries report only direct assistance to education and ignore external aid to the national budget itself, even though this may in certain cases amount to as much as 40 per cent. In one country, for example, in 1967, total expenditure on education came to U.S.$76 million. Of this total, some $25 million represented direct external assistance granted for specific projects; but the national budget, providing for the remaining $51 million, was itself sustained by external aid to the tune of 63 per cent and by Treasury loans, with the result that only $19 million of the total expenditure was met out of national resources properly so called. It is essential to carry out this type of investigation, especially in regard to operational expenditures, if a clear view of future commitments is to be obtained.

Bilateral aid[2] may derive from governments, private foundations or universities. Here we should mention the existence of a device which goes far to obviate the evils of a multiplicity of sources of finance, namely the consortium or coming together of countries willing to grant assistance, for the purpose of discussing with the beneficiary country the totality of its needs and the elaboration of a single plan of assistance. The management of such consortia is frequently entrusted to an international agency, and the system is already in operation, within certain limits, in the case of India and of a number of African States. It plays an important role in the development of secondary and higher education.

Multilateral aid to education in 1966 reached a total of some U.S.$140 million. The main international bodies concerned with education are as follows.

Unesco. The activities of Unesco are financed, like those of other United Nations Agencies, from two main sources, the Organization's own budget and the United

1. Source: Unesco questionnaire of 1965.
2. Concerning the volume and character of this form of assistance see: *Survey of the Scope and Nature of Existing Programmes of Educational Assistance*, a paper by the OECD Secretariat prepared for the Development Assistance Committee, Paris, 3-5 April 1968 (document DAC (68)8), which shows that States members of OECD granted some $500 million in 1965 and $600 million in 1966 to developing countries for educational purposes.

Nations Technical Assistance and Special Fund resources, which are shared out among all the Agencies. Technical Assistance and Special Fund are now administered jointly under the United Nations Development Programme (UNDP). The Special Fund is chiefly concerned with larger projects calling for both experts and equipment, while the principal role of Technical Assistance is to finance expert missions.

The World Bank. The International Bank for Reconstruction and Development (IBRD), a United Nations Agency, has been making loans for educational projects since 1964. To date, the World Bank has financed all forms of secondary education, including technical education and vocational training for agriculture and industry, primary and secondary teacher training, and certain types of university education.

The International Development Association (IDA). An affiliate of the World Bank, IDA began financing education projects as early as 1962. The association applies the same lending criteria as the World Bank. However, IDA credits are specifically designed to assist low-income countries which might find conventional World Bank loans too burdensome with regard to their balance of payments. IDA credits are uniformly for a period of fifty years and bear no interest; instead an annual service charge of 0.75 per cent is levied. In 1966 the World Bank and IDA together made loans and credits for educational purposes totalling $56 million. Unesco, under a co-operative agreement with the World Bank, assists less-developed member countries of the Bank and IDA in the identification and preparation of education projects.

United Nations Children's Fund (Unicef). This United Nations Agency specializes in aid to children. It has its own funds which it employs on health work, nutrition and children's education, principally through the supply of equipment.

The World Food Programme (WFP). This is one of the most recent United Nations ventures, dating from 1961. Its task is to contribute to development by distributing foodstuffs supplied voluntarily by a number of governments, such distribution to be linked with specific development projects. In the education field WFP may intervene by supplying school meals or the whole food needs of boarding establishments.

The Regional Development Banks. These banks, the most recently created of which is the Asian Bank, may, like the World Bank, grant loans for educational purposes. In 1967 the Inter-American Development Bank (IDB) granted such loans totalling $26.5 million.

The Food and Agriculture Organization (FAO) and the International Labour Organisation (ILO). Both of these bodies organize specialized programmes which

may have important implications for education and training in either the agricultural or industrial sectors.

In the case of all these United Nations organs, Unesco plays a direct role by providing technical advice on the merits of projects proposed for assistance.

Outside the United Nations system there are also numerous agencies for aid, or groupings of donor countries. Mention may be made of the European Development Fund (FED) which finances and executes projects in developing countries linked to countries members of the Common Market, the Colombo Plan which co-ordinates the bilateral assistance granted by its members, the Development Assistance Committee set up by OECD, etc. There are regional bodies in Africa and Latin America, and a new association, the SEAMES, has just been set up in South-East Asia.

Educational expenditure: unit costs

The technique of unit-cost analysis has come into growing use both to calculate the cost of plans in preparation and to assess the financial validity of an educational system and the cuts which may have to be made. Out of 69 countries replying to a question on this point, 64 make an analysis of costs and of the trend of expenditure, and 63 use for this purpose the formula of unit cost per pupil.

This annual unit cost is obtained by dividing the grand total of operational expenditures by the number of pupils at each level and in each branch of education under consideration. The results will reveal the differences in costs between the various levels of education, variations between countries, and the relative position of individual institutions in terms of the national average within one country.

Table 8 shows unit costs for ten selected countries in 1966, according to the latest statistics available to Unesco.

Greater accuracy can be secured by the adoption of a pupil-per-hour cost unit, while the phenomena of wastage and retardation can be investigated by means of a cost-per-diploma index.

Calculations of unit cost per pupil relate to recurring expenditure only. Investment expenditures can be calculated on the basis of cost per school place, cost per cubic foot of construction, cost of original equipment per pupil, annual amortization of outlay per school, place or class, and in various other ways.[1]

In order to be able to calculate unit costs most countries have adopted standards in such matters as the size of classes, the number of pupils per class and per teacher, etc.

Some countries have investigated variations in unit cost between different systems or methods of education, and have attempted to measure the real resource

1. For the methodology of unit-cost calculations, see: Friedrich Edding, *Methods of Analysing Educational Outlay*, Paris, Unesco, 1966 (*Statistical Reports and Studies*, ST/S/11).

TABLE 8. Unit costs (expenditure per student) by level and type of education in ten selected countries, 1968

Country, currency, and exchange rate in U.S. dollars	Primary	Second level			Higher
		General	Vocational	Teacher training	
Argentina (peso, 0.00404)	24 683	53 449	82 758	—	93 598
Chile (escudo, 0.2288)	246[1]	584	834	843	4 280
China (Taiwan) (New Taiwan dollar, 0.0249)	536	1 536	2 739	6 074	8 524
Colombia (peso, 0.0740)	359	1 212	1 641	1 608	11 665
Czechoslovakia (koruna, 0.1388)	1 486	2 270	3 006	—	14 614
Finland (markka, 0.3125)	1 271	1 059	2 408	5 093	3 217
Germany (Federal Republic of) (Deutsche Mark, 0.2514)	885[2]	1 782	691[3]	—	5 859
Jordan[4] (dinar, 2.80)	12	18	89	—	161
Madagascar (franc, 0.00405)	5 862	111 613	191 012	275 053[5]	259 211
Morocco (dirham, 0.1976)	273	580	3 452	12 750	3 183

1. Including pre-school education.
2. Including special education.
3. Part-time secondary technical and vocational.
4. 1965.
5. Including teacher training at the third level.
Source. Unesco Statistical Yearbook 1968, Paris, 1969.

costs of education in terms of both materials and manpower, as well as actual money expenditures. Money expenditures differ from real resource costs, since, for example, they include transfer payments, such as scholarships, and exclude the value of resources which are not directly purchased, such as unpaid work by teachers or students. Yet these resource costs represent the true 'opportunity cost' of education, that is to say, what must be sacrificed in other sectors of the economy, or in education itself, in order to pursue a chosen policy. Therefore, estimates of the real costs of education are as essential to educational planning as estimates of money costs and forecasts of expenditure.

4 Educational planning authorities

Of the 98 countries considered[1] 85 per cent had at national level an administrative authority responsible for educational planning. In a very few cases this authority had been in existence for some years (U.S.S.R., 1918; Ukrainian S.S.R., 1921; India, 1938; Albania, 1944; Poland, 1946; Korea, 1948) but in the vast majority of cases the authority was set up between 1957-58 (Colombia, United Arab Republic) and 1968 (Indonesia).

The educational planning authority has a great variety of titles, such as 'bureau of educational planning', 'office of over-all educational planning', 'bureau of statistics, guidance and planning', 'section for education and culture (office of economic planning)', 'Division of human resources', etc. This diversity of nomenclature is matched by wide divergences in the nature, location, functions and powers of the educational planning unit.

Location of the educational planning unit

Centralized and decentralized planning

In the majority of cases the educational planning unit is a body attached to the National Ministry of Education. But exceptions are numerous.

In federal countries, planning may take place at the state level, or at the same time at the state and federal levels.

The Federal Republic of Germany provides an example of extreme decentralization. The *Länder*, as autonomous regional entities, have under the terms of the constitution complete responsibility for education. There is no federal ministry of education. But co-ordination is assured through various bodies such as the

1. Sources: replies to ICEP questionnaire, 87; inquiry for the fifth volume of *World Survey*, 2; information from OECD, 3; *Educational Planning in Asia* (Unesco Regional Office for Education in Asia, 1967), 6.

Permanent Conference of Ministers of Education and Cultural Affairs, the Council for Education and the Council for Science. A similar situation is found in several other federal States, in particular in the United States of America, Canada, etc.

Brazil offers an example of the mixed system. The Law of 1961 placed primary education almost entirely under the responsibility of the states and the '*municipios*'. Secondary education, and sometimes a part of higher education and of continuing education, are similarly organized and mostly financed by the states, whose autonomy is thus considerable. The Federal Plan (National Education Plan, 1963-70) merely lays down percentages relating both to the targets to be reached and to the criteria of distribution of federal funds to states and universities. As regards structures, there is a planning board at the same level as the Federal Education Council, while the Instituto de Pesquisas Economicas Aplicadas of the Ministry of Planning and Economic Co-ordination has an Education Section. To these two bodies there was added in October 1967 an Educational Planning Group which to some extent represents their synthesis and which asserts the will to merge educational with socio-economic planning. In a number of states the regional council, just like the Federal Council, has a planning board; in addition, both Rio Grande do Sul and Bahia have, within their educational secretariat, a planning '*assesoria*' which draws up the state's educational plan; several other states are now contemplating the creation, following the federal example, of educational planning groups.

Similar arrangements can be found, with some variations, in other federal countries, including Argentina, India and Nigeria.[1]

In the United Kingdom there are separate departments of education for England and Wales, Northern Ireland and Scotland; but none of these has direct control of educational establishments. The Department of Education and Science in London, for example, is responsible for drawing up the general forecasts of long-term needs at all levels of education in England and Wales, for setting major reforms in train and for ensuring over-all co-ordination. But it does not prepare a plan in the strict sense; this is left to the 162 local education authorities as regards primary and the first stage of secondary education, and to the ten regional advisory councils as regards the second stage of secondary and higher education. A similar situation exists in Norway, where small planning units for primary education operate at the local authority level, and for secondary education at the county level.

In most of the Socialist countries planning is effected by means of exchanges between the various administrative levels. Thus in Poland directives for the preparation of the plan are issued annually by the planning commission of the Council of Ministers, in agreement with the Ministry of Education and Higher Training. These directives lay down principles and methods for the planning

1. See: A. C. R. Wheeler, *The Organization of Educational Planning in Nigeria*, Paris, Unesco/IIEP, 1968.

operation which is carried out by the central ministries and other authorities, including the people's councils of voivodships. The draft plans drawn up by these central ministries and other authorities concerned with education are then analysed and assessed by the Ministry of Education and the planning commission, and the final plan is submitted to the Council of Ministers by the commission's chairman for approval and to the National Parliament for debate. A similar course is followed in Hungary, Romania, etc., and also in countries having a federal structure, like the U.S.S.R. and Yugoslavia.

Many countries do not decentralize in the strict sense but have provincial annexes to the central educational planning authority, as in Afghanistan, Colombia, Iran, Morocco and elsewhere. In Afghanistan the planning department of the Ministry of Education has a 'correspondent', namely a provincial inspector, in each of the 29 provincial educational directorates. His tasks are to reply to questionnaires, to prepare the school zoning map and more generally to act for the Department at the provincial level.

Planning can be carried out within the different departments or commissions of the Ministry of Education. In Ceylon, Denmark and Thailand each department (primary, secondary, etc.) of the ministry of education has its own small planning unit. Co-ordination is ensured either by the Ministry of Planning and Economic Affairs, as in Ceylon, or by the planning division of the Ministry of Education as in Denmark and Thailand. In Sweden the Ministry of Education has a 'Secretariat for Planning and Budget' the main function of which is to-co-ordinate the other planning units, namely the planning department of the national Commission for Education and the planning bureau of the University Chancellery. There are also local planning bodies.

Some countries have no administrative unit for educational planning. The plan is prepared and discussed by a standing commission, or one created for the purpose. This is the situation in Burundi, Iceland and Laos. In other cases, e.g. Ethiopia, the commission was set up first and the permanent educational planning unit later.

Educational plans can also be drawn up by general development planning services. In many countries the general planning services have a section specifically responsible for education, but its responsibilities vary considerably from case to case.

Frequently the planning unit of the ministry of education is of more recent creation than the general planning service which was responsible for educational planning in the first years (Burundi, Iran, Iraq, Kuwait) and still performs a substantial co-ordinating duty.

Much as situations vary in the different countries, there is a clear tendency to centralize responsibility in the ministry of education. Even in federally structured States national planning bodies are being constituted. The most typical case is that of the United States where in 1965, within the Federal Office of Education, there was set up an 'Office of Program Planning and Evaluation' which is responsible for carrying out studies and drawing up long-term plans, even though local authorities retain direct management of education.

It is therefore prudent not to dwell too persistently on titles. The absence in a given country of a unit entitled 'Office of Educational Planning' may not mean that it does not plan its educational development. Sometimes even there may be no over-all educational plan, but a thorough amalgam of detailed plans (Netherlands), or a 'Plan' taking the form of a report by an Education Commission (New Zealand). Absence of the term 'planning' does not necessarily mean that no planning takes place—and vice versa.

Liaison between the educational planning unit and various public and private bodies

In the confusion of early days it sometimes happened that plans were drawn up *in vacuo*. Governments have, however, gradually become conscious of the very serious consequences of such isolated treatment of education, and the current tendency is on the contrary to associate as closely as possible the maximum number of public and private bodies with the educational planning process.

Let us recall in the first place that 86 per cent of the countries studied as a result of the ICEP questionnaire have a plan for economic and social development, and that in 72 per cent of these cases the educational plan is formally incorporated in the general plan. In most cases the co-ordination between the educational plan and socio-economic planning is ensured by the ministry or Department of planning (or the ministry of finance where the latter is answerable for over-all planning); sometimes co-ordination is the responsibility of a special commission under the prime minister.

In the great majority of countries there exists a human resources planning service to carry out manpower surveys, which is usually attached to the general planning service or to the ministry of labour (for example Panama's Instituto para la Formación y el Aprovechamiento de los Recursos Humanos). In other cases it is attached to the educational planning unit. In the past it was frequently found that there was no functional link between the human resources unit and the educational planners, but in recent years much effort has been expended to remedy this defect.

Many ministries have an interest in education. Bulgaria, for instance, states that fifteen ministries in addition to the Education Ministry have educational programmes. In the United Arab Republic, in addition to the Ministry of Education, which is responsible for primary and adult education, to the University of El Azhar which has charge of institutions for religious teaching, and to the Ministry of Higher Education, there are no less than seventeen ministries or public bodies concerned with education. In these circumstances co-ordination is clearly essential, and in most countries the various ministries concerned work together on the preparation of the educational plan, in many cases bringing also into consultation the regional and local public authorities.

Fifty-one countries out of 78 replying state that their planning unit co-ordinates its work with other branches in the ministry of education. The need of involving teachers is widely felt; in 47 cases the teaching profession is consulted before the

preparation of the plan in 30 other cases after the first draft has been drawn up. In only 10 countries is there no consultation at any stage. In 24 countries consultation also extends to parents' associations, and in 33 cases to student bodies.

Private teaching, whether lay or denominational and whether subsidized or not, commercial or non-profitmaking, plays a considerable role in very many countries and may account for as much as two-thirds of total secondary school effectives. Here again co-ordination is required, if only to work out projections of school attendance, distribution by branches of teaching, and school zoning maps. In many countries, accordingly, private teaching organizations are consulted while the plan is being prepared, and in some cases a representative of private teaching takes part in the work of the appropriate commission (Burundi); sometimes the chief co-ordinator of denominational private teaching even acts as an independent technical helper with the planning unit (Ecuador).

One of the most significant events of recent years has been the increasing participation of more and more separate bodies in the preparation of the education plan. This has become essential now that educational planning covers such a great variety of fields, and great importance is today attached to the creation of national and local advisory commissions bringing together representatives of public and private bodies, professional and (in 42 cases out of 73) syndical specialists, teachers, etc. Mixed commissions of this type take part in the preparation of the educational plan in Ecuador, Ivory Coast, Laos, Madagascar and elsewhere. Participation of parents and of the local community has been for a long time, in a few countries, a well-established practice. In a large number of countries there is also a high-level advisory committee consisting of a variety of specialists, representatives of different sectors of the economy and of labour, scientists, representatives of the arts, etc., which discusses and comments upon the plan. A typical example is the Central Council for Education in Japan.

Functions of the educational planning unit

Structure of the unit

The work of the educational planning unit may be confined to the purely quantitative aspects of the plan or to the co-ordination of programmes prepared by the various departments; or it may cover all aspects of planning (this is known as 'integrated planning') and take on a number of ancillary activities.

Replies to the ICEP questionnaire, data furnished for the fifth volume of the *World Survey* and, in the case of seven Asian countries, the report of the Regional Office for Education[1] reveal the variety of functions which can be assigned to an educational planning unit. In 44 per cent of the countries under consideration the planning unit incorporates a statistical section; it may also be responsible for

1. *Educational Planning in Asia*, Bangkok, Unesco Regional Office for Education in Asia, 1967.

educational research (25 per cent of cases), the preparation of the budget (20 per cent), the drawing up of school programmes (15 per cent), documentation (10 per cent), the assessment of qualified manpower needs (9 per cent), school building (7 per cent), administrative organization, cultural questions, school orientation, fellowships, teacher training and further training, rural development, etc. There is an interesting tendency to entrust the review of the annual budget to the planning unit, in particular in several European countries.

Stress must here be laid upon the work of the statistical section, which is of capital importance in any form of educational planning. Of 96 countries taken into account, 83 per cent have an education statistics service. In developing countries such services are mostly of recent creation (post-1960); in Africa 10 such services out of the existing 15 were set up between 1963 and 1965. In 44 per cent of cases, the statistical section is attached to the planning unit. In a good many instances the planning unit itself is an enlargement of the former statistical service; thus in Burundi it is proposed that the present statistical service, created in 1964, shall later become a department of educational planning. In the developing countries especially, statistical work is still the main function of the planning unit.

Where the education statistics service is not linked with the planning unit it is generally part of the ministry of education, or a section of the national statistical service. Situations vary very considerably. In Bulgaria, for example, educational statistics are the responsibility of the Central Office of Statistics. Brazil has a special unit for school statistics (SEEC) which is answerable on technical matters to the Instituto Brasileiro de Geografia e Estatistica (the Federal Statistical Centre), but administratively to the Ministry of Education. In Colombia, the statistical and research section of the Bureau of Educational Planning merely collects, collates and analyses the statistical material furnished by other services, including the National Statistical Department. Iraq has somewhat similar arrangements. Finally it should be noted that a number of countries have separate, special statistical services for higher education.

Mention should also be made of separate research sections (23 countries) or documentation units (9 countries). In Japan, the Republic of Korea and Venezuela among others, the responsible ministries have launched research programmes of considerable importance.[1]

Types and levels of education dealt with by the planning unit.

The recent trend is towards centralization of educational planning at all school levels, and out of school, in the same planning unit. Nevertheless, as already noted, planning of higher education is still frequently in the hands of a special unit. In the United Arab Republic, for example, the Ministry of Higher Education has charge of planning for universities, higher institutes and a variety of vocational

1. The question of educational research is dealt with more fully in Part II, Chapter 5 ('Research in Educational Planning').

training establishments; in Iran, higher education, literacy work and cultural activities are all directly dependent upon the Planning Organization; in Colombia, planning at the university level is undertaken by the Oficina de Planeación del Asociasión Colombiana de Universidades, Fondo Universitario Nacional. Finally some countries, such as Australia and the Federal Republic of Germany, which have no centralized planning for primary and secondary education, have national institutions for the co-ordination of university teaching (Australian Universities Commission and Council for Higher Education and Research, respectively).

In a number of cases the planning of literacy programmes is not, in the hands of the ministry of education but in those of the planning organization, as in Iran, or of the Ministry of the Interior or of Community Development, as in Ghana, or in other cases of the Presidency of the Council of Ministers.

Responsibilities of the planning unit for carrying out, assessing and revising the plan

The planning unit is generally responsible for the preparation of the plan, but in six countries we find an unusual situation in which this responsibility rests elsewhere, generally with the planning service for economic and social development.

In 31 cases the replies to the ICEP questionnaire indicate that the planning unit has some responsibility for the general execution of the plan, with particular reference to experimental reforms, to the retraining of teachers in relation to reforms and to the preparation of building and equipment programmes. In other words the planning unit plays a role in the process of innovating.

In 90 per cent of the cases considered the planning unit is officially responsible for the assessment of the plan. For example, in Jordan the planning unit, created in 1961, is styled 'Department of Educational Planning and Assessment'. Only six countries report that their planning units are not responsible for assessment.

Also in 90 per cent of cases the planning unit is responsible for the revision of the plan; in some cases, revision is a continuous process.

Methods used in drawing up the educational plan

Statistics provide the basic instrument, even though the reliability of available statistical data varies considerably from one country to another. Considerable progress has been achieved in the last few years. Problems of wastage have focused attention on the necessity of obtaining data not only on effectives at any given time but on the evolution of every school generation ('flow statistics' in the place of 'stock statistics').

Nevertheless much remains to be done. There is in general little valid information about private education, cultural activities, out-of-school education, or literacy work (the distinctions between illiteracy, semi-literacy and literacy are still very difficult to establish). The basic demographic data of many countries are

unreliable.[1] Financial statistics are not always to be counted upon: in few countries indeed is the exact total of all expenditure on education, public and private, scholastic and out of school, and its distribution, known with any precision. Finally we are still a very long way from a situation of total standardization of terms which would render international comparisons accurate and in which the same facts carried the same names.[2] For the future, the specialists insist particularly on the need for a permanent statistical accounting, an 'instrument panel' so to speak,[3] making it possible to verify the state of advancement of the plan at any moment.

The technique of school-zone mapping, created in countries of Latin tradition, is being increasingly employed.

Many countries, in preparing their education plans, have recourse to mathematical models. This device is now in use in 13 countries in Europe, 7 in Latin America, 5 among the Arab States, 4 in Asia and 3 in Africa.

The preparation of an education plan is a lengthy and complicated task, and various countries are beginning to introduce modern techniques of work-scheduling, programming (Programme evaluation and review technique (PERT), critical path method, etc.), budget, work-analysis, etc., into the operation.

Staffing of educational planning units

As any other new technique, educational planning suffered in its early days from a dearth of qualified practitioners. Even today most Member States regard this problem as the most urgent, if not the most serious.

From the available information it would appear that in the 78 countries providing returns there are 774 specialists in educational planning, or an average of 10 specialists per unit. The actual distribution is, of course, highly uneven: some planning units have over 100 professional workers, others only 2 or 1. Continental averages are 3 in Africa, 7 in Asia, 8 in the Arab States and 12 in Latin America and in Europe.

There is even greater variety in the degree of expertise of these workers. Fifty-three developing countries providing data have between them 498 educational planning 'specialists', but in 12 of them there is no professional having specialized training at all. In many cases, however, workers who have had no specialized training nevertheless have had adequate general university training (in education

1. A notion of possible margins of error may be gained from the fact that at the time of the Addis Ababa Conference the total population of Middle Africa had been underestimated by 16 million for the year 1960, and the projection for 1965 by 25 million.
2. *Recommendations Concerning the International Standardization of Educational Statistics*, Paris, Unesco, 1958. See also the recommendations of the Vienna Conference of 1967 concerning the standardization of terminology relating to access to higher education.
3. This term was coined by the Conference of Ministers of Education of French-speaking African Countries (Libreville, February 1968), which gave much attention to the problems involved.

economics or statistics), and a high proportion have had long administrative experience. But in numerous cases those in charge of the planning unit have received no more than primary teaching, or secondary or higher education of a purely literary character. Even in the most developed countries the number of professionals having had specialized training is exceedingly small, although most have the benefit of university education in subjects related to their present work.

According to the replies to the ICEP questionnaire, of the 278 officials in educational planning units who possess specialized training, 18 were trained at the International Institute of Educational Planning (IIEP), 112 at the Regional Centres set up by Unesco and 134 in various other institutions. It is of some interest to compare these figures with the information available to Unesco regarding existing training facilities.

Up to the present time the IIEP in Paris has received 44 trainees, while the four regional centres for educational planning and administration have, from their creation until July 1968, dealt with 991 trainees. Even after subtracting the 1967-68 trainees, who obviously could not be in employment at the period of the questionnaire, one is struck by the low proportion of trained pupils now employed in educational planning units in their own countries. An inquiry carried out in 1965 showed that a high number of trained pupils are now employed in other sections of ministries of education, in provincial inspectorates or in teacher-training schools; but over 25 per cent are employed in work unrelated to their training, or have disappeared from view.

On the other hand several countries already have their own national training programmes. Here again there is the greatest variety in the facilities provided: institutes of education (Israel, United Kingdom); institutes of economics (Bulgaria, Hungary, Poland); national schools of administration (Colombia, Spain); institutes of general planning (Kuwait, U.S.S.R.), institutes of development (Belgium, France): institutes of applied psychology (Algeria); institutes of educational research (Canada, Federal Republic of Germany, United States); vocational guidance institutes (Morocco); institutes of educational administration (Chile, Iran), etc.

Many countries have organized national training courses of varying length, while some regional organizations, including OECD, operate regional courses. Here again the gap between numbers trained and numbers of trained specialists at work in this field (11 per cent according to the returns) is a matter for surprise.

Most national training institutions have been created in the last five years, but it is already clear that national training is assuming steadily increasing importance; 32 countries (8 in Africa, 6 in Latin America, 8 in Asia, 6 among the Arab States and 4 in Europe and North America) have announced that they too propose to set up national training programmes.

The replies to the ICEP questionnaire and the material provided for the fifth *World Survey* suggest that the total number of educational planning specialists which it will be necessary to train between 1968 and 1978 reaches 5,566, spread as shown in Table 9 by degree of training and region of subsequent employment.

TABLE 9. Number of trained educational planning specialists required for the period 1968-78.

Region	Number of replies	Basic training (national or regional training)	Higher training (university or regional centres)	Training of planning experts and professors (IIEP, doctorates, research institutes)
Africa	21	422	68	47
Latin America	10	210	52	59
Asia plus Australia and New Zealand	13	316	196	146
Arab States	10	73	83	36
Europe and North America	22	742	3 080	36
TOTAL	76	1 763	3 479	324

Estimates vary considerably from country to country: the figures range from 2 (Algeria, Guatemala) to 40 (Jordan), 45 (Colombia), 80 (Viet-Nam), 86 (Afghanistan) and 600 (Ukrainian S.S.R.) for basic training; and from 1 (Algeria) to 50 (Sudan) and 3,000 (U.S.S.R.) for higher training. Clearly, the same criteria have not been used in all the replies.

5 Inadequacies of past action and difficulties to come

The balance-sheet submitted in the preceding pages may at first sight appear highly positive. But closer scrutiny will reveal that most—though not all—items of progress are of an ideological nature; the essence of what has been won is a clear recognition of the principles and techniques of planning. Doubtless this was the necessary basis for any subsequent progress, and it would be a grave error to fail to appreciate the value of this first step. Nevertheless it remains a first step only. To have a planning unit does not necessarily mean that one has a plan;[1] to have drawn up a plan does not automatically ensure that it will be approved;[2] and approval does not always signify implementation.[3] The widest gap lies between the commencement of operations and final success; that is, the achievement of the goals first aimed at.

From planning to implementation

Fulfilment of the objectives set by the regional conferences

In Asia it is as yet too soon to measure the degree of fulfilment attained in terms of the objectives set by the Bangkok Conference ('Asian Model'). But it is possible to assess the progress achieved between the Karachi and the Bangkok conferences: the Karachi objectives aimed at a 44.1 per cent increase in primary enrolments between 1960 and 1965;[4] returns for 1965 show that a 40.4 per cent advance only was made.[5]

1. According to the ICEP inquiry, five countries had planning units but no plan.
2. Eleven plans did not receive approval.
3. Three plans, after approval, were not put into operation.
4. This percentage is derived from the figures given in *The Needs of Asia in Primary Education*, Table 5, Paris, Unesco, 1962.
5. *An Asian Model of Educational Development: Perspectives for 1965-80*, p. 19, Paris, Unesco, 1966.

In the case of Latin America the specialists have gained the impression that the Santiago objectives have by and large been met, and even exceeded; but no precise survey has yet been made and its results may give cause for surprise.

For Africa we have up-to-date and fairly complete data, and the studies carried out for the purposes of the Nairobi Conference give the results shown in Table 10.

TABLE 10. Enrolment rates in Africa by level of education, 1960-65

Educational level	Enrolment rates			Annual rates of increase in enrolments (1966-65)	
		1965			
	1960 (base year) %	Addis-Ababa objectives %	Actual rates %	Addis-Ababa objectives %	Actual rates %
First level	36	47	44	7.7	6.2
Second level	3	6	5	19.8	15.3
Third level	0.2	0.4	0.5	13.8	20.1

Except in higher education, where the objectives were set very low, the results are thus clearly below the targets aimed at. The gap is appreciable: primary education enrolments in 1965 were less by 1.1 million than those forecast. These results become even more serious when the extent of wastage and retardation is brought into the reckoning; in the final accounting, enrolments at the primary level rose by only 1.77 per cent of the total for that age-group instead of 5 per cent, which had been the objective set at Addis Ababa.

In the economically most-developed countries quantitative problems are less evident, although they can still exist: certain 'rich' countries were compelled, as a result of financial straits, to postpone measures such as the raising of the school-leaving age.

Fulfilment of qualitative objectives

It is, however, chiefly in the so-called 'qualitative' field that failings were most glaring.

It has already been noted that the problems of wastage and retardation in primary education are particularly acute in the developing countries. The same problems will be found in many developed countries, but at the level of higher education and of the upper reaches of the secondary level.

In many cases increased enrolments have only been secured at the cost of totally abnormal overloading of classes. In one African country the teacher-pupil ratio had reached 1 : 88 in 1967-68, and this was not an isolated case. Elsewhere the problem is resolved by recruiting teachers whose qualifications are totally inadequate in relation to the level of teaching they are supposed to impart. Here again the developed countries would seem to encounter the same difficulty at the higher levels of general and technical secondary education, and in higher education itself, being frequently obliged to sacrifice full qualification to secure the necessary number of teachers.

The internal output of the educational system is almost everywhere deficient and is frequently found to be declining sharply. The external output is equally unsatisfactory, in particular if we relate the yield of education to the needs of the economy. In developing countries, where the shortage of qualified manpower is acute, unemployment among diploma-holders of all levels is prevalent, while almost everywhere the quantitative and qualitative imbalance between training and employment is also manifest. Reforms in structures, programmes and methods are constantly being attempted; but their very number (in some countries up to twenty or thirty measures of general reform have been undertaken since the beginning of the century) shows that they are of little avail.

These inadequacies, of both quality and quantity, cannot of course be ascribed to planning; but they have persisted despite ten years and more of planning. They constitute a warning that much remains to be done and that new efforts must be made.

Dimensions of the problem to be solved

While the difficulties in the way of achievement proved considerable in the past, they show every sign, however, of being still more serious in the near future.

The demand for education

There is every indication that the demand for education must increase.

In the first place the demographic pressure shows no sign of abating. While it is true that in certain developed countries, the United States for example, the birth-rate is now at its lowest point, it is rising steadily in most of the developing countries, where problems are the most pressing.[1] According to last estimates, the world population in 1960 was 2.998 million; it is foreseen that it will reach 3.500 million in 1970; 85 per cent of this increase will affect developing countries.[2] After 1970 estimates vary very much; if fecundity ratios observed in 1960 were to be maintained, the world population will attain 4.519 million in 1980 (including 3.434 for developing regions) and 7.522 million in the year 2000 (6.111 for developing countries);[3] nevertheless, it is extremely probable that these figures will be considerably reduced in view particularly of the extension of birth control.[4]

1. In developing regions the annual percentage of increase passes from 1 (between 1920 and 1930) to 1.2 (between 1930 and 1950) and to 2 (between 1950 and 1960).
2. Interim report prepared by the Secretary General of the United Nations for the Development Decade, United Nations, 1966.
3. See: *World Population Prospects*, New York, United Nations, 1966 (*Population Series*, No. 41).
4. See: G. Ohlin, *Demographic Regulation and Economic Development*, Paris, OECD, 1967, p. 95 ff.; following campaigns for birth control, fecundity rates have decreased from 50 to 35/1000 between 1951 and 1965 in China (Taiwan) and from 40 to 29/1000 between 1958 and 1964 in Hong Kong.

Demographic explosion has a direct influence on educational problems. In Asia, for instance, school-age population (6-21) will jump from 330.1 million (36 per cent of the population) to 513.7 million (38 per cent of the population) from 1964 to 1980.[1] Far too often, efforts at development are cancelled out by the demographic explosion. In this connexion, the fight against illiteracy offers a dramatic example: thanks to higher school enrolments and to literacy campaigns, the proportion of illiterate adults fell from 44.3 per cent in 1950 to 39.3 per cent in 1960 in the world, and from 42.8 per cent to 37.1 per cent among Unesco's Member States; but because of the rise in population, the absolute total of illiterates has increased by 40 million in the world and by 20 million in the Member States, and if current trends remain unchanged up to 1970 these absolute figures will rise still further, to 70 and 40 million respectively. There is, however, a possibility that family planning may after a certain time have some limiting effect.

It must moreover be expected that an increasing proportion of the total population will demand to have access to higher and higher levels of education in every part of the world. In the developing countries, once the problem has been more or less settled at the primary level, it will recur in its most acute form at the secondary level; this situation has already arisen in the developed countries, who must now expect steadily increasing pressures.

There is nothing irrational in such pressures, which reflect on the social plane the genuine needs of economic development. For it is increasingly clear that education is a necessary condition of lasting economic progress. This is true in the developed as well as developing countries. If a country is to rank among the most highly developed and to maintain that rank it must not only manufacture but also invent. Accordingly, once higher education has been established at a satisfactory level there must be further advance in the direction of scientific research; any pause today means a falling back. Yet the types of education which are most directly relevant to economic progress—technical and higher education, research—are far and away the most costly. Hence in terms both of quantity and quality, education is bound to require financing of steadily expanding magnitude.

Financing possibilities

In many cases, however, and more particularly in the developing countries, the financing possibilities appear to be reaching their ceiling.

This situation had already been reviewed in December 1966 at the Regional Study Course on Educational Investment in Latin America, where the participants declared: '. . . While the extremely rapid rate of growth of public expenditure on education in the last few years shows that the quickened expansion of educational systems took place in a climate of relative financial euphoria, there is reason to believe that in future, the increased costs of education, far from being met with

1. *An Asian Model of Educational Development*, op. cit., p. 48.

the facility of the past, will call for difficult decisions of a budgetary nature. The utmost care in accounting will be necessary, for a most serious obstacle will at once present itself, namely limitation of resources.

The current situation may be summarized as follows: since the beginning of the 1950 decade the percentage of GNP assigned to educational purposes has doubled. In 1955 the industrialized countries set aside from 2 to 4 per cent of GNP for education; by 1965 the rates stood between 4 per cent and 6 per cent and they are likely to reach 6-7 per cent by 1970. It is probable that these industrialized countries can sustain such figures, but only if their economies remain prosperous.

In the developing countries the situation is different. Some of them set aside over 4.5 per cent of GNP for education, and this may well represent 6 per cent of total income in strongly self-sustaining regions. Turning now to the total expenditure of these same countries in the social sector the magnitude of the effort they are making becomes apparent, for the figures lie between 20 per cent and 50 per cent of the State budget. It is thus clear that it will be more and more difficult to obtain an ever-increasing proportion of a country's budgetary resources for educational purposes.

It is in fact not possible indefinitely to augment the educational total within the national budget, unless that national budget is itself augmenting. Unfortunately the budgets of the developing countries in the past ten years have stood some way below targets and forecasts. The annual rise of 5 per cent of GNP which was the aim of the Dvelopment Decade has not as yet been attained; in 54 countries accounting for 87 per cent of the population of the Third World the average rate was 4.5 per cent between 1960 and 1965; but in 15 of those countries it did not exceed 2.7 per cent. Further, increases in national income are frequently cancelled out by the population increase.

At this point it is natural to think of the assistance that the wealthier countries might grant to the poorer; the highest temporal and spiritual authorities have already said on the subject everything that could be said. It is found, however, that the objective set for the Development Decade, the investment of 1 per cent of the gross national product of the industrial countries for the benefit of the developing countries, has not been reached; long-term investments in 1966 did not exceed 0.62 per cent.

At the same time the debt service of the developing countries is becoming heavier, while fluctuations in the price of primary commodities create a chronic instability and the terms of trade tend to worsen.[1] Despair would be criminal; but in the circumstances, it would be vain to count upon spectacular improvements unless a very much more resolute effort is made than hitherto.

1. See the resolution of the fourteenth session of the General Conference of Unesco entitled 'Contribution of Unesco to the Achievement of the Objectives of the United Nations Development Decade'; also R. Prebisch, *Towards a New Strategy for Development*, United Nations, 1968.

Evolution of costs

At this stage the only solution would be to reduce unit costs, but it is unlikely that such a reduction could be brought about if educational systems remain unchanged. In most Latin American countries, for example, the rate of increase of educational costs between 1958 and 1966 was, depending upon areas and levels of education, from two to five times greater than the rate of increase in enrolments.[1] For the bulk of the costs of education consists of salaries, and these salaries, in most cases although not in all, are already too low to ensure quality recruiting. A needed improvement in the professional standards of teachers, the mere advance towards seniority of countless young teachers in developing countries, an essential lowering of the teacher-pupil ratio everywhere, all make it likely that in the majority of cases, staff costs can only increase in the coming years, and with them, of course, unit costs.

Possible solutions and their difficulties

Given that enrolments must increase, that unit costs under the present system cannot be reduced and that it is unthinkable at the moment to count upon a spectacular increase in normal educational resources, the only solution viewed solely from the standpoint of expansion is that of making such changes as will very substantially increase the yield of education.

Innumerable improvements of detail are both possible and necessary, but it must be feared that at the stage now reached, alterations of detail will not suffice. We discuss below, in Parts II and III of this work, the major choices open to the educator today. They can be listed as follows: adoption of curricula which the child can absorb far more easily, which are more coherent, better adapted to the child's interests and concerns, to his needs and to those of socio-economic development; full use of the media made available by modern technology; wider participation by pupils, singly and collectively, in the process of teaching, and adaptation of the pace of teaching to the absorptive capacity of each child; incorporation of the school into a wider system making use of every facility for educating society and rendering the continuing education of man possible.

There is practically complete agreement in theory on the view that great changes are inevitable; but in practice, every positive innovation encounters the most vigorous opposition. Education is a realm of tradition, and resistance to change springs up in the most varied quarters, ranging from the teachers themselves, the administrators, the parents, the pupils and students, to political, professional, confessional and cultural circles. Several countries note in their replies to the

1. *Report of the Regional Study Course on Educational Investment in Latin America*, Santiago, December 1966.

ICEP questionnaire that socio-psychological resistance to reform is the major problem, perhaps more stubborn, than the financial problem itself.

In addition the administrative system, in its present form, is ill-adapted to the achievement of reforms, since it will almost automatically impede or distort any innovation it is asked to introduce. The existing system of finance is designed to assure control rather than performance, to favour continuity rather than change. Several countries also stress the fact that governmental directives are not always as precise and consistent as they might be, that the aims are frequently unclear, too numerous, and sometimes contradictory.

Finally innovations are not improvised; they require long preliminary research, patient experimentation and meticulous arrangements for their implementation. Reforms decided upon without study are condemned to failure, and there are today countless reforms which are discredited in most minds because they have never, in fact, been tested out with serious intent.

All this brings us back to the inevitability of planning—planning not only in the sense of preparing a plan, but of building into it the components which will render its implementation possible and planning not only in the sense of preparing quantitative forecasts, but as a creative analysis of the whole structure, curricula and methods of teaching; of associating the teaching profession and the most varied sectors of society in the process of modernizing the administrative and financing structures; and of according to research and experiment a great deal more importance than they receive today.

Problems of planning and the planning of planning

Planning itself, however, has its problems, even though it increasingly appears as the indispensable instrument for the solution—rational, least costly and most expeditious—of the vast and immensely complicated amalgam of problems facing education.

There are, first, problems of a technical and methodological order. The available data are far too fragmentary and lacking in precision. A major effort must be made on the statistical front, not only theoretical (selection of the data required) but practical (collection and analysis of data). Methods of forecasting manpower needs, and their translation into educational terms, must also be rendered more exact and more straightforward. In the field of assessment, without which it is impossible to measure comparatively the yields of alternative courses of action, everything remains to be done: at the moment, methodology in this field is non-existent.

Once the instruments become available, there must be workers to use them. Planning calls for impeccably trained specialists. Hence there must be the fullest training or further training, and this is a lengthy process which must itself be planned.

After ten years of generalized experience throughout the world it thus emerges

that planning is a very much more complicated matter than may at first have appeared. We know today that one does not launch into planning overnight and that the planning process itself requires planning.

Methods of planning the planning process already exist, such as the techniques of operational analysis (PERT, CPM, etc.) to which reference will be made in Part III of this paper. Beyond such techniques, however, what is perhaps most needed at the outset is a state of mind, at once intellectual and moral: a refusal to be led away from a total view of the problem by details; a continuous awareness of the final ends in view; a determination not to dodge awkward problems or to water down solutions which may displease others; a resolution to carry through decisions; a capacity for detecting the key difficulties and to move step by step in solving a problem; finally, imagination tempered by realism.

This recipe is probably incomplete or incorrect in part, but if we are asked to define the very first step in the planning process, is it not some such attitude that we should endeavour to foster?

II Objectives and preparation of the educational plan

In this part of this work, the intention is to take up again, one by one, the principal problems involved in the preparation of the educational plan, giving an account of the present state of knowledge and discussions on each question.

The text begins with a study on the definition of the aims of education, the importance of such definition and the difficulties attaching thereto. Methods of diagnosing the national situation are next examined from the educational, as well as from the economic, social and cultural points of view. The different aspects of the preparation of the plan are then reviewed: methods of determining enrolments at the different educational levels and their distribution throughout the various branches; integration in the plan of the following aspects—output, content, methods and structures; general reform of the educational system (place of innovations, possible alternatives to traditional teaching methods, mobilization of all society's resources for lifelong integrated education). Lastly, the usefulness and possibilities of standard educational strategies corresponding to the different levels and types of development are assessed.

Research is called upon to play a part throughout the preparation of the plan; a final chapter will, however, be devoted more especially to the identification of research priorities, the organization of research and the connexion between educational planning and the other disciplines.

1 Determination of educational aims and policies

A plan is a rational method of attaining a goal. There can be no plan unless aims are clearly defined beforehand; this would seem to be self-evident, yet experience reveals that it is particularly difficult to set the goals of any educational operation. For education affects the whole future of society and opinions differ widely as to the relative importance of each ultimate aim involved—whether economic, social, political, cultural or ethical—and the proper course to be taken in order to achieve them.

In fact, it is an all-too-common practice to embark on educational planning without having first decided exactly on the aims to be pursued. The absence of these, or their vagueness and incoherence, may have serious consequences; for there is then a danger that the plan will be limited to purely quantitative objectives (increase in the enrolment rate) and thus, instead of influencing the future, will perpetuate the existing situation, which may not necessarily be a satisfactory one. Alternatively, if the technicians grow accustomed, for lack of any clear instructions, to fixing objectives on their own, the plan may become the tool of a technocratic tyranny which is the 'antithesis of education'.[1]

To fix the goals is therefore the first step in planning and before doing that no further progress can be made. It is necessary to draw attention to the importance of this preliminary problem and, before tackling questions of strategy and method, to dwell on the principles governing the definition of aims and their application. The very notion of aim is far from simple. On the one hand there are the internal aims of the development of education proper, and on the other the ultimate external goal of the educational undertaking, which is reflected, in particular, in the integration of educational planning in over-all economic and social planning. There are objectives that can be expressed in terms of quantity (school attendance rate at different levels, minimum output, maximum costs) and others that cannot easily, if at all, be so expressed (promotion of attitudes conducive to development,

1. R. Maheu, in: *International Conference on the World Crisis in Education, Principal Addresses (and) Summary Report*, p. 18, Williamsburg, 1967.

freedom, creativity and fulfilment of the individual, international understanding). Some of these objectives are short-term, others are permanent or very long-term ones. These different aims and objectives should not, however, be entirely dissociated: they are interdependent and so must be at once distinguished from one another and co-ordinated. If the detailing of the plan's objectives is largely a matter for technicians, the general orientation given to education concerns the entire national community and indeed mankind at large; responsibility lies, then, at widely differing levels and these, often enough, intersect.

In this respect we shall examine in succession, in order to elucidate the problems of determining aims and establishing at least the basis of a common language: the scope of the definition of aims and objectives; the levels of authority involved; and the levels at which forecasts are made, their bearing and the integration of short-, medium-, long- and very long-term aims.

Definition of aims and objectives of education

Since education concerns all spheres of human activity, its aims are scattered through a wide variety of fields, every one of which must be taken into account. Many of the fundamental concerns of education have persisted through centuries, but in the course of time, different aspects have been stressed in turn.

Educational aims have long been of an essentially ethical, social, patriotic and ideological nature. Even today we find, on reading official declarations or those passages of national constitutions that relate to education, that these traditional aims are still emphasized. In the replies of Member States of Unesco to the questionnaire for the fifth volume of the *World Survey of Education*, for example, we come time and time again upon references to 'character-moulding of children', 'development of a sense of duty', 'integration of the child in the community', 'revival of African cultural values,' 'development of Arabic and Arab culture', 'love of one's country', 'patriotism', 'training in ethical and Christian values', 'appreciation of Christian values', 'acquisition of a Marxist-Leninist conception of the world', 'the spirit of socialist principles and ethics', 'preservation and strengthening of the democratic system', etc.

At a second stage, emphasis was laid, in practice if not in theory, on intellectual training (primarily literacy, latterly scientific). From learning the alphabet to scholarship, knowledge sometimes tended to appear as an end in itself. More recently, a reaction has set in against purely theoretical education; the idea nowadays is to link education to general development, so that training may be a preparation for employment, for life in its broadly economic aspects, for co-operation in the common endeavour, and for participation in the practices of democracy. Educational planning generally brings into focus this will to adapt education to economic and social development.

Furthermore, the function assigned to education in relation to social values is tending to alter; long considered to be the means of passing on the cultural

heritage and existing system of values, of maintaining the structures of a given society, education is nowadays looked upon increasingly as a means of changing, renewing and even of challenging those established values.

At the same time, the notion that education can and should be an instrument for international understanding and peace is gaining ground constantly; and the Member States of the United Nations and of Unesco have given their solemn undertaking to promote this notion.

The formulation of aims for a modern educational system does not mean simply substituting more recently defined aims for established ones, or adding them to existing aims with no fixed priorities. In order not to forget traditional aims while introducing new ones, it is necessary to distinguish between different groups of objectives, for instance cultural objectives such as transmission of knowledge, ethical objectives like promoting moral and spiritual values, social and economic objectives such as formation of essential skills, and political objectives, or nation-building.

Traditional aims may, to be sure, call for restatement to fit the present context: standardized ethical teaching may, for example, yield ground to more down-to-earth pedagogical methods designed to promote emotional stability, interpersonal relationships, adjustment to new family and social structures and a proper sense of man's place in the universe; the accumulation of knowledge may be replaced by training of the reasoning and critical faculties, and development of the imagination and of taste. Certain former aims, which may even be written into some national constitutions, may seem to be outdated and no longer to correspond to present realities or needs; when this is so, it would be advisable to alter the text of the constitution in such a way as to ensure the necessary coherence between the laws and educational action.

In some circumstances different aims may appear to conflict and some decision about priorities would have to be taken, but it is essential to see how the different aims are interconnected and mutually dependent. An attempt must be made to integrate them. There is, interestingly enough, a trend at present to reconcile the practical with the moral goals, the so-called economic with the so-called educational aims, considered as complementary approaches to human development; that is, development of the individual and the citizen alike, of character and intelligence, of theoretical and practical knowledge.

The arguments about the pros and cons of general education as opposed to vocational training seem more and more to be merely a matter of words. To say nothing of the basic attainments (the three R's—reading, writing and arithmetic) required in every present-day occupation, it is surely obvious that it is as, and indeed more, important for holding any position to have had a general education, to have learnt to be methodical and accurate, to be accustomed to adopting a rational and critical attitude to things and an imaginative approach to technology and economics, to have acquired a feeling for teamwork, etc., than merely to have the knowledge and skills necessary for that particular position. Is it not equally obvious that the retraining courses and reconversions necessitated by the

gathering speed of technological progress must be based on a sound general education? And lastly, who would gainsay that any general education which includes no practical work is not truly general, and that agriculture or the handicrafts can be excellent educational tools?

Can we go further? The Universal Declaration of Human Rights, adopted by all Member States of the United Nations, proclaims, *inter alia*, that 'education . . . shall promote understanding, tolerance and friendship among all nations, racial or religious groups, and shall further the activities of the United Nations for the maintenance of peace' (Article 26, paragraph 2). There is no doubt that education can, if this be genuinely and actively desired, do a great deal to foster international understanding, which will, in turn, tend to slow down the arms race; and the reduction of expenditure on armaments is, as several present-day examples prove, one of the shortest cuts to economic development. Surely in these conditions the contribution made by education for peace to development must in practice be on a par with, say, vocational training?

Finally the educational objectives proper must be considered: compulsory attendance, free schooling, raising of the school-leaving age and equality of access. These targets are, strictly speaking, means; they are, however, often regarded as targets by the public, and even feature on occasion in official declarations under the heading of educational 'goals'. Though internal in nature, they are nevertheless related in certain ways to external objectives: it is difficult, for example, to conceive of a democratic educational system without schooling for all.

Which authorities are to define the goals and aims?

In theory, the aims of education are either laid down by law, or the authorities empowered to establish them are stipulated in legal provisions, at the national and international levels alike. Here are some examples:

The General Assembly of the United Nations has adopted and proclaimed the right of everyone to education, together with the more general aims of education (Article 26 of the Universal Declaration of Human Rights).[1]

The General Conference of Unesco, at its eleventh session, adopted a Convention against Discrimination in Education which has already been ratified by a number of Member States, in whose territory it consequently has the force of law.

The General Conference of Unesco, the International Conference on Public Education and regional conferences adopt recommendations which, without having the force of law, are destined to serve as guide-lines.[2]

1. See also Article 5 of the International Convention on the Elimination of all Forms of Racial Discrimination (1965) and Article 9 of the Declaration on the Elimination of Discrimination against Women (1967).
2. *Recommendations of the International Conferences on Public Education 1934-1960* (IBE publication No. 221).

The constitutions of most countries set out national educational aims, and proclaim a certain number of principles (free and compulsory schooling, etc.); they stipulate which executive or legislative authorities are qualified to propose, approve and promulgate the laws, decrees and regulations governing the educational structure and budget, curricula, and the status of teachers.

The General Development Plan, where there is one, establishes the place of education in that plan and the aims which it is to pursue in order to contribute to economic development.

In practice things are not so simple. To begin with, there is too often a real gulf between the objectives proclaimed and those actually pursued.[1] In any case, such ostensible aims are always extremely general; they have to be interpreted in order to translate them into terms sufficiently specific for planning, and decisions and results may vary considerably according to that interpretation. Priorities must be fixed both amongst the different aims of education proper and in relation to the other sectors. True, the national constitution stipulates who, in the last resort, shall take the official decisions; but in reality the specialists in the educational planning bureau have always exerted a considerable influence—all the more so as problems become more technical and beyond the grasp of non-specialists. In the absence of any general development plan or specific educational policy, specialists may be tempted to take over from society, settle the plan's objectives themselves, and persuade the public authorities to ratify their proposals.

This would be a very serious state of affairs and is liable to bring planning into disrepute. An individual or group of individuals—however competent and well-intentioned—cannot know and understand everything about a particular society; their arguments can never be a substitute for the conscience and will of the people as a whole. Even if their objectives were the best in the world—which is highly doubtful—the plan prepared on the basis of those objectives would still be difficult to carry out; the public authorities might not authorize the outlay needed to execute a plan which had been, so to say, foisted on them; moreover, having had nothing to do with its drafting, the teaching profession and society would never take an active part in such a plan.

The participation of all the responsible authorities and of society as a whole in determining the goals and aims of the educational plan must not be taken for granted; in this respect consultation is a major operation and must be carefully organized. The following are some of the means of consultation and appropriate bodies that may be established: information seminars for provincial and national educational administrative staff; liaison commissions between the ministry of education, the other ministries involved (in particular the ministry of planning), the university and the various organizations concerned (private schools, trade unions, parents' associations); meetings of specialists (educators, economists,

1. Anisio S. Texeira, *Ostensible and Real Values in Educational Policy* (paper submitted at the Conference on Education and Economic and Social Development in Latin America, Santiago, 1962).

sociologists, technicians, etc.); provincial and local committees bringing together teachers, administrators, parents, students and representatives of the different economic and cultural sectors; surveys amongst the teaching profession, organization of information meetings and debates; information campaigns through the press, radio and television to draw the general public's attention to educational problems; furthermore, these media can be used to disclose and comment on the outcome of the consultations and to maintain contact between national and provincial committees.[1]

The organization of these nation-wide consultations calls for: time (at least six months: a time-table must be drawn up): staff (to follow the meetings of the commissions, direct seminars, tour the provinces, draft questionnaires, exploit results obtained); a budget (staff expenses, printing and mailing costs, travelling expenses and possibly recruitment of an expert); the active interest of the authorities—only the minister of education and the head of the government can direct such a campaign effectively.

This mobilization of efforts for the purpose of defining the goals and objectives of education in itself represents considerable progress. By making it its duty to reflect on education, society educates itself and becomes alive not only to the economic problems, but also to the social, cultural and human problems involved in its general development. Here we find a first manifestation of the truth, too often forgotten, that education must begin with itself, educating first and foremost the educators, administrators and all others responsible, including the voters.

The time and energy expended on such reflection are recovered with interest. Once the aims of the plan have been properly defined, half the preparatory work is done; priorities emerge later, as if of their own accord; and the 'internal yield' of education merges with the so-called 'external productivity' when the aims of the educational system coincide perfectly with those of society. The consultative bodies set up to determine the aims will be of service later when it comes to revising the hypotheses on which the plan is based, preparing curricula, discussing the school distribution map, etc.; it will be far easier to put the plan into practice if those responsible for its execution and all other persons concerned understand it and adhere to it fully; no administrative co-ordination measures can make up for the lack of a common viewpoint and will to succeed. It is impossible to evaluate educational 'productivity' if aims are not defined beforehand.

1. The importance of the public's co-operation in the preparation of the plan is stressed in the preamble to India's third Five-Year Plan: 'Development plans reflect the changes which are taking place in the country's economic and social structure as well as the directions in which this structure has to be recognized and strengthened. In a democracy the pace of change depends to a large extent on increase in public understanding and in public response and on the growth of a scientific outlook on the part of large numbers of people. Besides the economic and social objectives, the educational aspects of planning are, therefore, of great importance. These are emphasized through the wide sharing of responsibility for drawing up and carrying out Plans and through the participation in the process of planning by organizations representing all sections of opinion as well as universities and educational institutions and voluntary social service agencies.'

The role of the educational planning specialist is not so much diminished thereby as altered. His principal tasks are: to draw the attention of the competent authorities to the dangers of embarking upon any planning the aims of which have not been clearly defined; to mark crucial points but to refrain from personally fixing aims and objectives that lie outside the responsibility of the technician pure and simple; to explain to the competent authorities the possible implications and consequences of the different objectives and options in the financial, social, economic, cultural and educational fields; to organize, carry out and exploit the results of the nation-wide consultations on the aims of the educational plan.

A perfect consensus of the whole of society on the objectives of an educational plan remains an ideal goal; but it is the ideal goal sought by education itself. It cannot, therefore, be too quickly abandoned. Even if, finally, it were necessary to compromise in order to strike some sort of balance between different types of interest or different points of view, the fact that a compromise has been felt necessary and has been accepted could perhaps be interpreted as a sign of progress in the public consciousness of educational problems.

Levels at which forecasts are made and integration of the goals defined at these different levels

It has been decided here to employ the words 'long-term perspective', 'planning' and 'programming', which distinguish between different types and levels of forecasting, rather than 'long-term forecasting', 'medium-term forecasting' and 'short-term forecasting', which incorporate these types and levels in a single expression, without introducing—although they may appear to do so—greater precision as regards the time factor.

Long-term perspective. The purpose of long-term perspective is to extrapolate the longest-term problems, situations and needs (say, twenty to thirty years hence or more); it is impossible to quantify exactly, and there can be no question of estimating specific costs or of establishing a time-table. Long-term prediction should not be confused with planning. Such prediction lays no claim to plan for the year 2000; it is a tool for studying the distant perspectives into which successive plans will be fitted.[1]

1. Already in 1902 H. G. Wells was urging that historical, economic and social studies be directed towards taking stock of the future; but it was not till just after the Second World War that the technique of long-term prediction or *l'art de la conjecture* (B. de Jouvenel) came into being.

In the United States of America, the Rand Corporation, the Commission for the Year 2000, Tempo, the Hudson Institute, etc., are all concerned with studying the future. In France, Gaston Berger founded the Centre International de Prospective in 1957; Bertrand de Jouvenel has since 1961 been the leader of the Futuribles group, subsidized by the Ford Foundation. In the U.S.S.R., Vasiliev and Guschev have analysed in their *Life in the Twenty-first Century*

The very idea of long-term perspective shocks many specialists. It must be understood that such perspective does not claim to give firm forecasts of the future, but simply to reduce the margin of uncertainty by examining the educational implications of possible future conditions, and to distinguish, amongst possible futures, those that are most likely or least unlikely. Such forecasting—some prefer the term 'anticipation'—increases our chances of having the future we would wish for, and lessens those of having one we would not. For the future is not inevitable; it can be 'mastered' provided every effort is made to remain aware of it and to 'build' it. Short-term plans can, for example, help considerably to alter the bases of the more distant future.

Education is a particularly propitious field for long-term prediction, for it is very slow in producing results; it is a platitude to say that today's schools are training the men of the year 2000; it could be added that the teacher-training colleges are training the teachers who will be educating the men of the year 2030. It is certainly difficult to forecast manpower requirements in twenty years' time, and hence to determine educational aims; but we can already form an idea of the type of person we should like to see emerging in the coming generations, and to take appropriate steps to this end. And in this context should not our uncertainty as to manpower requirements prompt us to increase opportunities for adaptation and to make the entire educational system more flexible?

Some people, however, object that, as a result of the introduction of new media (television is a good example) educational conditions may very likely have altered out of all recognition in thirty years' time, and that it is useless to try to anticipate; all we know is that there will be great changes. But there again, the prescience of change to come is surely in itself a most important datum, leading us to avoid any short- or medium-term maximization which might jeopardize the future. Not to close to any doors is one way of preparing for it.

In short, long-term prediction may help educational planning to see more clearly: what the world of the future could be as a result of scientific, technological

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the views of twenty-nine Soviet scientists on the future. The European Foundation in Amsterdam has embarked upon a five-year study of education in the twenty-first century.

The basic technique of long-term prediction is 'simulation'; in order to simulate the future, such prediction draws on all the possibilities offered by trend extrapolation (including 'envelope curve' extrapolation), econometric models and computers. It also has recourse to comparisons of the points of view of various specialists: economists, sociologists, technicians, philosophers, and representatives of different interested sectors (The Rand Corporation's Delphi Technique). The technique also utilizes 'scenarios' (H. Kahn and the Hudson Institute), 'games' which are, so to speak, tactical exercises on future situations (Olaf Helmer's 'game'), parliaments of the future (B. de Jouvenel's '*Forum prévisionnel*').

The following are a few recent works: O. Helmer, *The Use of the Delphi Technique in Problems of Educational Innovation*, Rand Corporation, 1966; B. Haydon, *The Year 2000*, Rand Corporation, 1967; E. Jantsch, *Technological Forecasting in Perspective*, OECD, 1967 (important commented bibliography); *World Design Science Decade, 1965-1975*, Southern Illinois University, 1963 ff.; B. de Jouvenel, *L'Art de la Conjecture*, Paris, 1964; Vasiliev and Guschev, *Life in the Twenty-first Century* (London), *Russian Science in the Twenty-first Century* (New York); *Futuribles* (series of studies published since 1961 by SEDEIS).

and operational development;[1] what education could be within the possibilities afforded by these developments;[2] what should and could be done in order to obtain the material and social environment most suited to man's full realization; which type of education should and could be given in order to attain this goal.[3]

Planning. Planning proper, for which long-term prediction serves, so to speak, as a back-cloth, is a means of exerting a direct influence on events in the near future. On the one hand, it presupposes concordant decisions directed towards the solution of a whole set of problems; it therefore calls for priority options, and takes the relations between various projects or groups of projects into account; its scope is vast and complex (over-all planning of education at all levels and in all its forms within the context of general development). On the other hand, it implies calculation of expenditure and a specific time-table. The objectives of planning cannot necessarily all be quantified, for planning is not merely a matter of enrolments, buildings and equipment; it is possible, for example, to plan a reform of the curricula which is not quantifiable in terms of substance, although the consequences will be so (teachers to be retrained, new textbooks, additional equipment, buildings to be altered, costs involved, time-tables for the reform). The fact that planning deals with a whole complex of problems means that the various phases must be spread out over a certain period of time. It is hard to imagine an over-all educational plan lasting for less than four or five years—which is very often the duration of general development plans; but in other respects the calculation of expenditure and the drawing up of a time-table rule out any much longer term, for it is difficult at present to furnish particulars in these matters for more than a decade ahead.

Programming. The field of programming is more limited; a programme deals with one of the aspects of the general educational plan (e.g. school distribution map, reform of secondary education, retraining of teachers, vocational guidance, etc.), or is geared to one of its objectives (e.g. equal educational opportunities for women, adjustment of education to rural needs, adaptation of technical training to a given industrial development, etc.) Programming thus deals with a subgroup of problems covered by the plan; whereas the plan is concerned with policy, the

1. Specialists in long-term prediction, for instance, give lists of probable technical innovations in 1980, 2000, 2020.... See: O. Helmer, *Science Journal* (London), October 1967, p. 52; H. Kahn and A. J. Wiener, *The Year 2000; A Framework for Speculation on the Next Thirty-three Years*, New York, 1967.
2. Possibilities include: complete training through television and teaching machines; individual education at home (television sets and teaching machines will be extremely cheap and available to everybody); individual access (through telephone and television) to central data storage and computers; feasibility of using drugs to increase intelligence; genetic engineering; direct electro-mechanical interaction between the brain and the computer (probable towards 2020), feasibility of education by direct information recording on the brain (possible between 2020 and 2030), etc. Let us repeat that what is possible is not always desirable.
3. See: 'Technology and Education in the 21st Century', *Symposium II*, edited by San Francisco State College, Washington, 1967.

programme is operational; its objectives are therefore more detailed, more specific and, as a general rule, quantifiable. Since it deals with a particular phase of the plan, programming is seldom a long-term operation.[1]

The programme is in turn divided up into projects; building a series of schools, installing a closed television circuit, preparing textbooks, organizing adult education in an area marked for industrialization—all qualify as projects. The length of a project is clearly defined and it relates to a specific operation which is not as a rule intended to be repeated.[2]

Long-term perspective, planning and programming are different aspects of a single process of thought and action; none of them is sufficient in itself—all three are interdependent and complementary.[3] The over-all educational plan would remain a dead letter if it were not extended and expressed in detail in the form of programmes and projects; programming is the implementation of the plan. But the plan itself, if it is not to jeopardize the future seriously by taking only the more immediate problems into account, must be adapted to broader perspectives: to refuse to forecast the distant future and to take decisions, however general, in relation to that future is tantamount to deciding that changes must be left to chance.

The aims that can and must be fixed by long-term prediction, planning and programming are at different levels and are therefore different in nature. Long-term perspective rules out quantified targets and makes it possible simply: to take general measures in order to mitigate certain possible dangers (e.g. a serious rise in cases of emotional instability) or to meet certain probable situations (e.g. expansion of the modern production sector, generalization of the employment of female labour): to avoid embarking once and for all upon a course offering no possibilities of transfer (e.g. if it is proposed to bring certain new teaching techniques into general practice); to adopt a strategy in order to attain, in conditions

1. There is no absolute demarcation line between plan and programmes, on the one hand, and between programme and project on the other; these terms are often very nearly interchangeable. Furthermore, the boundary between planning and programming is not absolutely fixed; it may be debatable whether a project for the expansion of primary education comes under the head of planning or programming.
2. Programmes and projects lend themselves particularly to new management techniques such as programmed budget, PERT, etc. (see 'Rational Organization of Planning', page 167
3. As an example let us take that of the U.S.S.R. The U.S.S.R. has a certain conception of man's development in the light of which the government draws up long-term plans (twenty years), divided up into medium-term plans (five years) which are themselves regularly revised in the course of short-term plans (one year), designed to attain certain specific objectives and in anticipation of the probable evolution of the situation. The Soviet Union's general plan is in turn subdivided into as many plans as there are republics. The plan deals with educational development as a whole within the framework of economic and social development; it is in the nature of a general policy. It is broken down into programmes which deal with single aspects of educational development (e.g. the rational location of new school buildings, regrouping of establishments, student transport, etc.: or else the adaptation of the curriculum to the needs of the economy). The programme is concerned with action rather than with policy. It is in turn subdivided into projects (e.g. the building of a technical school in a given town; or the adaptation of the curriculum to a particular branch of the chemical industry).

likely to prevail in the future, the nation's more general educational goals (training for citizenship, maintenance of ethical values, religious principles, vitality of the national culture, etc.) or those of mankind (full development of the human personality, international understanding, peace, etc.).

The field of planning is composite. Broad options are needed with regard to economic policy (percentage of the budget allocated to education), development policy (distribution of staff at the various levels and in the different branches of education, geographical distribution, adaptation of curricula to development), pedagogical policy (structure, methods, technology) and general educational policy (duration of compulsory schooling, free schooling, equality of access, public and private education, co-educational schools, creation of pre-school education, special education, etc.). But these choices, once made, call for estimates of annual and also of provincial objectives, and the task of establishing them is a technical one.

As for programming, it requires precisely quantified objectives, together with time-schedules and exact estimates of costs; these objectives represent simply the breakdown of the plan's broader options; they are a matter of purely technical choice and policy questions do not, as a rule, come into the picture.

The logical sequence is to go on from long-term prediction to planning and from planning to programming, from the most general aims to medium-term options and from options to objectives. It is in practice necessary to shuttle between these three decision-making levels.

2 Diagnosis of social and economic development and educational development

To prepare a plan and adopt a strategy, it is not enough to define the objectives. Not only must we know where we are heading for, but also where we start, in what conditions and with what means.

At the same time as we determine the objectives, we must therefore diagnose the situation, the trends and the possibilities open to us in two fields: general social, economic and cultural development and development of education itself.

Diagnosis of the social, economic and cultural development

If education is to be adapted to general development, we must know the needs of development. Ideally, then, the educational plan should be thought out and prepared in conjunction with the other planning activities. Up to the present, however, where an over-all plan does exist, it is in most cases prepared separately, and its provisions for education amount, at best, to a mere forecast of manpower requirements in the modern production sector or for some special projects. In other respects the extension of education is regarded essentially as consumption and not as an investment; the education chapter is not linked organically to the other headings of development; and the various economic formulae which set out to indicate the optimum rates of schooling are used only after the event, by way of justification rather than as a basis of decision.

It follows that, even when an economic plan exists, the framing of the educational plan requires that a number of studies be carried out in regard to projected manpower requirements in general, the level and content of the education needed for each category of employment, general attitudes to be encouraged by education (education of the consumer, the small investor, the co-operative member, the citizen), the social demand for education, etc.

Whether the need is to prepare an over-all development plan jointly with an educational plan, or to supplement the over-all plan with special studies aimed

at the requirements of education, it is of great importance to find instruments for adequate diagnosis. Certain techniques (statistical, cartographical etc.) are familiar and have been in use for a considerable time, but they need to be constantly improved, and it would seem, for example, that surveys on development would gain considerably from the application of methods used for ethnographical surveys.[1] However, there also exists a relatively new method of diagnosis which is worth discussing at some length, namely typology.

The uses of typology

Typology is a classification of countries, regions, societies or cultures into groups having analogous features and similar structures. Typology has two distinct functions: scientifically, it provides a basis for comparative research on development; practically, it enables a country proposing to plan its development to have a general idea of its relative situation. Doubtless no two countries can be found to correspond exactly to a specific type, but with the help of typology, each can become precisely aware of the extent to which it resembles and differs from the standard type, and so have less difficulty in diagnosing its own situation.

Typology does not indicate what policy or strategy should be adopted; it is no more than an instrument of diagnosis and an aid to formulating working assumptions. In surveying the social, economic and cultural situation it provides a framework of research, thanks to which nothing is omitted and individual observations can be linked to one another; in preparing the various chapters of the development plan simultaneously, it makes it possible to formulate a preliminary and very general hypothesis which will facilitate integration of the various sectors; where there is no over-all plan or survey of development, it makes it possible to prepare a simple outline of the situation, trends and development possibilities of a country. This outline in turn will enable the educational planning experts to be constantly aware of the most obvious needs of development. In addition, it will help non-technicians—officials of the ministry of education and other ministries concerned, teachers, the public in general—to realize what is needed for development and so become willing to participate in the policy necessary to educational innovation.

All forms of though and action involve a certain amount of classification. To talk, for example, of 'underdeveloped countries', 'developing countries' and 'developed countries', or 'African countries' and 'Asian countries', is to resort to classification, but it is a very crude classification, and consequently of little use. Typology is simply a less rough-and-ready classification, hence one capable of being more efficient.

1. See the documents prepared by the Economic Commission for Africa (ECA) for the Conference of African Planners, Addis Ababa, 1967: *Data Collection for Project Identification*, *Feasibility of Socio-economic Data Collection on the Local and Regional Level in Africa in Systematic Project Identification*, and *Cartographical Methods in Assisting in Project Identification* (studies E/CN.14/CAP Nos. 18, 22 and 24).

There are already a large number of typologies in existence. Some are concerned exclusively with economic factors; others add social and cultural factors. These can be quantified or not, and in quantified typologies, the methods of weighting and correlation are extremely varied.[1]

The dangers of typology, its present shortcomings and its natural limits

The typology of development is an aspect of planning which provokes the liveliest discussion; proof, no doubt, that it lies at the heart of the problem. Far from avoiding debate, we must attempt to discuss the usefulness of typology exhaustively.

Most typologies, particularly those attributing a single composite index to each country, resemble a prize-list for development. Although we are here concerned with economic development and cultural values are not in question, the classifications are bound to give rise to objections on the part of those concerned. At the Abidjan Conference in 1964, for example, several delegates queried the accuracy of the data and the value of some of the criteria used in the typology submitted to the conference.[2] These objections are all the more understandable in that the statistical data are uncertain and rarely comparable, while the methods of classification still give rise to considerable controversy among specialists.

'Robot portraits' or profiles eschew the difficulties inherent in a classification of countries. Furthermore, they have the advantage of being very easily accessible to non-technicians and of giving an immediate and clear idea of a number of standard situations. It may be objected, however, that they accord too important a role to subjective judgement and lack the scientific precision obtained by quantification. No doubt ethnographers have long been using methods of qualitative typology (Guthman scale, etc.), apparently with success; but when the situations surveyed are highly complex (as are modern societies), it would seem impossible for the selectivity of the qualitative method to be greatly increased.

1. For example: Typologies based on GNP *per capita*, combined where appropriate with the rate of population growth: Escott Reid, *The Future of the World Bank: An Essay*, Washington, IBRD, September 1965; Yves Lacoste, *La Géographie Active*, Paris, Presses Universitaires de France, 1964. Typologies based on a larger number of numerical indicators: L. J. Lebret, *Dynamique Concrète du Développement*, Les Editions Ouvrières, 1961 (Economie et Humanisme); Brian J. L. Berry, 'An Introductive Approach to the Regionalization of Economic Development', in: Norton Ginsburg (pub.), *Geography and Economic Development*, Chicago University, 1960. Typologies based on historical criteria: W. W. Rostow, *Stages of Economic Growth*. Typologies based on a 'genetic' classification: Y. Lacoste, *Les Pays Sous-développés*, Paris, Presses Universitaires de France. Typologies based on the global level of education: F. Harbison and C. A. Myers, *Education, Manpower and Economic Growth*, McGraw-Hill, 1964. Typologies based on GNP *per capita*, combined with other indicators including educational indicators: Bruce M. Russet, *World Handbook of Political and Social Indicators*, Yale University Press, 1964. Regional typologies: IEDES, *Perspectivas de Desarrollo de la Educación en 19 Paises Latino-Americanos*, Unión Pan-americana, 1963; *Social Aspects of Economic Development in Latin America*, Vol. II, p. 72-100, Paris, Unesco, 1962; *Situación Demográfica, Económica, Social y Educativa de América Latina*, p. 51 ff., Santiago, 1962; IEDES, *Typologie Socio-économique*, Paris, 1963; ECA, *Outlines and Selected Indicators of African Development Plans*, 1965; *An Asian Model of Educational Development*, Paris, Unesco, 1967.
2. *Final Report*, p. 19 (Unesco/ED/205, 31 August 1964).

Indeed, where a large number of categories have to be clearly defined, we have to press fairly far in defining norms which correspond to the standard categories for each criterion. There is little likelihood of succeeding without having recourse to figures; also we are condemned to the use of expressions which are necessarily vague.

Quantitative typologies, however, are no less fraught with difficulties. When a quantitative typology is reduced to a single indicator, for example the gross national product *per capita*, the result is a classification so crude as to be completely useless in practice. The GNP figures are indexes of economic development which do not, for instance, include any evaluation of the real income of those living in a subsistence economy or give the slightest indication of the tremendous economic and cultural differences which may exist in one and the same country, and which in general are highly unsuited for purposes of international comparison in view of the uncertainties of exchange rates.

However, when an attempt is made to introduce a greater number of numerical indicators, other difficulties arise. We cannot purely and simply add up *per capita*, national revenue, figures of primary schooling, the number of kilometres of railway track or of cars, the ratio of industrial manpower to active population, etc. Each factor must be given a certain weighted coefficient, after which we must think out a method of integrating all the data which define a progressing situation as a figure or index that will enable us to place that situation on a scale. But there may be no single scale of development, and this makes the problem correspondingly more complicated. In practice, the considerable differences prevailing between classifications obtained through various typologies warn us that current methods are not yet fit for use.

It is also objected that many typologies present static situations instead of emphasizing current trends in each country, which are much more useful in estimating future developments. While this reproach seems justified in the case of most existing typologies, we can well imagine a typology taking, as factors, the growth rates of the gross national product, of population, of school attendance, etc. Robot portraits have frequent resort to an evolving approach as well as to static situations.

Typology, if it is to be useful for strategic purposes, must constantly and increasingly assume a dynamic aspect. Two situations identical in terms of revenue, social structure and cultural level should yet be classified in two different categories if, for reasons already perceptible, their evolution should tend to differ. The introduction of this element of dynamism should make it possible to avoid such fundamental errors of planning as, for example, building a number of new schools in rural areas likely to be depopulated in the near future, or in small towns doomed to decline for such geo-economic reasons as the poverty of the rural areas surrounding them.[1]

1. See: G. A. Ponsioen, *The Analysis of Social Changes Reconsidered*, 1965.

Current typologies are in most cases concerned with nations as a whole. But it frequently happens, particularly in developing countries, that the situation varies considerably from one part of the country to another. It may change completely between urban and rural zones. In addition, the conditions obtaining in large industrial cities are very different from those present in small towns in the heart of agricultural areas, and the problems of farmers engaged in market-gardening have little in common with those of colonists clearing the edges of virgin forest. Typology by whole countries continues to be necessary to demonstrate social and economic interaction inside a State which forms a political, economic and social whole; but it may also be useful to refer to types of geographical areas equivalent to similar regions in other countries.

To sum up, distrust of typology is largely due to its mechanical aspect. It is feared that the 'technocrats', starting from more or less general types, will try automatically to deduce such and such a development strategy for a given country whose characteristics can never correspond exactly to those of an ideal type.

The seminar on educational planning held in Banyuls in September-October 1967 drew attention to the limits of typology.[1]

Nevertheless it is permissible to use, as aids in diagnosis, cruder methods such as robot portraits or profiles. Such a technique, when further advanced, might ultimately yield a typology, incorporating both quantifiable and non-quantifiable indicators, which could be useful in helping identify and suggesting solutions to typical problems. But the classification involved in the typology should not be regarded as a ranking system.

Diagnosis of educational development

It has been necessary in the first place to consider education as one factor of economic, social and cultural development among others, so as to locate the problems in their widest context; but this done, we must return to education and discuss it specifically.

Typology of education

Most typologies of general development take certain educational indicators into account, but the features considered are inevitably few, and the general development profile does not necessarily high-light the characteristics of educational development. It is consequently useful to have, at the same time as a general

1. It is essential 'to consider typology as a purely indicative notion, as an operative concept... typology is merely a safeguard which enables the man of action, the non-specialist in planning, to set his country at a glance in an approximate category prior to any specific and thorough study of the case' (note by Mr. N'Sougan Agolemagnon); 'Typology is useful as a first stage, and in so far as it is not regarded as an accurate analysis, but simply as a number of references to be kept in mind by educational planners' (note by Mr. Elvin).

typology, an educational typology which gives us more exact data both for international comparisons and for the first over-all diagnosis of the country's educational situation and possibilities.[1]

Correlation between indicators of educational development and indicators of economic development. Correlation indicates the frequency with which two phenomena occur together. This is purely a matter of observation, in no way signifying that there is any link of cause and effect between the two thenomena, but it may reveal dynamic (or even dialectic) interaction and some interdependence.

Existing calculations give very diverse results, depending on the methods used. The report on *The World Social Situation*, prepared in 1961 by the United Nations, shows a clear relationship between the combined rate of primary and secondary school enrolment on the one hand, and various economic indicators—GNP (0.84), consumption of energy (0.76), manpower distribution (0.81)—on the other. Examples of interrelationship calculated by the Institut du Développement Economique et Social (IEDES) for 19 Latin American countries in 1960 show a considerable difference, depending on whether the subject is the promotion of literacy, primary education or secondary education; the interrelationship with GNP is 0.41 for literacy, 0.46 for primary education and 0.61 for secondary education (the ratios rising respectively to 0.62, 0.54 and 0.85 if we omit Venezuela, where oil resources create a special situation). Calculations made by M. J. Bowman and C. A. Anderson for 55 countries give a relationship of 0.432 between the rate for promotion of literacy and the GNP logarithm. Such as they are, these results suffice to show that interrelationship is much stronger for secondary than for primary education, a field in which various political decisions can produce very diverse situations in similar economic contexts. As it happens, these results are confirmed by observation: certain countries make a particular effort in education, and their educational situation is definitely out of alignment with their level of development (such is the case, for instance, with Gabon or India). It is consequently most useful to have a typology of education distinct from the typology of general development.

Groups of countries. Fairly definite thresholds exist in the GNP scale, with the result that it is possible to distinguish groups of countries based on this essential factor of economic development. On the other hand, when countries are examined in the light of their combined rates of primary and secondary school enrolment,[2] it is immediately seen that there are hardly any thresholds; the lowest rate, 5 per cent, increases by imperceptible steps to 154 per cent. Introducing additional data in a 'composite index' (e.g. Harbison and Myers' typology), does not give very different results; so that, at first sight, the methods hitherto used seem most

1. An example of purely educational classification is the typology of J. H. Laska, 'The Stages of Educational Development', *Comparative Education Review*, December 1964.
2. *Unesco Statistical Yearbook*, 1965.

unlikely to lead to a quantitative typology of education which is other than arbitrary, and a new mathematical method has been sought which would give a clearer picture of the differences between countries. The Expert Meeting on the Methodology of Human Resources Indicators convened by Unesco in Warsaw in December 1967 evaluated and recommended a so-called taxonomic method.

The taxonomic method, described by Professor Hellwig[1] can be summed up as follows: The 'distances' are taken between each country under consideration and all the others; each distance expresses synthetically several specific distances concerned with different dimensions. The number of these dimensions may be very considerable, the only limitation being the capacity of the computer. In education, for example, the factors considered may be the enrolment ratios for each of the three levels of education; to establish a typology covering more than one dimension at a time, using the traditional statistical methods, it is necessary in the first place to calculate a composite index (as is done, for instance, by Harbison and Myers, who add the rate of secondary school attendance to the rate of higher education given a weighting factor of 5); the taxonomic method avoids the introduction of such a composite index, which is always more or less arbitrary, and makes it possible to classify countries directly in a three-dimensional space, in which 'clusters' or cumulations of countries are clearly visible. These clusters or cumulations form a number of 'natural' groups. When one country, or several, stands or stand out clearly from all the others, the use of the so-called 'double sigma' ('critical distance') rule enables them to be identified as separate typological groups. The result of this is a typology suffering from a serious imbalance, with most countries shown in a single group. Later, subgroups can be identified within such a group on the basis of the order of concentration: subgroups of the first, second, third order, etc.

This method was first applied by the Secretariat of Unesco to the typology data of Harbison and Myers for the purposes of the Warsaw meeting. These authors, taking secondary and higher education enrolment ratios in 75 countries, obtained 4 groups each with the same number of countries. The taxonomic typology gave very different results. One country—the United States, as it happens —formed by itself a first group and all the others were in another. Even with the United States excluded, the typology continued to be seriously unbalanced. This result is already in itself extremely interesting, for it shows that the distances between countries increase with development (a little like what happens with celestial bodies, according to the theory of the expanding universe). The most highly developed countries turn out to be very distant from each other, whereas the less-developed ones are assembled in highly compact groups.

Indicators of educational development. To be both significant and usable, an educational typology would obviously require that a great number of indicators be

1. 'Procedures for Evaluating High-level Manpower Data and Typology of Countries by Means of the Taxonomic Method.'

taken into consideration, and would entail correspondingly complex calculations.

The seminar on educational planning which met in Banyuls (September-October 1967) suggested some indicators which could be used for a typology of education: enrolment by age group or by representative age, in the three levels, primary, secondary and higher; output (drop-out and repetition); pupil-teacher ratio; enrolment ratios (primary last year to secondary first year; technical first year to total secondary first year; secondary last year to higher first year); average ages for entering and leaving primary, entering and leaving secondary; costs (total public costs out of total educational costs, and public costs of primary out of children enrolled in public primary education; unit cost per pupil at different levels; cost per square metre of building in primary, technical, secondary and university education); teachers (proportion of qualified primary teachers out of total; proportion of qualified secondary teachers out of total; proportion of part-time secondary teachers out of total); literacy (proportion of literates in total rural population; proportion of literates in total population); town-country ratio of distribution (proportion of primary rural schools out of total primary schools, of primary rural enrolment out of total primary enrolment, of secondary rural enrolment out of total secondary enrolment).

To these indicators, corresponding to aspects of traditional education which are most commonly quantified, it would be useful to add numerical indicators concerning the most problematic aspects, these being no doubt the most interesting for the future: out-of-school education and lifelong education (young people taking part in youth movements, business training, percentage of ex-workers in university education, refresher courses, etc.); psycho-sociological situation of education (discontent among students, teachers or parents; days of strikes in education) sociological breakdown of wastage; use of new techniques in schools (television, radio, programmed instruction, etc.); cultural life (daily newspaper circulation, book publication, number of radio and television sets, cinema, theatre and concert attendances, visitors to museums, leisure); importance given to science teaching in total curricula; adaptation of education to development (educational characteristics of labour force; percentage of engineers, supervisory staff, skilled workers, relationship between income and level of education; unemployment of the educated, brain-drain); equality of access to education (percentage of girls, percentages of social categories in higher education); social demand for education; administration, supervision and planning of education; percentage of external aid received.

The choice of indicators, their quantification and the establishment of correlatives would involve a considerable amount of work, but the results could be extremely revealing.

Static and dynamic typology. As in the typology of development, it would be interesting to consider, not the situation at a given moment, but trends. To the enrolment ratio (which remains essential) it would then be necessary to add, for

example, the growth rates of the enrolment ratio over the last five known years, etc.

Taking the dynamism of education into consideration might considerably alter the grouping of countries. When the Conference of Ministers of Education and Ministers Responsible for Economic Planning of Member States in Asia (Bangkok, 1965) was being prepared, the original intention had been to classify countries in accordance with their enrolment ratios. The result proved extremely arbitrary and failed to reflect the vitality of the various systems of national education. Finally, a dynamic classification was adopted. The 'Asian Model' considers three groups of countries classified not according to their present situation but to the probable date by which they will succeed in increasing the term of compulsory school attendance to a minimum of seven years. Group A should succeed in doing so after 1980, Group B about 1980, Group C before 1980. This grouping 'discloses rhythms of educational development at three different stages, which are closely though not automatically or unalterably correlated with indicators of general socio-economic development such as *per capita* income, sectoral distribution of the labour force and mortality rates, etc.'.[1]

Similarly, it is very interesting to measure the relative cost of educational programmes in the various countries.

M. H. Correa has indicated the method in his work, *The Economics of Human Resources*[2] (Amsterdam, 1963), and M. Botti has applied it in his *Recherches sur les Coûts de l'Enseignement Primaire à Madagascar et dans les Huits Pays Francophones d'Afrique*.[3]

In calculating a country's educational potential, M. Botti uses the formula $y/p \times c$, where y is GNP *per capita*, p the percentage of school-age population (6-13 years) out of total population, and c the ratio between the cost of primary education and the population educated to that level. The formula discloses considerable differences between countries. If we take 100 as the index for Gabon (the best-placed country), we find 73 for East Cameroon, 17 for Dahomey, 12 for Mali, 10 for Niger and 7 for Mauritania; 'that means that an enrolment rate of 7 per cent for Mauritania would involve as great an effort as total enrolment for Gabon'. The probable evolution of this educational potential is obviously an essential factor in planning, since it indicates the magnitude and possibilities of the effort.

Stages of qualitative evolution in education. So far we have considered mainly quantitative aspects; but the nature of education—content, methods, quality—may change considerably from one country to another, and in one country, with the

1. See: *An Asian Model of Educational Development: Perspectives for 1965-80*, p. 39, Paris, Unesco, 1967.
2. Amsterdam, 1963.
3. Vol. I, p. 77 ff., Cedes, 1967.

passage of time. No less important than a typology of enrolment rates would be a typology of 'styles' in education.[1]

Such a typology of 'styles' would be aptly supplemented by information concerning first the administration of education, and secondly instances of resistance to innovation from teachers, parents, children and various social groups.

These qualitative typologies would be all the more valuable as indicating the probable difficulties in the way of reforming a specific situation. Taking several steps at a time is not out of question; but in that case, thought must be given to the problems which will then threaten to arise and an adequate strategy adopted to overcome them.

Diagnosis of present situation and trends

A typology permits no more than a first and very rudimentary diagnosis of the situation and of existing possibilities. Preparing a plan calls for a number of supplementary studies: a historical analysis of education over the last few years (in particular, the success and failure of previous reforms); an educational chart showing where the institutions are placed and how the teachers are allocated; an evaluation of programmes and methods; an analysis of unit costs; surveys among the teachers, etc.

Diagnosis presupposes research with a view to action. It is consequently important, in preparing it: always to regard education as a whole, a genuine system which itself forms part of the entire social system (that being so, it may be useful to employ such methods as operational research which emphasize the interaction existing inside education as well as between education and the rest of society); not to cling exclusively to pure description, but to elicit what functions well or less well, to determine where there is imbalance, to evaluate unceasingly on the basis of the practical needs of a concrete society; not merely to evaluate, but to try to identify the causes (educational, administrative, economic, social psychological, physical), difficulties, cases of imbalance, failures and instances of resistance and to imagine beforehand possible remedies and solutions.

It is not enough to diagnose the present situation and current trends. Diagnosis must be followed by a prognosis as to what the future situation would be if no

1. It is a typology of this kind that C. E. Beeby has outlined in *The Quality of Education in Developing Countries* (Harvard University Press, 1960). The author distinguishes four stages of evolution. The first stage is characterized by a non-professional corps of teachers; curricula are limited in practice to reading, writing and arithmetic; the pupils learn by rote without trying to understand. In the second stage, the teacher has a certain amount of vocational training, but his general culture is limited; he is unsure of himself, hence his teaching is formalistic, strictly confined to the official curriculum; discipline is strict, the child's emotional life is ignored. The third stage is one of transition; curricula are more flexible, but this flexibility is inhibited by final examinations which dominate the entire programme; education is essentially intellectual; school is still a world apart. In the fourth stage, meaning is given more importance than memory; more active methods encourage creation; teaching is personalized; a positive form of discipline takes the place of prohibitions; the child's emotional and aesthetic life is given as much attention as his intellectual life; the school opens out on to the community.

deliberate action were taken to change or speed up trends and the tempo of evolution regarded as natural. Prognosis is seen to have two stages:

Projection, which is merely an extrapolation of the past into the future in accordance with the average rates of evolution of the various elements of the educational system.

Forecasting, which corrects projection on the basis of an analysis of already existing factors of change, the effects of which can develop further in the future (examples: consequences of a current reform, appearance of new sources of financing, or the drying-up of an existing source, a drop in the birth-rate as a result of family planning, etc.).

Only then can a start be made on real planning which, on the basis of the diagnosis-prognosis, and keeping the objectives well in mind (Part II, Chapter 1), will attempt, with assistance from various economic, sociological and educational techniques (Part II, Chapter 3) to determine the strategies of education (Part II, Chapter 4). It is nevertheless quite obvious that the distinctions are in reality less clear-cut, that it is often by means of diagnosis that the objectives become apparent and that clearly defined objectives already provide a first outline of possible solutions.

3 Technical and practical problems in educational planning

Three sources of misunderstanding

In its early stages educational planning ran too frequently into sterile discussions between partisans of an economic approach and partisans of a social or educational approach, between theorists and pragmatists, between those who favoured the quantitative approach and those who stood by quality. These quarrels belong mainly to the past, but it might be useful to recall them, so as to overcome former sources of misunderstanding.

Economic approach and socio-educational approach

Up to the middle of the twentieth century, educators were essentially concerned with the educational and cultural ends of education and paid little attention to its economic aspects. On the other hand, the demands of general development, an awareness of the part which education could play in such development, and the general increase in its cost have led economists to take an increasing interest in education over the last twenty years.[1] They already had planning experience and brought with them precise and statistically based techniques. Very naturally, they played a considerable role in the first phases of educational planning. For one thing, the initiative in educational planning was taken in many countries by the ministry for the economic plan; and for another, the theorists in economics quickly published works of a highly scientific nature which applied general economic theories to education.

At first, educators were naturally inclined to fear that education would become a branch of economics and to feel somewhat suspicious of economists as well as of planning, which was seen as their instrument. Nowadays they tend increasingly to understand that the irruption of economics into the realm of education

1. See: Mary Jean Bowman, Michel Debeauvais, V. E. Komarov, J. Vaizey, (eds.) *Readings in the Economics of Education*, Paris, Unesco, 1968.

has been profitable. First of all, the economic approach is an excellent means of encouraging education to move closer to social reality, as so many educators have for long been demanding. Also, the scientific methods of economics bring with them a degree of precision which has a happy effect on educational disciplines. Lastly, economics, by demonstrating scientifically that education can be investment, offers a conclusive argument to induce society to accept an extra financial effort in favour of education.[1]

Economics as a discipline is concerned with the problems of finding optimum allocations of scarce resources, a crucial issue in educational planning; nevertheless, it must not be forgotten that economic development is one objective of education, but not the only one. Social development, cultural development, human development (whether seen as the full expansion of the individual personality or as the promotion of peace), are no less important and urgent. As it happens, all these objectives influence one another: the development of education, particularly by increasing the possibilities of training specialized labour, contributes to economic development and vice versa, economic development, entailing a rise in GNP, facilitates increased investment in education; education, particularly primary education and the promotion of literacy, is a decisive factor of social development, but also, social development increases the demand for education; lastly, social and economic development influence one another.

Economics, society, culture and education are aspects of one and the same reality, and to isolate them absolutely would be arbitrary. They must be considered globally. There should accordingly be no question of adapting education to economics, but rather of integrating economic development and the development of human resources, for to a certain extent it is also necessary to adapt economics to the possibilities and requirements of education. In practice, the educational plan should no longer be prepared after the general economic and social plan. This applies to plans in all sectors, but it is particularly obvious in the case of education, which is a development of human resources and consequently has repercussions on all activities which set out to develop society.

If economic objectives are the most obvious ones at the present time, that is because they are much better defined and more accurately stated than the others. There can be no regret over the advance of the economic sciences; the whole problem is to arrive at equally precise definitions of the social, cultural and specifically educational goals.[2]

1. 'The economist's first gift to the teachers' craft was a new economic respectability . . .' (C. S. Beeby, in: *The Quality of Education in Developing Countries*, Harvard University Press, 1966).
2. 'We want,' writes Mr. Blaug, 'to eliminate superstition, promote standards of nutrition and hygiene, emancipate women, create an enlightened citizenry, encourage participation in community activities, and, lastly, equalize educational opportunities and satisfy the aspirations of parents and children for knowledge and learning. In view of the fact that most of these objectives are rarely expressed in terms of quantitative targets, not to mention the fact that there is as yet little firm evidence as to just how much schooling actually contributes to the achievement of these social objectives, there would seem to be little hope of finding "methods" of integrating education with social development. In short, there is a fundamental asymmetry in the formulation of the problem at hand. It is hardly surprising that educational planning

It follows that as much attention and the same kind of attention should be paid to the social, cultural and psychological aspects of education as has been paid in recent years to its economic aspects. In particular, it would be most useful to study, measure and, as far as possible, quantify: the comparative output of various educational curricula and methods; the influence of education in general and of various types of education in particular on the acquisition of certain psychological, social and cultural attitudes implicit in development (rationalism, organization, enterprise, the habit of saving, technical and economic inventiveness, aesthetic taste, co-operation, social and civic awareness, active participation in political life, a deep belief in progress), and their influence on health, emotional equilibrium, family life, national unity, international understanding, etc.; and the effect of these attitudes and of certain specifically educational objectives (such as equal access to education without distinction of sex or class) on economic development.

Theorists and pragmatists

Planning is a fairly recent undertaking which has developed independently in several directions and there has not as yet been time for these various approaches to link up. On the one hand, the universities and specialized institutes of the most developed countries have attempted a scientific analysis of the relationship between education and economic development; on the other hand, more-or-less experienced pragmatists in developing countries have at the same time had to improvive educational plans with rudimentary means.

The result is that the two types of activity have frequently remained unconnected. Research has been uninterested in practical applications; the planning pragmatists often have known almost nothing about the state of research. When theorists and pragmatists met, for example, at seminars or international meetings, they were liable to speak different languages and to underestimate each others' problems.

We have seen an example of such failure of understanding in connexion with the problems of typology: research workers try to arrive at a scientific classification which appears very difficult to achieve with the techniques and data currently available; pragmatists, on the other hand, would be satisfied with a provisional typology, even if it were less scientifically reliable, but which at least would have the merit of aiding the authorities in developing countries to measure their situation and their problems. Another example is that of econometric methods for calculating optimum distribution of resources both to education as a whole and between different branches and types of education.

so far has concentrated almost exclusively on the contribution of education to targets related to income and employment, while social and cultural targets have been relatively neglected. Nothing we can say here will do very much to alter this situation: it is simply a reflection of the current state of knowledge of the determinants of developments' (Working Group on Methods of Integrating Education in Economic and Social Development with Special Reference to the Asian Member States, Report on the Bangkok Meeting, September 1967).

Faced with the complications of methods which often call for a relatively extensive knowledge of mathematics and presuppose very accurate data which generally do not exist (even in many 'developed' countries), faced also with the failure of the theorists to agree with one another, the pragmatists are apt to reject all scientific methodology and to fall back on instinct or common sense.

Theorists and pragmatists are equally wrong and equally right. It is the task of research workers to try to understand the underlying nature of phenomena, even though they have no immediate practical application in view; and it is the task of the pragmatists in the field to prepare the least defective educational plan possible with the instruments and data available. But there must be an attempt bring these two points of view together for mutual enrichment. A genuine collaboration between research workers and users, mutual recognition of the importance of their respective tasks, are two of the essential conditions for progress in educational planning.

Quantity and quality

The quarrel between quantity and quality to a certain extent overlaps the two quarrels just described; there is a more-or-less conscious tendency to regard economics as being concerned with quantity, whereas education, social and cultural matters raise issues of quality. Here as elsewhere, discussion of principles largely masks the simpler human realities; those familiar with mathematics are apt to make maximum use of it, others sometimes go so far as to say that it is useless.

Mathematics has clearly no virtue in itself, it is merely a means of expressing certain concepts with greater precision and of resolving them with more facility. It would be absurd to try to conceal under figures what can be clearly expressed in another way, but at the same time there is no point in defending quality against quantity as if two orders of rival realities were in question. It would be just as absurd to assert that certain data are, once and for all, by their very nature non-quantifiable and to reject *a priori* the convenience and rigour afforded by a mathematical formulation.

The expression 'quality of education' is used in the most variable and arbitrary manner. On the one hand, 'quality of education' frequently expresses a value judgement: it is said to be 'an excellent thing to increase the quantity of education (number of pupils and number of school years), but quality must not be sacrificed to number'. This value judgement is definitely open to challenge and depends critically on the definition of 'quality'. The question is not at all one of preserving in mass education the qualities of a type of education designed for an élite, but of discovering the new qualities of education for all. Many of the current difficulties arise from attempting to imitate 'qualities', means and objectives which belong to another situation. Furthermore, some specialists tend to set the qualitative aspects of educational planning against the quantitative ones: grouped under the word 'quality' are frequently found such subjects as: the structure of education,

curricula, methods, audio-visual aids, teacher training, etc., as though teacher training did not involve the question of enrolments, and consequently of number; as though numbers—the number of years or the number of hours—did not play their share in structures and curricula; as though methods were not subject to numerical evaluation and examinations based on marks; as though, finally, budgetary questions did not turn up everywhere. All the components of education (enrolments, buildings and equipment, curricula and methods) have their quantitative and qualitative, or to be more precise their unquantified, aspects.

The text which follows consequently tries as far as possible not to make too sharp a distinction between quality and quantity. Rather than the quantitative and qualitative aspects of education, it is proposed to deal below with questions of enrolments, the number of teachers, the number of schools (and how many at the various levels and in the various branches of education), and also with problems of the content, methods and structures of education. It is hoped that the elimination of ambiguous expressions will discourage sterile discussions.[1]

Various methods of determining the numbers of pupils enrolled and their distribution in the various branches of education

Educational planning tries to forecast more accurately the number and distribution of classes to be formed and teachers to be trained. Such forecasting is based on the number of schoolchildren at each level and in each type of education. Planning is accordingly concerned essentially with the requirements of the economy, the probable social pressure to be faced by the school, the cultural targets which have been set by the States and the financial resources which can or must be allocated to education.

Satisfaction of manpower requirements

Of all the methods recommended for adapting education to economic development, the only one which has hitherto been in current use, and on a scale large enough to make it possible to measure its results, is the forecasting of manpower requirements, which has spread throughout the world thanks in particular to the efforts of the ILO. From the time of the first Five-Year Plan of 1928-32, it has been the basis of educational planning in the U.S.S.R. Already before the Second World War, cases of imbalance which became apparent between training and employment in countries of Western Europe (over-supply of graduates in letters or law, shortage of engineers) led to a focusing of attention on educational and vocational guidance.

1. On problems of 'quality' in educational planning, see: Unesco/IIEP, *Qualitative Aspects of Educational Planning*, Paris, 1968.

After the war, the desire for development in nations which had recently attained independence still further emphasized the need for a rational vocational training policy; and this need has become increasingly urgent as it became necessary to deal with the problem of unemployment in certain categories of graduates, combined with the shortage of technicians in key sectors of the economy.[1]

Unemployment among graduates in countries which have the greatest need for skilled labour is a lamentable phenomenon which demonstrates, better than any other argument, the extent to which educational planning is essential. A recent survey shows that in India, 500,000 persons with diplomas in secondary or higher education, or 7 per cent of all diploma-holders, are out of work. A similar situation exists in, for example, Pakistan and the Philippines. Over the greater part of Africa, a considerable proportion of former pupils of both primary and secondary schools are unemployed.[2]

The methodologies are extremely diverse.[3] It would be useful to examine briefly the main ones, for the range and effectiveness of forecasting vary considerably according to the method chosen.

In the first Five-Year Plan, the U.S.S.R. used the method of 'saturation rates' (based on the ratio of skilled workers to total labour), and this was later combined with the method of 'work norms' (based on the amount and type of work done by each skilled worker). These methods are still widely employed in most countries with planned economies. They presuppose clear and minutely defined economic targets.

In countries with a liberal economy, the forecasting of manpower needs was

1. With regard to these questions, mention should be made of the work done by OECD as part of the Mediterranean Regional Project. See: OECD, *The Mediterranean Regional Project: An Experiment in Planning by Six Countries*, Paris, 1965, and R. Hollister, *A Technical Evaluation of the First Part of the Mediterranean Regional Project*, Paris, 1966.
2. See in particular: M. Blaug, P. R. G. Layard and M. Woodhall, *The Causes of Educated Unemployment in India*, London, 1968; A. Callaway, 'Unemployment among African School Leavers', *The Journal of Modern African Studies*, Vol. I, [illegible] 3, 1963.
3. The following are some recent publications: Unesco, *Economic and Social Aspects of Educational Planning*, 1965; M. Mehta, *Techniques of Forecasting the Manpower, Training and Educational Requirements of Development Planning* (document submitted to the Committee of Experts on Integrating Education in Economic and Social Development, Bangkok, 11-15 September 1967); Harold Goldstein and Sol Swerdloff, *Methods of Long-term Projection of Requirements for and Supply of Qualified Manpower*, Paris, Unesco, 1967; Unesco/IIEP, *Manpower Aspects of Educational Planning*, 1968; J. Auerhan, *Lectures on the Labour Force and its Employment*, Geneva, International Institute for Labour Studies, 1964; *Methods of Estimating the Demand for Specialists and of Planning Specialized Training within the U.S.S.R.*, Paris, Unesco, 1964; H. S. Parnes, *Forecasting Educational Needs for Economic and Social Development*, OECD, 1962; UNIDO/ILO, *Skill Requirements for Industrialization* (International Symposium on Industrial Development, Athens, 29 November to 20 December 1967); M. Sonine, *The Actual Problems of Manpower Utilization in the U.S.S.R.*, Moscow, 1965; A. Zagorodmeva and K. Remizov, *Balance-method of Manpower Planning*, Moscow, 1965; *Economic Problems of Training of Qualified Manpower*, Moscow University Press (Chapter X: 'Economic Efficiency of Alternative Programmes of Training of Qualified Manpower'); F. Harbison, *Educational Planning and Human Resource Development*, Paris, Unesco/IIEP, 1968 (*Fundamentals of Educational Planning*, 3).

at first limited to surveys among employers, and to an assessment of the most glaring cases of imbalance.

In countries with mixed economies, now the most numerous, the commonest method is based on the projection of past trends corrected by an estimate of the changes expected to be brought about by technological development (examples: mechanization and automation) and economic or social development (examples: increase of the industrial sector, migration from the countryside to the towns). The actual forecast is adjusted to the targets of the over-all development plan, so that the problem is not only one of forecasting but also of strengthening foreseeable trends in the direction desired.

The over-all forecast is the result of a sectoral approach controlled by a global one: correlation between total educated population and total output of goods and services (method of Tinbergen, Bos, Correa), calculation of the global yield of human investment (Harbison and Myers, H. B. Chenery, etc.). When the differences between the two series of results are too considerable, this is a sign that counter-checks are desirable.

When the forecasting of manpower requirements became general, certain enthusiasts saw in it the solution to all educational planning problems. The inevitable result has been a reaction in the opposite direction on the part of traditional educators.

Since then, there has grown up a clearer awareness of the limitations implicit in this technique. In the first place, it is concerned exclusively with training 'workers'; and from an economic point of view it is silent on the education of the consumer or small investor, and even more so on the training of the citizen, whose reactions may determine the nature of development. Furthermore it ignores the social, cultural and human objectives of comprehensive development. It makes no allowance for either the cost of training or wages of educated workers, (although manpower forecasting could usefully be supplemented by a differential analysis of the cost-benefit ratio for each type of training and occupation). Lastly, it raises the issues in terms which are not compatible with education: precise forecasting of requirements is a short-term issue, whereas education--academic education at any rate—is a long-term one (not only in terms of the duration of studies, but of the organization of the system); this type of forecasting is therefore valid only for the final specialized years of secondary education and for the non-academic forms of apprenticeship or further education.

To these natural limits are added those arising from specific situations or from a faulty application of the technique of forecasting. It happens too often that forecasting ignores the possibilities of substitution between different types of manpower, or between manpower and physical capital; yet the output-manpower ratio is not a constant: in certain cases manpower may be replaced by equipment, whereby a few skilled workers may produce as much as a large number of unskilled ones, and vice versa. Forecasts are sometimes global, covering an entire country, and assuming a mobility which does not always exist; sometimes, on the other hand, they make no allowance for the phenomena of internal or external migration.

In too many cases forecasting is limited to the modern sector of production and to the most highly skilled occupations; it is not thereby entirely without value, but its use in educational planning is often found to be very limited. Again, it too often happens that forecasting is purely quantitative and fails to describe education of skill requirements; consequently, it says nothing about the content of the training programmes; or else, where a job description exists, it is limited to the most superficial aspects (the specific knowledge and skills needed for this particular occupation) and omits the more general subjects of knowledge and attitudes which are no less essential. Lastly, it is very seldom—particularly in the developing countries—that all the statistical data necessary for a reliable forecast of manpower requirements can be found.

Experience of educational planning over the past ten years, particularly in the developing countries, reveals that a number of conditions are essential if optimum use is to be made of manpower-forecasting techniques.

A fundamental problem is that of the nomenclature used at both survey and forecasting stages; ILO and Unesco have already worked on this problem, but more remains to be done, especially with regard to the descriptive content of occupations and the definition of the corresponding training; in particular, there should be fuller knowledge of the training requirements common to each family, group and subgroup of occupations.

The scientific forecasting of manpower requirements calls for a series of statistical data: population census by individual occupations (and not only by major sectors of activity), and by qualifications (with training and education either before or during employment); differential study of wages (with cross-references by level of training and by age, so as to demonstrate the influence of education and experience respectively on earnings); unemployment among graduates; surpluses and shortages in the various professions.

Manpower surveys must cover the traditional activities as well as the modern, although the approach is specific for either type; economists should be able to indicate the level or type of education that should be given to the entire active population, including peasants living in a subsistence economy or domestic servants, and even should such education be nil or amounting to no more than what can be obtained from the mass media, for example.[1] Forecasts of manpower requirements should accordingly resort to the possibilities offered by mechanization (e.g. individual punched cards); at the same time it would be advisable, in the case of countries in the initial stages of development, to work out simpler and less delicate methods than those now existing.

Forecasting must make allowance both for probable technological and economic evolution and for the various currents in the active population (changes of employment, migrations), so as to determine margins and degrees of elasticity. The

1. See the studies prepared by R. Dumont, G. Hunter and Lê Thàn Khôi for the symposium on Manpower Aspects of Educational Planning, Unesco/IIEP, May 1966.

detailed forecasting of manpower requirements is a long-term enterprise calling for constant correction and adjustment; it presupposes a permanent mechanism of liaison between the population and statistical services, the economic ministries and the ministry of education.

Failing such refinements, the usefulness of forecasting, though necessarily reduced, is nevertheless not negligible. A survey, even a rapid one, can determine what minimum qualified personnel is needed in a key sector of production, in public works, administration, health or education; it makes it possible to provide against unemployment among graduates; it shows generally how requirements are distributed at the various levels, if not by type of training. In addition, with experience acquired in other countries, it is now possible, before undertaking any survey, to submit a number of general recommendations to countries which are at much the same stage of development.

To sum up, the forecasting of manpower requirements is an essential element in preparing an educational plan, but it must not be expected to give more information than it can. Forecasting must be supplemented by other approaches from various angles: estimates of the general needs of the economy of social demand, of cultural and educational requirements, of financial possibilities, etc.

The use of manpower forecasts: vocational guidance and over-all planning of human resources

Forecasting of manpower requirements discloses the likely development of employment, but cannot itself guarantee the desired distribution of labour. Forecasting would remain a dead letter were it not supplemented by a series of concrete measures such as guidance, organization of education and employment policy.

For some years past, numerous regional and international conferences have drawn the attention of governments to the urgency of promoting vocational guidance. In particular, the twenty-sixth International Conference on Public Education, held in Geneva in 1963, adopted a series of recommendations on 'The Organization of Educational and Vocational Guidance' (IBE Recommendation No. 56); and more recently, the Conference of Ministers of Education of European Member States on Access to Higher Education, convened by Unesco in Vienna (20-25 November 1967), stressed the need for 'constant guidance' constituting a means of 'co-ordinating the free choice of studies and professions... with the needs of society'.

Guidance, if it is to be effective, must mean that information is being provided uninterruptedly within the educational system. In particular:

Information on courses, specialities and market demand should be available at all time and particularly during the terminal classes of each cycle; it should not constitute a special subject, but should be an integral part of a system of education looking outwards towards life. It naturally presupposes that teachers will

be systematically briefed beforehand in their own training schools or through the supervision system.

There should be permanent observation of pupils and students with the object of spotting aptitudes and vocations by means of appropriate tests.

Parents and the public in general should be kept informed through the mass media of the various types of professional prospects and training programmes available.

The co-ordination of aptitudes, inclinations and real possibilities of employment assumes an extremely complex system of data-processing; some countries or organizations accordingly use modern systems of storage and retrieval by computer.[1]

It is not enough to have services for educational and vocational guidance; it is also necessary for parents and pupils to be willing to consult them and follow the advice they give. Experience shows that this is not always the case.

A study carried out in India discloses that up to quite recently only a small proportion of graduates sought their first job through the official placing exchanges proportion of graduates sought their first job through the official placing exchanges, although more of them used the facility for changing their jobs. A similar situation is found in Burma, United Arab Republic, etc.

The lack of public interest in official guidance services is essentially due to preconceived ideas with regard to certain types of employment: graduates want clerical jobs which do not exist and refuse available manual employment. A recent survey in Peru showed that only 13.3 per cent of pupils leaving technical schools were prepared to accept manual work at equivalent rates of pay; 31.1 per cent would have accepted manual work only if it were considerably better paid than office work; 35.5 per cent would in no circumstances have accepted manual labour.[2]

Vocational guidance therefore presupposes a re-education of the public with a view to eliminating or attenuating certain traditional attitudes.

Certain types of educational systems facilitate guidance, others hamper it. Premature differentiation between education aimed at the university and vocational training leading to immediate employment usually incites parents to enter their children for the former and thus inhibits the natural development of the pupil's vocation.

From the point of view of guidance, an ideal system of education would consist in a first cycle of common secondary education of a really general nature (that is, giving to all basic theoretical training together with practical pre-vocational manual

1. Harvard University's Graduate School of Education is at the present time conducting research on the use of computers for arriving at decisions in regard to choosing a career (see: T. E. Hutchinson, *Level of Aspiration and Models Applicable to the Problem of Choice of Career*, Harvard, 1967).
2. *Note on the Relationship between Educational Output and the Employment of Educated and Trained Personnel in Developing Countries*, prepared for the International Conference on Educational Planning by the International Institute for Labour Studies, Geneva, 1967.

training), followed by gradual specialization, each school year paving the way both for employment and for a more advanced level of specialization.

Manpower requirement forecasts and guidance, however, are not the full story; they must be supplemented by a wages policy, or better still by the general planning of human resources. Where certain types of employment attract too many applicants, while other types seem unduly neglected, wage adjustments would seem to be required. In theory at any rate, the government has power to make all such adjustments in the public sector. Adapting the development of human resources to the foreseeable requirements of the economy is not necessarily a one-way process. The terms could be reversed and an attempt made to adapt economic development to the development of human resources, or at any rate to combine the two approaches.

The social demand for education

'Social demand' is an equivocal expression which has two meanings not contradictory, but distinct. Social demand may mean the pressure of the masses for access to education; seen and interpreted by the politicians, this pressure is expressed in theory in the form of national and international declarations concerning the right of everyone to education. Social demand may also signify the quantity and type of education needed to ensure the harmonious functioning and the development of society.

In its first and most widely accepted meaning, social demand exists as such; in the second, it is the objective interpretation of requirements similar to economic ones.[1]

Pressure from the masses to accede to education is a characteristic feature of the second half of the twentieth century; it has increased spectacularly since the Second World War, in all continents and at all social levels.

How the demand for education functions is still imperfectly known. It is clearly associated with official measures such as compulsory schooling, creation of institutions, school transport, free education, canteens, scholarships etc., with the evolution of social structures, with urbanization, industrialization, the pattern of employment, etc. It is encouraged by declarations of public authorities, parents' associations, trade unions and political groups; it is responsive to considerations of prestige as well as to economic factors; it has a multiplying effect and parents generally seek to give their children access to a level of education higher than that they had reached themselves. But these explanations fail to reduce the demand to a mere artificial and superficial phenomenon. The demand for education is without doubt the best indicator of the will to develop and to expand; the first and clearest evidence of the desire for change and progress. Planning should therefore take the greatest account of this demand in determining the tempo at which general development can be conducted. It is accordingly very important to measure that

1. See: *Social Objectives in Educational Planning*, OECD, 1967.

latent pressure with greater precision: election analyses, opinion polls and sociological inquiries could be used for this purpose.

It is also very important to identify systematically the areas in which education can assist social development. The possibilities are tremendous: physical and mental health, family life, national and international social solidarity, the practice of civic life, etc. Finally, it would be desirable to state clearly the extent to which education is to be oriented towards social objectives, to attempt to calculate the ensuing cost and to estimate the direct and indirect yield, particularly in terms of actual economic development. The same work should be done in respect of the cultural aspects of education, such as the appreciation of the national and human heritage, the use of leisure, etc.

Comprehensive social and economic approach

It has become increasingly obvious over the last few years that there is no unavoidable clash (at least in the long run) between criteria of equity and efficiency and that the economic and the social aspects of education are in no way contradictory but complementary, that they overlap, and that to draw a distinction between them is often highly arbitrary. It would therefore seem advisable not to concentrate exclusively on fractional approaches but to attempt to develop an approach which embraces all aspects and requirements of economic, social, cultural and educational significance.

Economic aspects doubtless begin with manpower requirements, but the following should not be overlooked:

Education of the consumer. Acceptance of certain new products may in some cases provide a solution to serious problems of food supply: education can also play an important role in decreasing luxury imports into developing countries by encouraging greater recourse to local production.

Education of the small investor. Education, like the mass media, can do much to develop the habit of saving and to direct these savings to the most profitable kinds of investment; this action is equally necessary in both developed and developing countries.

Scientific education. This is valuable not only as part of vocational training, but also in pursuance of the country's policy of scientific and technological research.

The encouragement of a favourable attitude to development. When jobs are few, it is important to foster a spirit of enterprise among young people by the creation of jobs; in the developing countries, acceptance of change and the emergence of faith in development are the prerequisites of progress.

The impact of general education (i.e. including that which is not directly related to the formation of manpower) on economic growth.

Social aspects frequently overlap economic ones. They include in particular: the redistribution of incomes; health education, the need for which is particularly evident in developing countries; civics; family education; education of parents; education in co-operative association, which is essential, for instance, in projects

of rural development; social education in the proper meaning of the term, the sense of belonging to the community, of duties arising from the enjoyment of property held in common, of respect for public property, of prevention of delinquency; international understanding and education in favour of peace.

Cultural aspects are concerned with appreciation of national, regional and human cultural values and traditions, practical application of culture to enrich life and leisure in particular, the economic contribution of culture, namely the added values arising from good taste in exports, genuine handicrafts, cultural tourism.

Educational and human aspects such as individual development and equilibrium, education of the emotions, relationships with others and with the world in general, overlap and sustain the three aspects just mentioned; they are particularly important, in the economically developed countries, where the moral and social structures are frequently called in question.

In this comprehensive approach, the study of 'social demand', including the projection of past trends, the analysis of the attitude of various social groups to education and the individual demand for education, is of fundamental importance. It represents, in fact, a quantitative force shown by experience to be very difficult for politicians to resist, whatever the econometric indications; it also demonstrates the need to educate certain categories of the public which might be overlooked by superficial economic analysis, in particular, women, whose influence as mothers might be decisive in effecting changes. Issuing from the instincts of society, social demand gives invaluable guidance on the fundamental goals (social, cultural and human) which seemingly more scientific methods would be tempted to forget. It is a reminder, finally, that education is not only a matter of opportunity, but a right to which all are entitled.

Nevertheless, the appraisal of social demand must be corrected and explained by such additional devices as: forecasts of manpower requirements, which will indicate the minimum and maximum figures to meet the expansion of production; determination of the general needs of economic and social development, either in liaison with the development plan or, in the absence of a plan, in the perspective of a strategy adapted to the type and general situation of the country; calculation of the financial resources available for education, which should take into account the growth of national product and the requirements of all other sectors of economic, social and cultural development.

Financial constraints

In most countries now among the wealthiest, education came into being and developed essentially under the pressure of social demand. But this pressure was qualified by financial possibilities. The length of the period during which school education was compulsory increased more or less proportionally to the rate of economic growth; progress was hastened by prosperity and slowed down by crises. Given that an extra year of schooling costs a great deal in both direct

expenditure and loss of production (i.e. earnings foregone by students) a choice must be made between such prolongation and other social expenditures such as holidays with pay, old-age pensions, hospitals or equipment (roads and telephones), or simply a costly armaments programme. Choice among these options is obviously even more difficult to make in the poorest countries.

In the present state of knowledge, it would be imprudent to base options exclusively on international comparisons, or on studies of the cost-benefit ratio, or on marginal revenues.[1] Nevertheless, these methods, if used simultaneously and cross-checked, can provide a degree of control, warning us whether the estimated cost of education is well above or below the indications supplied by economic theory.

In any event, the projects are not interchangeable. Education and holidays with pay, for example (that is, paving the way for the future or satisfying the present generation) are not directly comparable, although in drawing up an order of priorities, it may be necessary to choose between them.

It should be noted, however, that education, given its adaptability, occupies a somewhat exceptional position. Properly oriented, it can replace or reinforce a large number of other channels. For example, in countries at the first stage of development, considerable progress can be made in the priority fields of health and agriculture through school and out-of-school education. As many examples show, education and public information (which should always be a form of education) can arouse public enthusiasm and lead to the achievement of major work programmes which would otherwise have been unrealizable without costly equipment. Education, by inculcating civic awareness and a sense of social responsibility, can facilitate and has actually allowed a reduction in police forces. Nor should we forget that the aim of Unesco's Member States is to build the defences of peace in the minds of men, that is, to replace armaments by education. One cannot, therefore, set absolutely the needs of other sectors against those of education.

A warning is needed against the fundamental error which is liable to arise when applying cost-benefit calculations to education. Such calculations are based on the education of the past; but the aim of planning is not to extend traditional education, but precisely to introduce all the changes needed to increase the intrinsic yield of education and its social and economic productivity. It would perhaps be reasonable to relate the cost of conservative education to what it formerly yielded in return. But it would not be reasonable to calculate the future yield of a revolu-

1. The United Nations Research Institute for Social Development and the Bureau of Social Affairs organized in Rennes (France), in September-October 1965, a meeting of experts to discuss the cost-benefit analysis of social projects. The report published after the meeting suggests that this extremely interesting area of research is still at the experimental stage. It rarely happens in practice that all the necessary statistical data are assembled; and on the theoretical side it may be asked whether the 'weighting coefficients' employed are not precisely the unknown quantities which are being sought.

tionary form of education by examining the yield of an out-of-date institution to which it has no resemblance.

This leads us to observe that if available resources are not sufficient to permit the expansion of the existing system of education, the problem is not necessarily insoluble. We have only to alter—radically if we must—the present system. Education is eminently flexible; in the past it assumed the most diverse forms; today, with the progress of technology, it commands many forms of new potentialities. In these conditions, when there is manifestly insufficient money to educate children in accordance with traditional methods (which in any case go back only a few centuries), it would seem that another, less expensive, solution should be found. Would it not be wise to study seriously, to try out, and to cost methods which would gradually make it possible, within existing resources, to give all the children of the world an education fitted to human development? In examining the feasibility of educational expansion, the structures, content and methods of education should be regarded as variables rather than a fixed and inalterable data.

Problems of structure, content, methods and techniques in planning for educational development

Educational yield: internal and external productivity

Questions of quantity (how many pupils to be enrolled in a given year, how to distribute them over the various branches of education, how many new teachers to be trained to teach them, and the cost of the whole) represent only half the problem of educational planning; the other and no less important half covers questions of content, methods and structure.

For it is clear that a confused and badly organized curriculum, methods ill-suited to the pupil's age and capability, and artificial structures will lead to greater educational wastage (drop-out and repetition); the internal output of education will be affected.

It is equally clear that a sound distribution of pupils among the various branches of education is not sufficient to adapt education to the manpower requirements of the economy. It is not enough to have the desired number of pupils in technical or agricultural schools; the curricula of such schools must also correspond exactly to the occupations for which they provide training. Consequently, the external output or productivity of education, that is, its efficiency from the point of view of economic, social and cultural development, does not depend only on the number of pupils enrolled in each branch, but also on the content of each branch, the educational methods used and the structure of the system.

The notion of output gives emphasis to the interdependence of questions of enrolment, of structure, of content and of methods; for there is certainly no point in sending a constantly increasing number of children to school if most of

them are to leave before attaining a sufficient level which will enable them to use their training. And if, moreover, the pupils take nine years to achieve six years' study, the total cost of education is thereby increased by 50 per cent; with the same budget and more efficient methods, it would have been possible to educate half as many again.

Reference was made in Part I of this book to the magnitude and gravity of drop-out and retardation. Annual drop-out rates of 20 per cent, and similar or higher ones for retardation, are clear proof that the educational system is not functioning normally. Drop-out and repetition are particularly prevalent in developing countries. In the economically more developed countries they are replaced, as it were, by failure in examinations. It is not unusual to meet with failure rates of 60 per cent at the end of the secondary stage, and this percentage increases in higher education. This has led to the remark that education is the only industry which can allow itself to deliver 60 per cent of its products unfinished. No doubt pupils abandoning school before the completion of the cycle of studies, or failing in their examinations, are not a dead loss; but it is none the less true that such instances of drop-out and failure constitute a very serious problem.[1]

Furthermore, the general level of studies, far from rising, seems to tend towards a constant decline. The first years of so-called secondary study are today often no more than a repetition of primary education, and the first years of higher education an extension of secondary education.

Educators have long been drawing attention to the unreasonable nature of a system under which children forget from one year to the next a considerable part of what they have learnt. Even the general public now observes with astonishment that in many countries pupils can study a modern language for six years in secondary school and yet still be unable, after 500-700 class-hours, to speak or understand that language fluently. About a hundred hours in a language laboratory, with a tape-recorder, give much better results; and this explains the success of commercial language institutes.

The disproportion of educational results according to social origin is another disturbing sign. If the children with a more cultivated background obtain considerably better results than the others, is that not proof that an important part of their knowledge has been acquired outside school? Individual experience often confirms that most of our knowledge has been gathered out of school.[2] It would be interesting to conduct precise surveys on this subject.

The situation is perhaps still worse in the case of external output. Mention was made earlier of unemployment among graduates. To unemployment in the strict sense must be added employment in a sphere totally different from that of

1. Marion Coulon, 'Le Rendement des Systèmes d'Education', in: *Les Sciences de l'Education*, Paris, Didier, January 1967.
2. But isn't the role of school or university to organize and verify the individually acquired knowledge?

the training given. In addition, inquiries carried out both among former pupils and among employers have frequently shown that education is not adapted to the realities of the profession. At a time when technological knowledge is developing at a constantly increasing pace, school curricula generally lag behind current science, so that education comes to be regarded as an institution marginal to real life.

Some educators dislike references to output, seeing in the word an unacceptable approximation of education to the process of industry; but if they are anxious to retain that element of 'quality' so much talked of, is it not essential to evaluate unceasingly the level of education provided by scholastic institutions? And are not the results obtained by the average pupil a particularly valid indicator of that level?

Education as we are discussing it, and of which the output is so much criticized, is undoubtedly very costly. One developing country whose enrolment ratio in 1964 (at the first and second levels combined) was 8 per cent, spent 14 per cent of its national budget on education. Another, in 1962, devoted 5.6 per cent of its GNP for an enrolment ratio (first and second levels) of about 13 per cent. No doubt these are extreme cases; but while the situation is less spectacular elsewhere, it is nowhere quite satisfactory. Educational planning, in making us aware of the immensity of requirements and the scantiness of resources, calls for reforms which should perhaps be of a fundamental nature.

Improving the structures of education

A few simple adjustments in organization could probably improve educational output.

A comparative study prepared by Unesco in 1962[1] on the organization of the school year showed that the duration may vary, according to the country, from 240 to 154 days in primary education. Out of 49 countries examined, 24 had fewer than 210 teaching days per year. Still with reference to first-level education, 32 countries out of 52 had fewer than 25 class-hours per week. Such underemployment of so costly an institution as a school seems hardly compatible with the vastness of the needs and the scarcity of means.

It should be possible to make a better use of buildings, of equipment (workshops and laboratories) and often of the actual teachers as part of their regular duties, by drawing up more rational curricula and time-tables and by generalizing whenever necessary the staggering of work (morning, afternoon and evening shifts). The weekly number of class-hours is frequently fixed irrespective of the teachers' working week and of the size of the institution in terms of class-rooms, laboratories and workshops. These three factors should be examined together, so that optimum use can be made of every facility. Furthermore, the use which could be made of

1. *The Organization of the School Year*, Paris, Unesco, 1962 (*Educational Studies and Documents*, 43).

school facilities for adult and out-of-school education purposes is too frequently overlooked.

Of particular importance also is the geographic siting of the institutions, their size and the spread of specialized teaching. All these problems are assembled in the 'regional school-map', which facilitates optimum load-sharing and full employment for each institution.[1]

The means habitually recommended for diminishing the drop-out rate include school transport, canteens, nurseries for very young children, fixing the dates of holidays during the peak period of agricultural activity, free school books and scholarships. These supplementary facilities are often, in fact, the *sine qua non* of school attendance.

As far as actual structures are concerned, premature specialization, as was mentioned earlier, threatens to jeopardize vocational and social mobility, which on the contrary is encouraged by the maintenance of a period of undifferentiated training for all ('single stream'). Generally speaking, drop-outs and failures are always more numerous where each unit or cycle is unduly long and where the significance of the training only becomes apparent after two, three or four years. Pupils who stop midway have in that case wasted their time. Would not short programmes, or better still, a school year constituting a complete educational unit, lead to a more flexible system offering an escape from the policy of all or nothing? These remarks are valid for secondary as well as higher education.

The structure of the educational system itself must also be flexible enough to facilitate transition not only from one branch of education to another but also from out-of-school training to training in school and vice versa. For this purpose it would be useful to begin by studying an over-all structure for all forms of education available to society (family, community, youth associations, commerce and industry, communication by mass media, etc.) to integrate the actual educational system with this general organization. Experience has in fact shown that if this is not done, the links between these elements are liable to be artificial and superimposed—and therefore inefficient—and any stand in favour of global planning of educational activities purely theoretical.

The reform of content

Improving the internal yield of the curriculum. To increase internal output, that is, to avoid drop-out, repetition and failure, the curricula must make it possible to retain maximum useful knowledge with minimum effort. There follow a few simple rules designed to eliminate the greater part of the causes of friction normally found in the curricula: cut everything that is not clearly essential (a sensible yardstick is to eliminate all knowledge deemed unlikely to be of use to the pupil in his subsequent studies); make certain that each subject is kept active from

1. *Educational Planning Practice in Developing Countries*, first draft, 1966, p. 47, 48, 57, 58.

month to month and year to year, recapitulate unceasingly and use what has already been learned, do not accumulate further knowledge, but integrate it with what went before; amalgamate all the subjects taught in a given period, for example by focusing them on a single theme or centre of interest; choose as the centre of interest the child's environment, his concerns, his future, the development of his community or country.

Improving the external yield of the curriculum. The first step is to adapt the curricula to the various types of employment offered by the economy. To do so, an analysis of jobs has to be made and translated into curriculum components. This analysis of employments, however, should not be confined to the most characteristic aspects of work in each profession. While each job has its particular features, it also belongs to a family of jobs with more general characteristics—common bases calling for common qualities. To reduce vocational training to the narrowest requirements of each special occupation is equivalent to rendering that training highly superficial.

Experience shows that in the immense majority of professions for which secondary education, for example, offers training, the factors wholly particular to these professions are very few, and that the training required is in most cases a matter for the employer rather than the school. If teaching is really to be adapted to employment it is therefore essential for requirements to be analysed also, and with the utmost care, in terms of groups of professions and of employment in general. This aspect of the problem has hitherto been unduly neglected, and such neglect is partly responsible for the relative failure of vocational training in school.

The foregoing observation is all the more important in that, except in the case of highly specialized professions, it is most unusual for anyone to spend his entire life in the same type of employment. It is hence quite clear that education must prepare the youth not for his first job but for his entire professional career. In developing countries in particular, where the number of specialized posts is generally well below the total number of school-trained candidates, vocational training should primarily consist in a type of education which aims at facilitating mobility and at developing a spirit of initiative.

Here, in other words, the employment of the individual is not the only problem. In order to guarantee genuine adaptation of education to individual employment, the curricula must also be matched with the general development of the country. In addition to analysing employment it is consequently necessary to analyse the requirements of development and to express these in terms of education. Both approaches must be used if there is to be an all-round view of the situation; for that which is based on the requirements of general development will disclose factors that an analysis of individual employment might perhaps not have revealed, for example education in co-operative action, or education of consumers, with particular reference to diet.

Development, however, as the experience of the last twenty years shows, is far from being a purely economic phenomenon. It is an economic, social, political

and psycho-cultural complex. We must, therefore, go on to analyse the requirements of development in these areas and to express them in terms of curricula. Political education, information on law, psychological, moral and emotional adjustment to changes arising from the entry of a given society into the world economy or from the increased participation of women in the community, the harmonizing of traditional cultural forms with modern universal culture, all these are not less important in terms of technological and economic progress than vocational education in the strict sense. Without them the equilibrium of society, as that of the individual, would be endangered.

Methods of curriculum planning. While the principle is simple, namely to include nothing in the curriculum which does not correspond to a recognized end, experience shows that its application is extremely difficult. The initial obstacle is psychological: given the stranglehold of tradition in this domain, a radical reform of curricula (needed to adapt education to development) is liable to unite the most varied forces in opposition against it. Any reform should, therefore, be accompanied by a thorough information campaign, among teachers, students and the general public, by means of press, television and radio.

Analyses of employment and of the requirements of development, which lie at the root of the preparation of rational curricula, and the formulation of the actual curricula, presuppose considerable research. This research can only be carried out by large teams of highly specialized workers, which very few countries are in a position to summon. There might well be here a field of action in which regional and international co-operation could play a very important role.

Planning the methods

All the suggestions set forth under the previous heading spring, in fact, from ideas which have for long been advocated by educators. Planning here is nothing else than a more systematic application of pedagogy. Much the same applies to the improvement of methods. A considerable increase in output could, probably, be obtained merely by applying recommendations made by Dewey, Kerschensteiner, Montessori, Decroly or Freinet.

The method of centres of interest (Decroly method). This method is based on the principle that dispersed education puts a considerable strain on the child's powers of attention and assimilation, whereas a coherent pattern of education becomes spontaneously organized, as it were, in its mind. The centre of interest, which in Decroly's thinking met, essentially, pedagogical criteria, is particularly well suited to the new economic approach to education. In a village in a developing country, for example, the centre of interest will naturally be the understanding, management and improvement of the village. In a junior secondary class of a general type combining academic education and pre-vocational training, the centre of interest must be the practical work.

Active education. This expression covers a whole range of activities which aim at placing the child at the very heart of the educational process instead of making him its passive object. These activities include individual work, teamwork, increasing responsibility in running and organizing the class and the creation of a social micro-group. The revolts of students in many countries of the world are a clear indication that something is wrong in the sort of sociological relations which prevail in universities. But the situation is not better in secondary and primary schools: the child is, too often, a stranger in what should be his house; he does not understand what school is about, communications with his teacher and other pupils are not natural; the permanent uneasiness, constraint and artificiality generate enormous resistances which jeopardize both teaching and education. Increased participation of students and pupils in their own education is not only a condition of peace in schools and universities but is necessary for a better output.[1]

The assembling of several classes of pupils in a single group under one teacher. Some thirty-five years ago, an IBE conference[2] demonstrated that the one-teacher school (regarded by some as a last resource), by facilitating the transmission of educational traditions, fostered the creation of a true society of children. This type of education involves the use of the methods mentioned above (centres of interest, teamwork, etc.), but can easily assimilate certain new methods such as programmed instruction and audio-visual media (radio, television). It also encourages the integration of school and out-of-school activities within the circle of a single group of pupils.

Programmed instruction. Special mention must be made of programmed instruction, a new method based on the old principle of individual tutoring. A 'programme' is an organized series of simple stages leading, step by step, to the acquisition of a piece of knowledge or to the understanding of a problem. The programme takes the form of a series of data, with questions inserted to ensure at every stage that the information has been assimilated. The student is continually called upon to verify, by means of these questions, that he has understood or retained what has gone before. Programmed instruction is based primarily on research carried out by an American, B. F. Skinner, into the mechanism of teaching animals. The Skinner programme is linear, i.e. it follows a single track, and the stages must be so simple that all students without exception are able to follow the track. There are also 'multiple choice' programmes based on the principle of the 'scrambled book' of N. Crowder. The student himself chooses

1. *Le Self-government à l'Ecole*, Geneva, IBE, 1934; M. Lobrot, *La Pédagogie Institutionnelle*, Paris, 1966.
2. *Le Travail par Equipes à l'Ecole*, Geneva, IBE, 1935; *The One-teacher School*, Geneva, IBE, 1961.

his path, omits unnecessary stages and turns back to understand any notion unfamiliar to him.[1]

By individualizing the allocation of programmes, programmed instruction could provide a solution to the problem of retardation; the traditional notion of a 'class' corresponding to a 'level' would then cease to be relevant. Programming opens the way to teaching machines, either very simple, such as scrambled books or boxes of cards, or complex (Edison Responsive Environment, '*Monitrices d'instructions technique et scientifique industrielle*', teaching computers, etc.).

Modernization of the tools of education

The teaching machines, so much discussed nowadays, are only, as W. Schramm has remarked,[2] the latest generation of educational instruments; they should not lead to neglect of earlier instruments. It may be helpful to review the latter briefly from the standpoint of their capacity to improve output.

In the first place, there is the actual school building: some form of shelter from cold, rain, sun or noise is needed, although it is not absolutely impossible in some climates for teaching to be conducted in the open air, under a tree or on a public square. A special building known as the school is not always essential. If a school is built, it must be designed in the light of its functional purpose as the first of the educational instruments: the school building must not only satisfy standards of comfort and hygiene (sanitary installations, adaptation to the climate), the general needs of teaching (acoustics, visibility) and the needs of certain special activities (workshops, laboratories); it must also facilitate the development of individual and group life in the school, for example in the one-teacher school; the building must in itself be an instrument of education: beauty, which is not a luxury and is often the opposite of luxury, siting as an element in the landscape and harmony with national culture are important factors. Such institutions as the regional centres for the construction of educational buildings set up by Unesco,[3] or the 'development groups', are attempting through studies and the training of specialists to promote the construction of less expensive, more functional, more aesthetic and better-adapted educational buildings.

Something should also be said about traditional equipment (such as furniture, scientific and technical equipment, maps, black-boards, etc.). It must be suited to the level of education and to school usage. Certain inexpensive traditional adjuncts such as maps and black-boards are not yet sufficiently or properly used. Some devices such as models (which are very useful for centres of interest) are almost entirely neglected; educational museography is still in its infancy. The manufacture or assembly of school equipment could be one of the purposes of practical training.

1. See: J. P. Lysaght and C. M. Williams, *A Guide to Programmed Instruction*, New York, 1963; W. Schramm, *Programmed Instruction, Today and Tomorrow*.
2. In No. 52 of Unesco's *Educational Studies and Documents* series.
3. There are three such regional centres, in Colombo, Khartoum and Mexico City.

The potentialities of books, which found their way into schools very slowly since the invention of printing, are far from being fully exploited. Seldom does an educational plan give due importance to the preparation of textbooks, a fact which doubtless explains why many reforms have met with failure. Where the teacher is not perfectly qualified, the primer should be regarded as the essential element of reform.

With audio-visual media we enter the realm of contemporary technology. The pre-eminent technique, in which the possibilities of all the other media are united, is television. Thanks to constant technical improvements affecting the size, the sharpness and the colours of the image, television has become an instrument of quality, comparable to the cinema. It is already possible with airborne television (for example the Midwest Programme on Airborne Television Instruction, MPATI) to serve areas of 200,000 square miles. Telecommunication satellites have an incomparably greater range; some of them already relay programmes between different television stations; satellites for distributing programmes could be in service within three or five years and direct transmission satellites within ten or fifteen.[1] The educational applications of television are almost limitless: education of the infirm (deaf-and-dumb, bed-ridden sick), courses to make up for lost time, education of scattered populations, vocational refresher courses, rural education and entertainment, advanced teacher training, etc.; the relay of one teacher's lesson to several class-rooms (closed-circuit television), the recording and rerun of a lesson; audio-visual supplementation of traditional education; all-round education at all levels and for all ages. A large number of experiments has shown that televised education gives results equivalent to or better than direct teaching; it is objected, however, that it may lead to a particular form of fatigue, and especially that it puts an end to direct contact and exchange of ideas between teacher and pupil. The great drawback, however, is cost. The MPATI project cost about $17 million to install; receivers for this type of television cost $500; preparing and transmitting a half-hour lesson amounts to $2,000. The project in question is a particularly expensive one, and a ground station can be installed from $1 million, reducing the cost per broadcast to $1,000. In any event, television can only pay its way given a minimum number of users. In the less wealthy countries, it is doubtful whether television could be added to the costs of traditional education ('the cream on the cake').[2]

Television must not, however, lead us to overlook the humbler media such as: radio, the possibilities of which for groundwork in languages (particularly when the language taught is not the mother tongue) and for rural entertainment continue to be considerable; the tape-recorder, the use of which in 'language laboratories'

1. *Space Communications in the Promotion of Unesco's Aims*, report submitted by Unesco on the occasion of the 1965 Conference; W. Schramm, *Communications Satellites for Education, Science and Culture*, Paris, Unesco, 1967; D. Jamison, *Optimal Utilization of Communication Satellites for Educational Purposes*, San Francisco, 1968 (AIKA Papers, No. 68.421).
2. W. Schramm, P. H. Coombs, F. Kahnert, J. Lyle, *The New Media: Memo to Educational Planners*, p. 119-59, 'What Do the New Media Cost?', Paris, Unesco/IIEP, 1967.

improves the teaching of foreign languages to an impressive degree; and radio-vision, a combination of film-strips and radio broadcasts, already very widely used in certain African countries.

Radio, television and the screen are all audio-visual aids. They can be excellent means of stating and demonstrating, but they do not permit communication, or question and answer. Other instruments have been perfected over the last twenty years, based on the principles of cybernetics and using the resources of electronics, thanks to which it is possible to question the student, analyse his answer and ask him a further question related to his particular problem.

There are teaching machines for learning to type (the Edison Responsive Environment, invented by Dr. Moore of Pittsburgh and constructed by the Thomas Edison Laboratories). Machines can teach grammar, mathematics, history, etc. (the Auto-tutor constructed by U.S. Industries Ltd.; Mitsi 3030, constructed by Sintra); coupled with a computer, they have an immense store of data. Some machines are still at the prototype stage, but many others are already on the market. Large industrial firms, awake to the possibilities of applied cybernetics for the educator, are taking an increasing interest in these prospects. Already about a hundred North American companies have begun to manufacture teaching machines. Supply will doubtless be considerable a few years from now and will naturally stimulate demand. Prices, still very high, will gradually come down with mass production. It is, therefore, from now on impossible to ignore the challenge offered by teaching machines to traditional education.

Recent groupings of major industrial firms, universities and publishers make it possible to forecast not only the invention of new teaching instruments, but also their improved adaptation to the requirements and problems of mass education at various levels.

Training and further training of teachers

The teaching machine leads us to consider the question of teaching staff. Hitherto school education has essentially been given by humans; no other occupation is so wholly subordinated to manpower. Reform of curricula, of methods and even of means ultimately depends to a large extent on the teaching profession; but in both developed and developing countries it is precisely the problem of teachers which is the most difficult to solve. Problems of quantity, quality and cost are here inextricably mingled. There are today some 20 million teachers in all. It has been calculated that to deal with the population explosion, with the generalization and prolongation of schooling, and with educational requirements in terms of the ideal teacher/pupil ratio, 70 million teachers will be needed by the year 2000, if the present educational system is retained.

Yet it is already proving very difficult in existing conditions of pay to recruit 20 million qualified teachers. In 1963, 57 developing countries had to turn, for primary teaching, to persons with no training as teachers and in many cases possessing no more than a general elementary education, and 84 countries adopted

a speeded-up form of training. Since then, the situation has not greatly improved. In secondary education, the teacher crisis exists in both the developing and the most highly developed countries. In one country of Western Europe, noted for the high quality of its secondary education, one post out of three is vacant in traditional schools and one in two in modern establishments.[1]

In the developed countries, drop-out of teachers is no less serious than drop-out of pupils in the developing countries. In the United Kingdom out of 1,000 men entering the profession, 323 leave it in the first six years. The increasing number of women teachers in no way alters the essence of the problem, and at times would seem to make it worse. Still in the United Kingdom, the drop-out of women teachers in primary education—where they constitute three-quarters of the profession—rises to 80 per cent during the first six years. Similar figures could be quoted for a great number of developed countries.

Relatively simple remedies exist for improving the quality of the profession up to a certain point, but it must be envisaged that the over-all solution of the problem depends on radical reforms which will call the whole of traditional education in question.

Training and further training of teachers. There is far from being unanimity as to the purpose and content of ordinary education. The champions of general culture rightly maintain that the teacher's role is not to condition the children, but to awaken their interest and that he must consequently be given a very wide range of general culture. The partisans of vocational training maintain with equal justice that it is necessary to choose priorities, and that, to begin with, the teacher must be trained for his specific tasks. The dilemma is particularly serious in developing countries and in primary, junior secondary and technical education. One possible solution would be to apply the centres of interest method to teacher training. In this case, the centre of interest would be the actual curriculum which the future teacher would have to teach. General culture would consist in studying the key points of the curriculum more thoroughly and in examining questions arising from the practical problems of school life.

In any event, a considerable part of teacher training should be devoted to modernizing the school system. The innovations envisaged in the proposed reform (curricula, methods, instruments) must not, as too often happens, be regarded as mere adjuncts. 'Teacher-training institutes must be an aggressive force for change in education, not a reflection of the *status quo*.'[2] Educational institutions must become the laboratories of reform.

Teacher training should also devote more time to the problems of development, not as a special subject, but with reference to the entire curriculum. The school

1. See: International Conference on Public Education, *The Shortage of Secondary School Teachers*, 1967.
2. International Conference on the World Crisis in Education, Williamsburg, 1967, *Summary Report*.

should never be presented to the future teacher as an institution looking inwards on itself, but as an instrument of economic, social and cultural development. It would consequently seem advisable for future teachers to be introduced to the general principles of educational planning and its application at class level.

A major difficulty encountered in the process of innovating is the routine spirit. Teachers, like doctors or engineers, need to renew their methods constantly. Every educational plan should therefore provide for the continuous training and retraining of teachers by means of vacation seminars, professional periodicals or bulletins, correspondence courses and special radio and television programmes. The unions and other teachers' associations could play a leading role in such a lifelong education for teachers.

Recruitment, salaries and structure of the teaching profession. The quality of recruitement depends primarily on the intellectual manpower available and on the salaries offered. It is reasonable to suppose that the development of higher education will gradually make more manpower available to education.[1] The problem of quality remains, however, what it was. The report of the International Conference on the World Crisis in Education recommends that 'the best teachers should receive salaries equal to those of the best-paid professionals in the country'; but it adds that 'to justify these salaries good teachers must operate at the highest level of productivity'. That is to say that the 'good teacher' should, with the appropriate techniques, do the work of 10 or 100 teachers. That is the problem and it will be discussed later; but as education stands today, it is not easy to see how 20 million teachers could be paid as much as the best professional workers. In many developing countries, where teachers' salaries are already well above the average income *per capita*, it is extremely doubtful that they could be substantially increased in the near future.[2]

For that matter, promotion by seniority, which means that financial gain is not based on quality, is unlikely to encourage the better elements, who are tempted to look for advancement outside teaching. Similarly, the salary scale normally fails to allow for the scarcity of specialists. Teachers of the humanities—who are relatively abundant—are paid the same as teachers of mathematics, who are becoming increasingly rare. We are, of course, faced here with established principles—'equal pay for equal work'—but here is a problem which cannot be avoided.[2]

Incidence of salaries on the cost of education. The core of the problem is that, education being fundamentally based on manpower, any increase in salary, any reduction of the pupil/teacher ratio has a very strong incidence on unit cost.

1. P. H. Coombs, in *The World Educational Crisis* (Unesco/IIEP, 1967, p. 50), points out that, in a number of developing countries, the quest for employment is already beginning to outstrip the availability of posts, and that this trend might shortly spread to such countries as France and the United States.
2. P. H. Coombs, op. cit., p. 55, 56.

Further training of teachers and their consequent reclassification in the developing countries 'are like a time-bomb ticking away under the educational budget'.[1] The simple mechanism of promotion on grounds of seniority can lead to considerable future difficulties for countries whose teachers are to a very large extent young; for it is not unusual for a teacher at the close of his career to be paid four times his starting salary. When young teachers begin to grow old, and later when some of them retire on pension, unit costs will increase considerably.

Similarly, it is far from easy to divide overcrowded classes in two. It would no doubt be an excellent thing to reduce the teacher/pupil ratio from 50 to 35, for example, but this would entail an increase in salaries which a developing country, and even developed ones, would find it practically impossible to contemplate. In Sweden, for instance, a country of 7.8 million inhabitants, a reduction of one pupil per class in compulsory education would mean the recruitment of 2,000 extra teachers.

The only solution—at any rate in theory—would be to increase the productivity of education, that is, to obtain the same result with less manpower, as has been done in industry and even in agriculture over the last 150 years. The problem is certainly very complex. Many people take alarm at any plan of 'industrialization', which they consider would be equivalent to dehumanizing education. They argue that education is a direct exchange of ideas between teacher and pupils, and that to do away with it is the very negation of education. But is it not already seriously in danger? What real human contacts exist in overcrowded class-rooms and amphitheatres?

Yet a real increase in productivity would make it possible to settle all the problems outstanding: generalization and prolongation of education, a genuine rise in salaries and, thanks to the increase in available resources, better 'quality'. Is that really possible without endangering education itself? We cannot answer, for no complete and uninterrupted experiment has ever been attempted. Would it not be worth trying, at any rate? And is it not both the duty of the educators themselves, and in their interest, to make the first move?

Alternatives for the school of the future

The conviction that the problems of education can no longer be solved by half measures and that a start must be made now on fundamental reorganization is beginning to make headway. Nevertheless, there is still too much belief that it is possible to superimpose new ways on the old without involving profound change. That course is not possible. The least that must now be attempted is to take a

1. 'We have computed that, if Uganda were suddenly to succeed in converting *all* of its primary teachers to "Grade III" (which would be highly desirable in terms of raising quality), the immediate effect would be a 32 per cent increase in the total salary bill, with no expansion of enrolments whatever' (P. H. Coombs, *op. cit.*, p. 54).

clear look at possible alternatives, either to adopt or to reject them, rather than to evade the problem.

A form of education resolutely new could be aimed in any of the three following directions.

Optimum use of the potentialities of modern techniques and teaching methods (television in particular). The adoption by the school of techniques used in mass communication could assist in relating and integrating the various influences to which a child may be submitted. We must indeed underline the universal paradox of a mass communication which propagates hedonistic models in contradiction with models of efforts and merit proposed by educational institutions. Thus society destroys with one hand that which it tries to construct with the other. One must therefore succeed in elaborating a pre-concerted educational policy of mass communication.

Visual communication has made its way everywhere and in all forms, and particularly in its most insinuating form, the one that has most penetrated everyday life, television. It moulds public opinion, tastes and habits and governs consumption; its influence for good or bad, particularly on children, is tremendous. Television represents a far more fundamental revolution than the book revolution in the sixteenth century. Books pass on a coded message which the reader has to decode; television, on the contrary, shows reality at first hand, with a moving image added to the words.

Televised education is far from being education on the cheap. Because it is mass-produced, television can allocate incomparable material and human resources to a single programme transmitted to millions of viewers. If educational television were accepted, not as an extra but as the basic instrument of education, there would be no obstacle to a still further improvement of the programmes. Many innovations in curricula and methods, which it is difficult to introduce into traditional education, could be adopted in televised education. But there should be no illusion: in the present state of national finances, television cannot be merely a supplementary means of education, even in the wealthiest countries. In other countries where it is still not possible to send all the children to school, it would seem difficult to add such an expensive aid, for a minority of privileged children, to the normal costs of education. Television compels a choice.

Associated with other new techniques, teaching machines or simply good programmed textbooks, television should be able to do all the traditional work of presentation and exposition; but it is clear that it cannot replace practical work, and in particular, could not replace real human contacts. Nevertheless, a school system based on television as a means of instruction could create a truer and more normal relationship between the viewer and the teacher on the screen than certain forms of school relationships, all too frequently based on mere authority: the nature and style of television require the teacher to be friendly, persuasive and intelligible. Furthermore, in the class-room itself the monitor,

freed from the need to teach and to know all, could devote himself exclusively to his task of educating the children and promoting an authentic school society.

A natural sequel to televised education is the transformation of the class into an organized micro-society; each class can and must become a club of young people, a small cell of children with its own laws and organization. The idea is not Utopian; there exist very simple ways of perpetuating school society, such as the so-called Iena method. Such a society of young people could be continuously helped and supported by the actual broadcasts, and it would then be possible to achieve the essential purpose of education, which is knowledge of others, communication and life with others, creativeness for others.[1]

What happens to the teacher in this case? With technical methods of presentation and exposition taking over from the teachers their role of carriers of information, it will doubtless be necessary to make some separation of educational tasks. In most cases, the teacher could be replaced by a monitor (a retired person,[2] a student, or one of the older pupils), chosen not for his knowledge but for the good relations he maintains with the children. The actual teachers would be responsible for the more technical tasks: introductory classes (in which the pupils must be taught to learn), senior specialized classes, school administration, inspection and, finally, the analysis of pedagogic duties, preparation and transmission of programmes. Having become true technicians, they could be remunerated as such; the teaching profession would then become an open career in which the best could rise to the top more easily than they do today.

Is it possible to give a new type of all-around education based on the use of television? What would be the educational output and the cost?[3] Can associations of young people responsible for the self-government of classes become general practice? It is still too soon to discuss these matters. A full plan should be prepared, costed and tested. Would that not be worth while? If we fail to do so, future generations may justifiably reproach us with having sacrificed education to our prejudices or our enthusiasms.

Lifelong education. The idea of lifelong education, that is, education lasting uninterruptedly throughout life, is making steady progress and is likely to transform the very essence of the educational system in its entirety.

The speeding-up of scientific progress, the rapid evolution of techniques and the consequent changes in the structure of employment, cause knowledge to become to a certain extent obsolescent, particularly at the more highly qualified

1. W. Kenneth Richmond, *The Teaching Revolution*, Chapter VII, Methuen, 1967; F. Oury and A. Vasquez, *Vers une Pédagogie Institutionnelle*, Paris, F. Maspero, 1965.
2. One may foresee that, with the advent of post-industrial society, workers will retire sooner and will always have better pensions. This phenomenon is already visible in the most developed countries. Therefore, it is not Utopian to imagine that in a relatively near future a number of old people may volunteer to give an adult educational presence in schools where most of the ordinary teaching would be provided by television or teaching machines.
3. J. Barson, *A Procedural and Cost Analysis Study of Media in Instructional System Development*, Michigan State University, 1965.

levels. It was perhaps unwise to crowd the whole educational process into the early stages of life. Instead of over-prolonging the period of schooling, one might consider periods of vocational refresher training and general education in the course of adult life. It is also possible to imagine, for all higher education (starting at 16 to 18 years of age, for example) alternate periods of education and work. Certainly there should be no question of cutting short the eagerness of a minority of young people highly gifted for study; but for the majority, such a system would probably correspond better to the natural rate of growth; it would make for a better integration of education and profession; and the access of all, without distinction of class, to higher education would be correspondingly facilitated.

Lifelong education is made much easier by the mass media of communication and the teaching machines which have just been added to such traditional means as libraries. Television is a first-class instrument for vocational refresher training; it can be used directly to stimulate an illiterate population and as an instrument for the promotion of literacy. It is already possible to supply various categories of professional workers (doctors, engineers, lawyers, etc.) with the services of computers linked by telephone for the constant provision of data. Television, radio, cinema and the press have already considerable importance in general education for both adults and children; it is obvious that their educational role, combined with leisure, will become increasingly widespread; the need to systematize it is already felt.

Viewed in this perspective the structural and functional aspects of education are to a large extent now open to challenge. If it is agreed that man can and must instruct and educate himself throughout life, certain functions of educational institutions for children and adolescents will have to be radically modified. Instead of attempting to accumulate over six, eight or ten years in an encyclopedic manner the largest possible mass of notions and practices which he will need for the remainder of his days, the pupil must in this case 'learn to learn', the essential points being to master the techniques of acquiring knowledge and to build up an intellectual method.

Lifelong education reconciles school and out-of-school education, hitherto artificially separated, by integrating them in an attempt at a global understanding of educational problems.[1]

Mobilization of society's total educational resources. The new teaching techniques on the one hand and lifelong education on the other warn us that education is not confined to school. When financial resources are limited, as is the case in the developing countries, would it not be advisable to make use of all other available resources? And even where resources are more abundant, is it not essential to integrate all educational possibilities?

1. See: P. Lengrand, *L'Education Permanente*, Paris, Peuple et Culture, 1966.

Training on the job has long been a complement of school education. Should school and work not be brought more closely together? Should not every large company—as already happens in several countries—possess an educational department, however modest? Would it not be possible to consider regular exchanges between the managerial staff in industry, commerce or the major services and the teachers?[1]

Radio, television, cinema and the press represent a colossal power. It can probably be said without exaggeration that they have as much influence as the school, or more. These media ought to be much more freely available to both school and general education. The training of mass-media specialists should accordingly take problems of education into account and cinema technicians, journalists, etc., should be given the necessary minimum of 'pedagogical' training.[2]

At the present time culture is far too remote from schooling. An integrated educational plan ought not to ignore museums, libraries, theatres and music. Cultural organizations could be more systematically consulted and utilized, and they in turn should be more diligent in taking a practical part in the education of young people and of the masses. The international organizations specializing in cultural activities should be more closely associated with educational planning.

Lastly, care must be taken not to overlook the most traditional instruments of education: the family, the community, the State through its various administrative branches, the church, groups and associations of all kinds. Some of these institutions may no doubt, by their very nature, impose limits on the planning of their activities, at least as far as content is concerned; but the interaction between the education they impart and formal education is obvious. The education of parents and future parents, the links between the school and the community, and the marshalling of all public and private educational resources, must be the subject of precise measures in educational planning.

Planning of a reform

The setting of a reform is a long and complex operation. It includes a series of stages: interdisciplinary research, information and consultation of the people concerned, experimentation and evaluation, preparation of new means (manuals, equipment, premises), training and refresher courses for teachers (starting with the instructors in teacher-training colleges), progressive generalization. Each stage, then, comprises various operations of different duration. Stages do not follow one another according to an absolute order, but often overlap. Finally, at the beginning we may be faced with a situation which necessitates the substitution of one system by another, without halting the educative production while attempting

1. Harold F. Clark and Harold S. Sloan, *Classrooms in the Factories*, Farleigh Dickinson University, 1965.
2. *Professional Training for Mass Communication*, Unesco, Paris, 1965 (*Reports and Papers on Mass Communication*, 45).

to minimize the consequent confusion (a typical problem of a transitory period is that of examinations).

Thus, it is important to plan the whole reform beforehand (in liaison with the preparation and implementation of the quantitative plan). To this effect, the modern management means and, particularly, the 'critical path' technique can provide precious help.

4 Educational strategies

The objectives, the diagnosis and the techniques of planning having been examined, we now come to the question of strategy.

Principles of a strategy of education

Strategy requires clearly defined objectives. It is of first importance to distinguish clearly between objectives and means. For example, it is obvious that since education is the general objective, schools, teachers, television, programmed instruction, etc., are means, and are not to be regarded as ends in themselves. It is of the utmost importance not to assert at the outset that such and such means are essential; for no means are sacrosanct. It is consequently necessary to proceed at all times with an open mind, though in actual fact nothing is more difficult; planning is too often concerned with means and not with objectives.

Objectives and means must be matched. If we find ourselves faced with several objectives, distinctions must be made between the main and the secondary ones, and a list of priorities drawn up. Countries and regional or international organizations have identified a very large number of planning targets. They are all of them important, but their order of importance must be determined, since an attempt to attain them all at the same time might well mean attaining none. The need for selection is particularly clear when a comparison is made between educational-planning requirements and the budget on which the ministry concerned may finally count. When expenditure has to be reduced by 25 per cent, 50 per cent or more, it happens too often that the reduction is applied proportionally to all projects.

Thus, the problem of establishing priorities is raised. Theoretically, problems of priorities come down to comparing the cost benefit of different programmes (e.g. balancing returns of expansion of rural primary education against those of creating a new college of engineering); even in purely economic terms, the problem is not simple but it is made even more difficult by the fact that returns are not always of the same sort (they can be economic, social or political); one must also

take into account the impact of the selected priority on the future development of education; finally, there is a factor of opportunity (priority of what is easier to do at a certain moment).

Experience shows that, under diverse pressures, a government might be tempted to do everything at the same time. It is excellent, indeed, to have ambitious aims, but in that case one must be prepared to mobilize the necessary means. If a given country wants, for example, to render its entire youth literate in ten years, it must be willing to make quite exceptional efforts and perhaps to abandon normal ways and means entirely. What is quite impossible is to pretend, when the cost of educating all children from 6 to 10 years of age under existing conditions has been calculated at 50 per cent of the national budget, that one can achieve the same result with 15 per cent of the same budget, without making any changes. Yet this latter result might be possible if other conditions were established, incomparably more economical than those prevailing hitherto.

Strategy means liaison and harmonization. If a country wants to send an additional 100,000 children to school each year, it must clearly take timely action to build schools to house these children, and to train the required teachers. In other words, the various items of building, teacher training, equipment, etc., must advance simultaneously, in order to avoid what operational research workers might call a 'queue'.[1] This is the basic rule and justification of planning.

Provision must also be made for the internal equilibrium of the educational system. If, in the base year, the number of new enrolments in primary education is considerably increased, some of these children will, six years later, knock at the doors of secondary education, which must therefore have taken timely and appropriate measures to admit them. The same will happen x years later, for higher education.

Similarly, the second-level curricula should not be prepared independently of the primary and higher ones; there must manifestly be continuity in education. Going further, all the subjects in an annual syllabus should be harmonized between themselves. These problems have been mentioned earlier.

Strategy seeks to resolve problems by reciprocal action. It happens too often that the solving of one problem brings to light another and more difficult one, when it might have been possible to find a solution which would have simultaneously settled several neighbouring problems. Let us imagine a country with a scattered population and without sufficient resources to open complete primary schools in all its villages. It could decide to adopt the system of the single-teacher school, which would not in this case be regarded as a last resource. Advantage would on the contrary be taken of the virtues inherent in the system: with the children of different years working together, a school society is fostered whose traditions are handed down by the older children to the younger.

Lastly, strategy must strike a balance between education on the one hand and the requirements and potentialities of society on the other. The problem of

1. See: *A Programmed Introduction to PERT*, New York, 1966.

adapting education to the needs of society, and to its economic needs in particular, is frequently raised; but the problem of adapting social structures to education is no less important: the educational resources of society are immense, and in general very scantily utilized. In fact, if adaptation is to be effective it must be reciprocal, and the best way for education to serve society is for it to make full use of all the social institutions.

Strategy is an exercise in timing. Education, more than any other human activity, is a matter of timing. If, for example, an improvement in educational output is sought primarily through the adaptation of teachers to new contents and teaching methods, this will imply training and retraining, i.e. the existence of a relatively large number of fully experienced teachers in training colleges, who must themselves have been trained by a small initial team. The recruitment and training of this initial team is therefore the first phase of an operation which will take at least three years before beginning to produce results at the lowest level. A rational strategy recognizes the time factor and makes the most of it. This means, in particular, an appreciation of what can be done at any given moment and in any circumstances. For example, a country too poor to undertake a major programme of school building may nevertheless begin by earmarking land for future schools. In the first stage of economic development, land costs nothing or next to nothing, whereas later on, when building becomes possible, the cost of the land will have risen sharply.

Strategy must make allowance for social and psychological factors. The biggest obstacle in the way of educational development today, even under serious financial difficulties, is socio-psychological in character. An adequate strategy must therefore be prepared for such obstacles and include the means to overcome them. Socio-psychological strategy must ensure in the first place that the objectives of the plan avoid a head-on collision with all attitudes and forms of resistance. It will therefore associate all concerned in the preparation of the plan, and organize a continuing programme of information and consultation. These measures are not to be regarded as secondary; they are essential, for coherence, equilibrium and continuity—the very bases of sound strategy—are mainly a matter of understanding and common determination on the part of the planners and of all others concerned.

Different strategies for different countries

The common features of an educational strategy

In *The World Educational Crisis*,[1] P. H. Coombs lists five priority targets for a strategy directed at resolving the educational crisis: modernization of educational management, of teachers, of the learning process; strengthening of educational finance; and greater emphasis on non-formal education.

1. Working document for the Williamsburg Conference, op. cit., p. 207-10.

This strategy is, in fact, one of innovation; and as the need for modernization is now being felt in almost all countries, the recommendations have universal application. They are, however, so general that in practice they constitute objectives rather than a strategy in the strict sense of the term. To attain these objectives, it will be necessary to employ a strategy that can be altered according to circumstances.[1]

Choice of an educational strategy matching the situation, needs and possibilities of each country

It is obvious that the same strategy of innovation will not be applicable at every stage of educational development. In a country where teachers are still relatively few and untrained, but where for that reason educational traditions are still relatively fluid and pressure groups still weak, strategy should not attempt the immediate introduction of sophisticated teaching methods. On the other hand, it will be a simple matter to have extremely radical innovations accepted, which in another setting would immediately be rejected. Similarly, because education in this particular country is expanding, it will be possible to link reforms with the creation of new schools and the training of new teachers. On the contrary, in a country where education is more developed, where expansion merely follows the growth of population, where the teachers have received complete vocational training, where the profession has a long tradition behind it and constitutes an extremely powerful pressure group, strategy will necessarily be different. It will be possible to introduce more subtle improvements, but extremely difficult to achieve rapid and radical changes.[2]

The absurdity of transferring the history, geography and natural history syllabuses, as they stand, from a European country to Africa or Asia has often been emphasized. It would be equally absurd to transport the standard school building of a cold country to the tropics, where climatic conditions and the traditional style of architecture are completely different. And we may wonder, more generally speaking, whether it would not be advisable to adapt the actual style of education to each country; or rather, to try to find each country's own particular style of formal or non-formal education. Depending on the psycho-social environment, teaching methods and the relationship between teachers and pupils can be extremely different.

In Europe, academic education developed slowly throughout the nineteenth century, more or less in step with the economy, and it is understandable, if not

1. See also: Ontario Institute for Studies in Education, *Emerging Strategies and Structures for Educational Change*, 1966; E. M. Rogers, *The Communication of Innovations: Strategies for Change in a Complex Institution*, a paper presented to the National Conference on Curricula and Instructional Innovation of Large Colleges and Universities, East Lansing, November 1966.
2. 'Academic arteriosclerosis comes more readily to older educational systems and is harder to cure' (P. H. Coombs, op. cit., p. 205).

logical, that the type of institution created at the start should have been preserved subsequently. In developing countries the situation is very different. A few decades must suffice to achieve as much as long evolution did elsewhere. Short cuts must be found. It follows that the strategy will perhaps have to envisage quite different forms of education. The conditions are different, and the possibilities as well. To return to the military example suggested by the very word 'strategy', guerrilla warfare is more appropriate in the jungle than the strategy of pitched battles designed for plains. Is this not equally true of education, and is it not possible in certain circumstances to think in terms of 'guerrilla' education as opposed to 'conventional' education? The school is no doubt at present a privileged form of education; but where it is materially impossible to create schools for all, forthwith, would it not, and should it not, be possible to organize another type of education? Is it really necessary to accept the alternative of school education or nothing? The two fundamental pre-conditions of education are the desire to learn and the possibility of having access to learning. Both in towns and in rural areas of developing countries, the desire to learn seems to be very strong, though more detailed studies on this subject would be extremely useful; what remains to be done is to give this public, whether adolescent or adult, access to learning. Up to quite recently, the only means of doing so were through teachers or through books; but teachers were few and books complicated, or at any rate called for ability to read as a first and necessary condition. Today, radio and television offer immediate access to knowledge to all who wish to learn, while for those who have just become literate, the press could be the means of consolidating their newly acquired skill. Hitherto, educational plans appear to have underestimated the potentialities of non-formal education. Once again we repeat that there is no question of opposing non-school to school education; but in the absence of schools, surely and in spite of all, something should be attempted. We now appear to possess the means.

The priorities of national development may vary considerably from one country to another. A country may decide that its greatest need is to train an élite of entrepreneurs in industry and commerce, handicrafts and agriculture, who will create employment and set the economy in motion. In such a case, the strategy will give priority to the second and third educational levels, while making certain that such education aims above all at encouraging initiative, developing technological and economic inventiveness, and inculcating the sense and the habit of management. Another country, however, may aim at national unity and the participation of all inhabitants in civic activities. In this case the strategy should, on the contrary, place emphasis on primary education, even on basic education for the masses, in order to spread throughout the country a certain number of simple ideas and attitudes with regard to the homeland, to modern life and to development.

Similarly, the content of education could be very different in a country in the first stage of development and in a very wealthy one. In the first case, certain priorities are obvious: people must first of all be protected from dying, therefore

they should be given, for example, some appropriately simple and practical notions of hygiene; health education, both practical and theoretical, will naturally occupy a preponderant place in all curricula and permeate the whole of education. On the contrary in the wealthy country, education, without disregarding the needs of practical life, will have a more general character and aim first and foremost at the acquisition of certain habits of thinking and understanding, rather than at concrete knowledge.

There is consequently no ready-made strategy. Every country requires one made to its measure.[1]

Common strategies for similar situations

Many excellent people, aware of the distinctive nature of the problems of each country, are highly suspicious of any standard strategy. They are particularly hostile to strategies which might be said to derive automatically from a typology of general development. They point out that no two countries can be found in exactly the same situation, and that even if they were so found, each society is entitled, starting from a given point, to follow its own chosen path.

Advantages of standard strategies

The objections to standard types of strategy are serious ones, and it would certainly be most desirable for every country to be able to work out its own fully made-to-measure plan. Nevertheless the preparation of such a plan without a pattern is extremely difficult, and very few countries have the means to carry out an undertaking of this type successfully in a reasonable time. In practice, as they have neither the time nor the ability to throw the whole problem open to consider all its aspects and to provide for every contingency, the planning experts, when they have no standard strategy corresponding to the general category in which their country could more or less be included, fall back on traditional foreign models which are infinitely less suited to their country's specific situation.

We can also imagine a situation midway between total refusal to accept any model and the blind application of a standard strategy. First of all, it should be clearly understood that a general development typology cannot by itself identify the most desirable educational strategy. For that matter, the educational typology itself must be considered; for it may be on the one hand that the quantitative development of education does not correspond exactly to the economic development plan, while on the other it is essential to know the 'qualitative' characteristics of the educational system (teacher qualifications, content of curricula, methods, etc.). It would also be advisable to provide a number of alternatives for each

1. See: Adam Curle, *Educational Strategy for Developing Societies*, London, 1963.

standard strategy, depending on geographic, political and cultural factors and according to the possibilities offered by one and the same situation, since a country may choose different development policies or different rates of development.[1] Finally, it is quite obvious that the use of standard strategies rules out neither intellectual reflection nor the exercise of imagination on the part of the planners.

Current use of standard strategies

There is in any case nothing new in standard strategies. In practice, considerable use is made of them, although this is not always realized.

It is for each country, no doubt, to choose its educational objectives; but in fact countries frequently choose the same. This growing coincidence is encouraged by international intellectual co-operation and increased facilities for the dissemination of information, and recognition of the fact that attacking ignorance, by means of education, is the best way of ensuring the liberty of the individual.

Most, if not all, countries have opted for rapid economic and social development. No doubt some of them place more emphasis on the urgency of modernization and others on the need to conserve, despite the modernizing urge, the characteristics of traditional culture. No doubt also there are differing opinions on how to modernize: some will give more importance to rapid industrialization, others to agricultural improvement; but no country is known to have turned its back on development. It is therefore possible, while fully respecting the wishes of those concerned, to propose educational strategies aimed at economic and social development; it is only necessary to provide alternatives, particularly in regard to the degree of priority to be given to the protection of cultural traditions and to the role to be accorded to industrialization in development.

In addition, all Unesco's Member States have jointly proclaimed a certain number of objectives of education. These may be very general: full development of the human personality, international understanding (Charter of the United Nations and Constitution of Unesco); they may be concerned with the principles of education (free education, equal access to education for all); they may also go into greater detail: the International Conference on Public Education has adopted a series of recommendations on such diverse subjects as technical education, educational research, preparation of curricula, etc., and the World Congress of Teheran has promoted the idea of selective and functional literacy; a series of regional conferences has not only recommended educational planning, but made suggestions on a number of specific themes (balance between general education and vocational training, promotion of rural education, teacher-training, teaching of science, problem of drop-outs and failures, educational administration, etc.).

The regional conferences of ministers of education and ministers responsible for economic planning, which have been meeting since 1960, have gone still

1. See note by J. Austry, in: *Report on the Seminar on Educational Planning, Banyuls, 28 September to 4 October, 1967*, p. 48-50.

further. In Karachi. Addis Ababa and Santiago, the Member States in each region have set minimum educational targets to be reached by definite dates, and have made recommendations concerning the percentage of GNP to be earmarked for education in coming years. These conferences have therefore outlined true quantitative plans (see Part I).

The conference held in Bangkok in 1965 went a step further. After studying a draft model for Asia, the conference recommended the use of this model, 'intended as a broad framework within which each country will identify its needs, formulate its objectives, determine its priorities and evolve a strategy of educational development most appropriate to its particular condition'.

Future prospects concerning the use of standard strategies

Is it possible and desirable to go further and to endeavour to draw up detailed and coherent strategies for each level of development and for each type of country?

Various attempts have been made in recent years to define standard strategies corresponding to the groups of a typology,[1] among them 'Educational Planning Practice in Developing Countries';[2] the international seminar organized in Banyuls by the French National Commission for Unesco (September-October 1967) examined the standard strategies proposed in that document. These are based on a typology of over-all development which distinguishes four levels: assuming a certain number of targets for each level considered, the document gives a sample strategy for each group, covering simultaneously all levels of education, non-academic education, the broad lines of the curricula, teacher training, etc. Those taking part in the seminar reacted variously: some regarded the standard strategies as being of considerable assistance, particularly for the planning units of the developing countries; others, on the contrary, concluded that there was here an oversimplification of very complex problems and that any attempt to standardize in this field was highly dangerous.

The approach attempted in 'Planning Practice' is quite rough and ready. It considers no alternatives, either to accord with geographical, political and cultural differences present within each group under consideration, or to allow for possibilities of choice open to countries which happen to be similarly placed. In addition, it may be wondered whether a general typology in four groups, on which the standard strategies are based, is itself sufficiently flexible and precise.

It must therefore be very clearly stated, prior to any discussion, that the typologies and strategies hitherto proposed can only serve as examples. Preparing a series of educational strategies—with a number of variants for each—and the preparatory typological studies, implies considerable team work, such as has never been attempted up to now.

1. F. Harbison and C. A. Myers, *Education, Manpower and Economic Growth*, 1964.
2. Unesco (first draft, 1966).

5 Research in educational planning

The whole process of drawing up a plan—collecting data for the purpose of diagnosis, forecasting manpower requirements, choosing priorities, evaluating —belongs up to a certain degree to research; but such specific forms of research are themselves based on more general research. The preceding chapters have already shown the need for additional research on a certain number of themes: typologies of general development and educational development, standard strategies of education, methodologies to estimate the general output of education and the comparative efficiency of various types or techniques of education, etc. In the same way, the next part shows the need for a certain amount of research on such subjects as the application of up-to-date administrative techniques to education, the perfecting of mathematical models, the calculation of global educational resources and costs, measurements and analysis of unit costs, etc.

It might, therefore, seem somewhat artificial to devote a special chapter to a subject which also turns up in every aspect of planning; but research raises problems having a particular bearing on organization, liaison and financing and for this reason we have thought it necessary to deal with it separately.

The various types of research

It would presumably be best to start by distinguishing clearly between the various types and levels of research required in educational planning, those that follow in particular.

Collection of the statistical data needed for planning. Educational planners, particularly in the developing countries, complain that they lack the most elementary data (e.g. wastage rates). It would consequently seem necessary for countries to modify their statistical surveys in such a way as to obtain the data essential to educational planning. Internationally, the attempt to standardize

has already begun but must be continued and completed, so that national statistics can be more easily established and comparative studies undertaken.

Diagnostic surveys and case studies. Diagnostic surveys are essential in preparing the plan and keeping it constantly up to date. They are still too often purely statistical in character. They should, in as many cases as possible, include evaluations, and it would also be useful that they should cover the educational system in its economic, social and cultural context, noting examples of interaction and indicating past or foreseeable instances of resistance to innovation. Case studies differ from diagnostic surveys only in the use which is made of them. They are not, in principle, intended for the preparation of the plan, but represent objective research for more general purposes (comparative studies, basic research, etc.).

Educational experiments. Pilot institutions and experimental classes have long existed for the purpose of trying out given innovations, with reference to such matters as curricula, methods and auxiliary aids. These experiments must be carried out under genuine scientific control and their results evaluated systematically and objectively. It is also essential that such educational experiments should not be conducted in isolation but be directed towards the needs of educational development and, accordingly, that they should answer precise questions posed by the planning bodies. We have already seen, in connexion with the internal organization of curricula or the choice between traditional and new methods such as programmed instruction, television, etc., the extent to which accurately evaluated experiments are necessary with a view to increasing educational output.

Basic and applied research in actual planning. This type of research is discussed below, but the various categories of research are closely linked to one another. There can be no basic research without the accurate data obtained from statistical surveys and case studies; nor is it possible to collect accurate data or attempt objective evaluations without the correct methodology. These various forms of research must go hand in hand, sustaining one another and gradually, together, becoming more thorough, so that there is no absolute priority between them. In the case of a country preparing its educational plan, priority will obviously be given to the collection of statistics, to diagnostic surveys and to educational experiments. Internationally, on the other hand, priority would seem to belong to more general research, that is, to the perfecting of the instruments of research, and methodology.

Some themes for basic and applied research

Several international meetings have drawn up lists of themes for priority study: the course for experts organized by the International Institute for Educational Planning at Bellagio in July 1964; various regional meetings of experts held in

Santiago de Chile in 1963, Simla in 1966, Beirut in 1967; the meeting of Directors of Educational Planning Institutes organized by the IIEP in Paris in July 1967; and more recently, the seminar organized at Banyuls by the French National Commission for Unesco in October 1967.[1]

It is interesting to note in passing the themes for research selected by the International Institute and the Regional Centres for Educational Planning:

The International Institute has carried out a number of case studies (sixteen monographs on Africa, one on the U.S.S.R., one on France) and has also published more general studies, in particular on: new educational techniques, manpower aspects of educational planning, qualitative aspects of educational planning, the world crisis in education, quantitative methodologies on education, etc. The institute hopes to do research in the following subjects, beginning in 1968 and extending over several years: the practical uses of cost analysis in educational planning, planning for change and innovation in education; the methodologies of planning, the organizational and administrative aspects of education, the social aspects of educational planning; integration of formal and non-formal educational plans; planning of higher education.

At the regional centres for educational planning and administration, research has hitherto been closely associated with the preparation of courses. The books or documents issued are intended primarily for those attending the courses, and are manuals rather than works of research. Nevertheless, the four centres have, since 1967, agreed upon a joint programme of research in liaison with the IIEP and the Secretariat of Unesco. Four themes for research have been selected: standardization of terminology and norms; calculation of unit costs; wastage (causes and remedies); and aids to evaluation of the internal and external efficiency of education.

Liaison with research in other fields

Drawing up a plan necessarily entails interdisciplinary work, but in practice it happens too often that the planning experts are especially interested in certain disciplines, economics in particular, and neglect others, in particular, sociology, anthropology and educational theory. There is, therefore, some purpose in repeating that research in this field must make an ever-increasing use of the methods and findings of very diverse disciplines, experts in which, in their turn, should be better informed as to what they can contribute.

Educational research

As we saw earlier, all solutions to problems of output involve questions of structure, content and methods, that is, questions of pedagogy. The weaknesses

1. See: Unesco/IIPE, *Planification de l'Education: Thèmes Principaux de Recherche* (in French only); French Commission for Unesco, *Report on the Seminar on Educational Planning, Banyuls, 28 September to 4 October 1967*, p. 34-7.

of planning in the past, and its failures, seem to be due essentially to the fact that many 'planners' were only acquainted with the statistical, economic and financial aspects of the situation, and overlooked the possibilities of improvement offered by pedagogical research. It is therefore essential that in future, research in educational planning should cover pedagogical problems. It is equally necessary for the pedagogical experts to orient their research according to the practical needs of educational development, hence to acquaint themselves with the problems which planning has to face. This was clearly emphasized by the International Conference on Public Education, at its twenty-ninth session in 1966, when discussing the organization of educational research.

Economic research

Basic research must be continued, for example on cost/benefit analysis, on the relations between education and occupation, on methods of improving manpower-forecasting techniques, on the implications for education of price and salary structures, etc.; but the experts should also seek to express the results in a more directly practical and usable form. It is particularly advisable that the economic approach should be increasingly integrated with a comprehensive approach, the economic aspects thus coming face to face with the social, cultural and educational aspects.

Sociological, cultural and demographic research[1]

Like pedagogy, these disciplines do not at the present time occupy their proper place in educational planning, their absence making for serious imbalance, incomplete views and, in the last resort, failure. Of the subjects in which research would seem to be most urgently needed, mention may be made of the following:

The socio-cultural goals of the educational plan. It would be of advantage to find more precise ways of measuring these goals and of assessing the extent to which education helps to attain them.

The socio-economic characteristics of the students. It would be helpful to know the family background of the students, defined in terms of the father's income, occupation and education together with their cultural characteristics, measured by knowledge and aptitude tests. Such studies would make it possible to ascertain the extent to which all young people have equal access to education.[2]

Instances of psycho-social resistance to innovation in education.[3] The adoption and implementation of the educational plan are often seriously compromised

1. See: 'Social Functions of Education', *International Social Science Journal*, Vol. XIX, No. 3, Paris, Unesco, 1967.
2. The international symposium on brain research and human behaviour organized by Unesco in March 1968 has drawn attention to the considerable advantages enjoyed by children of the more-favoured social categories, who receive early and constant intellectual stimulus.
3. See: *Role of the Human Factor in the Development of the Newly Independent Countries* (with an annotated bibliography), Paris, Unesco, 1967.

by the resistance of certain social groups. It is accordingly of great importance to determine—at both national and international level—the attitude of the various social categories to education and particularly to innovation therein, together with the reasons for that attitude. Some particularly interesting groupings are: age groups (in the developing countries in particular, the different age groups have grown up in very diverse political, social, economic and cultural conditions); various social and professional classes, taxpayers, ruling circles; civil servants in the ministries concerned (finance, agriculture, labour, health, etc.), journalists; the teaching profession, educational administrators, university circles, teachers serving abroad in developing countries; students, pupils and their parents; political parties; the churches; ethnic groups.

Study of the cultural factors which facilitate or hamper education. In the developing countries in particular, it is important to be well acquainted with the traditional culture, so as to make use of all its potentialities, and at the same time avoid unnecessary conflicts. The following are some themes for research: introduction of the traditional culture into the school curriculum; adaptation of educational methods to the mental structures, physical habits and *mores* of society.

Relationships between educational and demographic trends. Not only is it important to analyse the implications of demographic trends for education, but research is also needed on the long-term effects of education on fertility.

Technological and scientific research

In relation with school curricula, there is research to be done on the knowledge, skills and attitudes to be developed through training for each speciality or branch of a profession. Such research requires collaboration between educators and technicians in industry, agriculture, commerce and administration. It is essential that academic education should reflect more faithfully the present state and the trends in each discipline. To bring training up to date in this way calls for the collaboration of the best scientists; for the question is not merely one of drawing up catalogues of what is known, but also of determining the structure of knowledge. There has lately been some progress in adapting the mathematics syllabus to the current structures of mathematics; but in the human sciences everything, or practically everything, remains to be done. Grammar as taught in schools, for example, generally ignores the evolution of linguistics.

Regarding educational planning and educational development in general, there is a need for collaboration from practically all scientific sectors: mathematics (discovering the mathematical tools best adapted to educational problems); biology (brain studies); operational research (adapting forecasting techniques to educational problems); socio-economics (educational impact of mass-consumption, mass-advertising and mass communication media); town-planning, etc.

Finally, all intellectuals should be much more involved in the problems of education. The greatest philosophers of antiquity, Socrates and Confucius for

example, placed education at the heart of their thought. More recently, men such as Montaigne, Rousseau and Kant took a passionate interest in educational problems. It must be acknowledged that, with a few brilliant exceptions, this is no longer the situation today. The scant interest shown by intellectuals in a field with which they are nevertheless intimately concerned is a very serious matter. Educational thinking is in danger of becoming pedestrian if left to the care of specialists who are not always in the forefront of thought. It is consequently essential that scientists, intellectuals, artists and philosophers—the thinking élite of mankind—should once again take an interest in education and accord it part of their best thinking. The non-governmental organizations associated with Unesco are the natural instruments of such a mobilization of the world's intellectual vanguard.

National, regional and international organization of research

Planning draws upon practically all branches of human knowledge; it requires a mass of information—up-to-date information—relevant to all countries in the world. Research work on educational planning is therefore *inevitably* dispersed, not only over the various specialities, but also in space, among agencies and individuals who are to be found at very different levels of scientific competence.

This vast and diffuse science is, moreover, a new domain in which almost everything remains to be done. It is not a discipline requiring only finishing touches, but one coming into existence. In these circumstances it is impossible to expect any progress to result from isolated research. Maximum organization is needed to establish the bases of a common language for research workers, to ensure rapid exchange of information and research work and to make it easy to use the results already achieved and to avoid doing the same work ten times over and to make certain that no major problem has been overlooked.

The bases of a common language

As was mentioned earlier, the regional centres for educational planning have jointly undertaken research work on terminology and norms.

Attempts have already been made in recent years to standardize terminology. For example, Unesco in 1961 published a *Manual of Educational Statistics* laying down definitions for such terms as 'first', 'second' and 'third' level, 'special education', 'general education', etc. This work is now being supplemented by an international standard classification of education which establishes a decimal breakdown of educational levels, fields of study, courses and curricula—the equivalent from the standpoint of training of the classification of occupations prepared in the labour field by ILO.

Planning, however, needs more than a terminology. For purposes both of planning and international comparisons, statistics and unit costs necessitate the

standardization of the different types and qualities of building,[1] equipment and staff. Given the extreme diversity of education throughout the world, the establishment of universally applicable standards is a major operation involving countless checks and the prior adoption of a special methodology. This is none the less the essential basis for any serious work and is absolutely necessary for perfecting, for instance, mathematical models.

Communication of materials and of existing results

A simple and rapid system of communicating research work between the various workers is a prerequisite to progress in a nascent discipline. No less important, in the case of planning, is the communication of data. The processing and publication of statistics take much too long at present and international agreements would seem to be essential in this field. It is difficult, for that matter, to conceive how a country can plan and evaluate its education without permanent statistics; any joint effort in this regard would thus be extremely beneficial to Member States. It is also important to move from statistics intended for information to statistics aimed at action. In the absence of complete statistics, it would be necessary to have at least an annual compendium of essential figures and data for the year just ended.

The bibliography of educational planning is already tremendous,[2] but many titles are those of studies or articles of a very general nature which constantly repeat the same ideas. A continuous work of compilation, condensation and verification is essential

It would be most desirable for certain regional and international bodies to devote a considerable part of their activity to the secretarial side of research, i.e. to handle exchanges, speed up the collection of statistics, compile, summarize and verify.

Division of tasks at the various levels of research

Research is undoubtedly based on the intellectual independence of the individual research worker, but a certain minimum of co-ordination and discipline is essential if there is to be a true 'community of research'. We may imagine, for instance, that each institution and each individual research worker will split his or its activities into two parts, one independent one and one co-operative. In this way creative invention and the division of tasks could be reconciled.

One of the basic principles of the division of tasks is that each should give priority to what is easiest for him to do. National bodies for educational planning are seldom well placed to undertake basic research. On the other hand, they

1. As regards buildings, mention should be made at this point of the studies on unit costs prepared by Unesco's regional centres for the construction of school buildings.
2. See: Unesco, *Bibliography in Educational Planning*, 1963; Unesco/IIEP, *Educational Planning: a Bibliography*, 1964; M. Blaug, *The Economics of Education: A Selected Annotated Bibliography*, Oxford, Pergamon Press, 1966.

must promote and organize applied research on the practical questions raised in the preparation of their plans. They can also render extremely useful science in assembling and distributing rapidly, as complete, accurate and comparable data as possible concerning national education and planning.

In liaison with the planning bodies, the small- or medium-size universities and the teacher-training colleges can pursue applied research contributing to the preparation or evaluation of the national plan. Universities possessing major facilities can devote themselves to basic and interdisciplinary research. These large universities could, for that matter, co-operate with the smaller and less well-equipped ones, or else with individual research workers.

The regional or international agencies could concern themselves with basic research, but their real function is above all to promote and organize research, to arrange for experts to meet at regular intervals, to propose divisions of tasks, to compile and summarize and to organize communications and exchanges.

Liaison between research and implementation

Research work on educational planning is dependent on realistic data and has no meaning if divorced from implementation. Each country should, therefore, create a network consisting of research institutions in the strict sense (planning offices, universities) and executive agencies such as training colleges, experimental schools and field projects.[1]

If research is to be successful, it must not only aim at practical application, but be linked with it. This means, first and foremost, that research must be accessible, in other words, that the results must be expressed in a language intelligible to users and that the results must be widely and rapidly disseminated.

Liaison between the various aspects of research

The present division of tasks between the various levels, provincial, regional and international and between actual research, experimentation and implementation, is not sufficient. At each level there must be, in addition, an internal link between the various aspects of research on educational development and with research in other sectors.

Educational research has a wide variety of aspects: adaptation to manpower requirements, costs, content, methods, etc. It is obviously important that the research work on each of these sectors should form part of an over-all plan. This, as we know, is far from being the case; and such lack of prior co-ordination, such absence of organic and permanent liaison between the various projects during their

1. A good example of liaison between research and implementation is provided in the Federal Elementary and Secondary Education Act of 1965 in the United States. The act provides for continuity of institutions and functions, from basic research up to generalized implementation, and demonstration (see: E. B. Nyquist, *Emerging Strategies and Structures for Educational Changes*, The Ontario Institute for Studies in Education, p. 8 ff., 1966.

implementation, are largely responsible for the inefficacy of research. Still more uncommon and difficult is the liaison between research on educational development and research in other fields such as agriculture, industry, commerce, hygiene, economics, etc. Here liaison would be facilitated by fuller information; for example, lists of problems encountered in educational planning; by interdisciplinary research seminars; and by systematic exchanges between specialized reviews.

The organization of research is not a minor matter

Internationally, it is very doubtful whether mere recommendations are enough to bring about a rational division of tasks among the various universities and institutes. Precise commitments and contracts signed and in due form are needed: these could result from carefully prepared discussions between those concerned, meeting specially for that purpose.

Nationally, the installation of a research-and-implementation network implies legislation, the training and briefing of a relatively large staff, and a special budget. Each special research project must be carefully planned. It is necessary to distinguish between the phases of the project, to synchronize implementation of the various tasks and to make provision for the necessary staff and resources. Techniques exist for organizing research. D. L. Cook, for example, has published a small book on the application of the PERT system to educational research and development projects.[1]

Research on educational development is a long-term undertaking. Past experience provides ample proof that short-term projects (one to four years), unless concerned with a very limited theme, never lead to practical results.

The research budget

In all sectors of modern production and economy, research now enjoys a pre-eminent place and it is generally recognized that a country's progress is directly dependent upon its research capability. Nevertheless, education has remained at an artisan stage and is still living on tradition, on sleight of hand and on empiricism. This is all the more surprising in that the teaching profession is a nursery of research workers in other fields.

If educational research is to be more than a pious hope and is to become a reality it must have its own budget.[2] The Director-General of Unesco, in his address at the Williamsburg Conference on the World Crisis in Education,

1. D. L. Cook, *PERT Applications in Education*, U.S. Office of Education.
2. See, for example, the educational research project established by the Federal Elementary and Secondary Act of 1965 in the United States. Chapter IV of the Act earmarked $70 million in 1965-66 and $80 million in 1966-67 for early phases of research and experiment (grants to universities, research centres and regional education laboratories); in addition, Chapter III made provision for much larger funds—$75 million for the first year, $150 million for the

October 1967,[1] said that for serious work to be done, at least 2 per cent of the educational budget should be devoted to research, adding that this percentage, very much lower than that accorded to industrial or military research, was hardly ever reached. One difficulty is that the exact contribution of research on educational development is not immediately apparent either in the basic research in the disciplines concerned or in experimental projects, in extension or in generalization.

It would, therefore, seem advisable for each national budget to indicate clearly not only what sums were earmarked for applied research, which can be fairly easily defined, but also the sums assigned to research work on educational development in the budgets of various projects of basic research (economics, sociology, psychology, etc.) or in the budgets of training colleges, pilot institutions, etc.

In other words, it would be advisable to envisage a programmed research budget which, once officially adopted, would, more than any other means, make for easier co-ordination of the various aspects and levels of research tasks. To ensure the necessary continuity, this programmed budget should be included in the educational plan.

These arrangements, highly to be recommended at the national level, are equally so at the regional and international levels, where they can ensure liaison between the various departments of each organization and between the organizations themselves.[2]

second, etc.—for the subsequent phases (extension and generalization). Viewed as a whole, the research budget therefore amounted to $145 million in 1965-66 and to $230 million in 1967-68.

1. International Conference on the World Crisis in Education, Principal Address, *Summary Report*, Williamsburg, 1967.
2. OECD, *Policies for Research and Development in Education*, Paris, 1967.

III Implementation of educational plans

For the convenience of setting out and organizing the discussion, the formulation of the plan (Part II) and its implementation (Part III) are dealt with separately; but it would be as well to mention how dangerous such a separation would be were it to occur in real life.[1]

In the first place, the plan begins to be implemented from the time of its formulation; in so far as it strives to adapt education to the demands of reality, it has to envisage the difficulties of implementation and defines strategies (which vary from country to country) to overcome them. Of course, the plan cannot indicate the stages of implementation one by one, but a viable plan will necessarily include operational features. It will begin with a time schedule, if only a very flexible one; it will allocate responsibilities; it will comprise evaluation and revision; it will indicate means of action, not only financial, material or human means, but also the necessary administrative measures. In a word, when determining objectives, it will always consider how they can be attained.

Next, the plan will continue to be formulated while it is being implemented. The administrators of each educational sector and the local administrators work out in detail the programmes and projects for those parts of the plan for which they are responsible, but these programmes and projects are themselves never final. The plan is a series of successive approximations. Implementation, for its part, provides information enabling the problem to be studied on fresh bases and leading to more precise projects which, in their turn, will be tested and implemented; and so on.

1. C. E. Beeby goes at length into this danger in *Planning and the Educational Administrator*, p. 16, Unesco/IIEP, 1967. The seminar on strategies for implementing educational plans in countries of varying stages of development (London, January 1968) has also emphasized this point (see: *Report*, p. 5, 18-20). The second session of the Committee for Development Planning (United Nations Economic and Social Council) also says that 'the distinction between plan formulation and plan implementation is more formal than real' (*Report on the Second Session, Santiago, April 1967*, p. 3).

Formulation and implementation of the plan are therefore really a single major operation with which all these employed in national education are intimately associated.

In this part, the administration and financing of education will not be examined as such (the task would in any case be far beyond the scope of this book), but only in relation to implementation of the plan.

Chapter 1 (Administration) consequently examines the relationship between planning and administration and the changes which appear to be necessary in the administrative system to enable it to handle the extension and reform of education. In so doing, it will allow not only for the latest techniques of business management which the administration could adopt, but also for the particular human aspects of education.

Chapter 2 (Financing) describes the difficulties of exactly estimating all the financial and other resources available for the plan's implementation. It examines the methods of comparing expenditures, the problems of preparing and submitting the budget. Limited resources involve study of the theoretical and practical problems of output, mobilization of neglected resources and external aid.

Lastly, Chapter 3 deals with questions of training the various categories of persons concerned with formulating and implementing the plan: planning experts, managers of the educational 'enterprise', administrators and teachers; it considers training methods for each of these categories; it discusses the problem of forecasting the manpower and training requirements of educational planning.

1 Administration of education

In view of the all too frequent gap between the plan and its implementation, many people wonder whether too much emphasis has not been hitherto laid on the methodological refinements of ideal planning to the neglect of administration, without which the best of plans remains a dead letter.[1]

This does not mean that in the final count only administration matters; planning and administration cannot be separated, so there is no point in discussing their relative importance ('educational planning without administration is empty, but administration without planning is blind'[2]). The problem is to link them together the better.

A discussion of the problem turns upon three main points: planning must not be the monopoly of an office, it must permeate the entire administrative and educational process; traditional administration, organized for the dispatch of current business and not to introduce necessary innovations, is static, and so must be adapted to its new role of plan management; education is not an undertaking like others, for in it human relationships are of exceptional importance (the introduction of new management techniques would be of little effect if the administration of education failed in its turn to become more 'educational').

1. See in particular: Economic and Social Council, *Report on the Second Session of the Committee for Development Planning*, Santiago, 1967; International Conference on the World Crisis in Education, Williamsburg, October 1967, Final Reports of the Conference Working Groups; Alexander King, *Educational Management and Policy-making*, document submitted to the Williamsburg Conference, October 1967; Kjell Eide, *The Planning Process*, Symposium on Educational Planning, University of Minnesota, November 1967; *Seminar on Strategies for Implementing Educational Plans in Countries of Varying Stages of Development*, London, January 1968, Report by M. Woodhall; C. E. Beeby, Note prepared for the London Seminar (it repeats the ideas expressed by C. E. Beeby in *Planning and the Educational Administrator*, Unesco/IIEP, 1967).
2. *Report of the London Seminar*, p. 6.

Planning and administering

When a new planning office is created, there is often seen to exist more or less open tension between the new experts and the administrators in the older departments of the ministry of education.[1] The opposition between men and departments has slightly lessened with the passing of time, but planning and administration have by no means succeeded in becoming integrated.

This separation is a serious matter. The administrative consequences will be examined in detail later on, but it is disastrous for the actual plan. The isolation of 'planners' has at times caused them to attach undue importance to aspects with which they are the most familiar, that is, quantitative ones, with the result that 'the arithmetic of plans . . . has too often been equated with the whole of planning'.[2] Moreover, the idea that there is a moment when the plan is complete once for all and its implementation begins is an extremely dangerous one. A finished and inflexible plan is contrary to the very spirit of planning, which is adaptation to change, and it would only add to the automatic character of the administrative system. The plan is neither a prediction by an all-wise technocrat nor a political promise; it is a working hypothesis. Planning cannot be the monopoly of a small group during the period of planning, it must be the preoccupation and permanent responsibility of the entire administration.

The various stages of planning: authorities responsible at each stage

Educational planning is not limited to preparing a document; it is an uninterrupted process which begins before the actual 'plan' is drawn up and continues throughout its implementation.

The purpose of the first stage is to determine educational policy. The decision is, of course, taken by the highest governmental authorities and parliament. It is prepared by the minister and his immediate collaborators, in discussions with representatives of the sectors and groups concerned. The planning unit can intervene at this stage as an information and planning office.

The second stage is that of over-all strategy, outline law (*loi-cadre*) or medium- or long-term plan. Once again decisions are taken at government level. Preparation is essentially the task of the planning unit, working in close contact with the ministry on the one hand and the over-all planning board on the other, submitting successive solutions to them until the one to become the planning assumption is adopted; but parallel to these talks with the higher authorities are others with the various services of the ministry of education, to examine the consequences of each solution and discover the possible difficulties and resistances it is likely to meet with.

After that comes the stage of programming, which in fact covers a fairly varied range of activities: the more-or-less short-term programming of a single sector

1. See: C. E. Beeby, *Report of the London Seminar*, p. 18-19.
2. See: *Report of the Committee for Development Planning*, p. 2.

(e.g. promotion of literacy, primary education, etc.), intersectoral programming with a specific objective (e.g. reform of curricula, introduction of television, etc.), annual programming of each sector and of all together. In all instances programming implies preliminary consultations between the department or departments concerned, the planning unit and the political authority which will take the final decision; but the central responsibility for formulating will vary with the type of programme. Where one sector only is concerned, the corresponding department will doubtless be responsible, the planning unit merely supplying the information asked of it and verifying the coherence between the programme and the plan. If, on the contrary, the programme is intersectoral, the planning unit may act as co-ordinator and be charged—after discussion—with the formulation of the programme.

Lastly, there comes the project stage, which may be intersectoral or sectoral, national, regional or local, annual or covering a longer period. Save in the case of rather exceptional intersectoral projects with no point of application in the ministry, the planning unit will not intervene other than to give any necessary technical assistance. Here the responsibility clearly lies with the various departments of the ministry, the provincial boards, etc.

The place and role of the planning unit

The foregoing in no way means that everybody is to do everything. Education, like any other undertaking, calls for a division of labour. In practice, three types of official can be distinguished in a ministry: pure technicians (educators, statisticians, economists, architects, planning experts); pure administrators (employees responsible for current business); and 'managers' who should be both multi-discipline technicians and administrators (this last category being equivalent to the 'staff officers' of education, mentioned later). Ideally, the minister's immediate collaborators, the department heads (including the head of the planning service) should be managers. It is they who could be given the name of planners. There should, therefore, be no confusion between planner and planning office expert.

The word 'planner' is misleading and should be avoided. Everybody who takes part in planned education (politicians, administrators, teachers) is a planner of some sort; but nobody is or could be *the* planner. In these circumstances, is a special planning unit necessary in the ministry of education? The answer depends on the level of educational development and the administrative structure; but in general it would seem advisable to have a special unit: (a) to handle certain highly specific tasks of information, study and evaluation; (b) to co-ordinate the various sectors and (c) to obtain for planning the necessary attention.

The unit can be conceived in two very different ways. It can be a sort of 'secretariat of the plan', a body for study and consultation, responsible for formulating the plan and co-ordinating programmes under the direct orders of the minister or the secretary-general. It can also be a purely technical office, larger

or smaller (it may assemble statistics, documentary material, studies), responsible for well-defined tasks with a veiw to preparation of the plan. In this case, the secretarial work for the plan will be done by the minister's private staff, by an *ad hoc* committee, or by the economic plan department.

In any case, the functions, the responsibilities and the authority of the planning unit must be clearly defined, so as to be beyond dispute.

In both cases—whether a purely technical office or a secretariat for the plan—the specialized unit has a fundamental task: to centralize and analyse the information needed for decision, action and evaluation and to have it constantly available to the minister and other departments. The term information is preferable to documentation or study, which sound too theoretical. It must be quite clear that the information in itself is aimed at action.

If the unit acts as secretariat for the plan, it will be responsible for the actual formulation of the plan as well, and will also have certain supervisory functions. It would seem particularly important for it to check programmes, annual budgets and certain categories of project (in particular those in receipt of external aid). Such checking does not imply control by a higher authority, it is merely a matter of stating whether documents are in conformity or not with the plan, or whether any departures from it seem at first sight justified or require to be explained. Similarly, with regard to evaluation, the planning unit will merely report on the basis of objective criteria whether an objective has been attained or not. Control and evaluation form, in short, a part of information.

If the planning unit is to be effective, it seems a matter of considerable importance for it to take no part in decisions (which are taken by the minister), or in implementation (which is dependent upon the operational services), and for it not to form judgements but merely to note facts. It is through such technical objectivity that it will best prove its use. The planning unit has no orders to give, and the less it commands the more the other departments will tend to have recourse to it, officially or unofficially. The manager of a planning and research unit quotes in this regard the psychological theory of non-authoritarian guidance, adding that this will be all the more effective the less 'visible' it is.[1]

The planning unit is consequently rather like a research office, but an office for immediately applicable research. Its role is informative and strictly technical. The whole difficulty is to find the men who will form such a unit. A considerable number of specialities will have to be represented in it, although that does not mean that it must include a teacher, plus a statistician, plus an economist, plus a sociologist, etc., but rather that each member shall be able, in addition to his speciality and his origin, to master all the problems of planning: planning is not the sum total of specialities, but is an inter-speciality affair. Lastly, as many of these specialist-generalists as possible must have real experience of education and administration. This point will be discussed at greater length in the chapter on training.

1. K. Eide, op. cit., p. 17.

Adapting the administration to the needs of planned action

It is easy to say that planning is a matter for the entire administrative system; but the system must be capable of assuming this function and this is rarely the case.

First, education has become a vast undertaking, but administrative bodies and methods remain as they were at the beginning of the century when the volume of education was ten times, twenty times (and in some cases, fifty times) less than it is today; a huge factory is managed as though it were a workshop. Moreover, the actual strength of the administrative services is sometimes far below that of the teachers; particularly so in the cases of inspectors.

The range of education has been greatly extended (technical education, vocational training, promotion of literacy and adult education, youth movements, cultural activities, etc.); but the administrative structures have not been reorganized correspondingly; in most cases, the new responsibilities are assumed by an *ad hoc* section arbitrarily attached to an existing service. The result is a certain incoherence.

Last, and most important of all, major innovation is necessary but the existing administration, handed down from a long political past, is essentially concerned with controlling, its purpose is to make certain that everything is done in accordance with procedure. It is generally slow and hesitant, and the smallest decision requires a host of signatures, rubber-stamping and marginal notes. Any innovation entrusted to it is almost doomed in advance to be a failure.

If it is to be able to implement the plan, the traditional administration must, therefore, be radically changed.

Reform of the administration

A reform of the administration is perhaps dependent above all on a change of outlook, and consequently upon education. This essential aspect will be discussed later; at this point only a few changes of a more material nature will be mentioned.

Reforms of structure. While it is always possible to improve the channels of information and transmission of directives, experience nonetheless shows that this is extremely difficult and that to modify the ministry's organigram is to invite disappointment. Four main problems have to be faced.

The first is that of centralization and decentralization. It is the custom to quote the Anglo-Saxon countries as examples of decentralization, the Latin countries as examples of centralization; but the distinction is too sharp. It would be better to talk of countries which set centralization at different levels. The level of centralization is moreover closely linked to the country's cultural and political structure. Any change in this domain affects the entire public administration. For example, when initiating educational innovations, even if decision and implementation

remain at the provincial, local or institutional level, the national services may have an important role in stimulating research, co-ordinating experiments and generally promoting activities which bring about innovation; this seems to be the current trend in the United States of America and the United Kingdom.

The second problem is connected with the first: division of authority and responsibility within the administration. In some countries, the minister has to see and sign everything, and a system of this kind, based on an exaggerated notion of control, is very unwieldy. Innovation requires delegation of authority (and consequently of responsibility) throughout the whole hierarchy in such a way as to encourage initiative and speed up decisions; but in this case precise and constant evaluation is essential.

The third problem is that the traditional administration is normally divided into departments, each one responsible for a major sector of education: primary, secondary, higher, etc. This division to begin with disregards the new types of education and dangerously accentuates the separation between levels. Nowadays,[1] it is usual to recommend that provision be made for two types of department: functional and operational. Plans and programmes, for example, are functional, staff management and the budget are operational.

Lastly, struck by the need for innovation and aware of the difficulty of innovating, some people recommend the establishment of an innovation unit or service. It may be questioned whether that is not equivalent to confusing policy and administration, as happened with the co-ordination units which were fashionable a few years ago. It would be just as appropriate to create continuity units, efficiency units, etc. It is an excellent thing to make provisions to facilitate innovation, but not to set up a special service. In any case such a unit would be likely to duplicate the planning unit.

The new management techniques. Business management—in the private and public sector—has been revolutionized in recent years by mechanization and by a number of new techniques (operational analysis, network analysis, critical-path analysis, programme budgeting, etc.).[2] We may wonder how far this revolution can assist the administration of education.

Mechanization seems by now to be an irreversible process; most of the more developed countries and very many developing ones use it for the administration of education. Punched cards processed by computer seem to be the only rational answer to problems of educational statistics, employment forecasts, vocational guidance and staff management on the scale of the numbers now involved. It consequently seems advisable for all countries to adopt mechanization, or at any rate to head in that direction. Note, however, that the personnel has to be trained and data-collecting methods reformed beforehand. A machine processes only what has been fed into it.

1. See: *Report of the Working Groups of the Williamsburg Conference*, op. cit., p. 20.
2. For the definition of these terms, see: *Report of the London Seminar*, p. 8.

Operational analysis, critical path analysis and cost-effectiveness analysis will be discussed later. All these techniques are useful but not all-embracing. Operational analysis is a planning technique, it has nothing to offer the administrator in his daily work.[1] Many consider that programme budgeting is unsuited for regularly recurring operations, and the same obviously applies to the critical path method.[2] But it would be ingenuous to think that the new techniques will resolve all problems. Their main interest is doubtless educative in so far as they introduce a new approach to questions.

Rational organization of planning

If any department of the ministry of education is to furnish an example of rationalization and modernization it is clearly the planning unit.

Planning the preparation of the plan. Formulating and pursuing a plan is a very long and complex operation which cannot be improvised. It is, therefore, necessary to plan the operation, which itself constitutes a series of projects. The identification of the problems which can arise and of their possible solutions can be made easier through utilizing modern forecasting methods such as 'relevant tree' or 'morphological research'.[3] It is particularly important to prepare a time schedule with the dates of the various phases: preliminary phase (training of the planning-unit experts, strengthening or reform of the statistics service, manpower forecasting, information seminars, etc.), the phases of actual formulation, implementation, evaluation and revision. These different phases sometimes overlap and each includes several series of parallel operations, so that it may be very useful, in preparing the time schedule, to have recourse to critical path or network analysis, the best-known method being PERT.[4]

The working tools. No mention will be made at this stage of the planning techniques, which were discussed in Part II, but only of working methods.

As was seen earlier, the first task of the planning unit is to give information. The statistics section—whether or not forming part of the planning unit—is the basic element; but it is not enough to have reliable statistics, they must be conveniently at hand; a log book, kept carefully up to date and showing at all times the plan's progress to date, is an essential working tool. Provision should be made in it for 'alarm signals' to give warning of undue gaps between implementation and targets.

Much more complex are the instruments for analysis, forecasting and preparation of hypotheses. These instruments are more or less attached to the principles

1. See: C. E. Beeby, *Report of the London Seminar*, p. 27, 28.
2. *Report of the London Seminar*, p. 9.
3. E. Jantsch, *Technological Forecasting in Perspective*, OECD, 1967.
4. Desmond L. Cook, *The PERT Project*, Ohio University, undated.

of operational research.[1] Education is regarded as a 'system', a machine into which the materials are fed ('input') and which turns out a product ('output').[2] The ratio between input and output is the yield. Operational research has very varied aspects: linear programming, model construction, simulation. The term 'systems analysis' or 'systems design' is normally reserved for the preparation of data to be fed into the computers.

The work of Correa, Tinbergen and Bos and of the 1965 Bangkok Conference[3] have made the word 'model' familiar to educators.

In the particular sense with which we are at present concerned, the model is a series of equations representing the relationships between constants and variables in an educational system; the following can be distinguished: descriptive models, which present the most significant data synthetically and clearly; analytical models, which reveal cases of imbalance and make it possible to explain them; prevision models, which indicate the probable evolution of the system if the constants are left as they are; decision models, which show the consequences and repercussions of the various measures which can be taken or the conditions to be met in order to reach a certain target.[4]

Models are very convenient instruments among others, for the rapid calculation of various hypotheses of the quantitative plan, but they are no more than working tools. It could be a very serious matter to confuse models and plans, for it is far from easy for models to cover all aspects of so complex a reality as education and there is a danger of uncertain basic data being made to seem certain.[5] Furthermore, a model is a coded document which it is not easy for the uninitiated to read, with the result that communication is difficult. The document is thus restricted to use within the planning unit.

Adaptation of planning to a country's conditions. The degree of planning refinement

1. The aim of operational research is to make the most of a limited quantity of means ('maximization'). It proceeds via scientific analysis of targets, operations and tasks required to reach targets, available resources, time allowed and time actually required. For example, an analysis of the time required for various simultaneous or successive tasks can cut down waiting time between completion of an operation in one sector and the beginning in another of an operation which assumes completion of the first. PERT (Programme Evaluation and Review Technique) is essentially a method of time analysis. Originally used in the United States during the Second World War in preparing military operations, operational research has been extended to industry, finance and general planning. Its systematic application in education is now being studied. One example is the PEP (Preparation Educational Planners) project launched in California with aid from the federal government.
2. See P. H. Coombs, *The World Educational Crisis—A Systems Analysis*. Working document of the Williamsburg Conference, 1967.
3. The 'Asian Model' already quoted, was adopted at the conference.
4. There is already a considerable number of publications concerning the use of models in educational planning. Only the following will be mentioned: *Econometric Models of Education*, OECD, 1965 (which gives models for Spain, Turkey and Greece) and an article by H. Correa in *The World Yearbook of Education* (1967), which includes an ample bibliography.
5. Theoretically, anything can be included in a model, and H. Correa, for example, has studied the incorporation of socio-psychological factors in an educational model (paper for the *Round Table on Operations Analysis of Education*, Washington, November 1967). In fact, existing models are limited to strengths and costs.

can vary considerably, depending on the qualifications of the staff, the quality of available data and, in general, local conditions. The most advanced countries, for example, seem determined to make increasing use of models in planning education. In the developing countries, they are still rare, and several of those attempted seem to have been abandoned.

In general, planning techniques have to be adapted to a country's situation. It must be possible for the plan to be understood by the politicians who will approve it and implemented by the existing administrative apparatus and teachers. In short, it must be realistic not only from the financial point of view, but also from that of those who implement it.

The plan must accordingly be careful to avoid 'technical terminology which makes the language unintelligible for purposes of simple direct communication',[1] as the plan is not a scientific study but a handbook for users and, as such, must be an educational exemplar.

Adapting the administration and the planning to the needs of educational action

Several recent conferences, while recommending that the administration of education be modernized, have pointed out that modernization could not and should not lead to a slavish imitation of management methods used by such branches of the economy as banking and industry.[2]

Education has, in fact, its own very special characteristics. Its objectives are not immediately apparent as in a bank, a factory or most of the public services, so that there will have to be general agreement in defining them. Education lies outside the market, so that the success or failure of a particular procedure is not immediately apparent. Administration depends largely on the goodwill of the administrators; but as education is a highly dispersed activity there is no possibility of seriously verifying whether or not all teachers habitually apply a directive. It is, therefore, not enough to issue orders, it is necessary to convince.

Human relationships, which are so important in any undertaking, are here essential. Informing, consulting, persuading others and learning for oneself, that is, educating and being educated, are at the basis of an effective administration of education. There is nothing extraordinary in that. Since administration cannot be different in nature from what it administers, the administration of education itself must be an educational process.

Importance of human factors in the administration and planning of education

Socio-psychological resistance. Reference was made at the beginning of this

1. *Report of the Committee for Development Planning*, op. cit., p. 15.
2. *Report of the Working Groups of the Williamsburg Conference*, op. cit., p. 20; *Report of the London Seminar*, op. cit., p. 26, 27.

chapter to instances of past and sometimes surviving friction between traditional administrators and planning unit experts. In Part II (Chapter 3), we already noted disagreement existing at times between the various 'schools' of planners. There is no question here of deciding who is right and who is wrong, but such friction and such disagreement are not innocuous, they lead to an unnecessary waste of energy and are a cause of delay, incoherent action and, finally, inefficiency.

In general the problem of resistance—whether professional, social or personal —is one of the most serious met with in planning. The most crucial example of this is innovation. Besides the misunderstandings which may be cleared up by discussion, there are also questions of personal situation, interest groups, the prejudices of certain sectors of public opinion. These difficulties cannot be masked. They have to be overcome, and this is possible only if society in general awakens to the problem; an awakening which implies a long and thorough education.

The role of 'personal outlook' in implementation of the plan. This applies to all the key problems of an administration concerned with implementing the plan. Of course, it is possible to try to improve machinery and methods, but in the final count all these problems are essentially problems of personal outlook and consequently of education.

Co-ordination, for example, cannot be added once planning is over, it is the result of a mutual participation in objectives equally understood and desired, but any participation of this kind will be difficult to achieve if the objectives have not been the subject of widespread, serious and frank consultation.

Decentralization and the delegation of powers presuppose trust on the part of the higher or central authorities, freely accepted discipline and a sense of responsibility lower down. Once again, we are concerned with human relationships, with intellectual and moral outlooks.

How can the proper attitude to implementation of the plan be created?

The list of sectors which can help or hinder—by resistance or lack of co-operation —implementation of the plan is a very lengthy one. It ranges from the administrators at all levels of education, inspectors, teachers in public and private[1] schools taken individually and in their professional capacities,[2] down to pupils' parents, students, the pupils themselves, via the other ministries, the trade unions, members of parliament, cultural circles, etc. Practically the whole of society proves to be concerned and must be reached.

One of the essential tasks of the planning unit is therefore to explain the aims of the plan and to convince everybody of the need for, and the direction to be taken by, efforts to be accepted by them individually. This is not to be limited

1. The Catholic International Education Office organized in 1968 a meeting on 'The Adaptation of Educational Planning Methods to Private School Systems'.
2. The Fifteenth Assembly of the World Confederation of Organizations of the Teaching Profession (Seoul, 1966) devoted its discussions to planning in education.

to the sector of the administrators of education and the teaching profession, but must extend farther. It is obvious that a plan cannot satisfy everyone to the same extent, it is always liable to encroach on certain established positions or upset certain opinions; but, generally speaking, opposition will be less violent the more is known of the operation as a whole and of the reaons for it, and if opposition is unjustified, it will be all the less effective the more the plan has been made known to the public. This information drive must employ all available means, and the corresponding funds must be provided in the plan.

Nevertheless, information must not turn into propaganda or advertising. The techniques of commercial publicity must not in this case be applied as they stand, for the idea is not to 'sell' ready-made ideas and to condition collaborators or opponents. Information about education must itself be a form of education, and so cannot cheat or lie, be it only by omission.

Finally, information is not enough. It must be coupled with carefully prepared consultation, the latter genuine, based on a sincere desire to know the opinions, ideas and reasons of other people, particularly those of possible adversaries. Sincere consultation will certainly give rise to objections and criticisms, all of them offering opportunities and obligations to correct the plan, enrich it and make it more elastic. It naturally demands from those consulted an equal sincerity and determination to arrive at a common solution.

The word 'education' occurs unceasingly in all this. It is true that the means cannot be dissociated from the end: the ideas of the ministry are invariably reflected in the class-room. A dogmatic administration produces a pedantic education, an administration that sticks to the letter of the law leads to formalism in education. If we are to have, as basis, a form of education opening out on life an active education in which children take part in instruction and learn to learn and to evolve, planning must embrace society and administration must be active. For the administration of planning to be effective, it must itself be an educational process from top to bottom of the teaching profession, and extend beyond it to the public. This assumes that the administrators—those in particular who are responsible for the plan—shall be educators. That does not necessarily mean being teachers but having the vocation of awakening, stimulating and liberating.

These remarks may seem to some people distinctly Utopian, ill-suited to such methods and techniques as operational research, cost-effectiveness analysis and mathematical models, but those who have helped in the effective application of a plan or a reform are well aware that that is the whole point of the problem. There must, at the outset, be a small group of men ready to launch or revive (today in the form of planning) the ideal of education.

How can such a group be formed? The administrators and experts who met at the international conference are very precisely those who have an opportunity to initiate a radical reform, that is, an educational reform of the administration of education.

2 Financing of education

Financing is not the only problem of education, and it is not certain that it is the main one. There was a time when education was so much a part of family, community or religious life as not to depend on specific resources, but now that education has been institutionalized the situation is very different. It is as well, however, to bear in mind that public and private funds are not the only resources and that in education in particular there are non-monetary resources—contributions in kind and services—which might, especially in the economically least developed countries, assume considerable importance. A plan must therefore be able to rely upon all resources in the broadest sense of the term.

Furthermore, the financing of education is characterized by the heavy running costs entailed by an investment plan, so that it is necessary not only to specify the origin, nature and amount of the financial sources, but to indicate the necessary links between expenditure on new building and the recurrent costs to which such building will give rise. While private or external capital may be found for new projects, running expenses are usually charged to the public budgets. This dynamic approach is reflected by the recent rationalization of budgetary options,[1] by which it is possible to define at the outset the targets and due dates of expenditures, together with the time schedule of resources.

It is with the twofold intention of proposing as broad a concept as possible of educational resources and costs, and of envisaging continuous and programmed financing, that this chapter will inventory these resources and costs.

Measuring the available resources

Diversity of resources

These may be broken down by geographic origin (national or external) or by

1. For example, the Planning Programming Budgetary System (PPBS).

origin of sector (public or private). While national and external public resources and part of national private resources can be posted in accounts because they involve transfers of money, another and not inconsiderable part of private resources cannot be, because it comes either from the actual resources of families or from contributions (in cash, kind or services) which, by reason of their non-monetary nature, are unsuited for inclusion in a budget.

National public resources. The present trend is towards centralization. An over-all tax is spent impartially on education, health, national defence. Although certain countries have a special tax for education, which would seem to be useful in the most backward ones in order to give the public a better understanding of the role of taxation, this practice is not generally recommended, as it leads to administrative complications without necessarily affecting the limits of assessable income.

The public resources available to education are included in a large number of budgets (central or federal, provincial and municipal) and can come from national and local taxes and possibly from transfers from one administrative level to another. Even so, a distinction must be made between various chapters in these budgets: first of all there is the chapter concerned with the ministry of education, although it has items under what is called cultural or collective expenditure unconnected with educational activities in the strict sense; after that come the chapters of the technical ministries (ministry of public works for school buildings and transport; ministry of health for the training of hospital nurses, midwives and laboratory assistants, for health and school meals; ministry of labour for accelerated vocational training; ministry of youth and sports for the training of group leaders; ministry of agriculture for the training of technical agents, etc.). These are training expenses, but it is important not to overlook that part of the State's common expenses which is of indirect benefit to education, such as overheads (electricity, telephone, transport, etc.). The total of pensions paid by the State to national education officials must also be accurately known. The budgets further include the various transfers or grants to multinational foundations and international bodies.

A number of activities of benefit to education may draw their resources from accounts opened in the Treasury or in public banks and are not shown in the budget. This sometimes happens with the proceeds of a loan administered by a national development bank. It happens in some countries where anti-unemployment funds are used to build schools.

There are more or less self-governing concerns, offices. State-controlled businesses and all national monopolies (postal service, telephones, railways) or else entirely self-governing bodies (share-issuing societies having the State as majority shareholder) which give vocational training. The State's national education resources also include the mobilized resources of all activities having an educational impact (radio and television, for example).

To the above must be added the actual funds of public educational institutions, sale or hire of goods or services.

National private resources. Family contributions to education certainly play an important role which it is not easy to quantify, but the contribution to the cost of schooling can be determined by evaluating the proportion of the family budget spent on equipping the student. In the countryside, family contributions may take the form of aiding the teacher by supplying food (as is sometimes done in school canteens) or giving voluntary assistance in building or improving the school.

In many countries, the State assumes responsibility for a considerable part of private school expenditure. These transfers are known and frequently appear in budgets in the form of grants. Some countries pay all or part of the salaries of private school-teachers. In general the income of private institutions can be estimated only on the basis of what is collected in school fees.

In many States, private concerns are obliged to contribute to vocational training. They can do this by paying a tax, but they may prefer to organize their own system of training. The total tax collected is known, but it is a more difficult matter to evaluate the cost of training, which may have no equivalent in the country.

External resources. External financing resources are constituted by international or bilateral aid in various forms: capital, school supplies or textbooks; scholarships for training at home or abroad; technical assistance (teachers or educational experts); in certain instances the acceptance of responsibility for certain recurrent costs.

The difficulty of accurately evaluating the cost of education

The diversity of sources, the varied forms which financing can assume, and the dispersion of the points of application render evaluation of the cost of education difficult and imprecise.

State financing. Budgets normally show estimated expenditure, which is frequently modified by supplementary budgets (prepared particularly in developing countries in the light of fiscal returns). Funds may be transferred during implementation of the budget, and they are frequently cancelled at the end of the financial year. Some States, on the other hand, carry over funds from one financial year to another, particularly in the case of capital expenditure. Lastly, funds are transferred by the national or federal authorities to states or provinces which in turn can transfer to the municipalities. Further, the fact that the budget item headings (based on annually established concepts) are frequently inappropriate for planning (which would require concepts based on projects phased in time) makes it particularly difficult to estimate costs.

Nor should we forget extra-budgetary financing, special allocations, funds, etc. While it is possible to be fairly accurate in calculating the expenses earmarked for the educational work of certain State agencies, such as the post and telecommunications office, the savings bank and social security, it is often far from easy to determine the real proportion of education dispensed by such mass means

of communication as radio and television. Finally, costs should, ideally, include the medical or social services provided by the schools.

In conclusion, mention must be made of the problem of amortizing investment costs (building or equipment). In private accounting it is common practice to enter the cost of 'devalorization' or 'amortization', or even the fictitious rent of a building. The corresponding sums paid into a special fund make it possible, at the end of the customary period, to build a new building. Contrary to an economic concept requiring amortization to be calculated, the total investment is entered once and for all in the public accounts and never referred to in subsequent budgets. In theory, failure to amortize distorts the calculation of real total cost; in practice it is difficult to introduce depreciation and amortization into educational expenditure as long as other sectors of public administration fail to do likewise. There would, in fact, be a danger of distorting—to the detriment of education—the comparison with the cost and yield of the other sectors. This is one of the problems which add to the difficulty of accurately appraising total educational costs.

The role of the private sector. In general, little is known about the expenditure of private organizations. It is evaluated by deducting any State grants-in-aid from what public education of the same type would cost. The financing of business concerns is better known in countries which levy an apprenticeship tax. Family contributions can be estimated in part on the basis of what a family spends on school fees, school supplies, full or partial board for pupils not in receipt of scholarships, and specific pupils' equipment (special school clothes, sports equipment, musical instruments, etc.).

Lastly, there exists an economic concept which cannot really be quantified, but which has an undoubted theoretical importance: earnings foregone. Its importance cannot be evaluated realistically, but it is certain that in essentially agricultural countries with a low rate of population increase, the traditional sector is deprived of part of its labour by school attendance.

External aid. In some countries, accurate accounting of aid per sector is not easy, owing to the diversity of sources and forms of aid, as well as to a certain diplomatic competition. The exact total of international aid is generally known, but bilateral aid (sometimes very considerable and varied) rather less so. In principle, the receiving countries in turn contribute something, or offer some counterpart. They frequently grant tax abatement or exemption. This makes it difficult to evaluate the cost of aid, in regard to which we may consider the 'real cost' (charged to both giver and receiver) or else the cost charged to the receiver alone.

Ratio between resources earmarked for education and a number of economic variables

It would be interesting to compare the total resources earmarked to education with the GNP, but, as we saw, little is known about total resources; further

in countries still at the stage of a subsistence economy, GNP is often very crudely estimated; its calculation varies substantially as between countries with a liberal economy and Socialist countries.

The ratio educational budget/GNP evades the first of the difficulties mentioned, but the items in the budget may vary considerably from one country to another and, within one country, from one period to another, or from one zone to another. The simplest ratio, and the one most commonly used, is that which exists between the educational budget and the total budget. Other interesting ratios are: educational budget to total public social expenditures; educational expenditure *per capita*, per child of school age, etc.

Comparisons between different countries and between different periods

The various ratios just mentioned make it possible to make comparisons in space and time which—were they accurate enough—would give useful information concerning what can and ought to be done in a given situation.

Several authorities[1] have noted a very close correlation between *per capita* educational expenditure and the national revenue or *per capita* gross domestic product, so that an international comparison may here refer to what is spent on education at a certain level of development, without any normative value being involved. The comparison is particularly interesting in the case of countries at the same level of economic development and possessing similar educational structures. It is less reliable when made with a more developed country serving as a model. In any event it requires comparable prices and exchange rates.

The method of comparisons over a time for one country (time series analysis) makes it possible to learn the rate of growth of educational expenditures, in isolation or in relation to other data (GNP, etc.). In particular, it shows the high degree of elasticity of educational expenditure.[2] This technique requires the use of 'real' prices, hence the use of 'deflators' based on items of expenditure peculiar to education: salaries, supplies, buildings, etc.[3]

Without altogether abandoning the various methods of comparison, the experts are apparently tending at present to use them with great caution.[4]

1. F. Edding, *Internationale Tendenzen in der Entwicklung des Ausgaben für Schulen und Hochschulen*, Kiel, 1958; D. Blot and M. Debeauvais, 'Les Dépenses de l'Education dans le Monde', *Tiers-Monde*, April-June 1965.
2. S. Sacks, 'Historical Trends and Present Patterns in Educational Expenditure: Constraints on Planning for Education in Developed Nations', *The World Year Book of Education*, London, 1967.
3. J. Vaizey, *The Economies of Education*, New York, 1962.
4. M. Woodhall, *Report of the Seminar on Strategies for Implementing Educational Plans*, p. 10, London, 1968.

Classification of expenditures; balancing of expenditures; presentation of the budget

Analysis of expenditures

To analyse past expenditures and forecast future ones, they should be broken down into a certain number of categories: investment and current expenses; levels of education (primary, secondary, higher, adult, etc.); types of education (general, academic, scientific, technical, etc.); items of expenditure (teachers' salaries, overheads, buildings, equipment, etc.); public sector and private sector; geographic distribution. The figures obtained for the various categories will of course have to be cross-checked.

Balancing of expenditure

These analyses and cross-checks are particularly useful for maintaining a proper balance between the various categories of expenditure, and for avoiding bottle-necks.

Certain investment costs (organizing a system of educational television) may in the long run reduce total current costs, but, to begin with, almost all investment implies additional current costs, such as new wages, maintenance expenses, interest payments, etc. To build new schools and train new teachers without making allowance for the impact of such investment on current expenses may give rise to critical situations. Experience shows that this preoccupation is not unjustified. In many countries current expenses are unconnected with investment costs and separate decisions may be taken concerning them by different services or ministries. For instance, when investment costs and, in particular, expenditures for building schools, are financed by external aid, it may happen that the investment agreed upon is included in the plan, but that concomitant current expenses are not budgeted. It may also happen that such investment is not included in the plan. In both cases its execution cannot be assured or else it is effected to the detriment of other investment which might rate a higher priority.

Financial bottle-necks may occur in the implementation of the plan.[1] The funds needed for wages and salaries have frequently to be readjusted to the cost of living and in response to trade-union pressure. If no allowance has been made for such increases, they have to be paid by cutting down unduly some other current expenditures. The funds needed for maintenance of educational equipment are often overlooked. Credits for the maintenance of school buildings and the maintenance or renewal of scientific equipment should be included in the budget.

The administration of education must increase as the educational system

1. P. H. Coombs, *The World Educational Crisis—A Systems Analysis*, Oxford University Press, 1968.

grows. Too small an administrative staff may seriously hamper the implementation of a plan. Research, experiment and the introduction of innovations are rarely given their due importance in the budget. The funds needed for the success of an experiment and for the testing of an innovation must be included in the budget estimates and they must be given a preferential treatment.

Presentation of the budget

Traditionally the intention of a budget is to make certain that the costs approved by the competent authorities are spent according to the law and that no sum will be diverted from its original purpose; but a budget is often drawn up in a vague, general way, reflecting more the traditional rote of public finance than the needs of the sector with which it is concerned. Education more than any other sector lends itself—thanks to the non-specific terms of its budget—to outside pressure which modifies the original provisions of the plan. It is consequently necessary to have more functional budgets which are concerned not only with control but also with implementation.

A programmed budget, instead of having the usual chapters of expenditure (wages, equipment, overheads, etc.) is divided into projects which are clearly defined in 'physical' and 'financial' terms. A programmed budget makes it possible to see whether financing is really keeping pace with the proclaimed targets and priorities, and to estimate accurately the cost of attaining a set objective.

If a programmed budget may occasionally query the justifiability of continuing some programmes, that is because it is not self-evident that the continuation of past activities must always be given absolute priority. It is in any case possible to ear-mark programmed budgets for innovation and for special projects, and at the same time have a traditional budget for continuous activities. The traditional budget and the programmed budget need not be mutually exclusive. The planning programming budgeting system which is now coming into use (in particular for the United Nations Development Programme) extends the programmed budget presentation over several years. It is a strategic programme, a major programme, concerned especially with continuity in innovation.

Whether a budget is traditional or programmed, it seems necessary to encourage unification of the educational budget and to consolidate all educational activities, including out-of-school education: if the budget is broken up in fragments, it is impossible to administer it properly and to evaluate its impact.

Optimum use of resources and the quest for new resources

Mention was made earlier, in Part I, Chapter 5, of the financing prospects for education in the years to come. If traditional resources are limited, it is necessary to make the most of existing resources and to look for all possible new resources.

Educational output

The application of the notion of output to education, which a few years ago still seemed to many to be sacrilegious, is now becoming more and more generally accepted. However, distinction has to be made between internal output, which is concerned with the efficiency of the educational system, its ability to reach its own tragets, and external output, which is concerned with the adaptation of education to the aims of society.

This distinction gave rise to lively discussion at the London Seminar.[1] Some would like to reserve the word 'output' for external output and speak of 'productivity' for internal output. Others prefer 'productivity' for internal output and 'fitness' (adaptation or adjustment) for external output. Some find the distinction absurd. For them it is impossible to imagine that the aims of education should be separate from the aims of society, and so external output and internal output are one and the same thing. For want of anything better, use will be made here of the expressions internal and external output, which are at any rate convenient.

Measuring the external output of education

Calculating external output is generally limited to the contribution of education to economic development, and it is in this sense of the term that U.S.S.R. economists (Strumilin in particular) studied the question between the two world wars. Since then a great number of studies have been made on this subject. Only the best-known methods will be briefly mentioned here.

The cost-benefit approach compares the total resource costs of education with the economic benefits obtained from education.[2] It is possible in this way to arrive at an output ratio which may, in turn, be compared with the output ratio of other expenditures (industrial equipment, communications, health, etc.). In theory this analysis should indicate the optimal level of educational expenditure towards economic development.[3] In practice numerous difficulties are met with in this method. As we have seen, it is far from easy to measure the total cost of education; differences in income between two individuals may be due to education or to other factors which possess a high coefficient of correlation with education (natural gifts, education and the social standing of parents, relations, etc.). In addition, education brings people advantages which cannot be reckoned in terms of income.

1. *Report of the London Seminar*, op. cit., p. 10.
2. See: Theodore W. Schultz, *The Economic Value of Education*, New York and London, 1963. Examples of cost-benefit analyses for education are now available for many countries and regions, including Israel, Latin America, Uganda, the United Kingdom, the United States. See, for example: Gary S. Becker, *Human Capital: A Theoretical and Empirical Analysis, with Special Reference to Education*, New York and London, 1964, and the Symposium in *Journal of Human Resources*, summer 1967, which includes estimates of the returns to education in India, Latin America, the United Kingdom and the United States.
3. M. Blaug, *A Cost Benefit Approach to Educational Planning in Developing Countries*, Washington, 1967.

It is still more difficult and hazardous to measure the benefit of education to society as a whole. Differences in income levels may be caused by many things which have nothing to do with education or the formation of manpower, such as the scarcity of labour supply in some sectors of activity, social attitudes, or salary taxing laws, etc. Finally, calculating benefits on the basis of differences of income is apt to draw attention away from all the indirect benefits in the economic but non-monetary field or the social or cultural fields.

The residual factor method[1] is based on recognition that the increase in the national product over a given period cannot be entirely explained by the increase of capital and labour. Part of it may be due to a 'residue', a complex of variables which include the effects of education, research, better management, specialization, technical progress in general. An attempt has therefore been made to calculate the role of education in the 'residual factor' and consequently in economic development. This method meets with difficulties both theoretical (value of the hypothesis of 'perfect competition') and practical (impossibility of entirely isolating the share of education in the residual factor).

Mention must also be made of the international comparisons of Correa and Tinbergen,[2] which are intended essentially for estimating manpower and educational requirements, but also make it possible to measure the external output of education.

Interesting as these methods are in theory, in practice they are little used; yet the evaluation of the external output of education is a crucial point in planning. It is a matter of urgency to find simpler and less precarious methods, suited particularly to the varying conditions of the different countries.

Measuring the internal output of education

It is somewhat easier to estimate the internal output of education, although the crucial problem is to measure educational quality. The relationship between output and inputs can then be analysed. The method normally used is that of analysis of unit costs.[3] There are various bases of calculation.

The unit cost per pupil is very useful in preparing the educational plan, but must be used for calculating real past output with caution; unit costs vary considerably from one country to another.[4] For a comparison to be possible, it would first of all be necessary for the rates of exchange to correspond to reality, and also for the various costs to include the same components. A lower cost may signify

1. Edward F. Denison, *The Sources of Economic Growth and the Alternatives before Us*, New York, 1962; *The Residual Factor of Economic Growth*, OECD, 1964.
2. H. Correa and J. Tinbergen, *Quantitative Adaptation of Education to Accelerated Growth*; this subject has also been treated in various studies by OECD (*Econometric Models in Education*, 1965) and by the Economic Institute of the Netherlands.
3. See: F. Edding, *Methods of Analysing Educational Outlay*, Paris, Unesco, 1966.
4. The 1961 unit cost per primary school pupil ranged from U.S.$10.80 (India) to U.S.$359 (Sweden).

a better use of funds, but it may also be due to too high a ratio between pupils and teacher, to the inferior qualifications of the teachers, to considerable differences in teachers' salaries, to a lack of minimum equipment, to an absence of ancillary services (textbooks, canteens, health). There is no proof at first sight that a very low cost is equivalent to poor quality and a high cost to better quality.

The unit cost per graduate is apparently more attentive to efficiency, but the assumption here is that the only aim of the educational system is to turn out holders of diplomas. This is not quite accurate, as the 'unfinished products' of education are not without their value; a child leaving school before completing his studies has not for that reason wasted all the time he has spent in class.

The unit cost of education per producer would be by far the most interesting method, were it not extremely difficult to calculate.

Of particular use would be the comparative costs of various educational systems. In recent years, studies have been carried out to determine the optimal size of a secondary school or university with a view to arriving at the minimum cost.[1] These studies tend to show that small institutions generally cost more; but such studies are based on current practice; there seems no proof that severely standardized small institutions are necessarily less economical. In addition, the calculations leave out purely educational considerations.

Studies of the costs of certain forms of innovation (television, programmed instruction) compared with that of traditional methods are absolutely necessary. A start has been made, for instance in the IIEP study of new educational media;[2] but as yet nothing exists which can be directly used.

Increasing output

What is particularly important, while trying to develop and determine methods of measuring educational output, is to increase output, and to do so now. The question was examined in detail in Part II. The solutions proposed merge into a twofold concept: (a) education must not be confined to school, but on the contrary the school must be integrated in a global system of lifelong education; (b) curricula reflecting the priority needs of the individual and of society must be worked out in terms of the educational targets for the various stages of life. In this way the concept of the school-trained child, adolescent or adult assumes a meaning.

A brief reference will be made to a few of the solutions most commonly envisaged: to encourage teachers' productivity (promotion by merit, teamwork, division of tasks), so as to obtain an optimal ratio of 'trained' pupils per teacher; to develop self-education (programmed instruction, language laboratories, etc.), to encourage pupils to work in groups and to adapt to education the latest

1. Central Office of Statistics (Netherlands), *Schoolgrootte en Kosten bij het VHMO 1958*, Zeist, 1961; Economic Institute of the Netherlands, *The Financing of Higher Education in Africa*, Rotterdam, 1962.
2. Unesco/IIEP, *The New Media: Memo to Educational Planners*, Paris, 1967.

techniques of communication (television, radio, long-distance communications, etc.); to reduce the unit cost of educational buildings[1] and equipment (standardization, local materials, mass production, etc.); to ensure the full use of premises and equipment and to modernize services for the purchase, storage and issue of school supplies; to apply the principle of 'economics of scale', to regroup schools that are too small, to standardize the size of institutions and curricula in conjunction with the full-time employment of staff and equipment (in several neighbouring institutions to pool the most costly installations and specialized teachers and, in a group of neighbouring States, certain university or research programmes).

Mobilization of resources

The absolute need to improve the utilization of resources does not, however, rule out looking for new resources and increasing existing ones.

Greater individual participation in educational expenditure. Even in developing countries, some families voluntarily assume additional educational expenses (private lessons, study abroad, etc.). Would it not be possible, wherever private consumption rises appreciably, to charge it something to relieve State expenditure on education? The Regional Seminar on Investment in Education in Latin America (Santiago, 1966) proposed 'the payment for educational services in public schools in proportion to family income, beyond the level of compulsory education . . .' and 'the setting up of mixed economy schools'. In countries still at the stage of a subsistence economy, private citizens frequently continue to take part in building schools by supplying materials or labour. Should this practice not be generalized? Some countries call for volunteers; others offer young people the possibility of doing educational work instead of military service. Are such experiments not worth evaluating, studying and possibly extending? In terms of economic theory, voluntary services and contributions in kind, even if they do not imply monetary expenditure, are part of the 'real economic cost' of education. But if, theoretically, these resources could have been utilized in other sectors of development, practically they often constitute true supplementary resources which would not have existed without this specific motivation.

Self-financing of school institutions. The self-financing of technical, agricultural and handicraft schools has long been a subject of controversy. Everybody agrees that the mass production of certain particularly special items would be anti-educational. On the other hand, production is a powerful factor in motivation, as well as a guarantee against the over-academic in technical education. Certain countries, the United Arab Republic in particular, apparently practise successful

1. See the CONESCAL study: *Cost Analysis and Space Utilization in Secondary Schools*, Mexico, 1966.

self-financing in the vocational schools. Even should the products not be offered on the market, we can imagine that all forms of technical and vocational education are active on behalf of education (building of schools, production of equipment, victualling of boarding schools, etc.).

Increased participation of employers. In many countries, especially in Latin America, industrial and commercial firms finance vocational training programmes linked with general education. In so far as such training is closely dependent upon the qualitative and quantitative needs of the employer, the cost involved is entirely borne by the firm. It would be possible to extend this practice and also to adapt it to the agricultural sector, where industrial plantations, agricultural credit organizations, land reform agricultural extension services, etc., would probably wish to define the training curriculum of their future senior and junior employees, and would in that case be prepared to assume the financial expense involved.

Increase in actual State expenditure. This solution should not be excluded. Countries, for example, devoting to education a fraction of their GNP below the average of those with a comparable level of production might reasonably increase expenditure. Where educational expenditure is considerably above that average, there is room for political options. It is at all times desirable, for instance, to transfer to the education of children part of the expenditure on armaments. The increase in educational needs may one day force certain countries to face the question of effecting such transfers.

Place and problems of external aid

Scope and nature of external aid in the field of education

The volume of aid given from the most developed countries to the developing ones in the field of education is considerable. Developed countries have over 100,000 teachers or educational experts in developing countries and they grant, every year, some 20,000 fellowships for studies abroad. Combined bilateral, multilateral and international aid in the field of education amounts approximately to $1,000 million per year, 15 per cent of which comes from international agencies. The total aid represents about 12 per cent of expenditures on education in developing countries.

The relatively modest targets that developing countries of Africa, Latin America and Asia have set in past regional conferences for their educational development imply that educational expenditures in 1970 should exceed 1965 spendings by U.S.$4,000 million, that is four times the total amount of external aid provided now! In view of the limited domestic resources, it is expected that demand for aid will grow significantly. The main problem of external aid is, therefore, the obvious need for a considerable increase.

Aid may take many forms: financial (grants, loans, credits, etc.); material (buildings, equipment, furniture, supplies, etc.); human (teaching and administrative personnel, fellowships, etc.); advisory (experts, seminars, conferences); it may be offered for investments or for payment of current expenditures; it can be occasional or be committed for a number of years.[1] Different strategies of aid are appropriate to different levels of development; one country would need expatriate professors in order to fill urgently a gap; for another it would be more suitable to receive training facilities for national teachers; similarly, equipment might be right for one country while assistance to develop an industry capable of manufacturing this equipment at home would be more profitable for another.[2] The London Seminar (January 1968) felt that types of aid needed—or given—should be introduced in an economic or educational typology.

Impact of external aid; distortions introduced by external aid and how to avoid them

The usefulness of external aid can be out of proportion to its amount. Aid in certain countries, particularly in Africa, enabled secondary and higher education to establish itself and operate for its initial years where local resources would have been incapable of meeting either capital costs for new constructions and wages of expatriate professors, or the demand for teaching staff at those levels. A top-level expert, working closely with his national counterpart, can have an enormous influence on the modernization of the educational system and its adaptation to the needs of social and economic development. Similarly, soundly conceived, effectively administered and carefully integrated with a country's national system of education, a grant or a loan can do much to break down the archaic nature of many existing systems of education. As particular projects become taken for granted they exercise a kind of multiplying force in promoting a positive demonstration of the advantages of modernization in school buildings, equipment, new teaching media and the training of teachers. Should not, therefore, educational assistance projects be drawn up with a view, not only to their immediate consequences, but to the positive impact they may have in modernizing the whole system?

Therefore, the quality of aid, the selection of projects have as much importance as the volume of aid. But aid can also be disruptive. An institution created and sustained with great financial means by external aid can set standards which are impossible to generalize with limited national resources. Similarly, institutions launched with external capital investment can generate current expenditures which the national budget is not in a position to sustain; even more dangerous

1. For an example of breakdown of external aid, see: OECD, *Survey of the Scope and Nature of Existing Programmes of Educational Assistance*, Meeting of Development Assistance Committee, Paris, 3-5 April 1968, p. 3-6 (document DAC (68) 8). Technical assistance represents about 60 per cent of educational aid from OECD Member States.
2. M. Woodhall, *Report of the Seminar on Strategies for Implementing Educational Plans*, p. 12, London, 1968.

are current expenditures sustained by external aid and which are liable to be suppressed when the aid ceases.

Donors are often interested in giving a specific type of aid, along with well-defined conditions; the recipient country might, for the sake of not losing the aid, accept or request assistance for institutions or services not foreseen in the national plan of education, or even in contradiction with the plan. Such aid is not only useless but can jeopardize the plan of educational development. Aid could become expensive if it forces the recipient country to spend money on goods or services supplied by the donor country at a price much higher than similar goods or services (although not necessarily of the same standards) available locally. Finally, loans if they are close to commercial terms can be prohibitive for the recipient country, which finds itself with an increasing share of its domestic resources being devoted to the servicing of external debt, while credits calling for counterpart investment outlay may upset the delicate balance of the locally generated investments plan in education by altering priorities.

Disruption is all the more easy because of the fact that assistance, in the field of education, is often of a very scattered nature, and can be of practically any amount: a loan of several million dollars or one fellowship, the building of a new faculty of science or a token gift of books. Therefore, assistance for education to a given country comes often from a quantity of sources: international, regional, national, religious, private, etc.

Disruption which might be produced by inadequate aid reflects either the absence or the ineffectiveness of an educational plan. For the recipient country, a well-prepared and detailed plan is one major guarantee that external aid, integrated in the plan, will serve national targets and respect national priorities. Planning, in this case, is a guarantee of independence. For the donor country the plan's realism, its usefulness in terms of general development, is an indication that its assistance will be profitable, and in fact donors seem more inclined to give assistance when such plans exist. 'To get the best results out of this haphazard and piecemeal process of giving foreign aid it is necessary to harmonize and rationalize';[1] one possibility for harmonization of the different sources of aid and their integration in the national plan of education could lie in the creation, by the recipient country, of consultative groups or consortia.

Reciprocity of aid: international co-operation

One too often assumes that aid is one-way traffic from developed to developing countries. It should certainly not be so in a matter like education, where cultural and moral values are as essential as the material or the financial means of diffusion; it is not, in fact, quite so yet. Experts and teachers sent to developing countries

1. Dr. P. N. Kirpal, 'Report on International Co-operation', International Conference on the World Crisis in Education (*Final Reports of the Conference Working Groups*, p. 24), Williamsburg (United States), 5-9 October 1967.

acquire an experience which is essential for a global understanding of the economic, social and cultural development of humanity and, therefore, of their own country's condition; good experts take as much from this experience as they give. This is specially true for educational planning and most of the existing experts have learned their trade in developing countries. On the other hand, an important number of educated expatriates from developing countries are settled in developed countries; this 'brain drain' is an involuntary perhaps but not the less important 'technical assistance'.[1] It should be noted, incidentally, that brain drain must be taken into account when forecasting training needs or calculating graduate unemployment and unit cost of employed graduates.

Can reciprocity be enlarged? Yes, if economically most developed countries become more and more conscious that economic progress is not everything and that they have something to learn (e.g. in cultural, psychological and moral fields) from the developing countries. It is, no doubt, difficult to devise precisely what sort of aid can be given and received in these fields, but no task, perhaps, is more urgent in order to attain a balanced and complete development of all mankind possibilities.

1. The disadvantages and benefits of brain drain for emigration countries are discussed in the London Seminar *Report*, p. 12, 13.

3 Training of educational planning staff

While it is agreed that all administrators and teachers, from the minister to the schoolmaster, are involved in one way or another in educational planning, we cannot talk simply of 'training planners'. With so many kinds of planner, it is necessary to consider the various types and levels of training.

In addition to this initial complication of the problem, there is the fact that planning is a new technique. Much, if not all, has still to be done. A system of continuous training must be worked out and incorporated in existing institutions —from primary education training college to the university. Teachers must be found, curricula drawn up, the rules for recruiting students defined, the rough lines of a career established. Furthermore, in view of immediate needs, regular training must for some time to come continue to be accompanied by emergency training.

To this end, it is necessary to give training absolute priority and to apply to it the planning methods which it will be called upon to teach.

Categories of staff to be trained: types and levels of training

To have an idea of what a system of continuous training could be, we shall start from the bottom (teachers and administrative employees) and proceed by stages to those at the top—the educational headquarters staff.[1]

Training teachers and administrative officials

There would be little hope of planning becoming a reality if those called upon to implement it, that is, the teachers, failed to understand the plan and declined

1. The following analysis is based on the conclusions of five recent meetings: the Simla Seminar, May 1966, organized by the Asian Institute for Educational Planning and Administration; the Beirut Seminar, September 1967, organized by the Arab States Centre for Educational Planning and Administration; study groups organized by the IIEP in July 1966 and July 1967; the London Seminar, January 1968, organized by the United Kingdom National Commission for Unesco.

to accept it. The importance of teacher training has been mentioned more than once in this work but obviously we must not wait for the teachers, at present totally ignorant of planning; to be trained before trying, with the inevitable risks, to make up for lost time. If we really want to plan education, the teachers must be trained from the start to act within the framework of a planned education.

The meetings organized in recent years to discuss training problems with reference to educational planning have all emphasized the need to introduce planning elements into the curricula of the teacher-training colleges and educational institutes. Planning is not necessarily an isolated subject, it could be incorporated —very definitely—with others: administration, pedagogy, psycho-pedagogy, history of education, teaching methods.

There is of course no question of teaching primary- and secondary-school teachers how to prepare the plan, but of telling them as much as is necessary about planning to enable them to do their work. Here are some suggestions submitted at the London Seminar:

General notions of the role of education in economic and social development; concept of educational output, its practical significance for teachers: analysis of past instances of resistance encountered by educational planning and innovation.

Explanation of the plan (currently being applied or in preparation), teaching of new school curricula, trying out new methods (single-teacher schools, programmed instruction, work in teams and associations of pupils, television, etc.).

Practical notions concerning the teachers' participation in preparing the plan (how to fill in a statistical questionnaire, reply to a survey, etc.) and evaluating it, school and vocational guidance for the children, information for the public.

These first general and practical notions should be examined thoroughly and developed in the specialization years of educational institutes or faculties, and in the various training courses of the future training-college professors, heads of institutions, inspectors and, in so far as they are not recruited from the preceding categories, administrators. If educational administrators are trained in an institute for general public administration, educational planning must be included in their curriculum. Some practical experience of teaching also seems essential.

Training of experts other than the planning unit experts

Besides administrators proper, there are a number of experts in the ministry of education: statisticians, school-building architects, etc. Wherever possible (particularly in the faculties of economics and institutes for over-all planning), it would be advisable to introduce into the preparation of these various specialities some ideas of educational planning carefully adapted to each of them. If not, training courses would have to be provided in the form, possibly, of specialized regional courses or of national courses, specialized or not, according to the status of the country.

Similar solutions may hold good for training or informing the various categories of experts outside the ministry of education: officials in charge of education sections in the technical ministries, manpower experts, etc.

Training of middle-level experts of the planning unit

The members of the planning unit constitute a special category of experts. They are not 'planners' since, except for the head of the unit, they normally take no part in strategic or technical decisions, these being the responsibility of the minister and his immediate collaborators (see below, 'Training of the educational "General Staff" '); but neither are they simply statisticians or economists or educators. They have specific tasks: staffing plans, forecasting of manpower needs expressed in terms of education, calculation of costs, construction of models, use of computers, drawing of the educational map, objective evaluation, preparation of surveys, organization of information and consultation, etc. These tasks call for special training of an essentially practical nature. It is obviously necessary for these experts to have some notion of the processes of development and of planning's contribution to development, but it is not essential for them to have a thorough knowledge of econometry or sociology; no one will ever ask them their views on the proportion of GNP to be assigned to education or on the balance which should exist between social demand and the needs of the economy. Their training is therefore essentially concerned with such planning tasks as will fall to them in practice.

In view of the size of the programme, training can hardly be for less than one year, and should normally last for two. It could be given in a faculty of education or, in the case of countries with no institutions of this type, at a regional centre.

Training of the educational 'General Staff'

In the chapter on administration, we saw that, if the controversial term of 'planner' really had to be used, it would be best applied to the minister and his immediate collaborators, the chiefs of the major departments at the ministry of education, and in particular to the head of the planning unit and the official responsible for the human resources section of the economic plan.

In many countries, the senior officials of certain public services are trained in institutions at post-graduate level: the national school of administration, the military staff college, etc. We may wonder whether it is not becoming essential nowadays for education to have a similar system for training its leaders, whether that would not be the surest way of guaranteeing the quality of top personnel, of encouraging the best elements and avoiding favouritism and a parallel recruitment which is always unfortunate for the profession.

Such training at top level would necessarily be long (two to three years). The curriculum, tending to turn specialists into generalists, would have to be very

wide-ranging (planning techniques, pedagogy, comparative education, economic development, statistics, sociology, political geography, cultural anthropology, foreign languages). The educational system would be very varied: lectures, practical exercises in planning, individual work, courses in all sorts of public and private institutions and business firms. Trainees would be selected by open competition from among administrators, teachers, manpower and development experts with a minimum of five to ten years' experience. Such an education would be possible at national level only in fairly large countries with highly developed universities. In the case of the others it would have to be given in regional centres.

Students attending courses at the staff colleges are not promoted to general rank on leaving, and not all of them become generals later on; but all generals have passed through the college. In the same way, graduates of the educational staff college would not all become departmental heads immediately, but after a time all heads and 'staff officers'[1] in education would be former students of the college.

Training of educational administration and planning teachers and of international experts

Selection should normally be from the preceding category. Training could be given in a very large university or an international planning institute.

The training of the teachers, like that of all university lecturers, would be based on original research. In addition to their technical knowledge, the international experts should have experience of education in several countries. It would be advisable for their training to include a solid programme of cultural anthropology, so as to enable them to integrate themselves in civilizations different from their own.

Information

Finally, stress must again be laid on the importance of programmes of information for politicians, the leaders in the various sectors of public and economic life, university circles, journalists, etc. One of the tasks of the specialized training institutes or, failing them, of the planning unit, is to organize seminars, symposia and round tables for that purpose.

Current problems of training for educational planning

The foregoing pages describe what the experts regard as a possible system of rational training. It is a target, but far from being a reality, and many problems are involved in the transition from today's situation to what is desirable.

1. This term was used by Professor F. Edding in the course of a study group concerned with the training of educational planning staff, IIEP, August 1966.

When a majority of developing countries decided over the last ten years to plan their education, most of them started from zero; everything had to be done and done quickly. It was therefore necessary to adopt emergency solutions. Foreign experts were called in; *ad hoc* regional seminars were organized (under the auspices of Unesco, OECD, OAS); after which the regional centres for planning and administration were founded and, finally, the IIEP, which organized courses lasting from two to ten months. Some universities and institutes introduced educational and planning courses. All this was improvised to meet the needs of the moment, in somewhat rudimentary fashion, entirely unplanned. What must be done now is to tidy up and proceed from a provisional to a permanent state of things.

Regular and emergency training

Training has hitherto consisted mainly of refresher courses for already existing officials. By July 1968, a total of 1,035 will have attended the courses given by the regional centres and the IIEP alone, and a considerable number have been trained in other institutions. The time seems to have come to organize regular and continuous training (from the primary-teacher training college to the higher educational institute) on behalf of a future and fully qualified staff. The regional centres, the IIEP and several universities have already begun to move in this direction. Nevertheless, the entire personnel of the planning units, to say nothing of the senior ranks of education, are far from trained. It will consequently be necessary to continue the refresher courses for some time to come. Continuing emergency training at the same time as regular training is being organized creates a situation which is not without complications, confusion and additional difficulties.

However, all is not amiss in this complicated situation. The fact that it began with refresher courses naturally directs the training of planning administrators and experts towards lifelong education, which is particularly necessary in such a field. What started as emergency refresher courses should become regular, periodical retraining. The system described above is, for that matter, an example of lifelong education, with alternating periods of professional experience and study.

Existing or nascent institutions

The majority of the most developed countries already possess training institutions. These may be extremely varied: a branch of a faculty of education, administration or political economy, a section of a public or private development institute (IEDES or IRFED), an *ad hoc* project (the PEP in California). A few developing countries, also, have their national training institutions: the Institute of Applied Psychology and Orientation of the University of Algiers, the Santiago Institute of Educational Administration, the Teheran Institute of Educational Planning and Administration

etc. Many others propose to open institutes of this kind, and it may be noted that UNDP (Special Fund) has included aid to similar institutions in its programme. In most cases, however, the developing countries have recourse to the regional centres, the IIEP and foreign institutions.

For all, the first problem is to strengthen and organize what exists, in such a way as to create a continuous and complete system of training. The regional centres and the IIEP, for instance, have tried to set up a training system at three levels:

At first level for the pre-service and in-service training of planning unit experts: this can be given either in national courses organized with the assistance of the regional centre (this formula seems to be growing increasingly popular[1]), or at the regional centre itself.

At second level for the training of the educational 'staff officers'; the regional centres inaugurated this type of training in 1967; the seminars of Simla (1966) and Beirut (1967) emphasized its importance.

At third level for the training of educational planning professors and international experts; in principle, it is given at the IIEP.

To the three successive levels should be added the specialized courses and seminars organized for various categories of experts (manpower, statistics, curricula, school buildings, etc.), representatives of other disciplines, politicians, etc.

Such a division is still no more than an ideal framework which will be set up gradually. As R. Lyons remarks: 'Any attempt to establish a rigid division of responsibility for different levels and types of training within the pool of available resources would seem inappropriate at this time . . .' and, for example, 'for some time regular interns' IIEP courses will be approximately equal to the senior course at the regional centres'.[2]

However, as was emphasized at the London Seminar,[3] it is necessary to arrive gradually and flexibly at a better 'co-ordination between various existing courses' at both national and international level; it would be most desirable to have equivalences—official or unofficial—between the levels of normal training, at any rate inside each region using the same centre.

At the same time as an increasing division of tasks, there should be 'a general upgrading of courses'.[3] The basic courses, hitherto given by the regional centres, should be increasingly at national level. The regional centres would then specialize in second-level courses, and the IIEP could be exclusively concerned with the international training at top level of professors and experts.

Training programmes and the teachers

In the early years, training was almost always much too theoretical, with the teaching of statistics, economics, comparative education—all very useful for

1. It has been tried out in Africa in particular, with marked success.
2. In the *Report of the London Seminar*, op. cit., p. 36.
3. ibid., p. 14.

educational planning—but nothing about drawing up a plan. This omission has gradually been made good. Everywhere practical exercises have now assumed considerable importance; two of the regional centres base their first-level course on an over-all exercise in preparing the plan, and the teaching is given with this in view.

The early courses placed too exclusive an emphasis on purely quantitative or economic aspects at the expense of content and methods and socio-cultural aspects. This imbalance was pointed out by the Simla and Beirut seminars and the two IIEP study groups. Here, as elsewhere, the education is worth what the teachers are worth. In the early years of improvisation, many 'professors of planning' had no direct experience of what they taught. While the situation has very definitely improved, it is still not altogether satisfactory.

There is clearly a tendency to upgrading. All the professors at the regional centres have a doctor's degree or are completing a thesis. It is necessary, however, to attract more university professors to the education and research side of educational planning. Only then will educational planning be able to enjoy full status in higher education and establish itself as a scientific discipline.

Selection of trainees; using them after training

The planning unit experts and the top ranks of education could be selected from among educators, general administrators or other categories of experts (statisticians, economists, etc.). Some participants in the London Seminar hold that it is impossible to administer or plan education without having had 'chalk under the fingernails'.[1] Others, on the contrary, think it desirable to attract men from other disciplines to educational planning. Without absolutely excluding candidates from outside, it may be noted that a large-scale parallel recruitment, by diminishing educators' chances of promotion in their own field, is hardly likely to be popular in teaching circles. In any case, candidates from outside should presumably have to do some teaching to become familiar with the realities of what they would plan or administer. It is also highly desirable that educators should have some experience outside education.

One major difficulty encountered by the regional centres and the IIEP lies in the extreme differences in the level of trainees. Developing countries are reluctant to be deprived for six months, a year or longer, of their best material, whose presence at home is needed for urgent tasks. Competition for qualified staff is keen in any case between the various sectors. It also happens that some of the trainees sent to the training centres and institutes are people whose presence there seems least useful: selection is the wrong way round; many others lack an adequate basic training. At the present time, the regional centres are tending to require a higher education diploma for access to first-level training.[2] It is also suggested by some that selection should be by national competitive examination.

1. Ibid., p. 15, 17.
2. Access to second level presupposes the first, and access to third level presupposes the second.

Member States sending trainees to the regional centres or the IIEP undertake to use them after training in a service concerned with planning. We have seen that this is not always done, far from it; while experts are so rare, a considerable number of them occupy positions unconnected with their training. This failure to use trained personnel may be due to several causes: inadequate practical training, defective selection, inappropriate salary scale, political or personal considerations.

The problem of the use to be made of personnel is linked to that of the diploma. The IIEP grants a diploma to trainees taking its ten-month course and the Beirut Centre proposes to issue one to trainees who have complied with certain conditions of attendance and have passed a final examination. There remains the question of how much this diploma is worth, of its being recognized by the national authorities, of its potential equivalence.

The planning of training courses

Once again planning is needed to resolve all these problems.

What must be done first is to follow the logical phases of the multiplying process, and consequently give absolute priority to teacher training and, before that, to the selection of those who train the teachers. That is the key to the whole system, and a mistake at this point jeopardizes the entire operation.

The future requirements of staff training then have to be evaluated. It is only natural that planning, which launched the idea of forecasting manpower requirements, should use its own methods on its own behalf. In 1966, Unesco's Department of Planning issued to its experts a practical guide to estimating requirements per country. A document submitted to the 1967 study group at the IIEP attempts a calculation for the whole world.[1]

The London Seminar suggested that the international conference should study the question and if necessary make recommendations in regard to it.[2] What is of primary importance is for all countries—or at any rate all countries in a single region—to agree on the categories of personnel to be trained and on the corresponding levels of training. After that each country should prepare a training plan showing which categories are to be trained nationally (hence the creation of specialized institutions and, consequently, the training of professors), and which are to be sent to courses abroad and at which level.

Training means expenditure to finance the foundation and administration of the national institutions, the scholarships for training abroad, and the possible upgrading of certain categories of salaries after training. These expenses are relatively modest compared with the cost of the entire educational plan, but they are priority matters. In fact, they are very often forgotten.

1. C. Malpica Faustor, *Future Requirements for Training in Educational Planning*, June 1967 (IIEP/SI 3/1).
2. *Report of the London Seminar*, op. cit., p. 15.

Certain expenditures can be covered by aid. Unesco, for example, may grant scholarships for educational planning. The United Nations Special Fund may grant aid to set up administration and planning institutes. Even so, such aid must be applied for in time (a year before the start of each biennium in the case of scholarships and several years ahead in the case of the Special Fund). In general, training must therefore be provided for in the long-term educational plan, and, where there is as yet no plan, a special long-term programme must be drawn up. That seems to be the starting-point for all planning.

If the educational plan is not to remain Utopian but to become a fact, it is important to determine the stages which will lead from the present situation to the desired goals. Planning is action phased in time. Without losing sight of later stages, we must pay particular attention to the first one; our resolution with regard to it, the attention we give it, is the proof of our sincerity and our determination to succeed.

It may seem that the first stage, and the first step taken in it, will be of minor importance compared with certain weighty problems whose urgency is obvious to all; but to give priority to tackling the biggest and, apparently, the most urgent, problems is the very negation of planning. Planning means, in fact, having the courage, if necessary, to keep certain pressing problems waiting and giving priority to measures which reason shows as lying at the base of all subsequent solutions.

Experience over the last ten years strongly suggests that, if education is to be planned, it is necessary above all to train or inform those who will be responsible for preparing and implementing the plan: experts in the planning office, but also the senior ranks of education, administrators, teachers. Until those responsible are in a position to rethink educational problems with a view to meeting the challenge of the modern world, until they have been trained accordingly or at any rate have collectively given these problems long and sincere thought, it is useless to suppose they can really be overcome. Of course, it is not possible to wait until such training and informing are fully terminated before going on to something else; but at any rate it is important to begin such training (and in particular plan how it will be given) before doing anything else. That is the first stage of planning, and therefore of educational development.