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ECONOMICS OF EDUCATION

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INTRODUCTION

"This is a challenging and exciting time to become involved in the study of problems in the economics of education, for old streams of thought are being reborn in modern garb and at the same time almost totally new conditions in today's world are stimulating us to new kinds of thinking. The new economics of education are thus a synthesis of important older elements in economics, a forging of new tools, an opening of fresh vistas, and also the ground on which sharp battles are waged among different schools of economists," Mary Jean Bowman.

There is a boisterous upsurge of educational activity all over the world, in both the developed and the developing countries which are engaged in ambitious new projects for education. Education is a difficult subject which is made more difficult to deal with if the complexities of analytical economics are to be avoided. In order to understand the multi-dimensional and multi-functional aspects of education, it is necessary but by no means sufficient to understand a few basic economic ideas.

The first idea to be understood is that the whole object of producing anything is either to consume it, or to use it for producing more things. It is difficult to make a sharp distinction because many things are consumed quickly in order to make something more durable to assist in further production. Coal burnt in a factory's power plant is consumed in order to make something else; if the factory makes chocolate, the coal is being used to make chocolate, which itself is almost immediately consumed; whereas if the factory makes farm tractors, the coal is being used to assist in increasing agricultural production. On the other hand, even the tractor is 'consumed' in the long run, due to wear and tear.

Education is the production of people able to use their brains and their muscles; people who are worn out after a certain time from the time of production. In Britain and other developed countries, the period is roughly fifty years; in less developed countries it may be very much less. But during their lives their skills may be consumed (as when one of them plays a piano which gives immediate pleasure), or used for further production (as when one of them makes a piano which will give pleasure to piano players for many years). Goods which are consumed quickly are called consumption goods; goods which are used for further production are called investment, or capital, goods. The word 'investment' can refer, when used in connection with education, to the consumption skills of the educated man and can be referred to as a social investment, but usually 'investment' in education means the production of skills which will assist further production, and it is in the latter sense that it is used here.

The second idea to be understood is that the more advanced a country is technologically, the more use is made of investment or capital goods. The phrase "highly capitalised industry" always carries the connotation that it is a highly developed industry, and it applies in the same manner to the whole country. If the first idea has been understood, it will be clear that there cannot be any investment unless the essential consumption goods, such as food, are first produced. When the community has arranged its food supply and has some spare energy, houses, roads, railways, schools, etc., can be built and called 'investment'. With the passage of time and increased prosperity, factories, machines, etc., find new investment. The material prosperity of a country can be measured by the proportion of its total output which is devoted to capital or investment goods. It is fairly obvious that once the process of

accumulating investment goods starts, and because these assist in further production, it is likely to continue at an accelerated pace, and the production of goods, of wealth, will also increase.

There are two main points to consider from the point of view of the educator. Firstly, as it is human beings who initiate and maintain the changes from which increasing investment results and as educated men are more likely to pioneer new ways, than uneducated, it is more likely that education plays a vital role in effecting the changes, rather than that the changes come first and result in a demand for educated men. Secondly, once the accumulation of capital gains momentum, however, there will be a demand for educated men able to operate the capital investment in industrial processes, and as the changes will continue during their lifetimes, men must be educated to a level beyond immediate needs. 'Investment in education' means putting money into education in anticipation that increase of prosperity will result from it, or, at least, that increased prosperity will require it.

The third idea to be understood, if an educator is to be a policy-maker, is that of the National Product or income. It is the total value of all goods produced and all services rendered. It can be gross or net. It is important when comparing one country with another to be sure that the same sort of figure is used for each. It is also important to realize changes in the value of money when comparing one period with another. To see how prosperous countries stand relatively to each other, the national product is divided by the total population to give per capita product or income.

Using these fundamental ideas, economists have for long recognised that the investment of resources in human beings by way of education is as important

as, and sometimes more important than, investment in buildings and machinery. Alfred Marshall, the Cambridge economist, in the early days of this century was writing:

"We may conclude then that the wisdom of expanding public and private funds on education is not to be measured by its direct fruits alone. It will be profitable as a mere investment to give the masses of the people much greater opportunities than they can generally avail themselves of. For by this means many, who would have died unknown, are enabled to get the start needed for bringing out their latent abilities. And the economic value of one great industrial genius is sufficient to cover the expenses of the education of a whole town; for one new idea, such as Bessemer's chief invention, adds as much to England's productive power as the labour of a hundred thousand men."

Pigon, a follower of Marshall, writing on "investment in the poor", said:

"There is reason to believe that the ordinary play of economic forces tends unduly to contract investment in the persons of the normal poor, with the result that the marginal return to resources invested in the poor and their children is higher than it would be if normal investments were made. There is a strong reason to believe that if a moderate amount of resources were transferred and invested in persons with regard to rendering them as efficient as possible, the rate of return yielded by those resources would much exceed the normal rate of interest on money invested in machinery."

But there is something much more interesting than the recognition that education is an investment in any country, and that in some countries there is



a serious under-investment in schools. The interesting fact relates to the proportion of a country's wealth which is devoted to education. Public education is the 'growth industry' today of the world. Education is the single largest enterprise in many economies and it is the one activity that in some way or at some time directly involves every single citizen.

The quantitative importance and significance of public education on the one hand, and the relative scarcity of our resources on the other are closely examined in this work. We cannot afford to make a mistake, nor can we afford to waste our scarce resources. It is equally important to maintain a fair balance between the competing demands for our resources by equating marginal costs and marginal returns. We need to keep a constant watch over changing situations and needs to ensure that education is adaptable, flexible and dynamic enough to meet these challenges.

In view of this great importance of education, I have first of all discussed the technique called "Cost-benefit" analysis, which has been used in many fields to appraise investments. - I have only used those aspects that can be used for investment appraisal in education. It is not a perfect technique, nor are all other techniques, but with minor changes and adaptations to suit different situations, it can provide a rough indication of the desirability or undesirability of any change. It is always better to have an appraisal technique if the objective is to get the most from our scarce resources. This technique is described and criticised in the first section.

Following this, I have looked at the role of education in economic development. In connection with this I have also examined the world literacy situation, the results of post-war experiences in development, the changes in

thoughts and ideologies as a result of these experiences. Then, as a result of these influences, to what extent the educational systems have changed, are changing to meet the new challenges of the economy.

Finally, I have examined the educational system of Malaysia with particular bias and emphasis on the importance of educational planning and its integration with man-power requirements of the economy. A planner faces many problems — social, political, economic, etc., and the choice he makes is the result of the interaction of all these constraints. It is a formidable task.

In conclusion, I wish to thank Mr. R.H.B. Condie, Senior lecturer in the Dept. of Industrial Engineering and Management, who supervised my work. Time is a scarce commodity and I have made great demands on his valuable time. I am indebted to him for all assistance and advice. My thanks are also due to the library staff of the University who took undue trouble to get me books, periodicals, etc., from other libraries; the Ministry of Education, Malaya, for some of the data; Mrs. J. Neal who took great pains to type, and finally all members of the staff of the Department of Industrial Engineering and Management, University of Loughborough, who have in some way contributed to my progress.

## COST-BENEFIT ANALYSIS

ISSUES "Economics is the Science which studies human behaviour as a relation between ends and scarce means which have alternative uses" - Lord Robbins. Most resources are limited and scarcity has always been a human problem. The problem of how to allocate scarce resources between competing claims is as old as Man himself - it is the classical problem of choice that forms the basis of economic reasoning. For various reasons the state has come to occupy an important role in the economic life of the community by its greater participation in all spheres of life, particularly the economic sector. The choice is no longer left to the complete private judgement of the individual citizen expressed through the mechanism of the market. The decision how much schooling or education a child should have is no longer made by the parents acting in isolation; the State intervenes at several points and by its policies influences the choices open to the parent. In addition, public authorities influence the market directly by their expenditure on education.

Expenditure on that branch of activity that is often described as social services exhibits some special characteristics. Because there is a long gestation period the benefits do not accrue immediately. Consequently the impact of investment in this branch of the productive process is relatively remote in time compared with, for example, investment in manufacturing. In addition this is the branch that most intimately affects the lives of men : decisions once implemented cannot be reversed without grave social cost. Again, the burden of this sector shows up less in the capital requirement than in the recurrent expenditures generated by the capital investment. The net recurrent needs - net of receipts from fees charged for services - constitute an important budgetary strain on the resources of the country.

The most striking characteristic is that the objectives of policy do not admit of a simple definition. In the more directly productive fields we can readily define the output. If we are proposing to invest in a steel factory we know the objective is to produce steel. We cannot define the output so readily in the social services branch. We can, of course,

say that the purpose of expenditure on health is to eradicate disease and suffering and thereby prolong life. The output thus can be said to be represented by the increase in life expectancy. For, except among a community of ascetics and saints who may deliberately cultivate martyrdom, we can assume that everyone likes to live longer and in good health. By contrast, the objectives of expenditure on education are multidimensional, and complications are introduced by the wide divergence between private and social goals.

A parent may finance the ducation of his child out of a desire to increase his child's income earning potential, or to give him a better opportunity for attaining a status and esteem in the society, or to indulge his love of knowledge for its own sake. In the newer countries, education may indeed open the door to power and influence as well as to material well-being. The parent has to make up his mind about how much to devote to the education of his children in the face of other claims or his resources.

The same problem is posed for society. Priorities in public expenditure are always difficult to decide upon;

expecially in a society such as British where so large a part of available resources is allocated not by the market mechanism but by the conscious decisions of Government. However, the philosophic basis of policy varies not only from time to time, between one generation and another, but also from one point to another in the educational pyramid. In a country in which only a handful of people are able to read and write, there may be a strong sense of social injustice in having the bulk of the population illiterate. The leaders of the country may decide that the most important task before them is, therefore, the reduction of illiteracy. There may be many who feel that the role of the public Authorities is merely to promote those conditions that will enable the educational system to produce men whose minds have become free. Or alternatively, the leaders may consider the most urgent problem to be the development of special skills. The goals set for the society have to be clearly defined before we can develop any meaningful criteria for public expenditure.

Any of these objectives can be pursued at any one time; they cannot all be pursued simultaneously. How in

these circumstances are we to weigh investments in roads against new hospitals and schools? How much should be spent on Urban renewal or on new towns? What should be spent on providing industrial research facilities and to which industries should it be aimed? And how do the returns which accrue from all these uses of funds compare with the advantages of simply allowing financed to find its way into private industry? The rôle of the economists is to choose that objective that will most enhance the rate of growth of the economy. In selecting the optimum he must recognise, however, that the wider the divergence between private and social objectives the stronger the possibility of Social protest in democratic policies. Once the optimum is chosen, the problems that remain are how to measure ~~it~~ and allocate the costs and returns, and how to rank and compare them with the costs and returns in alternative branches of activity.

John Vaizey in his "Economics of Education" examines four models for evaluating public expenditure on education and for answering the question: how much should be spent on education? He found the difficulty of establishing workable criteria in the difference in the character of expenditure on social as distinct

from the more directly productive investment. He concludes that no one has yet evolved a general criterion which which can be used to assess the usefulness of social outlays in comparison with those on productive investment. It is not surprising then that any method which promises to remove elements of hunch, guesswork and 'horse-trading' from the whole process of centralised allocation and which seemingly, can offer cold and calculated precision as a substitute should be hailed as a major breakthrough in economic planning techniques. Such a method it is claimed is afforded by "cost-benefit" analysis.

#### TIME STREAMS AND CRITERIA IN COST-BENEFIT ANALYSIS

It will be useful at this stage to examine time streams and criteria in Cost-Benefit Analysis to get a clear understanding of the cost-benefit technique as used in investment appraisal and choice of most economic investment.

The criteria what are available to assist us in discriminating between different investment projects are of two main types, which may be described as "amount of net return" criteria and "rate of return" criteria. Criteria of the first type tell us to



discriminate in favour of projects yielding large surpluses of benefit over cost. Criteria of the second type tell us to discriminate in favour of projects yielding surpluses of benefit over costs which are large in relation to the initial capital investments required.

Difficulties may arise in formulating criteria of both these types when, as is usually the case in practice, streams of benefits and costs spread out over time are involved. Clearly, different significance must be attached to benefits or costs of the same amount if they occur at different times. An investment of £100 which will yield a certain surplus of benefit over cost in two year's time is obviously not as good as an investment of £100 which will yield the same surplus in one year's time. When this kind of consideration is important, the technique usually adopted is to discount future amounts of benefit and cost at some chosen rate and thus convert each stream to its Present Value.

A sum of £100, lent out at 10% compound interest for 2 years, will yield £121 when the 2 years are up. Looking at this the other way round, we say that the Present Value of a sum of £121 due in two years time, if we take the discount rate as 10% is £100

In general terms, the present value of a sum of £x due in n years' time at a discount rate of 1%, is the same which if invested for n years at 1% compound interest would yield £x at the end of the period.

The three criteria whose use is most frequently advocated by cost-benefit analysts all make use of this kind of technique. The first of these criteria is an "amount of net return criterion," the second and third are "rate of net return" criteria.

A. PRESENT WORTH: This criterion tells us that in our choices of investments we should favour those with a high "Present Worth", the latter being defined as the present value of the stream of benefits minus the present value of the stream of costs. Consider the case of a project with a life of two years and the following cost-benefit characteristics.

	<u>Initial Capital</u>	<u>End of Yr. 1</u>	<u>End of Yr. 2</u>
Benefits		£220	£242
Costs	£100	<u>£110</u>	<u>£121</u>
Annual net Returns		£110	£121

Let us suppose that we decide that 10% is an appropriate rate of discount to use. On the benefits side, the present value of the year 1 benefits is £200, and the present value of the stream of benefits as a whole is £200 + £200 = £400. On the cost

side, (same as the expenditure itself), the present value of the year 1 costs is £100, and the present value of the year 2 costs is £100 : therefore the present value of the stream of costs as a whole is  $£100+£100+£100 = £300$ . The Present Worth of the investment defined as above is therefore  $£400 - £300 = £100$ . It will be clear the Present Worth might also have been defined as the amount by which the present value of the stream of annual net returns exceeds the initial capital expenditure.

B. Present Worth per Unit of Capital Investment: This criterion tells us that in our choices of projects we should favour those with a high present worth per unit of initial capital expenditure. In the example above, present worth per unit of Capital investment as a percentage, is obviously ~~£1~~ 100%.

C. Internal Rate of Return: This criterion tells us that in our choice of investments we should favour those with a high "internal rate of return". It is defined as the rate of discount which would make the present value of the project's benefits stream equal to the present value of its costs streams - i.e. the rate which would make the project's present worth zero. In other words, it is in effect the rate of discount which would make the present value of the stream of annual net returns equal to the initial capital expenditure.

In the above example, the "internal rate of return" will be the rate at which the stream of annual net returns (£110 at the end of year 1, and £121 at the end of year 2) would have to be discounted in order that its present value should be ~~xx~~ made equal to the initial capital expenditure of £100. In other words, looking at it round the other way, what we have to find is the rate of interest which would enable an investment of £100 to yield £110 in one year's time and £121 in two years' time. The rate of interest which would in fact do this in our example is near enough to 78%. £100 invested for one year at 78% would yield £178 at the end of the year. If we took £100 out of this, and invested the remaining £68 for a further year at 78% this would yield a shade under £121 at the end of the year. Thus the ~~initial~~ "internal rate of return" on the initial capital expenditure in our example is ~~£~~ 78%.

What is Cost-benefit? Cost-benefit analysis is a practical way of assessing the ~~x~~ desirability of projects, where it is important to take a long view - in the sense of looking at repercussions in the further, as well as in the near future - and a wide view - in the sense of allowing for side effects of many kinds on many persons, industries, regions, etc. In short, it means the enumeration and evaluation of all the relevant costs and benefits. This involves drawing on a variety of traditional sections of economic study - welfare economics, public finance, resource economics and trying to

weld these components into a coherent whole. It has been praised highly by many economists for its contribution. Peter Hall, the editor of 'Labour's New Frontiers' commended in it:

"We have begun to grope our way towards a practical concept of economic planning which may prove in a few years' time to be as revolutionary in its policy implications as was the Keynesian revolution in economics thirty years ago. It also originated, many years ago, with a Cambridge economist, Keynes (Contemporary Pigou. It is the concept of Social costs and benefits, Pigou pointed out that in Capitalist Society individual entrepreneurs consider only the items which feature in their own balance sheets. There are, however, others, which society must reckon with, though the entrepreneur does not. If a factory owners chimneys pollute the air, that is a social cost. If he builds a beautiful house for himself, and that improves the view, that is a social benefit. In both cases, society is not responsible, but it feels the effect. This leads to the revolutionary concept that we can actually add up the social costs and benefits, in money terms, by asking what value people would themselves put on them. We can then express them as rate of return on capital, as an ordinary capitalist would, and so determine our investment rationally, from the point of view of the community as a whole, just as the capitalist can now do from his private point of view."

The technique is regarded by Hall as being one of the Keys to economic advance which should be applied as a means of checking investment programmes and economic plans. Cost-benefit analysis has already been applied in several fields, most notably in water resource development, military planning, electric supply and transportation. In addition there has been much discussion about applications to public spending for education, health care, and other forms of investment in human capital. In the course of its application problems have arisen in these fields and methods have been developed to deal with them. It is not my intention to survey the whole field of cost-benefit analysis, and as I am concerned with its use and application in the field of education I am constricted to this framework.

The economic importance of expenditure on education rests not only on the significance of this service as used of national resources but on the contribution it can make to national well being and growth. The application of cost-benefit analysis can help to determine both the appropriate total expenditure on these services and the best allocation of these funds among competing projects and programmes. In the field of education cost-benefit analysis has not been used as a criteria for investment choice and decisions. I have indicated in my final section that investment in education is the result of a number of interacting forces. But a number of studies

have been carried out in the United States, United Kingdom and elsewhere using this technique to evaluate the contribution of education to the National Product. It is true that it is unwise to execute a project and then find justification by carrying by carrying out a cost-benefit analysis as it was done in the case of the M.1 Motorway. The purpose of cost-benefit analysis is not only to choose projects from a number of them but also to find out the most economical way of achieving the same objective. The cost-benefit studies in education are subject to a number of limitations and have been criticised for their deficiency in certain aspects but they do bring out principles that are necessary in carrying out a cost-benefit analysis. It will be better if I confine myself to those studies which might assist policy makers in choosing where and how to increase expenditure on education. These studies concentrate on the costs of education, including imputed earnings forgone and on those benefits of education which take the form of higher education.

Since it is often asserted that only a small fraction of national income is spent on education - using only expenditures through taxation - it is important to see a more complete summation of real costs. In this way, one obtains a fuller picture of the extent of the response of Contemporary Societies to the demands upon education arising out of economic and social changes in recent

decades. Even the estimates by T.W. Schultz are incomplete for they do not include the cost of training paid by industry; adult education programmes paid by fees, etc. The picture given here for the United States would be broadly similar, although the totals relative to income would probably be smaller, for other industrial nations.

Schultz begins his analysis by pointing out that between 1919 and 1957 the output of the American economy grew at a rate of 3 percent per annum, while the resources put into the economy expanded at the rate of only one percent annually. In questioning the accuracy of previous estimates of the inputs of 'human capital' he is led to a dissection of this important category. In tracing the trends during the past half century, he observes that today post elementary enrolments are nearly two-fifths of elementary enrolment, whereas in 1900 they were only about 6% as large. Obviously, the upper levels of schooling are much more costly, and the cost of teachers does not decline with greater volume, as does for example, the cost of television sets. He seeks, therefore, to estimate the human effort going into education in relation to the total labour force. Between 1900 and 1956, the share of teachers in the total labour force rose from 1.86 percent to 2.34 per cent, but the ratio of students beyond elementary school to the numbers in the labour force rose from 3.5 to 16.5 per cent.



Schultz also relates the cost of schooling to the national income and the cost of all resources used in education to the value physical capital used in the economy. In 1900, the total costs of elementary education were 58 per cent of all schooling costs, but by 1956 this lowest stage of schooling was accounting for only 27 per cent of total costs. Meanwhile over the same period, educational costs rose from 2.9 to 10.3 per cent of the total consumer incomes. The population was spending a larger share of its income flow on education, and to an increasing extent this spending was going to the more advanced levels of education.

In order to grasp the full indication of this picture of educational investment, it is helpful briefly to consider the items that make up the costs. A major cost is "foregone earnings", i.e. what student might have earned at going rates of pay if they had not chosen to attend school. He assumes that for elementary pupils this item is negligible. For high-school students in 1956, it is estimated that their foregone earnings for four years total \$3,408, as against direct school costs paid by those who finance the public or private Secondary Schools of only \$2,272. For four years the corresponding sums were \$7,788 and \$5,412; and for 3 years of graduate or professional study, they totalled \$5,841 and \$4,059.

But it is also necessary to take account of the growing numbers of Americans who have been attending school. Although it is difficult to measure the improved quality of a year of schooling today compared with 1900, it is possible to allow for the increase in number of days of school per year and the increased number of years attended by the average person. This equivalent school years measure - using 1940 as the base year - shows that the average number of the Labour force in 1900 had 4.14 years, while in 1957 the typical labourer had 10.45 years. Only a sixth of this schooling was obtained beyond the elementary level in 1900 while in 1957 three-tenths of it was.

Using the cost estimates, Schultz put a price on a typical year of schooling in 1900 and 1956. He then totalled the whole investment made in this way in 'human capital'. In 1900, the whole population aged 14 and more carried around in its persons an investment of \$114 billion; and in 1957, \$848 billion respectively. Hence in 1900, the human capital value of the labour force was 22 per cent of all productive capital, but in 1957 it had risen to 42 per cent of the total. Training or investment in human resources by education is clearly becoming a major form of investment in the modern type of economy.

Hausen, building on earlier writings by Miller, Schultz and others calculates internal money rates of return for successive stages of education. These rates of return are those which make the present value of the cost and return streams equal and are calculated both for social and for private money costs and returns. Social costs include:-

- a) School costs incurred by Society, i.e. teachers' salaries, supplies, interest and depreciation on capital.
- b) Opportunity costs incurred by individuals, namely income foregone during school attendance.
- c) Incidental school-related costs incurred by individuals e.g. books, travel, etc.

Private resource costs include the same three components except that in (a) above the tuition and fees paid by individuals are substituted for Society's costs which are normally defrayed through taxation.

Returns are estimated from cross section data of the incomes of individuals classified by age and education. The differences between the cross section income streams of people with varying levels of ~~xxx~~ education are attributed to the differences in educational levels. Before tax figures are taken as social returns and post tax figures as private returns

By postulating that these observed relationships will endure for half a century or so, and by adjusting <sup>for</sup> ~~the~~ the incidence of mortality, time streams of the extra incomes due to different levels of education are obtained. It may be noted, incidentally, that we are not only dealing with a very long pay-off period, but also with a situation where returns may be negative in the early years.

In the above studies we have only confirmed<sup>n</sup> to those benefits and costs which are subject to measuring rod of money. There are many benefits and costs which in Pigou's own words cannot be 'readily brought into ~~a~~ relation with the measuring rod of money'. He very clearly had grave doubts about the practicability of assessing the value of ~~money~~ many externalities and doubted whether his principle would ever be capable of strict quantitative application though he urged its importance as 'quantitative' guide to action in a few cases. Blaug, Bowman and Weisbrod and others have provided elegant accounts of some of the unmeasured benefits and costs with which I shall deal later.

#### CRITIQUE OF COST-BENEFIT ANALYSIS

The aim of cost-benefit analysis is to maximise the present value of all benefits less that of all costs, subject to certain constraints. In the study of cost-benefits we are confronted with several problems:

- a) which costs and which benefits are to be included?
- b) How are they to be valued?
- c) At what interest rate are they to be discounted?
- d) What are the relevant constraints?

The above studies of Schultz, Hansen, etc. must have raised certain doubts and the validity of certain assumptions must have been questioned. It is difficult to answer all the above questions satisfactorily due to the lack of sufficient data and the role of subjective elements. In the private sector it is possible to measure the costs and returns of alternative forms of investment. The cost of education is represented by the outlays in fees and other expenses or income foregone while at school; the returns are represented by increased earnings over the earning of those who have not had similar education. An important criticism of this method is that the differential earnings reflect partly differences in innate ability, parental background and other attributes as well as differences in education and training; they reflect too, the demand and supply positions for particular skills at that time and as seen in the foreseeable future. The existence of differential rewards for different aptitudes and skills is a universal phenomenon not explained fully by the differences in educational levels. Nevertheless, these calculations could serve as first approximations.

The return on the investment appropriately discounted can be compared with investment in other channels, and investment in education will be recommended as long as the return is higher than elsewhere.

When we come to deal with society at large we find that it <sup>be</sup> would/grossly inadequate simply to add up the private costs and returns. There is a wide difference between private costs and social costs of education. We have already referred to the components of private costs looked at from the point of view of the consumer of education. From the supplier's point of view, the costs include capital outlays for buildings, plant and equipment, outlays for maintenance, ages and salaries for staff - academic and administrative. For Society as a whole, however, the cost of education must be determined on the opportunity cost principle, i.e. the present and the future income foregone by virtue of the resources being devoted to education rather than to other production. In practice, the supplier's costs, appropriately discounted, would correspond more closely to the social cost than an aggregation of the cost to consumers.

It is therefore important that we specify what costs and returns we have in mind when we are speaking of the returns to investment in

education. The rate of return on investment in education will vary according to whether we use the consumer's or supplier's costs; it is likely to be higher when calculated on the consumer's costs than when calculated on the supplier's costs. Even then B.S.Becher's analysis suggests that direct returns to consumers cannot justify a large increase in expenditure on College education.

A question that arises is whether in the calculation of social cost we should follow Shultz in including income foregone by pupils while at school and in training. While this will be correct in theory and then only under an assumption of full employment, in practice there are reasons why it would be inappropriate to make such calculations in India or Africa where there is abundance of labour and high unemployment or disguised underemployment. First, for most pupils the alternative to remaining in school is idleness. In a regime of under employment it would certainly be incorrect to add to the social cost of training the income foregone by the pupils. Second, and more important, the data on costs of education are 'harder' than data on returns. It is important therefore that these data should not be diluted by large subjective imputations. Admittedly, the exclusion of income foregone would raise the rate of return on investment. Were we to add this figure, we would have to make subjective imputations on the return side and allow some

national figure for the acquisition of knowledge for its own sake. I think, it would be better if different weight is given to income foregone at different levels of education, and general economic environment too is considered.

The major difficulty is in the measurement of returns. We must evaluate the effect of education on the incomes not only of those receiving education but also others as well. We can, of course, aggregate the direct returns to the educated in terms of the increase in their income earning potential. This would be the same as assuming that all differential incomes are due to differences in educational level. But when we have done this, we have still left out the effect on the incomes of others. The dissemination of skills raises the productivity of investment generally and thus contributes to economic growth independently of the increase in the incomes of those directly concerned. An allowance will have to be made for this indirect contribution estimated by H. Correa to be between five and ten per cent of the rate of growth of output in the United States. In developing countries lack of historical data may make this calculation extremely difficult. I think that the contribution made by investment in education would be greater in a developing country where there is an acute shortage of qualified/skilled personnel but unlimited supply of unskilled labour. There is virtually little or no income foregone when in school, and under each qualified person there may be a large unskilled labour force, and the overall



productivity may be increased. But then the use of scarce resources in this direction may deprive the use of scarce resources in alternative more productive ways, especially because resources are very scarce in most developing countries. So the blind <sup>application</sup> ~~appreciation~~ of the results of the studies in Western countries in developing countries would only result in misallocation of their scarce resources which have other more competing needs. One has critically to assess the situation and modify the results to meet local needs and environment.

Once we are agreed on how ~~to~~ to measure costs and returns, what elements to include and which to exclude, the next serious problem is the choice of the discounted functions to use. Because of the nature of investment in human resources, the long gestation period, and, therefore, the futurity of the stream of costs and returns, it is important that any evaluation of costs and benefits be appropriately discounted. The rate of discount that would equalise the present value of the stream of returns with that of the stream of costs is compared to the interest rate on private funds, and investment is recommended if this rate is higher than the rate of interest. Because of the large element of public expenditure in the total outlay on educational, it would be inadvisable to relate the discount function to the rate of interest on private funds.

It should be possible in principle to partition the costs and returns between their public and private components. We could then choose different discount functions, one for the public expenditure and another for the private component. For the public expenditure and returns we should use the rate on public funds as the nearest approximation to the social time preference rate. An approximation would be the rate of interest on long term government bonds. It must be recognised that there is bound to be considerable asymmetry in this procedure. The major part of the cost is likely to be public while the major part of the identifiable benefits is likely to be private. Consequently, the use of different discount functions to find the present value of the costs and benefits is bound to distort the cost-benefit relations. This is all the more significant since those who plead for higher investment in education are bound to rest their case on the magnitude of the indirect benefits.

The main weaknesses of the attempts to use cost-benefits analysis as a guide to investment can now be summarised. Only direct benefits can be quantified with any degree of accuracy. The measurement of the social or indirect benefits is subject to imputations. One can argue that by introducing subjective valuations we impair the validity of the criteria so obtained; for

we can make the returns on investment as large ~~xx~~ or as little as we choose by adjusting the magnitude of the social benefits with different rates of discount. The cost-benefit approach can only serve as a rough indicator in the absence of any better alternative.

The above studies has concentrated on assessing the increased earning power of individuals as the result of reaching various defined levels of education; and it has been possible to show that over a given period in the past, an American with a High School of College education has earned sufficiently more than the average of the American incomes to yield a reasonable return on the money it took to pay for that education. John Vaizey in his 'Economics of Education' quotes estimates by Becher that for White Urban workers with high school education the return on educational costs, including income foregone, as 14.3 per cent in 1939,; and for College education from 1940 - 1955 the return was 12.5 per cent. The calculations so far made seem to have been related to educational levels rather than to types of education; they have tried to measure the comparative advantage of having been to a College rather than a school but not to the comparative advantage of having studied, say science or arts. Perhaps, this could be remedied by more detailed investigation on similar lines. The Robbins Committee stressed another difficulty of this approach which is less easily dealt with: Is it safe to

assume that the experience of the past will be repeated, in very different circumstances in the future? Sydney Caine casts a shadow of doubt by wonder whether a medical doctor who had a substantial earning power over the years 1920 to 1950, would have the same differential advantage between 1970 and 2000. The period from 1929 to 1957 was a period of rapid advance in productivity.

It would be most unwise and irresponsible to argue that findings that credit education with any particular contribution to growth in the United States or Japan or Russia could be transferred directly to any other country for any other period. It is evident that such measures must be interpreted with great care. We have to go further to get illumination in this direction. And one of the first things we must look for is the relation between developments in education and in other factors and in other factors that we should expect, a priori, to contribute positively or negatively to the advance in productivity. In the U.S. from 1929 to the present and in Russia in recent years education and other developments were moving hand in hand to foster significant net positive growth. In less developed nations, even if we set aside destruction and waste associated with political instability, some

of the complementary factors essential for growth may be lacking. And the difficulty is not just shortage of physical capital. More serious are gaps in other aspects of human competence and organisation that are complementary in production with the skills acquired in school. Administrative skills, technical on the job "know how", productive attitudes towards work and risk, etc. do not emerge overnight. Neither do economies of scale and available mass markets. To assess relations between education and economic development, it is necessary to consider the matrix of factors in which education may play its part.

Moreover, when one American in ten was getting a College ~~and~~ education he acquired knowledge and skills which earned more than average remuneration in the labour market, in Malaya where there is one doctor to 50 to 10 thousand patients or a single private practitioner in a town making large sums: will the position be the same when one American in two is acquiring the equivalent skills or in Malaya when the number of doctors double? The flow of this kind of discussion is that it is concerned only with the differential advantages of one level of education as compared with another. Obviously, the higher the basic and Universal level is in any given society, the less room there is for differential advantages to show themselves. If all we can measure is the advantage of, say, a Secondary School product

over a primary school product, there will be nothing left to measure if everyone is given Secondary School education. In terms of measurable phenomenon, both the Social and personal benefits of education thus diminish as the school leaving age is raised. When only a few could read and write, clerks learned more than labourers; today in Britain where virtually everyone learns to read and write, routine office workers earn less than average factory workers.

It is evident that the cost-benefit studies of Schultz, Dennison and others pose certain problems and there are certain holes in their procedure. First, there is a danger in using a current cross section analysis to predict a future time series. Second, there is the question whether incomes reflect marginal productivity sufficiently well to be used as a measure of Social returns. Third, there is the complication suggested by Weisbrod that the value of extra education includes the option which it confers to obtain still further education. A fourth major difficulty in the estimate of returns to extra education is the most formidable of all: that income depends on other variables besides age and education. Some of these difficulties have been dealt with by Becher, Blaugh and others but not very satisfactorily.

Realising the problems and difficulties of cost-benefit analysis A. Smithes concludes, "The foregoing discussion leads to two major conclusions: First, judgement plays such an important role in the estimation of cost-benefit ratios that little significance can be attached to the precise numerical results obtained. Second, competition is likely to drive the agencies towards increasingly optimistic estimates; and far from resolving the organisational difficulties, computation of cost benefit ratios may in fact make them worse." This is rather an extreme pessimistic view. But it makes it clear that we can view cost-benefit-analysis as anything from an infalliable means of reaching the new Utopia to a waste of resources in attempting to measure the unmeasurable.

#### VALUE AND USEFULNESS

It is true that there is a formidable range of difficulties which might give the view that it is a waste of resources to carry out a cost-benefit analysis - like the view of A Smithes. Before we throw in the towel we have to ask: Is there a better alternative? The practical problem is that decisions do have to be taken by public agencies. There is a need for rational investment criteria as the free forces of the market do not operate in the public sector. As I indicated in an earlier section that

priorities in public expenditure are always difficult to decide upon; especially where public expenditure is a large part of the national expenditure. An important advantage of a cost-benefit study is that it forces those responsible to quantify costs and benefits as far as possible rather than rest content with vague qualitative judgement, guesswork and personal hunch. This is certainly a good thing in itself - some information is better than none. Moreover, quantification and evaluation of benefits, however rough, does give some sort of clue to the charges which consumers are willing to pay. It may well be a salutary check on the biases likely to creep into estimated costs and benefits by enthusiastic advocates of particular investments. Even if cost-benefit analysis cannot give the right answers, it can sometimes play the purely negative role of screening projects and rejecting those answers which are obviously less promising. More especially, statistics of costs and benefits may be used to answer such questions as these:

1. How much expenditure on education, as compared with expenditure on other sectors, is needed to achieve certain targets of economic growth?
2. How should a given volume of resources, available for education be allocated within the educational sector?



3. What resources, drawn from which sectors of an economy and collected in what ways, should be used to finance education?
4. What are the secondary, tertiary, etc. effects of educational expenditure?

The point need hardly be laboured further. It is obvious that assessment on a full cost-benefit basis of the effects of so many public outlays is impossible. Expenditure on education has so many aspects that returns to investment in education cannot be assessed. But it must be remembered that the "case for using cost benefit analysis is strengthened, not weakened, if its limitations are openly recognised and indeed emphasised", as Turvey and Prest pointed out in their survey article.

In conclusion, let us ask from a wider aspect if cost-benefit criteria should be the only sole criteria in deciding investment in education. Does it mean that ~~we~~ if the cost-benefit analysis shows a low rate of return from education that we should reduce or cut down our expenditure in that direction? Must we value education for its contribution to Gross National Product only? I think there are other and greater values in education than mere monetary returns. This fact is realistically and sympathetically put by the Robbins Committee:-

"We begin with instruction in skills suitable to play a part in the general division of labour. We put this first, not because we regard it as the most important, but because we think it is sometimes ignored or undervalued. Confucious said in the Analects that it was not easy to find a man who had studied for three years without aiming at pay. We deceive ourselves if we claim that more than a small fraction of students in institutions of higher education would be where they are if there were no significance for their future careers in what they hear and read; and it is a mistake to suppose that there is anything discreditable in this. Certainly this was not the attitude of the past: the ancient Universities of Europe were founded to promote the training of the clergy, doctors and lawyers; though at times there may have been many who attended for the pursuit of pure knowledge or of pleasure, they must surely have been a minority. And it must be recognised in our own times, progress and particularly the maintenance of a competitive position- depends to a much greater extent than ever before on skills demanding special training. A good general education, valuable though it may be, is frequently less than we need to solve many of our most pressing problems".

These arguments are not put forward to justify all education being judged by whether it is, in common language, "useful", i.e. calculated to increase productivity. There are

as I mentioned earlier, other and greater values to be sought in education. But it would be living in a dreamland to ignore that much of education, up to the highest levels, is designed to be 'useful', and that much of the argument for devoting the present proportion of the National income - and more - to education is that it will increase productivity. Too much is left to the opinions of academics; too little is done to take into account the real nature of the demand, whether by organised research or by the pressures of the market or by the orders and influences of Central Authority.

Any new system which may develop ought to be capable of combining attention to all the purposes of education, taking into consideration its role as investment in human productivity, the creation of political consciences and whatever other of the many ~~roles~~ roles of education may be thought appropriate. The content of education might well be feasible and in any event the machinery of decision taking ought to be more open to non-academic influences. Let us hope that the present enormously heightened interest in education will lead to more organised research into its real effects as a factor of production, and the evaluation of a better criteria for the rational allocation of our scarce resources.

## EDUCATION AND ECONOMIC GROWTH

### CLASSICAL PHILOSOPHY

Never ~~xxxx~~ before in the history of the world has there been such an extraordinary surge of interest in the correlation between education and economic development and growth as today. It does not mean that in the past it was completely a neglected field, but what I mean is, that it didnot receive the attention that it should have from failure to recognise its importance. It is only lately that techniques like cost-benefit analysis have demonstrated the vital role of education in growth of National Income.

Human resource development was a central theme among the mercantilists and they recommended policies to foster development of skill and ingenuity accordingly. William Petty even tried to measure human capital. The classical economists up to J. S. Mill through the first half of the 19th Century saw schooling and training as a means to higher incomes for a minority, and concerned themselves with the economic efficiency

of the system of production and learning. However, they did not see economic growth as involving an increase in demand for skills or schooling among the masses. Indeed, they predicted quite the opposite: the division of labour, while it was central to progress in raising national income, would downgrade the masses in their working lives. Schooling for ordinary people was seen as economically useful mainly through its contribution to civil order and Muthusian restraint. It was more the betterment of Man than economic growth that preoccupied these economists. The potentials for economic and progress were believed to be severely limited whereas no such limits shut in the vistas of progress towards the perfecting of Man. They believed strongly in the law of diminishing productivity and could not foresee in the long-run the possibility of shifting the production function to the right as a result of innovation, technological improvement, learning effect and other factors.

Over the 19th Century education, technology and production were all expanding, becoming ~~xx~~ transformed beyond anything that the early classicists could have imagined. Meanwhile, the emphasis in economics was shifting from problems of aggregate productivity and progress to income distribution and

resource allocation. Adam Smith "the Father of Economics", is best known for his interest in the market mechanics as a means of directing resources into uses according to the preferences of consumers and of free men and women selling their services. Through the 'invisible hand' the economic machine seemed to produce desirable results. It seemed to work in an automatic law-governed way like a machine "but what is law-governed is not necessarily good", say R. L. Meek in his "The rise and fall of the Economic Machine". The themes of the classical economists were elaborated over the generations that followed in both positive and normative economics, which jointly defined criteria for assessing resource allocation and developed the ethic of equalisation of opportunity as a component of the philosophy of individualism. Education had a special place in the body of thought because its relevance to the distribution of opportunity to earn an income. In this respect it was distinguished from most other consumer choices even when the idea of education is an investment was not clearly appreciated. Moreover, education received special attention as one among a few goods and services that might claim public subsidy because of social benefits accruing to the Society at large, over and above those accruing to individuals. There was a large cry for mass education by

the middle of the 19th Century when liberal ideas were popular and gaining momentum. Over the late 19th and early 20th centuries the relative attention given to education by economists appears to have waned, except in Russia, where public schooling had lagged and "education was belatedly but also creatively rediscovered as an investment", - A Bowman.

The peripheral or incidental position given to education in the economics of late 19th and especially the first half of the 20th century is not surprising. The battle for universal public schooling had been won and a humanistic view of education had led many economists mistakenly to downgrade its economic importance. The same humanistic inclinations blocked application of the increasingly powerful tools of economic theory to a thorough going examination of education as an investment analogous in some respects at least to investment in the production of machines.

RICARDIAN INFLUENCE Physical capital is a necessary but not a sufficient condition to promote economic growth - it was only lately realised, though a bit too late. The provision of capital for development investment is not the whole or even a major part of the problem of promoting economic development. The notion that capital accumulation is the crux of the development problem is firmly embedded in the early post-war literature on the problem of economic development, and was the foundation of early efforts at developing - in most of the earlier national plans of developing countries we see the non-proportionate allocation of funds on heavy industry to the almost neglect of education. It is only gradually being expelled by practical experience of the difficulties of, and many obstacles too, the establishment of a self-sustaining growth process. The notion was derived from two major origins - the intellectual tradition of English classical economics and misreading of the Soviet experience with economic planning.

Ever since Ricardo's masterly construction of a vastly over simplified long-run model of distribution, the English tradition of economic thought has tended to accept implicitly two basic assumptions of English Classical economics - that



human labour is homogeneous mass of brute force, and that technological progress is an exogenous influence of limited strength. In consequence, ~~ex~~ it has been placed the emphasis, in its analysis of the mechanism of growth on the accumulation of physical capital, to the neglect on the one hand of the contribution of the learning and acquisition of human skills and on the other of the contribution of the applications of scientific methods to the improvement of technology and management. The Ricardian influence was particularly strong in Keynes who in constructing his short-run theory of employment took the quality of labour as given. The major concentration was on the theory of the firm and industry, and the problems of economic fluctuations and unemployment. This was the period of the "Keynesian Revolution" and education had no place in his "general theory". It was quite reasonable for his purpose, but it so happened that the Keynesian apparatus was conveniently extended into a long-run growth model by Harrod's addition of the capital-output-ratio - the rate of real savings and investment in physical capital. This was the nearest and most appealing tool to handle for those who turned from pre-war unemployment problem to the post-war development problem. Probably at no time in the past two centuries was education further removed

from the main streams of Western Economics than in the quarter century from 1930-1955.

The Marxian tradition, which took off from the Ricardian theory became also the tool of dogmatism by putting the accumulation of capital at the centre of the mechanism of growth. Moreover, the theory seemed to be confirmed empirically by Soviet planning, which exercised a great hold over the intellectual imagination of the 1930's by virtue of ~~it~~ the contrast between the idea of planning and the reality of capitalist chaos, and which placed a strong emphasis in investment, especially in heavy industry, i.e. producers goods industry. It is only in the recent years that economists have penetrated the mythology of Soviet growth to appreciate the important part played in it by a tight labour market, high rewards to education and a consequent Universal incentive to self improvement by the labour force, together with substantial investment in scientific research and development.

There is no doubt that the quality of the contributions of land and capital can also be improved, and they can be made to enter into increasingly profitable factor combinations. But once they have reached, respectively a certain degree of fertility and a certain degree of efficiency of production, it is only as

a result of inventions and innovations that they can produce a greater output. In other words, they reach limits and law of diminishing returns or marginal productivity comes into operation. This does not seem to exist in the case of labour and enterprenueral ability since both theoretical research and its practical applications are manifestations of human skills which can themselves be directly improved by education. It was a major blunder to neglect the quality of labour - what mattered most was the number. The input in a production function was usually merely number!

## POST WAR EXPERIENCE

The emphasis on education and the uncomitant changes in educational systems (refer to Section I) is clearly a manifestation that the disregard for quality is now a thing of the past. This is due to the startling post-war experience in rates of income growth in the advanced nations and the slow rates or stagnation in many of the developing countries; the success of Marshall Plan Aid to Europe and the failures and frustrations elsewhere. Experience with development problems and development planning has amply demonstrated that economic development is not a simple matter of generating enough capital investment. It is a far more complex problem of generating the human skills and knowledge required for working with and managing the capital, and this in turn requires a transformation of the economic, social, legal and cultural environment. So changes in the quality of the work force are the fundamental explanation of the fact that economic growth proceeds in advanced countries more rapidly than can be accounted for by the record of inputs of labour and capital. Moreover, differences between levels of development between countries may be explicable in the same terms. Kuznets had lumped technology and the labour capacity together as more important than physical equipment!

"The major capital stock of an industrially advanced country is not its physical equipment: it is the body of knowledge amassed from tested findings and discoveries of empirical science, and the capacity and training of its population to use this knowledge effectively."

This point may be demonstrated more strikingly by two contrasting situations - one in which the country has had its physical capital destroyed but has a highly trained and energetic labour force: the other with the latest capital equipment in abundance but unskilled labour. The first case will be able to rebuild its capital stock in a short period as the post-war experience of Japan and Germany suggests. It is likely that it would take far longer to get the other economy going. Starting from scratch it is more time consuming to build a skilled labour force than to construct a Steel Mill.

The quality of the labour force means more than just simply technical skill. It includes the will to economise interest in output for the sake of output, the spirit of team work, and the elusive and noneconomic restrictive practices. It has been said that a modern fishing trawler with its latest equipment is manned in Norway by seven men, in Japan by twelve

to fourteen men, and in India by twenty to twenty-five men. Each task to be carried out by the small crew can be performed by some-one on the large.

It is not enough to recruit a large industrial labour force and induce it to accept the values of industrial society. Beyond a minimal stage of development, the major requirements is for foremen, technicians and engineers. The capacity to handle modern technology in the United States does not reside in a small group of engineering and business school graduates, but is diffused throughout the culture. The great majority of employers are interested in productivity, and their early training, formal and informal is directed towards machines and production. @ In underdeveloped countries it is not enough to cultivate a band of entrepreneurs and business executives. This only means upgrading any existing labour force in a less developed country to provide the junior officers to fill in the organisation.

#### FUNCTIONS OF EDUCATION

So among the factors of production there are two-labour and entrepreneurial ability - which lend themselves to improvements by education in the widest sense, including training education:

1. Makes people more receptive to inventions and innovations.
2. Permits increasingly advantageous combinations of factors of production as compared with those in which the human factors are lesser quality.
3. Promotes the division of labour and specialisation and the use of machinery.
4. Makes it possible for any new technological discovery to be brought into operation with little or no delay.
5. Promotes, both in the domestic economy and on an international scale, a far reaching mobility of labour and of entrepreneurial ability.
6. Ensures that those individuals who are responsible for making major technical, economic and political decisions possess the width of knowledge and breadth of view, which, associated with a high moral sense, enable them to avoid particularly dangerous mistakes.

All these results follow from the employment of increasingly better educated and trained personnel in productive undertakings; and even though the results become apparent only in the long-run and are therefore, hard to predict with precision - they reduce risks and costs. In other words, they

they lead to edonomies, some internal, some external but all eventually to the advantage of production. I t follows that more particularly in the early stages of a country's economic development, education rather than consumer goods, which are advantageous only to those who profit directly from them, is instrumental in increasing output in all sectors of production and in creating a basis for continuing progress. Nor is it by accident that all progress starts with the human element, since it is the human element that is always the originator of every thing that is created and is responsible for every development of himself and his country.

#### CORRELATION BETWEEN EDUCATION AND NATIONAL INCOME

The is quite a widespread belief that literates were few and far between in England as late as the Factory Acts, that literacy has little importance for agricultural progress in the early stages, and yet that education is more important for the emergent nations of today than in the history of the now advanced countries. Fresh evidence is revealing the fallacy of these beliefs. Empirical data as well as a priori reasoning are now availa le to indicate that the minimum level of diffusion of literacy necessary as a pre-condition of development is probably something like 40% of the adult male population



(See Table 1A for definitions of literacy). With the exception of countries producing oil, only when this rate was attained did any nation attain a measured per capita income over \$200 in the mid 1950's. (per-capita figures should be examined with caution due to differences in living standards and requirements). Anderson's research through historical records reveals that 40% adult literacy rates were matched or exceeded in the pre-industrial West, they were exceeded in the first years of the Meiji era in Japan, and in Urban Russia of the late 19th Century. These findings might be of surprise to those who thought that literacy rates were low and lagged behind development. There is some disagreement of cause and effect relationship of education and economic development of the type - which came first the egg or the chicken? It does not follow from the above evidence that 40% of literacy guarantees development or a \$ 200 per capita income; but countries that had attained that literacy rate and not yet excluded \$200 per capita income in the 1950's were the exception and were all in Asia.

But the relationship between literacy and national income is complicated, because the level of national and per capita income is dependent not only on the technical training and skill of the population, but also on the physical capital assets, and the natural resources of a country. Moreover, literacy rates are very imperfect measures of all the skills required in a modern industrial economy. Some skills and technical abilities

TABLE 6. Percentage of illiteracy in 21 other countries according to their latest census or sample survey since 1945

Country	Year	Criterion of literacy <sup>1</sup>	Age level of population	Total number of persons	Per cent illiterate
<b>AFRICA</b>					
Angola:					
'Civilized' population	1950	RW	All ages	135 355	32.2
Cape Verde Is.	1950	RW	All ages	148 331	79.2
Mauritius <sup>2</sup>	1952	R <sup>3</sup>	15 and over	300 256	48.2
Mozambique:					
'Civilized' population	1950	RW	15 and over	63 635	12.7
Nigeria:					
African population	1952/53	RW <sup>4</sup>	7 and over	22 335 420	88.5
Nyasaland:					
African population	1945	RW <sup>5</sup>	All ages	2 044 707	93.5
Portuguese Guinea:					
'Civilized' population	1950	RW	All ages	8 320	45.1
Seychelles	1947	RW	All ages	34 632	74.0
Swaziland <sup>6</sup>	1946	RW	All ages	181 269	86.7
Union of South Africa:					
Native population	1946	RW	10 and over	5 742 211	72.4
<b>AMERICA</b>					
Honduras	1950	RW	10 and over	975 157	64.8
Mexico	1950	RW	6 and over	21 038 742	43.2
St. Pierre and Miquelon	1951	RW	10 and over	3 490	8.1
<b>ASIA</b>					
Burma <sup>7</sup>	1953	RW	16 and over	1 937 594	39.1
Iraq <sup>8</sup>	1947	RW	5 and over	3 727 045	89.1
Macau	1950	RW	All ages	187 772	47.1
Pakistan	1951	R	All ages	75 842 165	86.2
<b>EUROPE</b>					
Gibraltar	1951	RW	5 and over	19 370	34.5
Rumania	1948	...	7 and over	*13 862 816	*23.1
Spain	1950	RW	10 and over	22 969 716	17.3
<b>OCEANIA</b>					
Gilbert and Ellice Is.					
Native population	1947	R	10 and over	26 640	7.6

1. RW = ability to read and write; R = ability to read.

2. Excluding Rodrigues and other dependencies.

3. Ability to read any non-European language.

4. Ability to read and write in English, in other Roman script, or in Arabic script.

5. Ability to read and write in English or in a vernacular tongue.

6. Excluding European and coloured populations.

7. Data for 252 towns only, based on a 20 per cent sample.

8. Excluding nomadic tribes.

may be the results of generations of experience and cannot be reflected by literacy rates. The capital assets of a country are usually the result of a long process of capital formation which may have taken decades or even centuries. Hence, it cannot be assumed that literacy rates and the level of national income are closely related to each other. Nevertheless, empirical data seems to indicate that a certain degree of relationship exists.

The United Nations' Preliminary Report on the World Social Situation contains a table showing the distribution of 75 countries and territories by size of per capita income in 1950. According to this table 25 of the countries had per capita incomes equivalent to 300 U.S. dollars or more, 10 countries between 150 and 300 dollars, and 40 countries were below the level of 150 dollars. If we separate the countries at the level of 300 dollars per capita income, and separate the adult illiteracy rates of countries at three levels, as before we ~~arrive~~ arrive at some idea of the association between these two factors as shown below:

T The above table show founnty-one countries for which data is available on adult illiteracy rates and per capita incomes in 1950. Among these countries, all 12 which had high illiteracy rates are found with relatively low per capita income. Of 16 countries with low illiteracy rates, all except Japan had relatively high capita income. As regards the other 13 countries, with illiteracy rates between 20 and 49 per cent, all except two Puerto Rica and Venezuela - had per capital incomes of less than \$300.

Let us now examine the development of per capita income in 4 countries, in relation to their level and trend of illitercay rates. First let us look at U.S.A.

In the table 2 above we observe that the illiteracy rate in the U.S.A. had declined from 20% in 1870 to 10.7% in 1900 and continued to decline since the beginning of the century. The per capita~~x~~ gross National Product, expressed in terms of the 1929 dollar, had increased from \$268 in the period around 1870 to \$542 in the period around 1900. It continued to increase - except for the depression years around 1930 - until it had reached a high level of about \$1,200 in 1953. In other words, the per capita income had more than doubled from the beginning to the middle of the century. It should be noted that the U.S. around 1870, started at a relatively high level of literacy. While the rapid rise of prosperity in the U.S. was due to many factors, including the discovery of natural resources and the high annual rate of capital formation, the evidence nevertheless shows a parallel development in the reduction of illiteracy and the increase in per capita income.

In the table 3 we see the development of per capita income in Norway since 1900. In terms of 1938 prices, the gross national product had increased from less than 1,000 kroner per capita at the beginning of the century to over 2,500 kroner per capita in 1953, an increase in more than 150%. This ~~xxx~~ represents a rate of increase higher than that of the U.S. over a comparable period of time. Data on illiteracy rates are not available, but the high proportion of children 7-14 years old receiving instruction, maintained since at least 1875 would justify <sup>our</sup> ~~xxx~~ assumption that Norway, at the beginning of this century, had reached a very high level of literacy. Here again, we find an indication of association between the educational level of a population and its productive capacity.

Third, the example of Italy, as shown above, shows a rise in National income at a slower rate than either the U.S. or Norway. At the beginning of the century, the per capita income, in terms of 1938 prices, was around 2,300 line. By 1954 this had increased to about 3,500 line, a rise of 50% in half a century. The population of Italy was about 50 per cent illiterate at the beginning of the century, though the rate of illiteracy had declined considerably then.

Finally, let us look at Spain.

Here the trends have been somewhat similar to those in Italy. The level of per capita income in 1929 prices, rose from about 850 pesetas near the beginning of the century to about 14200 pesetas in 1953, at a rate of somewhat less than 50% in half a century. It may be noted that Spain began this century with an illiteracy rate even higher than Italy, though today it may be considered among the relatively more literate nations with less than 20% illiteracy in the population 10 years old and over as of 1950.

The educational development of a country is perhaps related to the distribution of income within a country even more closely than the level of per capita income. Where income is more concentrated in a small proportion of the population, education tends to be the privilege of the few, and a large part of the people will remain illiterate. On the other hand, as literacy skills and education in general become more widespread, the gap between high income and low income groups will be reduced, and the total income of the nation will tend to be more evenly distributed.



## LITERACY AND AGRICULTURE

The idea that literacy is relatively unimportant in agriculture, and even for modernisation of agriculture in the early stages, is almost certainly fallacious, just as fallacious as the notion that the way to make good farmers and keep farmers on the farm is to teach 'practical agriculture' in the primary grades. The most convincing evidence comes from observations of men who have worked with technical assistance and community development programmes and those who have studied agriculture in underdeveloped and emergent nations, as well as in more advanced settings. The failure of the Tanyanyika government scheme, the corridor plantation system in the Congo are a clear reflection of this problem - lack of qualified personnel. Western machinery and tools are useless unless there are people who know the technical know how to operate them. Time and time again this has been demonstrated by the experience of developing countries. Appreciation of this problem has been reflected in the creation of facilities for pre-investment surveys through the United Nations Fund for Economic Development, the evolution techniques of man power planning in underdeveloped countries to complement investment planning, and a growing emphasis on educational and technical assistance to developing countries. For most of the underdeveloped

world the progress of agriculture is the key importance to to national economic advance. Education here has a vital role to play.

#### CHANGED ENVIRONMENT

The proposition that the minimum essential rate of literacy and the levels of literacy at which people can function are higher today than for emergence into development in earlier times is rarely stated to give a better comparison. In fact, it usually means that more literacy is needed to develop in say 10 to 20 years than in a hundred or more. The underdeveloped countries are trying to make a 'great leap forward' in order to achieve the same results as the Western countries but in a shorter time. F. H. Harbison at the United Nations Conference in 1963 puts it strikingly "The newly developing countries in the world today are in a hurry. They will not be satisfied with the rate of development that has been achieved in the past by the so called advanced nations. They want high speed accelerated growth". It is good to be forward looking, have high target rates, etc. but failure to achieve the goals and aspirations creates frustrations and discontent - evident in most parts of Asia and Africa. Moreover, the question is one we will never be able to answer on the basis of statistical

evidence, for the World drive to Universal education is changing the implications of observed literacy rates. Given the place of education among the political development priorities of today, there will almost certainly be countries with 40% or ~~or~~ even 50% adult literacy and less than \$200 per capita income in the 1960's and 1970's than 1950's, and situations in which per capita incomes exceed \$200 but literacy rates fall below 40% are likely meanwhile to disappear, if only because these countries will have extended literacy whatever happens to their incomes. Nevertheless, emergence out of traditionalism into active international economic life is very different today from what it was a century ago for a number of reasons - among them modern communication techniques and the levels of educations among the peoples of other ~~max~~ nations with whom the developing countries must compete and interact.

#### CASE FOR INVESTMENT

In the cost benefit analysis discussed in Section II I referred to the procedure used by Schultz in evaluating returns from investment in education. Accepting the results of cost-benefit analysis within broad limits we find justification in the light shown. It would be appropriate to examine briefly

Some of the other rate of return studies which strengthen the cost-benefit technique and add support to investment in education. For both the United States and Mexico, the Male rates are extremely high for the incremental schooling between the first few years in primary school and the last primary years. Even for social returns, estimates run from 20 to 35 per cent. This is a pattern we should expect to see repeated in ~~am~~ many Latin American countries where there is a marked divergence between the economic activities of those who drop out of primary school early and those who continue to completion. Judging from such evidence as is available on late 19th century Russia the rates were probably quite high there also, and Strumilin suggested a law of diminishing returns to investment in education in Russia in the 1920's. However this is not likely to be the case in most African and Asian countries over the coming decade, for the enthusiasm for education is diffusing rapidly there and the drive for universal primary schooling is leading other development efforts. At the middle and highest educational levels, male rates of return in Venezuela appear to be fantastically but this reflects a sharp inequality of income distribution. Rates in Mexico are much higher than in the estimates for the United

States or than preliminary estimates suggest for India. In the United States the College rates of about 11 to 12 percent though sufficiently high to match likely alternative investments are relatively modest. No estimates for the lowest levels of schooling have yet been attempted in India, but those for the middle and highest levels reveal what reports concerning the incidence of "intellectual unemployment" among the trained but not the top would suggest; Indians who have the equivalent of a Master's degree or better probably get back a return of the order of about 12 to 15 per cent; those who stop somewhat sooner only a modest monetary reward. These rates for India were lower than the returns on investments in physical capital in the modern sector of the Indian economy. Does this mean that education in India should not get the same treatment? The answer certainly is no for there are many unquantifiable benefits from education - refer to the Cost-Benefit Analysis.

The above analysis of India must not be judged superficially and all assumptions made need careful and thorough examination in the light of all circumstances. Bearing this in mind it is sensible to take the view of the Dean Rusk who comments "Education is not a luxury which can be afforded

after development has occurred; it is an integral part, an inescapable and essential part, of the development process itself.

So universal education which was once a Utopian dream among the Social Sciences has today moved into the centre of that earth wide revolution which is daily transforming man's living conditions on this planet more drastically than the Renaissance, the discovery of America, the Reformation, the Industrial Revolution, and the Advent of the Air Age - all rolled into one. It is best to conclude the role of education in economic development with the words of Professor Garcia of Argentina, Secretary of the U.N. Conference 1963 " A large part of mankind is not mentally prepared to assimilate this transformation to become incorporated fully and vitally in this new type of society which should be built in the countries suffering from underdevelopment. The very basis of the problems of development, the core of everything related to it, is MAN. Technology cannot canalize his potential with the same speed as it can, for example, canalize a river. Today we know how to deal with a desert, to turn it into an orchard in relatively few years; but far more time is necessary to train men who are capable of growing oranges in a desert."

"RESOURCE DRAIN"

There is no certain system of estimating educational requirements or how much scarce capital should be put into educational plant, how much current income should be spent on education as consumption cum investment. Work to improve the data and the analysis goes forward to clarify the choices to be made. The need for more education is clear in under-developed countries at least, even though the amounts to be sought cannot be quantified.

All investment involves risk, some less and some more. More education for villagers sometimes makes them dissatisfied with the village and unwilling to return to it, adding to the <sup>ed</sup> education~~ism~~ unemployed in the city and robbing the village of its best intellects, rather than raising the level of village education. This creates further social problems of overcrowding - urbanisation without industrialisation. However, those with education wanting only to do white collar jobs for which there is inelastic demand. In India about 6% of the graduates are unemployed, though the literacy rate is only about 21%. Educations abroad too, runs risks. The exposure to foreign standards of living or marriage abroad may lead to emigration at high cost in foreign exchange to the country

which sponsored the education, to dissatisfaction with conditions upon return, or even, when the domestic educational system is dominated by a system of local patronage which foreign study threatens, to failure to get a good job. A large number of India doctors have gone to U.K., U.S.A., Malaya, etc. in search of better conditions and standards of living, despite the acute shortage in India of such skills. The 'brain-drain' to U.S. and Canada from Britain is another example. There are no easy answers to how best to manage the large educational job which undeveloped countries face, but perhaps this is much valid: education by foreigners is more productive for the underdeveloped country if it takes place in the country by foreign teachers, or if the student goes abroad he does so later for shorter periods, and after he has obtained his career starts at home. It is reported, for example, that while there are about 2,000 United States Citizens teaching abroad at various levels, there are about 4,000 people from abroad, especially the less developed countries teaching in the United States. Many of these are graduate students who undertake teaching as part of their training. Some have been beguiled by higher pay and better working conditions into postponing, perhaps for a long time, their long awaited return.



### DEGREE OF ILLITERACY

Having recognised the significance and importance of education in economic development, it is necessary to have a look at the picture of world illiteracy situation and what is being done to change the picture. One obvious result of formal education is that people learn to read and write, and the idea of literacy as a measure of educational progress - both personally and socially - has taken deep root. More often than not, it is illiteracy that is discussed as a social problem, along with such ills as poverty and disease.

A great deal has been written about illiteracy, which is generally regarded by educators as a world-wide issue of the greatest importance. It would seem feasible, therefore, to examine the incidence of illiteracy statistically and to consider whether its reduction might be used as a measure of educational progress. At first sight illiteracy is prevalent enough to justify such an approach. It is true that in certain countries education has long been compulsory and almost universal, and the number of persons not able to read and write is confined to an irreducible minimum, composed mainly of those mentally incapable of such learning. Yet, in many areas of the world the majority of the population is still illiterate and a

reasonable estimate is that half of the worlds people still cannot reach and write.

It is estimated that there are about 700 million illiterate in the world today. They represent about 44% of the total world population 15 years old and over. About half of all the countries and territories are believed to have 50 percent or more illiteracy among their adult population. In about one-third of all countries, there are at least a million adult illiterates in each country. Such, in broad terms, is the magnitude of the problem of world illiteracy in the middle of this century. The ~~large~~ large portion of the world's illiterates are to be found in certain parts of Asia and Africa. However, the problem of illiteracy is certainly not confined to these regions. At least one country in the Western Hemisphere has more than 15 million adult illiterates, another has 5 million, and 8 others have each one million or more. In the same manner, there are 10 European countries each of which has at least one million illerate persons 15 years old and over.

The table below gives a summary of the illiteracy situation in the world in about 1950, based on detailed estimates.

TABLE 6. Estimated distribution of the world's illiterate population, around 1950, by groups of countries

Group	Number of countries	Estimated number of adult illiterates	Estimated proportion of world's illiterates
		(millions)	·%
<i>World total</i>	198	690-720	100
A. Countries with estimated 50 per cent or more illiteracy and 1 million or more adult illiterates. <sup>1</sup>	43	600-640	88
B. Countries with estimated 50 per cent or more illiteracy and less than 1 million adult illiterates. <sup>2</sup>	54	15-16	2
C. Countries with estimated less than 50 per cent illiteracy and 1 million or more adult illiterates. <sup>3</sup>	20	55-65	9
D. Countries with estimated less than 50 per cent illiteracy and less than 1 million adult illiterates. <sup>4</sup>	81	8-9	1

1. Countries listed in Table 7.

2. Countries listed in Table 8.

3. Countries listed in Table 9.

4. Countries listed in Table 10.

1. These regions, as defined in the United Nations *Demographic Yearbook 1955* (p. 1000), are constituted as follows: *Northern Africa*—Spanish West Africa, Spanish Possessions in North Africa, Morocco, Tangier, Algeria, Tunisia, Libya, Egypt, the Sudan, Eritrea, Ethiopia, the Somalilands; *Tropical and Southern Africa*—the remainder of Africa; *Northern America*—Alaska, Bermuda, Canada, United States, St. Pierre and Miquelon, Greenland; *Middle America*—the remainder of North America including the Caribbean; *South America*—the entire continent; *South West Asia*—Turkey, Iran, Iraq, Syria, Lebanon, Israel, Jordan, Cyprus, the Arabian Peninsula; *South Central Asia*—Afghanistan, Pakistan, India, Nepal, Bhutan, Ceylon, Maldives Islands; *South East Asia*—Burma, Thailand, Indochina, Malayan Peninsula, Philippines, Indonesia, and other islands southeast of the mainland; *East Asia*—the remainder of Asia, except the Asiatic part of the U.S.S.R.; *Northern and Western Europe*—Denmark, Finland, Sweden, Norway, Iceland, United Kingdom, Republic of Ireland, Channel Islands, Isle of Man, Benelux countries, France, Monaco; *Central Europe*—Germany, the Saar, Switzerland, Austria, Liechtenstein, Czechoslovakia, Poland, Hungary; *Southern Europe*—the remainder of Europe, except the European parts of the U.S.S.R. and Turkey; *Oceania*; *U.S.S.R.*—The Union of Soviet Socialist Republics.

TABLE 68 Number and percentage of illiterates in the population 15 years old and over, in 52 countries according to their latest census or sample survey since 1945

Country	Year	Total number of persons <sup>1</sup>	Cannot read and write	Per cent illiterate
<b>AFRICA</b>				
Algeria:				
Muslim population	1948	4 330 140	4 063 329	93.8
European population	1948	681 349	56 024	8.2
Egypt <sup>2</sup>	1947	11 393 181	9 125 037	80.1
Portuguese Guinea:				
'Non-civilized' population	1950	318 386	317 480	99.7
Reunion	1954	163 134	98 880	60.6
<b>AMERICA, NORTH</b>				
Barbados	1946	127 603	11 391	8.9
Bermuda <sup>3</sup>	1950	25 484	699	2.7
British Honduras	1946	36 276	6 845	18.9
Costa Rica	1950	457 786	94 492	20.6
Dominican Republic	1950	1 185 424	677 293	57.1
El Salvador	1950	1 064 013	644 514	60.6
Guatemala	1950	1 611 251	1 138 297	70.6
Haiti	1950	1 920 442	1 718 278	89.5
Honduras	1945	699 421	445 586	63.7
Leeward Is.	1946	67 687	13 029	19.2
Martinique	1954	147 427	38 438	26.1
Nicaragua	1950	599 545	369 376	61.6
Panama <sup>4</sup>	1950	442 249	132 978	30.1
Puerto Rico	1950	1 255 328	335 799	26.7
Trinidad and Tobago	1946	351 067	91 948	26.2
United States of America <sup>5</sup>	1952	110 074 000	2 780 000	2.5
Windward Is.	1946	146 657	50 249	34.3
<b>AMERICA, SOUTH</b>				
Argentina <sup>6</sup>	1947	11 318 896	1 541 678	13.6
Bolivia	1950	1 633 313	1 109 385	67.9
Brazil	1950	30 189 411	15 272 632	50.6
British Guiana	1946	229 594	55 402	24.1
Chile	1952	3 618 500	719 900	19.9
Ecuador	1950	1 842 177	815 464	44.3
Paraguay	1950	747 112	255 411	34.2
Venezuela	1950	2 857 086	1 365 888	47.8
<b>ASIA</b>				
Aden Colony	1946	56 048	44 258	79.0

Country	Year	Total number of persons <sup>1</sup>	Cannot read and write	Per cent illiterate
<b>ASIA (continued)</b>				
Brunei <sup>8</sup>	1947	24 248	17 610	72.6
Ceylon	1946	4 178 895	1 548 243	37.0
Cyprus	1946	298 100	117 679	39.5
India <sup>9</sup>	1951	215 327 350	173 857 820	80.7
Israel <sup>10</sup>	1948	512 456	31 761	6.3
Malaya <sup>8</sup> (incl. Singapore)	1947	3 535 369	2 130 151	60.3
North Borneo <sup>11</sup>	1951	201 281	166 831	82.9
Philippines	1948	10 548 473	4 214 203	40.0
Ryukyu Is. <sup>11</sup>	1950	551 317	139 938	25.4
Sarawak <sup>8</sup>	1947	328 704	270 880	82.4
Thailand	1947	10 067 670	4 833 747	48.0
Turkey	1950	12 882 759	8 769 887	68.1
<b>EUROPE</b>				
Belgium	1947	6 759 702	222 391	3.3
Bulgaria	1946	5 069 384	1 229 064	24.2
France <sup>3</sup>	1946	12 30 590 863	1 087 406	3.6
Greece	1951	5 410 922	1 399 343	25.9
Hungary	1949	6 914 209	322 342	4.7
Malta and Gozo	1948	199 389	84 471	42.4
Portugal	1950	5 951 520	2 622 128	44.1
Yugoslavia	1953	11 722 000	3 185 000	27.2
<b>OCEANIA</b>				
Cook Islands <sup>11</sup>	1951	7 939	652	8.2
Fiji	1946	140 980	50 129	35.6
Niue <sup>11</sup>	1951	2 764	166	6.0
Tokelau <sup>11</sup>	1951	905	25	2.8
Western Samoa <sup>11</sup>	1951	42 793	6 183	14.4

1. Excluding persons unspecified for literacy.

2. Excluding nomadic population and 370,231 persons unspecified for literacy.

3. Population 14 years old and over.

4. Excluding tribal Indians.

5. Based on sample survey of civilian non-institutional population 14 years old and over.

6. Excluding Europeans and nomadic Punans.

7. Based on 10 per cent sample tabulation.

8. Based on sample tabulation for Jewish population.

9. Excluding nomadic aborigines.

10. Excluding Europeans.

11. Indigenous population.

12. Excluding 1,208,990 persons not specified for literacy.

estimated for each country.

TABLE 7. Estimated population and extent of illiteracy around 1950 in 43 countries (illiteracy rate: 50 per cent or more; number of adult illiterates: 1 million or more)

Country	Estimated population		Extent of illiteracy	
	Total (all ages)	Adult (15 years and over)	Estimated per cent of adult population illiterate	Estimated number of adult illiterates
	(thousands)	(thousands)	%	(thousands)
<b>AFRICA</b>				
Algeria	8 753	5 200	80-85	4 200 - 4 400
Angola	4 093	2 400	95-99	2 300 - 2 400
Belgian Congo	11 258	7 300	60-65	4 400 - 4 700
Cameroons (Fr.)	3 085	1 900	90-95	1 700 - 1 800
Egypt	20 393	12 700	75-80	9 500 - 10 200
Ethiopia	15 000	9 300	95-99	8 800 - 9 200
French Equatorial Africa	4 406	2 700	95-99	2 600 - 2 700
French West Africa	17 363	10 500	95-99	10 000 - 10 400
Gold Coast	3 878	2 500	75-80	1 900 - 2 000
Kenya	5 579	2 900	75-80	2 200 - 2 300
Madagascar	4 305	2 500	65-70	1 600 - 1 800
Morocco	8 800	5 100	85-90	4 300 - 4 600
Mozambique	5 739	3 400	95-99	3 200 - 3 400
Nigeria	24 000	15 200	85-90	12 900 - 13 700
Nyasaland	2 289	1 200	90-95	1 100 -
Ruanda-Urundi	3 927	2 400	90-95	2 200 - 2 300
Sierra Leone	1 880	1 200	90-95	1 100
Sudan	8 350	5 200	90-95	4 700 - 4 900
Tanganyika	7 703	4 600	90-95	4 100 - 4 400
Tunisia	3 470	2 100	80-85	1 700 - 1 800
Uganda	5 103	3 000	70-75	2 100 - 2 300
Union of South Africa	12 450	7 800	55-60	4 300 - 4 700
<b>AMERICA</b>				
Bolivia	3 019	1 800	65-70	1 200 - 1 300
Brazil	51 976	30 300	50-55	15 200 - 16 700
Guatemala	2 791	1 600	70-75	1 100 - 1 200
Haiti	3 097	1 900	85-90	1 600 - 1 700
Peru	8 521	4 900	50-55	2 500 - 2 700

Country	Estimated population		Extent of illiteracy	
	Total (all ages)	Adult (15 years and over)	Estimated per cent of adult population illiterate	Estimated number of adult illiterates
	(thousands)	(thousands)	%	(thousands)
<b>ASIA</b>				
Afghanistan	12 000	7 400	95-99	7 000 - 7 300
Cambodia	3 900	2 300	80-85	1 800 - 2 000
China <sup>1</sup>	560 000	330 000	50-55	165 000 - 182 000
India	358 000	221 000	80-85	177 000 - 188 000
Indonesia	75 500	45 700	80-85	36 000 - 39 000
Iran	18 952	10 800	85-90	9 200 - 9 700
Iraq	4 834	2 900	85-90	2 500 - 2 600
Korea <sup>1</sup>	29 500	17 200	60-65	10 300 - 11 200
Malaya, Fed. of	5 227	3 200	60-65	1 900 - 2 100
Nepal	7 000	4 000	95-99	3 800 - 4 000
Pakistan	75 040	46 300	80-85	37 000 - 39 400
Saudi-Arabia	6 500	3 900	95-99	3 700 - 3 900
Syria	3 500	2 100	70-75	1 500 - 1 600
Turkey	20 935	13 000	65-70	8 500 - 9 100
Viet-Nam <sup>1</sup>	25 000	14 500	80-85	11 600 - 12 300
Yemen	4 500	2 700	95-99	2 600 - 2 700
Total (43 countries)				600 000 - 640 000

1. Boundaries as at end of World War II.

TABLE 8. Estimated population and extent of illiteracy around 1950 in 54 countries (illiteracy rate: 50 per cent or more; number of adult illiterates: less than 1 million)

Country	Estimated population		Extent of illiteracy	
	Total (all ages)	Adult (15 years and over)	Estimated per cent of adult population illiterate	Estimated number of adult illiterates
	(thousands)	(thousands)	%	(thousands)
<b>AFRICA</b>				
Bechuanaland	289	180	75-80	130 - 140
British Somaliland	500	310	95-99	290 - 310
Cameroons (U.K.)	1 000	600	90-95	540 - 570
Cape Verde Is.	145	100	75-80	75 - 80
Comoro Is.	165	100	75-80	75 - 80
Eritrea	1 104	680	95-99	650 - 670
French Somaliland	55	35	95-99	29 - 30

TABLE 8 (continued)

Country	Estimated population		Extent of illiteracy	
	Total (all ages)	Adult (15 years and over)	Estimated per cent of adult population illiterate	Estimated number of adult illiterates
	(thousands)	(thousands)	%	(thousands)
<b>AFRICA (continued)</b>				
Gambia	273	170	90-95	150 - 160
Liberia	1 250	790	90-95	710 - 750
Libya	1 124	650	90-95	590 - 620
Northern Rhodesia	1 856	980	75-80	740 - 780
Portuguese Guinea	511	320	95-99	300 - 320
Reunion	258	150	60-65	90 - 98
São Tome and Principe	60	45	80-85	36 - 38
Seychelles	36	20	60-65	12 - 13
Southern Rhodesia	2 065	1 100	75-80	830 - 880
Somaliland (Ital.)	1 246	770	95-99	730 - 760
South West Africa	405	250	75-80	190 - 200
Spanish Guinea	199	120	75-80	90 - 96
Spanish West Africa	52	30	95-99	29 - 30
Swaziland	197	110	80-85	88 - 94
Tangier	148	90	75-80	68 - 72
Togoland (Fr.)	999	640	90-95	580 - 610
Togoland (U.K.)	397	260	90-95	230 - 240
Zanzibar and Pemba	269	180	90-95	160 - 170

**AMERICA**

Dominican Republic	2 136	1 200	55-60	660 - 720
El Salvador	1 856	1 100	60-65	660 - 720
Honduras	1 505	890	60-65	530 - 580
Nicaragua	1 060	600	60-65	360 - 390

**ASIA**

Aden Colony	100	70	75-80	53 - 56
Aden Protectorate	650	390	95-99	370 - 390
Bahrain	110	70	85-90	60 - 63
Bhutan	300	180	95-99	170 - 180
Brunei	46	30	70-75	21 - 23
Jordan	1 269	700	80-85	560 - 600
Kuwait	170	100	80-85	80 - 85
Laos	1 260	730	80-85	580 - 620
Lebanon	1 257	750	50-55	370 - 410
Muscat and Oman	550	330	95-99	310 - 330
North Borneo	325	200	60-85	160 - 170
Portuguese India	637	410	80-85	330 - 350

TABLE 8 (continued)

Country	Estimated population		Extent of illiteracy	
	Total (all ages)	Adult (15 years and over)	Estimated per cent of adult population illiterate	Estimated number of adult illiterates
	(thousands)	(thousands)	%	(thousands)
<b>ASIA (continued)</b>				
Portuguese Timor	442	300	95-99	290 - 300
Qatar	20	12	90-95	10 - 11
Sarawak	562	340	80-85	270 - 290
Singapore	1 018	650	50-55	330 - 360
Trucial Oman	80	48	95-99	46 - 48
West New Guinea	700	420	90-95	380 - 400
<b>OCEANIA</b>				
British Solomon Is.	99	60	90-95	54 - 57
Cocos (Keeling) Is.	2	1	80-85	1
French Oceania	60	36	65-70	23 - 25
New Caledonia	63	38	60-65	23 - 25
New Guinea (Aust.)	1 080	650	90-95	585 - 620
New Hebrides	49	30	65-70	20 - 21
Papua	373	220	80-85	180 - 190
<i>Total (54 countries)</i>				15 000 - 16 000

TABLE 9. Estimated population and extent of illiteracy around 1950 in 20 countries (illiteracy rate: less than 50 per cent; number of adult illiterates: 1 million or more)

Country	Estimated population		Extent of illiteracy	
	Total (all ages)	Adult (15 years and over)	Estimated per cent of adult population illiterate	Estimated number of adult illiterates
	(thousands)	(thousands)	%	(thousands)
<b>AMERICA</b>				
Argentina	17 189	11 900	10-15	1 200 - 1 800
Colombia	11 336	6 600	45-50	3 000 - 3 300
Mexico	25 791	15 000	35-40	5 300 - 6 000
United States of America	150 697	110 200	3-4	3 300 - 4 400
Venezuela	5 031	2 900	45-50	1 300 - 1 500
<b>ASIA</b>				
Burma	18 489	11 600	40-45	4 600 - 5 200
Ceylon	7 544	4 700	35-40	1 600 - 1 900
Japan	82 900	53 600	2-3	1 100 - 1 600
Philippines	19 881	11 100	35-40	3 900 - 4 400
Thailand	18 488	10 700	45-50	4 800 - 5 400

TABLE 9 (continued)

Country	Estimated population		Extent of illiteracy	
	Total (all ages)	Adult (15 years and over)	Estimated per cent of adult population illiterate	Estimated number of adult illiterates
	(thousands)	(thousands)	%	(thousands)
<b>EUROPE</b>				
Bulgaria	7 225	5 200	20-25	1 000 - 1 300
France	41 944	32 800	3-4	1 000 - 1 300
Greece	7 566	5 400	25-30	1 400 - 1 600
Italy	46 603	34 400	10-15	3 400 - 5 200
Poland	24 977	17 900	5-10	900 - 1 800
Portugal	8 405	6 000	40-45	2 400 - 2 700
Rumania	16 100	11 400	20-25	2 300 - 2 900
Spain	27 868	20 600	15-20	3 100 - 4 100
Yugoslavia	16 245	11 000	25-30	2 800 - 3 300
<b>U.S.S.R.</b>				
U.S.S.R.	186 000	112 000	5-10	5 600 - 11 200
Total (20 countries):				55 000 - 65 000

TABLE 10. Estimated population and extent of illiteracy around 1950 in 81 countries (illiteracy rate: less than 50 per cent; number of adult illiterates: less than 1 million)

Country	Estimated population		Extent of illiteracy	
	Total (all ages)	Adult (15 years and over)	Estimated per cent of adult population illiterate	Estimated number of adult illiterates <sup>a</sup>
	(thousands)	(thousands)	%	(thousands)
<b>AFRICA</b>				
Basutoland	574	360	45-50	160 - 180
Ceuta and Melilla	141	80	30-35	24 - 28
Mauritius and dependencies	481	290	45-50	130 - 145
St. Helena	5	3	1-2	
<b>AMERICA</b>				
Alaska	129	95	10-15	10 - 14
Bahamas	79	49	20-25	10 - 12
Barbados	209	140	5-10	7 - 14
Bermuda	37	25	3-4	1
British Guiana	420	260	20-25	52 - 65
British Honduras	67	41	20-25	8 - 10
Canada	13 712	9 600	2-3	190 - 290
Chile	6 073	3 700	20-25	740 - 930

TABLE 10 (continued)

Country	Estimated population		Extent of illiteracy	
	Total (all ages)	Adult (15 years and over)	Estimated per cent of adult population illiterate	Estimated number of adult illiterates <sup>a</sup>
	(thousands)	(thousands)	%	(thousands)
<b>AMERICA (continued)</b>				
Costa Rica	801	460	20-25	92 - 115
Cuba	5 362	3 400	20-25	680 - 850
Ecuador	3 203	1 850	40-45	740 - 830
Falkland Is.	2	2	5-10	
French Guiana	26	16	30-35	5 - 6
Greenland	23	13	1-2	
Guadeloupe	289	180	30-35	54 - 63
Jamaica and dependencies	1 417	900	25-30	220 - 270
Leeward Is.	112	70	15-20	11 - 14
Martinique	273	170	25-30	43 - 51
Netherlands Antilles	161	120	25-30	30 - 36
Panama	805	470	30-35	140 - 160
Panama Canal Zone	53	38	5-10	2 - 4
Paraguay	1 408	810	30-35	240 - 280
Puerto Rico	2 211	1 250	25-30	310 - 380
St. Pierre and Miquelon	5	3	5-10	
Surinam	219	140	25-30	35 - 42
Trinidad and Tobago	632	380	20-25	76 - 95
Uruguay	2 398	1 650	15-20	250 - 330
Virgin Is. (U.S.)	27	16	10-15	2
Windward Is.	276	160	30-35	48 - 56
<b>ASIA</b>				
Cyprus	485	320	35-40	110 - 130
Hong Kong	2 260	1 700	40-45	680 - 770
Israel	1 258	890	5-10	45 - 89
Macao	188	140	40-45	56 - 63
Maldives Is.	85	50	25-30	12 - 15
Mongolian People's Republic	885	530	40-45	210 - 240
Ryukyu Is.	915	560	25-30	140 - 170
<b>EUROPE</b>				
Albania	1 200	840	25-30	210 - 250
Andorra	5	4	15-20	
Austria	6 935	5 350	1-2	50 - 100
Belgium	8 639	6 800	3-4	200 - 270
Channel Is.	103	80	1-2	1
Czechoslovakia	12 338	9 300	2-3	190 - 280
Denmark	4 281	3 150	1-2	32 - 63
Faeroe Is.	32	20	1-2	

TABLE 10 (continued)

Country	Estimated population		Extent of illiteracy	
	Total (all ages)	Adult (15 years and over)	Estimated per cent of adult population illiterate	Estimated number of adult illiterates <sup>1</sup>
	(thousands)	(thousands)	%	(thousands)
<b>EUROPE (continued)</b>				
Finland	4 030	2 800	1-2	28 - 56
Germany <sup>a</sup>	68 500	52 000	1-2	500 - 1 000
Gibraltar	25	19	30-35	6 - 7
Hungary	9 334	6 900	4-5	280 - 350
Iceland	143	100	1-2	1 - 2
Ireland	2 969	2 100	1-2	21 - 42
Isle of Man	53	42	1-2	.
Liechtenstein	14	11	1-2	.
Luxembourg	297	240	3-4	7 - 10
Malta and Gozo	312	200	40-45	80 - 90
Monaco	20	17	3-4	.
Netherlands	10 114	7 150	1-2	70 - 140
Norway	3 265	2 500	1-2	25 - 50
Saar	943	720	1-2	7 - 14
San Marino	13	9	10-15	1
Sweden	7 017	5 400	1-2	50 - 100
Switzerland	4 694	3 600	1-2	36 - 72
United Kingdom	50 325	39 000	1-2	390 - 780
<b>OCEANIA</b>				
American Samoa	19	10	2-5	.
Australia	8 220	6 000	1-2	60 - 120
Cook Is.	15	8	5-10	1
Fiji	289	170	30-35	50 - 60
Gilbert and Ellice Is.	38	24	5-10	1 - 2
Guam	27	20	10-15	2 - 3
Hawaii	470	320	5-10	16 - 32
Nauru	3	2	25-30	.
New Zealand	1 908	1 300	1-2	13 - 26
Niue	5	3	5-10	.
Norfolk Is.	1	1	10-15	.
Pacific Is. (U.S.)	55	34	25-30	8 - 10
Tokelau	1	1	3-5	.
Tonga	48	28	5-10	1 - 3
Western Samoa	79	42	10-15	4 - 6
Total (81 countries)				8 000 - 9 000

1. Number not shown if less than 1,000.  
 2. Boundaries as at end of World War II.



Table II gives the estimated total and adult populations, and estimated percentage and number of adult illiterates in the world by continents and by geographic regions.<sup>1</sup>

TABLE II Estimated population and extent of illiteracy in the world, around 1950, by continents and regions

Continent and region <sup>1</sup>	Estimated population		Estimated extent of illiteracy	
	Total (all ages)	Adult (15 years old and over)	Per cent of adult illiteracy	Number of adult illiterates
	(millions)	(millions)		(millions)
<i>World total</i>	2 496	1 587	43-45	690-720
<i>Africa</i>	198	120	80-85	98-104
Northern Africa	65	40	85-90	34-36
Tropical and Southern Africa	134	80	80-85	64-68
<i>America</i>	330	223	20-21	45-47
Northern America	168	126	3-4	4-5
Middle America	51	30	40-42	12-13
South America	111	67	42-44	28-29
<i>Asia</i>	1 376	830	60-65	510-540
South West Asia	62	37	75-80	28-30
South Central Asia	166	287	80-85	230-240
South East Asia	171	102	65-70	68-72
East Asia	677	404	45-50	180-200
<i>Europe</i>	393	293	7-9	22-25
Northern and Western Europe	133	102	1-2	1-2
Central Europe	128	96	2-3	2-3
Southern Europe	131	95	20-21	19-20
<i>Oceania</i>	13	9	10-11	1
<i>U.S.S.R.</i>	186	112	5-10	6-11

1. For definition of regions, see footnote 1, p. 14.

We can see from the table that about 75% of the world's illiterate population live in Asia, some 14 Or 15 per cent in Africa, about 6.5 per cent in the Americas and the remaining 4 or 5 per cent in Europe, Oceania and U.S.S.R. Among the 14 regions shown the largest number of illiterates are to be found in the region of South Central Asia; but ~~equally~~ equally high if not higher, percentages in the two regions of Africa. The lowest range of illiteracy rates undoubtedly belongs to the regions of Northern, Western and Central Europe and Northern America. Equally low illiteracy rates are of course to be found in the individual countries in other regions as well.

It must be understood that many of the country estimates used to arrive at the totals shown in Tables 7-10, and 11 are themselves tentative and subject to a considerable margin of error. This is due to lack of precise information, not only as regards illiteracy rates but even as to the size and age distribution of the population. In countries with ~~at~~ large populations, possible errors in estimates can affect the world estimates to a considerable extent. In ~~x~~ countries like China, India, Nigeria, etc. there are no national census figures on illiteracy.

The magnitude of the problem has been realised and each country is doing its best to meet this challenge by allocating more of its scarce resources to this end. To this we turn now.

### EXPENDITURE ON EDUCATION

In the section on cost-benefit analysis I posed the question - How much expenditure on education as compared with expenditure on other sectors, is needed to achieve certain targets of economic growth? This is an overall allocation problem of our scarce resources and no economic criteria can explain how government allocates funds between the different sectors. We can nevertheless examine what the various governments are doing to overcome illiteracy problem as they have realised the importance of literacy.

For some of the highly developed countries it is possible to compare the growth of education expenditure over fifty years or more. A first survey revealed that countries like the U.S.A., the U.K., the Netherlands, Germany, Italy and Japan spent around 1900 between one and two per cent of their National income on public education. Around 1960 this share had grown in these countries to between 4 and 6 per cent. Thus there was at least a doubling, in some cases tripling, of the ~~xxxxx~~ share. (See Figs 1 and 2 below).

FIG. 1  
EXPENDITURE ON EDUCATION (PUBLIC AND PRIVATE) AS PERCENTAGE OF NATIONAL INCOME IN CURRENT PRICES AND OF NATIONAL INCOME PER CAPITA AT CONSTANT PRICES IN THE UNITED STATES 1909-59  
(1909 = 100)

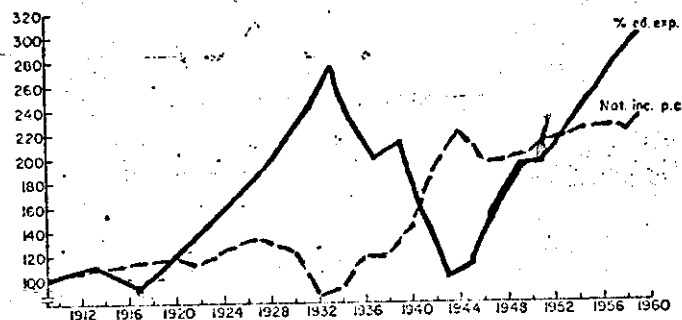


FIG. 1 (continued)  
EXPENDITURE ON EDUCATION AS PERCENTAGE OF NATIONAL INCOME IN CURRENT PRICES AND OF NATIONAL INCOME PER CAPITA AT CONSTANT PRICES IN GERMANY 1913-60  
(1913 = 100)

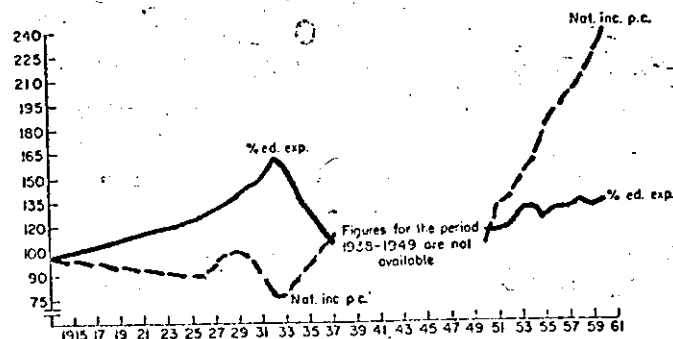


FIG. 1 (continued)  
EXPENDITURE ON EDUCATION AS PERCENTAGE OF NATIONAL INCOME AT CURRENT PRICES AND OF NATIONAL INCOME PER CAPITA AT CONSTANT PRICES IN JAPAN 1900-1960  
(1900 = 100)

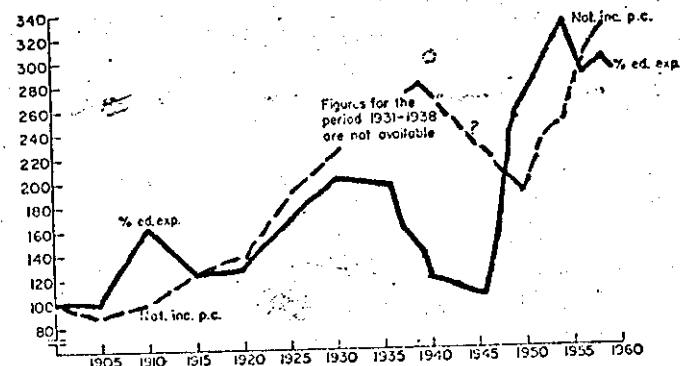
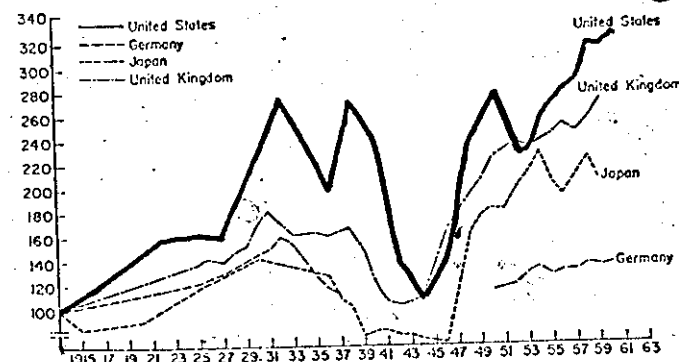


FIG. 2  
EXPENDITURE ON EDUCATION AS PERCENTAGE OF NATIONAL INCOME IN SELECTED COUNTRIES 1913-60  
(around 1913 = 100)



All these countries were hit severely by two world wars and by the great economic crisis of the thirties. This has greatly influenced the trend of educational expenditure. Its share in National Income fell sharply during the wars and rose sharply during the great depression, when National Income was low but the contracted incomes of teachers could not be cut correspondingly.

For most countries a fairly comparable and continuous series of expenditure figures is available for shorter periods. Examples taken from some 20 countries are given for the period 1950 to 1960 in Figs. 3 and 4.

FIG. (continued) 3

GROSS NATIONAL PRODUCT PER CAPITA AND EXPENDITURE ON EDUCATION PER CAPITA IN SELECTED COUNTRIES

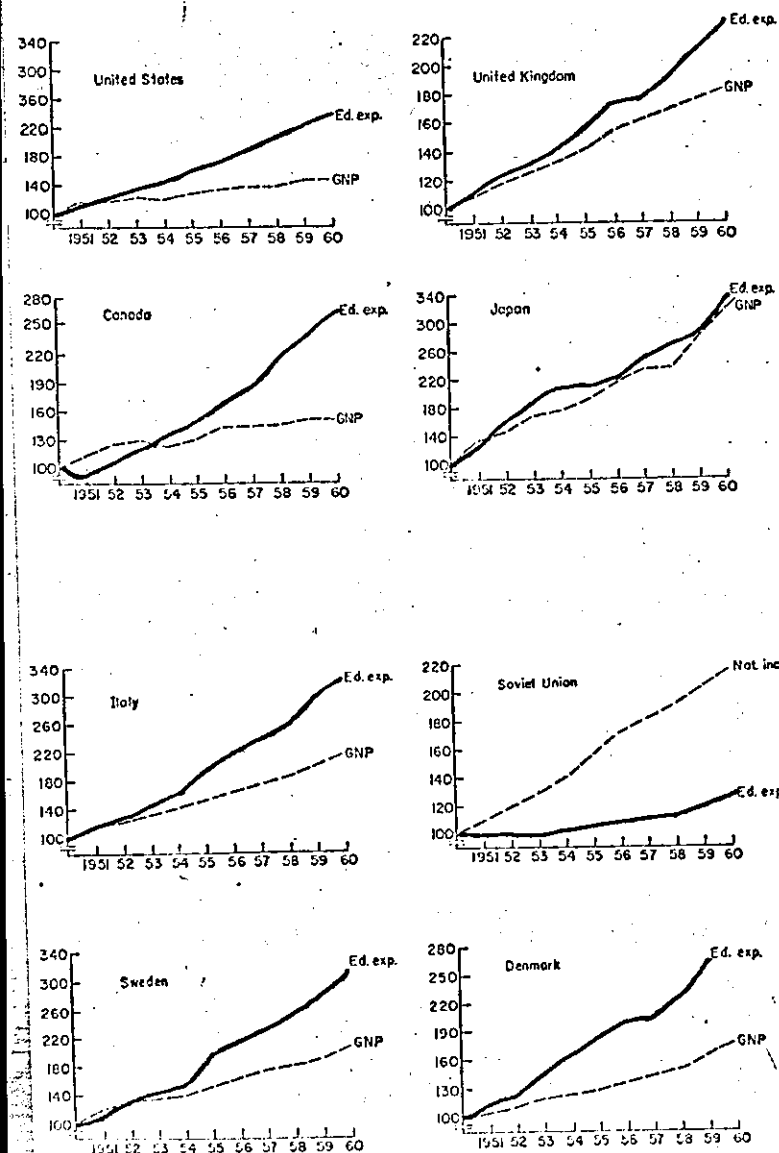


FIG. (continued) 3

GROSS NATIONAL PRODUCT PER CAPITA AND EXPENDITURE ON EDUCATION PER CAPITA IN SELECTED COUNTRIES

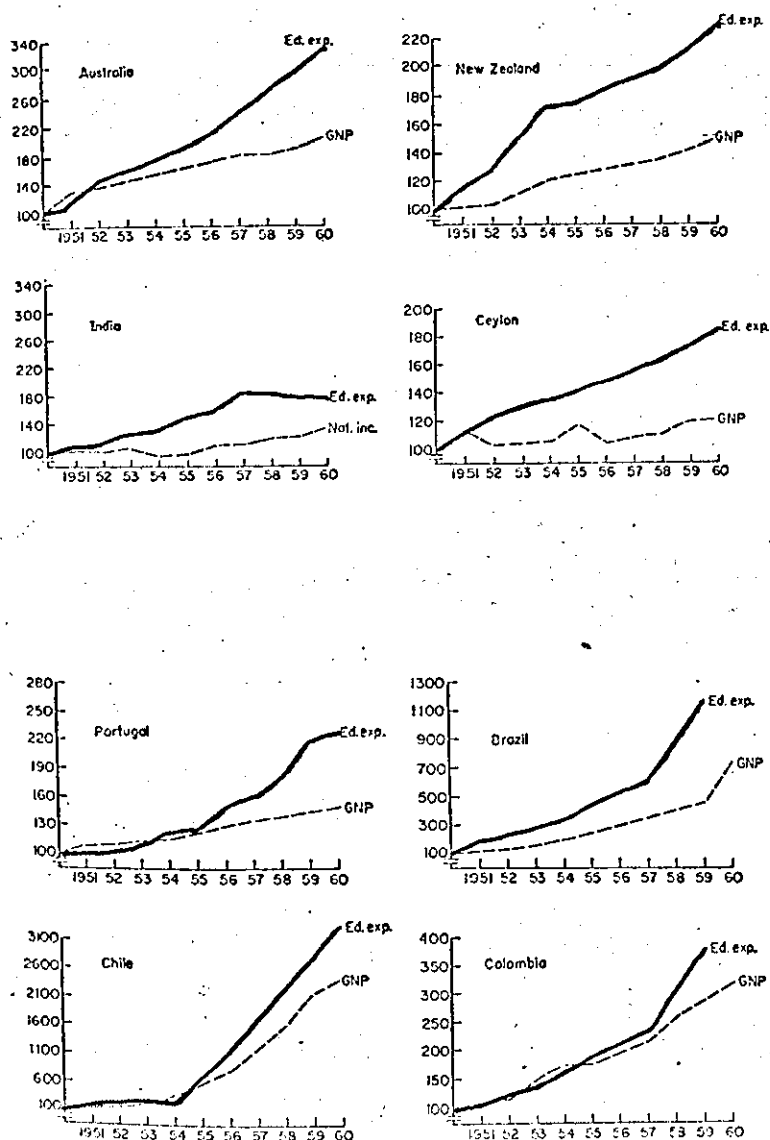
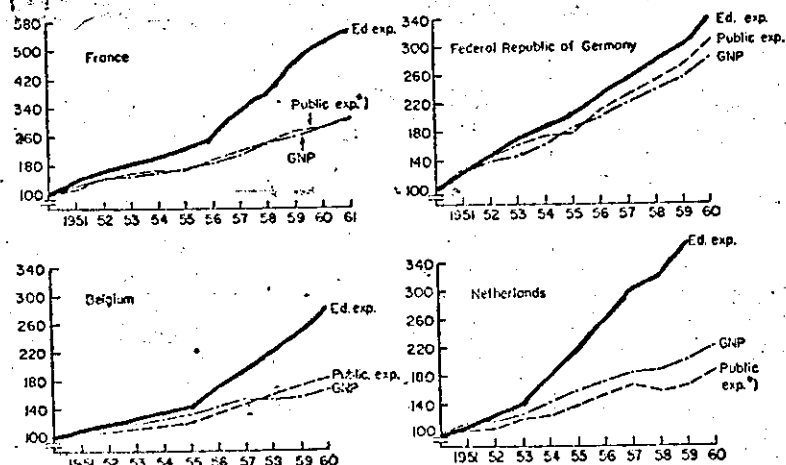
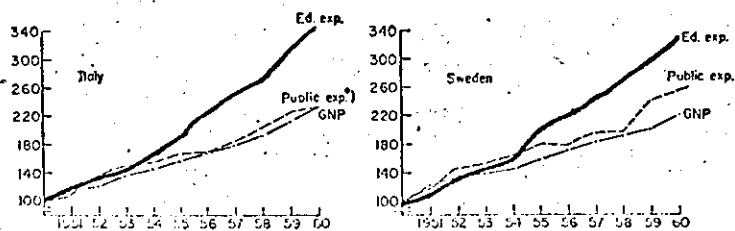
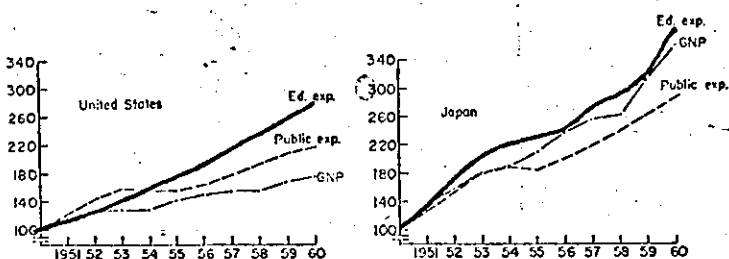


FIG. 4

GROSS NATIONAL PRODUCT, TOTAL PUBLIC EXPENDITURE AND EXPENDITURE ON EDUCATION IN SELECTED COUNTRIES (1950 = 100)



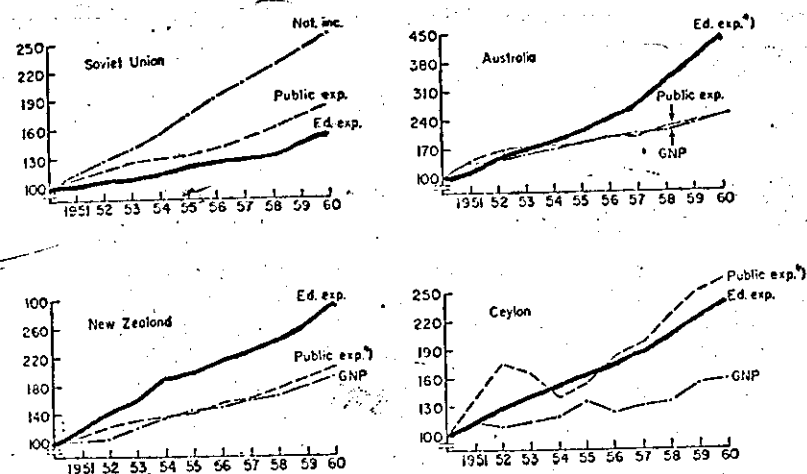
\*) Central government only



\*) Central government only

FIG. 4. (continued)

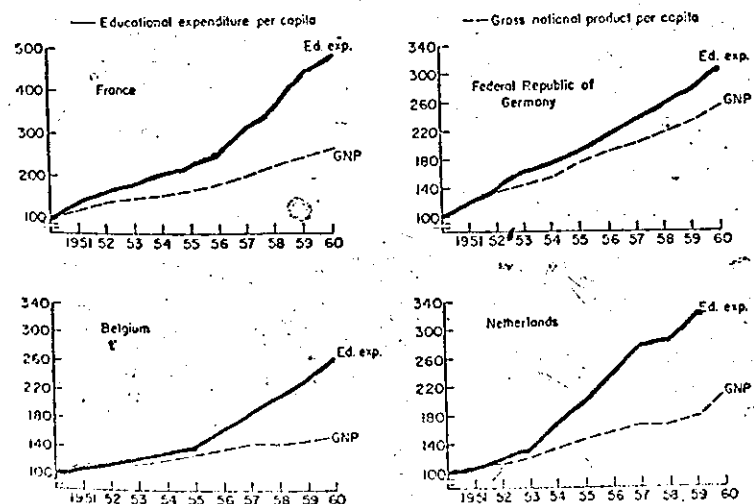
GROSS NATIONAL PRODUCT, TOTAL PUBLIC EXPENDITURE AND EXPENDITURE ON EDUCATION IN SELECTED COUNTRIES (1950 = 100)



\*) Central government only

FIG. 5A

GROSS NATIONAL PRODUCT PER CAPITA AND EXPENDITURE ON EDUCATION PER CAPITA IN SELECTED COUNTRIES



These countries have not been selected in order to prove a point, but solely because they happened to provide figures for these ten years. The figures are taken as they were reported to the United Nations agencies. These curves and the index showing the growth of the share of education in the National Income (Table 16) speak for themselves. There is no sign of a slowing down of the secular upward trend. But there are remarkable differences in the relative growth of educational expenditure.

Since in most countries education is financed mainly from public sources the question arises whether there is a similar growth of the share of education expenditure in relation to total public outlay. Tables 12A to D show that this is not the case.



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TABLE 12 A  
EDUCATIONAL EXPENDITURE IN GERMANY\*  
IN RELATION TO OTHER MACRO-ECONOMIC DATA  
1913-60  
(Current Prices)

Year (1)	Popula- tion (000's) (2)	National Income (m. Rm./Dm.) (3)	Gross National Product (m. Rm./Dm.) (4)	Total Public Expenditure (m. Rm./Dm.) (5)	Total Educational Expenditure (m. Rm./Dm.) (6)	Total Educational Expenditure per Capita (Rm./Dm.) (7)	Column (6) as % of Column (3) (8)	Column (6) as % of Column (4) (9)	Column (6) as % of Column (5) (10)
1913	60,220	43,728	..	7,178	1,227	20.37	2.80	..	17.09
1925	62,526	57,397	..	14,465	2,003	32.03	3.48	..	13.84
1926	62,967	60,050	..	17,201	2,149	34.12	3.57	..	12.49
1927	63,349	67,285	..	18,770	2,455	38.75	3.64	..	13.07
1928	63,707	72,395	..	20,801	2,730	42.85	3.77	..	13.12
1929	64,043	72,297	..	20,872	2,870	44.81	3.96	..	13.75
1930	64,374	66,199	..	20,406	2,695	41.86	4.07	..	13.20
1931	64,687	53,794	..	16,977	2,252	34.81	4.18	..	13.26
1932	64,988	42,597	..	14,535	1,922	29.57	4.51	..	13.22
1933	65,312	44,049	..	..	1,919	29.38	4.35	..	..
1934	65,710	50,443	..	..	2,022	30.77	4.00	..	..
1935	67,018	56,849	..	..	2,042	30.47	3.59	..	..
1936	67,470	63,599	..	..	2,100	31.12	3.30	..	..
1937	68,015	71,477	..	..	2,244	32.99	3.13	..	..
1950	49,047	77,525	101,062	28,489	2,493	50.80	3.21	2.46	8.75
1951	49,576	93,932	123,525	36,655	3,048	61.50	3.24	2.46	8.30
1952	49,897	106,725	140,719	40,804	3,585	71.80	3.35	2.54	8.78
1953	50,381	115,087	151,207	45,849	4,159	82.60	3.61	2.75	9.07
1954	50,902	124,754	162,787	50,033	4,604	90.40	3.69	2.82	9.20
1955	51,398	143,369	185,679	51,389	5,067	98.60	3.83	2.72	9.86
1956	52,018	158,584	204,648	59,873	5,758	110.70	3.63	2.81	9.61
1957	52,657	172,839	222,663	66,092	6,280	119.30	3.63	2.82	9.50
1958	53,282	184,925	238,156	71,664	7,026	131.90	3.79	2.94	9.83
1959	53,847	200,925	258,509	78,147	7,474	138.80	3.71	2.69	9.56
1960	54,386	223,511	287,800	86,846 †	8,477 †	155.90	3.79	2.95	9.76

\* 1913-37 Deutsches Reich; 1950-60 Federal Republic of Germany, excluding the Saar, including Berlin (West).

† Fiscal year of 9 months adjusted to 12 months.

TABLE 12 B  
EDUCATIONAL EXPENDITURE IN JAPAN  
IN RELATION TO OTHER MACRO-ECONOMIC DATA  
1910-60  
(Current Prices)

Year (1)	Popula- tion (000's) (2)	National Income (m. Yen) (3)	Gross National Product (m. Yen) (4)	Total Public Expenditure (m. Yen) (5)	Total Educational Expenditure (m. Yen) (6)	Total Educational Expenditure per Capita (Yen) (7)	Column (6) as % of Column (3) (8)	Column (6) as % of Column (4) (9)	Column (6) as % of Column (5) (10)
1910	49,184	..	..	839	85.3	1.73	..	..	10.16
1920	55,473	..	..	2,253	300.4	5.42	..	..	13.33
1930	63,872	11,700	..	3,144	452.9	7.09	3.87	..	14.41
1935	68,662	14,400	..	4,069	497.1	7.24	3.45	..	12.22
1936	69,590	15,500	..	4,701	524.0	7.53	3.38	..	11.15
1937	70,040	18,600	..	6,315	532.9	7.61	2.87	..	8.18
1938	70,530	20,000	..	9,578	536.7	7.61	2.68	..	5.60
1939	70,850	25,400	..	10,673	580.2	8.19	2.28	..	5.44
1940	71,400	31,000	..	13,019	671.9	9.41	2.17	..	5.16
1941	71,600	35,800	..	18,541	803.0	11.22	2.24	..	4.33
1942	72,300	42,100	..	26,493	888.0	12.28	2.11	..	3.35
1943	73,300	48,400	..	40,459	1,026.0	14.00	2.12	..	2.55
1944	73,800	56,900	..	88,193	1,111.0	15.05	1.95	..	1.26
1945	..	..	..	40,320	1,538.0	..	..	..	3.81
1946	75,325	360,900	..	146,530	7,025.0	93.26	1.95	..	4.79
1947	77,983	968,000	..	263,584	29,495.0	378.22	3.05	..	11.19
1948	79,925	1,961,600	..	584,808	82,486.0	1,032.04	4.21	..	14.10
1949	81,708	2,737,300	..	922,061	127,199.8	1,556.76	4.65	..	13.80
1950	83,167	3,381,500	3,947,000	933,509	161,512.6	1,942.03	4.78	4.09	17.36
1951	84,550	4,347,500	5,445,000	1,172,382	216,474.0	2,560.31	4.98	3.98	18.44
1952	85,792	4,959,000	6,118,000	1,409,188	274,147.6	3,195.49	5.53	4.48	19.48
1953	86,975	5,647,000	7,085,000	1,658,951	329,350.1	3,786.72	5.83	4.65	19.88
1954	88,300	5,984,400	7,466,000	1,766,064	366,237.1	4,147.65	6.12	4.91	20.88
1955	89,276	6,535,000	8,237,000	1,727,000	371,972.4	4,166.54	5.69	4.52	21.58
1956	90,300	7,386,000	9,307,000	1,854,000	395,816.7	4,383.35	5.36	4.25	21.33
1957	91,090	8,269,000	10,097,000	2,033,000	442,788.8	4,861.00	5.35	4.39	21.77
1958	92,010	8,359,000	10,380,000	2,231,000	471,806.2	5,127.77	5.64	4.55	21.11
1959	93,040	9,666,000	12,522,000	2,473,000	521,111.0	5,600.94	5.39	4.16	21.07
1960	93,419	11,431,000	14,350,000	..	612,483.7	6,556.31	5.36	4.27	..

TABLE 12 C

EDUCATIONAL EXPENDITURE IN THE UNITED STATES  
IN RELATION TO OTHER MACRO-ECONOMIC DATA  
1909-59  
(Current Prices)

Year (1)	Population (000's) (2)	National Income (m. \$) (3)	Gross National Product (m. \$) (4)	Total Educational Expenditure * (1,000 \$) (5)	Total Educational Expenditure per Capita \$ (6)	Column (5) as % of Column (3) (7)	Column (5) as % of Column (4) (8)
1909	90,492	27,200†	31,600†	626,000	6.92	2.30	1.98
1911	93,868	27,200†	31,600†	705,000	7.51	2.59	2.23
1913	97,227	34,800†	40,300†	743,000	7.69	2.20	1.86
1917	103,414	66,900§	75,600§	1,059,000	10.24	1.58	1.40
1927	119,038	81,700	96,300	3,033,000	25.47	3.71	3.15
1929	121,770	87,814	104,436	3,233,601	26.55	3.68	3.10
1931	124,149	59,708	76,300	2,966,464	23.89	4.97	3.89
1933	125,690	40,159	55,964	2,294,896	18.25	5.71	4.10
1935	127,362	57,057	72,502	2,649,914	20.80	4.64	3.65
1937	128,961	73,618	90,800	3,014,074	23.37	4.09	3.32
1939	131,028	72,753	91,100	3,199,593	24.60	4.40	3.51
1941	133,894	104,710	125,800	3,203,548	23.92	3.06	2.55
1943	137,250	170,310	192,500	3,522,007	25.66	2.07	1.83
1945	140,468	181,248	213,558	4,167,597	29.66	2.30	1.95
1947	144,698	198,177	234,300	6,574,379	45.43	3.32	2.81
1949	149,767	217,690	255,100	8,795,635	58.72	4.04	3.41
1951	154,878	279,313	329,000	11,312,446	73.04	4.05	3.44
1953	160,184	305,573	365,400	13,949,876	87.08	4.57	3.82
1955	165,931	330,206	397,469	16,811,651	101.31	5.09	4.23
1957	171,984	366,943	442,769	21,119,565	122.79	5.76	4.77
1959	177,830	399,648	482,783	24,617,000	138.42	6.16	5.10

\* Education in public and private schools, colleges and universities.

† Annual average 1907-11.

‡ Annual average 1912-16.

§ Annual average 1917-21.

TABLE 12 D

EDUCATIONAL EXPENDITURE IN THE NETHERLANDS  
IN RELATION TO OTHER MACRO-ECONOMIC DATA  
1900-60  
(Current Prices)

Year (1)	Population (000's) (2)	National Income (m. Guilder) (3)	Gross National Product (m. Guilder) (4)	Total Educational Expenditure (1,000 Guilder) (5)	Total Educational Expenditure per Capita Guilder (6)	Column (5) as % of Column (3) (7)	Column (5) as % of Column (4) (8)
1900	5,141.7	1,699	..	27,034	5.26	1.59	..
1905	5,550.5	1,948	..	34,975	6.30	1.80	..
1910	5,901.7	2,283	..	47,446	8.04	2.08	..
1913	6,163.5	2,670	..	55,871	9.06	2.09	..
1920	6,848.2	6,006	..	177,882	25.97	2.96	..
1925	7,365.7	5,394	..	183,180	24.87	3.40	..
1927	7,576.1	5,603	..	187,506	24.75	3.35	..
1929	7,781.4	6,108	..	207,518	26.67	3.40	..
1931	7,998.6	5,129	..	226,502	28.32	4.42	..
1932	8,122.5	4,558	..	221,134	27.22	4.85	..
1933	8,236.9	4,391	..	219,451	26.64	5.00	..
1935	8,433.3	4,251	..	196,781	23.33	4.63	..
1937	8,598.3	4,802	..	185,202	21.54	3.86	..
1939	8,781.3	5,207	..	190,782	21.73	3.66	..
1948	9,800.2	12,166	..	411,970	42.04	3.39	..
1949	9,955.6	13,624	..	449,974	45.20	3.30	..
1950	10,113.5	15,037	19,044	499,641	49.37	3.32	2.62
1951	10,264.3	16,969	21,728	546,812	53.27	3.22	2.51
1952	10,382.0	17,739	22,768	614,297	59.17	3.46	2.69
1953	10,493.2	19,146	24,269	696,866	66.41	3.64	2.87
1954	10,615.3	21,606	27,065	903,965	85.16	4.18	3.33
1955	10,750.8	24,565	30,300	1,079,176	100.38	4.39	3.56
1956	10,957.0	26,510	32,587	1,309,159	119.48	4.94	4.01
1957	11,095.7	29,045	35,323	1,529,038	137.80	5.26	4.32
1958	11,278.0	29,614	35,983	1,606,024	142.40	5.42	4.46
1959	11,417.2	31,700	38,620	1,841,196	161.27	5.80	4.76
1960	11,556.0	34,810	42,340	..	..	..	..

In the secular expansion of public spending in the highly developed countries, public expenditure on education has generally not enjoyed an increasing share. In a number of highly developed countries, the percentage of educational expenditure in the total of public outlays was higher before the first World War than in recent years. Other public responsibilities, in particular armaments and Social policy, have secured rapidly rising shares and caused the share of expenditure to diminish. This is equally true in the Soviet Union where educational expenditure absorbed 11.8 percent of total public outlay in 1950 and only 9.8 per cent in 1960. Here the public sector is larger than in other countries. An exception is Japan. In Japan their share in recent years has been more than double what it was around 1910. Whereas educational expenditure in the highly developed countries amounts to between 10 and 15 percent of total public expenditure, Japan was spending in the 50's between 20 and 25 percent of total public outlay on education.

It seems that Japan is, in this respect, representative of many of the developing countries. If the public sector is small, then inevitably the high ratio of educational to national income which these countries have made their objective. If a country wishes to spend 6 per cent of its Gross National Product on education, it can theoretically

choose

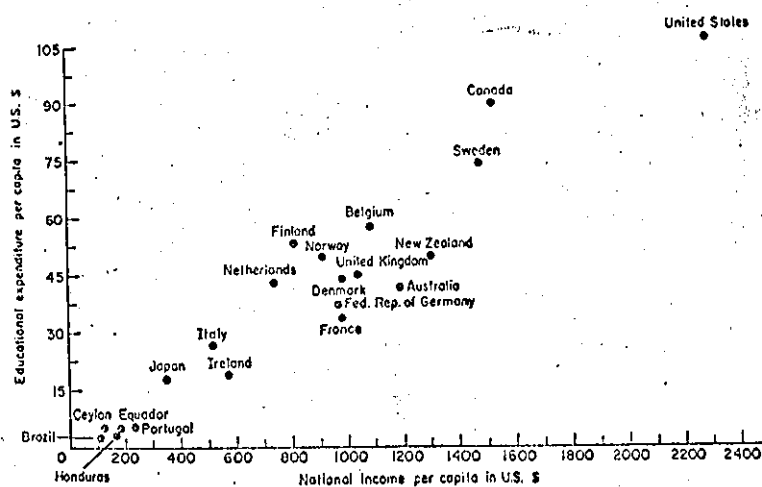
/between bringing the public sector up to 30 per cent and spending 20 per cent of it on education or having a public sector of 10 per cent and giving 60 per cent of it to education. Since the public sector is limited to about 10 per cent in many of the poorer countries, it seems inevitable that in the recent drive for more educational outlay to total public spending has reached percentage far above those of the more developed nations. It may, however, be less noticeable in some countries because a large part of education is financed from abroad and this assistance is not included in the statistics of public expenditures.

Sine the public sector in the poorer countries is bound in the absence of large scale Nationalisation to remain rather restricted for a long period to come, the percentage of educational expenditure in their total public outlay is not likely to decrease in the foreseeable future. It can be argued that the share of education in aggregate National Product and even more in total public outlay must be much higher in the less developed countries, it is clear that the provinces or states with the lowest income level have to pay the highest percentage of aggregate income for education to achieve the standards set as the compulsory national minimum. As a rule, therefore, these poorer parts of the developed countries receive financial assistance from the richer areas. It may well be that aid to developing countries will be regarded in the future as a normal procedure in a similar system of international financial equalisation, and that a larger part of total foreign aid than before will have to be devoted to education.

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Such proposals assume that education is to be considered as a pre condition for economic development. But whether education is primarily a cause or an effect of economic growth cannot be deduced easily, as I have said earlier. What one can gather from the statistics of educational is merely the strong correlation between National Product expenditure/per head and expenditure on education per head. This correlationship is shown in Figs 5A and 5B for selected countries.

FIG. 5B  
NATIONAL INCOME PER CAPITA AND EDUCATIONAL EXPENDITURE  
PER CAPITA IN SELECTED COUNTRIES AROUND 1960  
(U.S. dollars)



In table 13, 23 countries are ranked according to the level of National Income per head. In the second column, the amounts of education expenditure per head range in a fairly similar order. Only Belgium, Norway and Finland seem to spend less per head of population than could be expected in a perfect correlation. In the third column the deviations from a possibly assumed close correlation with column one are very numerous. More than half of the countries listed in this table range in the percentage of National Income spent on education very differently from the range of National Income per capita. Only a few countries at the top and at the bottom range have in approximately the same order as in column one. The poorer countries cannot be expected to spend on education as much per head as the richer countries do and vice versa. But the poorer countries have good reasons and should have opportunities to spend a percentage of National Income as high as the richer countries.

In practice to spend even 6 per cent out of the National Product on public education will prove very difficult for the poorer countries. It would mean spending 60 per cent of the public sector for this purpose if that is, as is often the case, only 10 per cent of the National Product. To enlarge the public sector in a large predominantly agricultural and non- economy takes much time - or supposes substantial foreign aid.

In earlier decades, the correlation between national income per head and the share of educational expenditure in National Income must have been more positive than in recent years. See Table 14 below. There are indication that forty years ago it was the general rule that the level of educational effort, measured as a percentage of educational expenditure in the National Product, was obliged to correspond to the level of average income. Japan was probably the first country to break this rule. Japan began even before the First World War to spend about 3 per cent of National income on education, which was at that time an extraordinary high percentage for a country with this low level of National Income per head. Except during Wartime, Japan has continued to spend in comparison with most other countries, very high percentage of the National aggregate on education. The Soviet Union too, seems to have decided to regard education as a good investment long before the economics of education were discussed by Western Scholars. The percentage of the National aggregate spent on education in the Soviet Union may for some years in the thirties and after the Second World War, have been even higher than in Japan. It is probably not just a coincidence that these two countries which broke away from the traditional rule have shown for some years extraordinarily high growth rates in productivity. This may be regarded as circumstantial evidence to prove that education expenditure can, in favourable combination with other factors, be an important cause of economic growth. However, that may be, the example set in this respect by Japan and the Soviet Union has played an important role in the planning of educational expansion in the developing countries.



Table 13  
EXPENDITURE ON EDUCATION PER HEAD IN RELATION TO NATIONAL  
INCOME PER HEAD IN 23 COUNTRIES AROUND 1960  
(U.S. \$)

Country	National Income <i>per Capita</i>	Educational Expenditure <i>per Capita</i>	Educational Expenditure as % of National Income
United States	(1) 2,237	(1) 138.43	(2) 6.19
Canada	(2) 1,528	(2) 89.65	(3) 5.87
Sweden	(3) 1,470	(3) 73.74	(9) 5.02
New Zealand	(4) 1,301	(7) 49.55	(13) 3.81
Australia	(5) 1,187	(11) 41.41	(16) 3.49
United Kingdom	(6) 1,036	(8) 45.64	(11) 4.41
Federal Republic of Germany	(7) 985	(12) 37.37	(14) 3.79
Belgium	(8) 981	(4) 57.20	(5) 5.83
Denmark	(9) 979	(9) 44.03	(10) 4.50
France	(10) 968	(13) 33.87	(15) 3.50
Norway	(11) 909	(6) 49.78	(6) 5.48
Finland	(12) 806	(5) 53.32	(1) 6.61
Netherlands	(13) 735	(10) 43.04	(4) 5.85
Ireland	(14) 528	(16) 18.00	(17) 3.41
Italy	(15) 510	(14) 26.56	(8) 5.19
Japan	(16) 342	(15) 18.28	(7) 5.34
Portugal	(17) 234	(18) 5.17	(20) 2.21
Colombia	(18) 216	(20) 4.36	(22) 2.02
Ecuador	(19) 179	(19) 4.38	(19) 2.45
Honduras	(20) 167	(21) 3.66	(21) 2.20
Ceylon	(21) 122	(17) 5.37	(12) 4.39
Brazil	(22) 107	(22) 2.90	(18) 2.70
India	(23) 64	(23) 1.18	(23) 1.85
U.S.S.R.*	800	56.00	7.00

\* This is a guesstimate giving the absolute amounts in the real purchasing power of the U.S. \$.

TABLE 14

EXPENDITURE ON EDUCATION AS PERCENTAGE OF NATIONAL INCOME  
IN 27 COUNTRIES AROUND 1950 AND 1960 \*

Country	1950	1960	Increase 1950-60 in %
Honduras	0.60	2.20 (1958)	207
Finland	2.57	6.61	157
Brazil	1.26	2.70 (1959)	114
Ecuador	1.27	2.45	93
France	1.90	3.50	84
Canada	3.21	5.87	83
Netherlands	3.34	5.85 (1959)	75
Belgium	3.35	5.83	74
Argentina	1.80 (1948)	3.10	72
Italy	3.03	5.19	71
Denmark	2.65	4.50 (1959)	70
Australia	2.06	3.49	69
Colombia	1.21	2.02 (1959)	67
Portugal	1.35 (1952)	2.21	64
Norway	3.37	5.48 (1959)	63
New Zealand	2.40	3.81	59
Sweden	3.20	5.02	57
India	1.20	1.85 (1959)	54
Puerto Rico	4.80 (1948)	7.40	54
United States	4.04	6.19	53
Ceylon	2.96	4.39 (1959)	48
Ireland	2.62	3.41	30
Chile	1.89	2.37 (1959)	25
United Kingdom	3.65	4.41 (1959)	21
Federal Republic of Germany	3.21	3.79	18
Panama	3.50	4.00	14
Japan	4.78	5.34	12

\* The definitions of expenditure used for the two years under comparison may, in some cases, have changed considerably.

TABLE 15A  
EDUCATIONAL EXPENDITURE IN GERMANY\*  
AT DIFFERENT LEVELS OF EDUCATIONAL INSTITUTIONS†  
1913-60  
(Current Prices)  
(Million Rm./million Dm.)

of which														
Year	Total Educational Expenditure		Secondary											
			Primary		Total		General		Vocational		Higher †		Other ‡	
	Rm./Dm.	%	Rm./Dm.	%	Rm./Dm.	%	Rm./Dm.	%	Rm./Dm.	%	Rm./Dm.	%	Rm./Dm.	%
1913	1,227.4	100.0	755.8	61.6	372.9	30.4	276.7	22.6	96.2	7.8	81.2	6.6	17.5	1.4
1925	1,992.4	100.0	1,234.1	61.9	554.9	27.9	433.3	21.8	121.5	6.1	169.7	8.5	33.7	1.7
1926	2,149.5	100.0	1,306.1	60.8	612.2	28.5	476.3	22.2	135.7	6.3	191.4	8.9	36.7	1.8
1927	2,453.7	100.0	1,492.0	60.8	688.7	28.1	541.3	22.1	147.4	6.0	221.8	9.0	51.2	2.5
1928	2,725.5	100.0	1,660.2	60.9	771.5	28.3	604.0	22.2	167.4	6.1	238.1	8.8	55.6	2.6
1929														
1930	2,689.0	100.0	1,508.0	56.1	874.0	32.5	575.0	21.4	299.0	11.1	253.3	9.4	53.7	2.4
1931	2,349.0	100.0	1,263.6	56.2	720.2	32.0	485.0	21.5	235.3	10.5	220.1	9.8	45.1	2.3
1932	1,918.0	100.0	1,104.9	57.6	594.8	31.0	403.3	21.2	188.5	9.8	179.3	9.4	39.0	2.0
1933	1,917.0	100.0	1,110.2	57.9	591.3	30.9	407.0	21.3	184.4	9.6	176.8	9.2	38.7	2.0
1934	2,019.0	100.0	1,172.1	58.1	606.9	30.0	415.6	20.5	191.3	9.5	200.4	9.9	39.7	2.1
1935	2,050.7	100.0	1,180.3	57.6	620.8	30.2	418.9	20.4	201.9	9.8	210.5	10.3	39.1	1.9
1936	2,096.7	100.0	1,183.4	56.4	639.4	30.5	429.3	20.5	209.9	10.0	220.4	10.5	53.5	2.6
1937	2,236.6	100.0	1,253.7	56.1	694.8	31.0	456.8	20.4	238.0	10.6	232.1	10.4	56.6	2.8
1950	2,493.1	100.0	1,382.8	55.4	800.4	32.2	474.6	19.1	325.8	13.1	234.5	9.4	75.4	3.0
1951	3,047.6	100.0	1,681.7	55.2	1,066.0	35.0	596.6	19.6	409.4	13.4	272.6	8.9	87.4	2.9
1952	3,584.7	100.0	1,924.3	53.7	1,222.9	34.1	715.3	19.9	507.6	14.2	339.7	9.5	97.8	2.9
1953	4,159.5	100.0	2,208.3	53.1	1,447.8	35.0	838.2	20.4	609.6	14.6	385.3	9.3	108.1	2.6
1954	4,604.1	100.0	2,375.9	51.6	1,680.2	36.5	986.1	21.4	694.1	15.1	429.2	9.3	118.8	2.6
1955	5,067.1	100.0	2,568.6	50.7	1,903.8	37.6	1,127.2	22.2	778.6	15.4	469.0	9.3	123.3	2.9
1956	5,751.3	100.0	2,859.6	49.7	2,202.2	38.2	1,310.4	22.7	891.9	15.5	549.6	9.6	146.9	2.6
1957	6,280.0	100.0	3,096.1	49.3	2,349.4	37.4	1,396.5	22.2	952.9	15.2	671.4	10.7	163.1	2.6
1958	7,025.6	100.0	3,447.5	49.1	2,614.0	37.1	1,523.7	21.7	1,085.3	15.4	795.3	11.3	168.7	2.6
1959	7,474.2	100.0	3,630.7	48.6	2,789.4	37.3	1,641.4	21.9	1,148.0	15.4	876.1	11.7	178.1	2.6
1960**	8,476.7	100.0	3,990.3	47.1	3,231.7	38.1	1,900.7	22.4	1,330.9	15.7	1,047.5	12.4	207.2	2.4

\* 1913-37 German Reich; 1950-60 Federal Republic of Germany, excluding the Saar, including Berlin West.  
† 1950-60 including teacher training. ‡ 1913-37 'Administration'; 1935-37 and 1950-60 'Administration' and other schools.  
§ Including part-time vocational schools. || Including other schools. ¶ Excluding part-time vocational schools.  
\*\* Data for 1960 is preliminary, based on 12 months.

TABLE 15B

EXPENDITURE ON EDUCATION IN THE UNITED STATES  
AT DIFFERENT LEVELS OF EDUCATION  
1909-57  
(Percentages)

Year	Total Educational Expenditure	of which			
		Primary	Secondary	Higher	Other
1909	100	68.6	10.9	14.7	5.8
1911	100	67.2	12.3	14.7	5.8
1913	100	68.1	12.2	14.0	5.7
1917	100	61.8	18.6	14.9	4.7
1927	100		79.6	18.5	1.9
1929	100		78.6	19.6	1.8
1935	100	48.4	29.5	21.4	0.7
1937	100	47.1	30.6	21.7	0.6
1939	100	48.1	28.6	22.6	0.7
1943	100	46.8	27.7	24.8	0.7
1945	100	45.9	27.3	26.1	0.7
1947	100	41.3	27.3	31.0	0.4
1949	100	53.5	17.4	28.5	0.6
1951	100	51.9	22.1	25.4	0.6
1953	100	52.3	22.6	24.5	0.6
1955	100	51.4	23.4	24.9	0.3
1957	100	51.2	22.9	25.6	0.3

TABLE 152  
EXPENDITURE ON EDUCATION IN THE NETHERLANDS  
AT DIFFERENT LEVELS OF EDUCATION  
1900-58  
(Percentages)

Year	Total Educational Expenditure	Primary	of which				
			Total	Secondary			
				General	Vocational	Higher	Other
1900	100	72.3	19.2	14.2	5.0	8.5	—
1905	100	73.0	18.8	13.7	5.1	8.2	—
1910	100	72.0	17.2	10.9	6.3	10.8	—
1913	100	72.8	18.1	10.7	7.4	9.1	—
1920	100	74.2	18.1	9.7	8.4	7.7	—
1925	100	73.0	20.8	10.9	9.9	6.2	—
1927	100	71.4	21.5	11.3	10.2	7.1	—
1929	100	70.7	21.9	10.7	11.2	7.4	—
1931	100	72.5	20.8	12.0	8.8	6.7	—
1933	100	72.2	20.4	11.8	8.6	6.5	0.9
1935	100	71.7	20.8	11.9	8.9	6.8	0.7
1937	100	70.5	21.5	12.0	9.5	7.0	1.0
1939	100	69.1	22.8	11.8	11.0	7.3	0.8
1948	100	67.2	23.9	11.4	12.5	7.9	1.0
1949	100	65.1	24.1	11.4	12.7	8.2	2.6
1950	100	63.8	26.1	12.3	13.8	9.5	0.6
1951	100	64.1	24.9	10.7	14.2	9.6	1.4
1952	100	63.1	25.6	11.0	14.6	10.0	1.3
1953	100	62.0	26.8	11.6	15.2	10.0	1.2
1954	100	62.3	26.6	12.2	14.4	10.0	1.1
1955	100	62.2	26.3	11.3	15.0	10.2	1.3
1956	100	58.8	26.0	10.7	15.3	9.9	5.3
1957	100	57.8	25.5	10.6	14.9	11.5	5.2
1958	100	56.4	25.9	10.5	15.4	12.5	5.2

TABLE 153  
EXPENDITURE ON EDUCATION IN BELGIUM  
AT DIFFERENT LEVELS OF EDUCATION  
1907-59  
(Percentages)

Year	Total Educational Expenditure*	Primary †	Total	of which				
				General	Secondary			
					Voca- tional	Teacher Training	Higher	Other
1907	100	58.2	30.0	18.9	6.0	5.1	6.4	5.4
1908	100	57.0	31.2	19.5	6.4	5.3	6.7	5.1
1909	100	57.5	30.6	19.3	6.2	5.1	6.7	5.2
1910	100	58.5	30.1	18.7	6.5	4.9	6.7	4.7
1911	100	57.8	29.7	18.2	6.4	5.1	6.9	5.6
1912	100	57.1	30.3	17.6	6.5	6.2	6.7	5.9
1924	100	62.2	32.8	17.7	11.5	3.6	5.0	—
1927	100	60.0	34.7	16.6	14.4	3.7	5.3	—
1930	100	62.0	32.3	16.9	12.0	3.4	5.7	—
1934	100	59.7	33.1	19.0	11.1	3.0	7.2	—
1935	100	58.8	34.1	19.7	11.5	2.9	7.1	—
1936	100	58.1	34.9	19.8	12.2	2.9	7.0	—
1937	100	58.0	34.2	19.2	11.8	3.2	7.8	—
1938	100	57.0	35.8	19.5	13.1	3.2	7.2	—
1950	100	49.6	40.4	22.1	15.6	2.7	6.8	3.2
1951	100	47.2	42.9	22.6	17.5	2.8	6.4	3.5
1952	100	45.7	44.7	22.3	19.2	3.2	6.3	3.3
1953	100	44.9	45.6	22.8	19.5	3.3	6.4	3.1
1954	100	42.8	47.8	22.8	21.7	3.3	6.1	3.3
1955	100	42.2	48.0	24.0	20.9	3.1	6.4	3.4
1956	100	40.0	49.9	25.0	21.8	3.1	6.4	3.7
1957	100	39.2	51.1	25.1	22.9	3.1	6.2	3.5
1958	100	41.4	49.6	23.0	23.1	3.5	5.8	3.2
1959	100	40.0	51.1	23.8	23.8	3.5	6.0	2.9

\* 1924-59 total current expenditure only.

† Including pre-primary education.

TABLE 16 A  
EXPENDITURE ON EDUCATION IN ITALY  
AT DIFFERENT LEVELS OF EDUCATION  
1901-60  
(Percentages)

Year	Total Educational Expenditure	of which			
		Primary	Secondary	Higher	Other
1901	100	9.4	45.7	23.1	21.8
1907	100	23.6	40.6	19.2	16.6
1926	100	65.5	16.3	6.2	12.0
1926	100	60.6	21.5	5.7	12.2
1946	100	61.1	24.6	5.0	9.3
1954	100	49.1	27.3	5.0	18.6
1955	100	50.2	29.9	5.1	14.8
1956	100	50.5	30.4	5.1	14.0
1957	100	49.7	30.4	6.2	13.7
1958	100	48.2	32.4	6.0	13.4
1959	100	43.4	33.4	8.1	15.1
1960	100	38.8	32.9	11.8	16.5

TABLE 16 B  
EXPENDITURE ON EDUCATION IN INDIA  
AT DIFFERENT LEVELS OF EDUCATION  
1870-1955  
(Percentages)

Year	Total	Primary	Total	of which		
				Secondary		
				of which		
				General	Professional and Technical	Higher
1870	100	28.3	60.3	47.5	12.8	11.4
1880	100	50.3	40.4	31.7	8.7	9.3
1886	100	41.0	47.7	40.8	6.9	11.3
1891	100	39.1	50.6	40.3	10.3	10.3
1896	100	39.0	50.3	40.3	10.0	10.7
1901	100	37.8	51.5	40.4	11.1	10.7
1906	100	39.0	50.7	37.8	12.9	10.3
1911	100	37.3	51.2	37.4	13.8	11.5
1916	100	35.8	52.4	39.0	13.4	11.8
1921	100	37.0	49.7	35.4	14.3	13.3
1926	100	37.5	49.2	35.7	13.5	13.3
1931	100	37.1	49.3	37.1	12.2	13.6
1936	100	36.3	49.0	38.1	10.9	14.7
1941	100	39.6	46.9	38.6	8.3	13.5
1946	100	46.5	39.8	30.0	9.8	13.7
1950	100	41.8	44.3	35.2	9.1	13.9
1955	100	38.7	47.2	38.2	9.0	14.1

TABLE 16C  
EXPENDITURE ON EDUCATION IN SWEDEN  
AT DIFFERENT LEVELS OF EDUCATION  
1913-58  
(Percentages)

Year	Total Educational Expenditure	of which			
		Primary	Secondary	Higher	Other *
1913	100	69.8	16.4	5.4	8.4
1914	100	69.3	15.6	5.0	10.1
1916	100	71.4	14.6	4.7	9.3
1918	100	70.9	14.9	3.3	10.9
1920	100	69.9	11.7	1.8	16.6
1922	100	62.1	11.1	2.1	24.7
1924	100	67.5	12.4	2.6	17.5
1926	100	66.2	12.8	3.2	17.8
1928	100	67.1	12.7	3.2	17.0
1930	100	68.1	12.7	3.1	16.1
1932	100	67.8	13.4	3.3	15.5
1934	100	67.6	12.9	3.5	16.0
1936	100	64.5	14.2	3.3	18.0
1938	100	66.8	13.9	2.7	16.6
1940	100	67.9	16.5	3.2	12.4
1942	100	65.2	14.9	2.8	17.1
1944	100	61.9	13.9	2.8	21.4
1946	100	61.4	12.5	3.3	22.8
1948	100	66.5	14.3	4.1	15.1
1950	100	65.6	14.8	4.2	15.5
1952	100	65.7	14.4	4.4	15.5
1954	100	64.6	14.9	4.5	16.0
1956	100	63.3	14.9	4.7	17.1
1958	100	60.6	14.4	5.3	19.7

\* Adult education, People's Libraries, other education.

TABLE 7A  
EXPENDITURE ON EDUCATION IN THE FEDERAL REPUBLIC  
OF GERMANY \* BY LEVEL OF GOVERNMENT  
1950-60  
(Percentages)

Year	Total	Federal Govern- ment	States	City States	Muni- cipalities
1950	100	0.0	53.7	11.7	34.6
1951	100	0.2	52.2	11.7	35.9
1952	100	0.2	52.1	11.7	36.0
1953	100	0.2	51.9	11.3	36.6
1954	100	0.2	52.9	11.0	35.9
1955	100	0.3	51.8	11.3	36.6
1956	100	0.5	52.1	11.2	36.2
1957	100	1.3	52.8	11.0	34.9
1958	100	1.7	54.0	10.8	33.5
1959	100	2.6	53.7	10.1	33.6
1960	100	3.2	51.5	10.1	35.2

\* Excluding the Saar; including Berlin West.

TABLE 7B  
EXPENDITURE ON EDUCATION IN DENMARK  
BY LEVEL OF GOVERNMENT  
1938 AND 1950-59  
(Percentages)

Year	Total	State	Muni- cipalities
1938	100	55.1	44.9
1950	100	53.3	46.7
1951	100	52.7	47.3
1952	100	52.4	47.6
1953	100	49.1	50.9
1954	100	50.4	49.6
1955	100	49.2	50.8
1956	100	49.7	50.3
1957	100	54.4	45.6
1958	100	55.2	44.8
1959	100	56.6	43.4



TABLE 7C  
EXPENDITURE ON EDUCATION IN THE UNITED STATES  
BY LEVEL OF GOVERNMENT  
1902-60  
(Percentages)

Year	Total	Federal Government	States	Local
1902	100	1.2	6.6	92.2
1913	100	0.8	9.5	89.7
1922	100	0.4	9.6	90.0
1927	100	0.3	9.7	90.0
1932	100	0.6	12.0	87.4
1934	100	8.6	11.4	80.0
1936	100	7.9	12.6	79.5
1938	100	6.1	13.1	80.8
1940	100	6.7	13.3	80.0
1942	100	4.1	14.5	81.4
1944	100	0.5	17.4	82.1
1946	100	9.5	14.0	76.5
1948	100	30.3 *	14.0	55.7
1950	100	25.6 *	14.1	60.3
1952	100	13.3	15.6	71.1
1953	100	7.2	16.1	76.7
1954	100	5.7	15.3	79.0
1955	100	6.3	15.0	78.7
1956	100	6.6	15.1	78.3
1957	100	6.4	16.3	77.3
1959	100	4.6	17.9	77.5
1960	100	3.6	18.3	78.1

\* Abnormal increase caused by veterans' benefits.

TABLE 7D  
EXPENDITURE ON EDUCATION IN JAPAN  
BY LEVEL OF GOVERNMENT  
1881-1960  
(Percentages)

Year	Total	States	Total Local	of which	
				Pre-fectures	Municipalities
1881	100	10.2	89.8	14.3	75.5
1885	100	9.5	90.5	11.2	79.3
1890	100	9.7	90.3	12.4	77.9
1895	100	11.2	88.8	13.2	75.6
1900	100	14.2	85.8	21.6	64.2
1905	100	13.2	86.8	21.0	65.8
1910	100	10.6	89.4	18.5	70.9
1915	100	11.7	88.3	19.0	69.3
1920	100	14.7	85.3	18.5	66.8
1922	100	14.7	85.3	21.4	63.9
1925	100	22.7	77.3	21.0	56.3
1927	100	27.2	72.8	20.6	52.2
1930	100	31.6	68.4	23.4	45.0
1931	100	32.4	67.6	24.0	43.6
1932	100	34.8	65.2	21.8	43.4
1933	100	33.9	66.1	21.1	45.0
1934	100	33.2	66.8	21.0	45.8
1935	100	30.4	69.6	20.7	48.9
1936	100	29.8	70.2	20.1	50.1
1937	100	30.9	69.1	20.0	49.1
1938	100	31.8	68.2	19.9	48.3
1939	100	33.1	66.9	20.5	46.4
1940	100	40.3	59.7	29.7	30.0
1949	100	46.6	53.4	27.9	25.5
1950	100	46.3	53.7	27.7	26.0
1951	100	43.5	56.5	30.6	25.9
1952	100	45.4	54.6	30.8	23.8
1953	100	45.2	54.8	31.2	23.6
1954	100	43.6	56.4	31.9	24.5
1955	100	47.2	52.8	30.5	22.3
1956	100	45.8	54.2	32.4	21.8
1957	100	47.5	52.5	31.2	21.3
1958	100	45.9	54.1	32.2	21.9
1959	100	48.7	51.3	30.0	21.3
1960	100	48.4	51.6	30.3	21.3

TABLE 7E  
EXPENDITURE ON EDUCATION IN ITALY  
BY LEVEL OF GOVERNMENT  
1907-60  
(Percentages)

Year	Total	State	Total Local	of which		
				Regions	Provinces	Municipalities
1907	100	38.6	61.4	—	—	61.4
1926	100	61.6	38.4	—	1.7	36.7
1936	100	77.4	22.6	—	1.2	21.4
1946	100	85.3	14.7	—	1.6	13.1
1954	100	82.8	17.2	0.8	1.6	14.8
1955	100	81.0	19.0	0.6	1.7	16.7
1956	100	81.2	18.8	0.7	1.8	16.3
1957	100	81.4	18.6	0.8	2.0	15.8
1958	100	81.8	18.2	0.8	2.0	15.4
1959	100	79.1	20.9	0.9	1.9	18.1
1960	100	77.1	22.9	0.9	2.0	20.0

TABLE 7F  
EXPENDITURE ON EDUCATION IN INDIA  
BY LEVEL OF GOVERNMENT  
1870-1955  
(Percentages)

Year	Total	Central Government	Local	Municipalities
1870	100	79.6	19.1	1.3
1881	100	69.5	26.1	4.4
1886	100	63.5	27.6	8.9
1891	100	56.4	34.6	9.0
1896	100	56.8	34.3	8.9
1901	100	58.0	33.3	8.7
1906	100	62.4	30.8	6.8
1911	100	66.5	26.1	7.4
1916	100	63.7	28.3	8.0
1921	100	78.5	14.6	6.9
1926	100	76.5	15.6	7.9
1931	100	74.0	16.6	9.4
1936	100	74.0	15.4	10.6
1941	100	74.9	14.6	10.5
1946	100	75.5	15.1	9.4
1950	100	83.9	10.1	6.0
1955	100	87.8	7.4	4.8

TABLE 7G  
EXPENDITURE ON EDUCATION IN SWEDEN  
BY LEVEL OF GOVERNMENT  
1913-58  
(Percentages)

Year	Total	State	Municipalities
1913	100	25.6	74.4
1914	100	26.2	73.8
1916	100	24.1	75.9
1918	100	22.3	77.7
1920	100	22.6	77.4
1922	100	30.2	69.8
1924	100	23.6	76.4
1926	100	25.4	74.6
1928	100	24.1	75.9
1930	100	23.1	76.9
1932	100	22.3	77.7
1934	100	22.0	78.0
1936	100	24.3	75.7
1938	100	22.1	77.9
1940	100	29.0	81.0
1942	100	21.9	78.1
1944	100	24.5	75.5
1946	100	24.6	75.4
1948	100	19.4	80.6
1950	100	20.0	80.0
1952	100	19.0	81.0
1954	100	18.8	81.2
1956	100	18.9	81.1
1958	100	19.2	80.8

#### 4. EDUCATIONAL SYSTEMS AND CHANGES

##### (a) Structure:

The Universal Declaration of Human Rights, adapted unanimously by some fifty nations at the third session of the U.N. General Assembly on 10th Dec., 1948, states:

"Everyone has the right to education. Education shall be free, at least in the elementary and fundamental stages. Elementary education shall be compulsory. Technical and professional education shall be made generally available and higher education shall be equally accessible to all on the basis of merit."

! This is the educational profession of faith of the world today. But for a fuller understanding of the goals humanity has set itself, one needs to place beside the Universal Declaration a sort of report on the present state of educational affairs - the purpose being constructive - to reveal the size of the task ahead, and not simply to reflect negatively on how far reality falls short of the ideal. Regular reports and investigations reveal from time to time what our achievements and failures are in achieving that goal. Each country has its own system of education to achieve this goal.

The term "educational system" is very widely and frequently used, but it is by no means easy to define. An inclusive definition acceptable in all countries would serve little purpose; it would be more to the point to take account of varying national views and thus discover areas of both similarity and differences. In brief, this is the purpose of comparative education. Each nation or independent state today has a range of institutions and agencies to provide education for its future citizens. The public authorities have everywhere assumed some measure of responsibility for maintaining the process.

The principal vehicle of formal education in all countries is the school, which brings together children and adolescents, roughly between the ages of 6 and 17 years. The public school system may thus be taken as the central part of what is meant by the educational system. To this must be added the agencies that ensure administrative, supervisory and welfare services for the schools, pupils and teachers, embodied at the highest level of government in the Ministry of Education. Various other elements will have to be included in the educational system of particular countries, depending on the way in which the nation views its educational task and allots responsibility. Some of these elements are in administrative terms: private schools and institutions maintained by public authorities other than the educational; in terms of age level, institutions for pre-school age children and for higher education; and in terms of purpose, the part-time vocational education of adolescents and a whole gamut of institutions and agencies concerned with adult education. No two countries have educational systems identically composed and indeed any single system is constantly changing and growing. In a dynamic society change is the norm and pre-requisite of any educational system. It must be admitted, therefore, that within a country the description of a 'unified' educational system is an abstraction, and a listing of the component parts can at best be approximate. Yet, the degree of agreement between countries on essential points is sufficient to justify the abstraction and makes possible the comparative study of national educational systems as units.

(b) Cultural and Geographical Segmentation:

The principal criterion for fixing the geographical limits of an educational system must inevitably be political, since the process of education is related so closely to nationhood and citizenship. There can be little doubt

of, say, what is meant by the British, or the Russian, or the German, or the Malaysian educational system. In countries with a Federal Political structure, the unit is less obvious, and educational criteria may also have to be sought. Thus, in Australia, U.S.A., the states have almost complete autonomy in educational matters; resemblances between states are, however, more important than differences, and cover such essentials as the general aims of education and the organizational pattern. It is reasonable, therefore, to speak of the Australian and the U.S. system of education, while remembering that in each case there may be considerable variations of detail within the country. The USSR also, despite its vast expanse and many component parts, presents unity of aim and method, which justifies the description of a single educational system. In two cases the national unit cannot easily be made to fit the educational system: Switzerland and the United Kingdom. Locational differences in Switzerland are so distinct that the custom has grown up, within the country and abroad, of focussing attention on the twenty-five Cantonal systems of education. For the United Kingdom also the three large political units -- England and Wales, Scotland, and Northern Ireland, have separate educational systems. While an outsider may see enough unifying elements to distinguish a Swiss educational system from its neighbours, the French, German or Italian, the degree of abstraction involved is greater than elsewhere.

Another situation arises in a country with a plural population, like the Union of South Africa, where separate school systems have developed to suit different cultural conditions. Yet here, also, as in the Federal Countries mentioned earlier, typical national ways of going about education are to be found. -- Similarities between the several school systems outweigh differences, largely because they mutually influence one another, and there is little

difficulty in describing the South African educational system as a unit.

Finally, one comes to the non-selfgoverning territories usually distinguished from sovereign states on political grounds. To what extent should territories be regarded as having educational systems of the same order as independent countries? The answer appears to be that any difference between the two groups is one of degree, not of kind. Every territory has a school system, the complexity of the educational pattern and its place in the life of the people vary widely between territories; but in no case is the school system something entirely extraneous, bearing no relation to government and the community. In other words, while the educational ideas at work in a territory may come from the country administering the territory, the process of adaptation soon produces institutions and agencies that differ from the originals. In many developing but independent nations, this is how the present educational systems have evolved. It would be justifiable to treat the educational systems of territories as entities, bearing in mind that rapid change is characteristic of these areas and that in some cases only a rudimentary pattern is to be found at present.

(c) Interaction of Inertia, History and Contacts:

Patterns of education have been influenced by the degree of interaction of at least three basic elements - contacts with other countries, traditional beliefs and institutions, and indigenous attempts to innovate and experiment. This interaction is most clearly typified in the case of Japan. The sources of the present Japanese system encompass the age-old Confucian principles, Western values and practices, especially French and American, and internal innovation such as the creation of appointed local school boards. The introduction of Western liberal ideas into an authoritarian semi-feudal society

in the late 19th century created serious social conflicts that have persisted and have been accentuated in recent years. The strength of each of the two major elements, traditional and Western, in shaping educational policy, has resulted in an intense and not easily resolved conflict. On the other hand, in a country like Greece, where until quite recently the forces of traditional institutions and beliefs were dominant, conflicts created by the introduction of foreign elements have not been as intense.

In most societies periods of national crises and overwhelming events have been followed by attempts at major educational reorganisation. It is interesting to note, for example, that major reform of education followed World War II. In some instances, as in the case of the Educational Act of 1944 in England, educational reform was directly influenced by the war. The state of war revealed several gaps in opportunities for education and in the training of people for certain technical jobs. In the Soviet Union, the post-war emphasis upon polytechnical education may be attributed partly to the losses in technological manpower and the need created to allocate a higher degree of talent to the task of rebuilding the country. Like wars, revolutions also seem to have been accompanied by major educational reforms. In Turkey, for example, the Kemalist Revolution of 1923 was followed by attempts to establish a secular, publicly controlled system of education in place of the traditional, voluntary religious system. Likewise, internal or external events of major importance, e.g., the first Russian sputnik, the issue of Civil Rights in America, etc., have provided the impetus for similar educational changes.

Changes in education that purportedly were revolutionary were not completely devoid of traditional elements. The system in Turkey, like that in Russia, which directed its efforts to secularisation and democratization, has

retained the elitist and centralised characteristics of the Ottoman period or the Tsarist characteristics in the case of Russia. In addition, in Turkey, the Ottoman Tuba Agaci theory of education has persisted throughout the Republican period. This suggests that although new institutional arrangements may be introduced after a revolution, and a fortiori after a planned educational change, the historical social functions performed by education, as perceived by the people, tend to persist. Mere organization or administrative change does not automatically alter basic beliefs and values about the role of education. For example, the planned attempt in England after 1944 to establish technical schools that would enjoy parity of esteem with the traditional grammar schools was not very successful because people continued to associate technical schools with inferior training, leading to low positions in the occupational hierarchy. For similar reasons the post-primary vocational schools established in Malaya in 1960, for those students who failed the entrance requirements to the academic secondary stream, were a complete failure. Likewise, in Japan, regardless of the post-war legislation to establish American-style comprehensive high schools that would provide different avenues for entrance into the prestigious universities, parents continued to view the traditional upper-secondary schools as the best schools for entrance into such universities, and thereby to the highest positions in the society. This further suggests that for educational change to be effective, there must also be concomitant changes in both primary and secondary social institutions.

The degree of educational centralisation or decentralisation is not in and of itself an index of either the tempo or the nature of change in the educational system. In the Soviet Union, sweeping changes in the organization and content of secondary education were introduced and implemented during a relatively short period of time. In Greece, on the other hand, where the



control of education has been vested in a central authority, educational change was both sporadic and dilatory. In the U.S., which is characterised by state and local control of education, change has been uneven at both levels; e.g., innovation and curriculum change has been strongly resisted in some states and/or local communities, but fostered in others. For example, certain rural communities are known for their rigidity in the treatment of controversial issues or the hiring and dismissal of teachers. In both centralized and decentralized systems, there seem to be certain paradoxes regarding educational changes. In centralized systems, while change may be accelerated, it tends to rigidify the prevailing or proposed patterns and to stifle experimentation and innovation. In the decentralized systems, although local school systems are theoretically free to innovate and experiment, in actual practice they may be subject to local pressures as centralized systems are to national pressures.

The question of centralized and decentralized control of education is often discussed in conjunction with democratic versus totalitarian political systems. For example, it is often assumed that decentralized systems of education are democratic while centralized systems are not. Although this may be true in some cases, e.g., Soviet Union and the U.S., it is not true of France and Greece. In these two countries, there is a central authority that controls and supervises the total educational enterprise, yet it is accountable to the popular will and subject to removal through legal procedures. One of the distinguishing features of democratic versus totalitarian systems is not the degree of centralized control, but the extent to which education is in the hands of one self-perpetuating power group that makes all major decisions and is not accountable to public opinion.

In this connection, it might also be noted that planned educational change at the national level need be neither intrinsically liberal and democratic nor constraining, and undemocratic. A great deal depends on the context in which planning takes place and the values to which it relates. For example, government stipends and forms of educational support may be used to enhance opportunities; however, they may also restrict individual initiative and establish uniformity.

The extent to which the educational profession participates in the formulation of overall educational policy varies from country to country. In general, however, in major decisions, affecting aims, control and support of education, certification of teachers, curriculum organization, and even the selection of textbooks, the role of the educational profession is at best minimal. In the majority of cases, the power rests with political figures or legislatures functioning at state or national levels. In political democracies, decisions about education may also be largely by powerful, voluntary associations that mobilise themselves and act as political pressure groups. In the U.S., for example, organized groups such as the Daughters of the American Revolution, the Veterans of Foreign Wars, the American Civil Liberties Union, the American Bar Association, the National Association for the Advancement of Coloured People, and several religious organizations, have from time to time taken an active part in influencing educational policy and in thinking about the place of religion in schools, the teaching of communism, the issue of racial segregation, and so on. In Malaya, the Mission Schools — Methodist and Catholic — have played a dominant role in influencing the teaching of English, and are continuing to play a vital part in the educational system of independent Malaysia.

(d) Institutional Differentiation

Although in the 20th century the avowed aim has been to establish elementary and secondary education for all, this goal has only been partially attained. In the European countries and in Japan, primary education is provided in common schools for everybody; in Turkey, India, Malaysia, etc., universal primary education has not yet been attained — in some cases it will take many more years before this objective is achieved. At the secondary school level, education is provided in different types of schools, admission to which depends upon certain selected criteria. Such schools are differentiated in terms of curriculum, length of time spent at school, vocational destinations of students, and prestige. Thus, although the complete separation of elementary and secondary education, which characterized these educational systems in the 19th century, has been largely eliminated, it has persisted at the secondary level. At the primary level, there are virtually no conditions regarding entrance and attendance; this is not true of secondary schools. Theoretically, admission to secondary schools is based on the democratic notion of "equal opportunity according to equal ability, i.e., on criteria of achievement rather than of ascription. In practice, however, ascription criteria such as family background and wealth continue to play an important part in both entrance and attendance at the various types of secondary schools — the existence and practice of Public Schools in Britain are a clear illustration.

The U.S. has rejected the multi-track institutional arrangement of the European countries we examined earlier. Instead, it has adopted the so-called comprehensive high school, which extends the idea of a school common to all beyond the primary level. Yet, even though there is no institutional

differentiation in terms of types of schools, there is generally in terms of college - preparatory, vocational, and commercial curriculum tracks. In addition, in recent years there has been a conspicuous trend towards specialised programmes for the gifted, requiring special grouping on the basis of intellectual aptitude (discussed more in the later stages). What is of interest to us here is the fact that even with this type of differentiation ascriptive criteria have by no means been eliminated. It has been found, for example, that there is disproportionately higher representation of middle and upper middle-class children in the college preparatory curriculum, and that the drop-out rate is higher among children from the lower socio-economic strata. The differentiation has recently become accentuated by the rapid growth of affluent suburban communities. The suburban school system, although theoretically comprehensive as the urban and rural systems, in practice represent a new type of elite institution, catering for a socially and economically privileged group of children and providing better facilities, more vigorous programmes and higher quality teachers than their supposedly equivalent urban counterparts. It has been established that a very high percentage of students in these suburban schools continue their education in institutions of higher learning and that they are more successful in national programmes. Most of the students who get state and Federal scholarships, Colombo Plan, Commonwealth, etc., scholarships, come from these institutions. Most of the students who get into Civil Service in Britain come from Cambridge and Oxford, who in turn are filled by students mainly from Public Schools. The picture in this direction, too, is changing as the door is now open to all on the basis of merit.

In most societies except the American, there is a multi-track school organization. In some European countries, however, the post-war years

witnessed a movement towards the establishment of comprehensive schools or the extension of the common school stage. For example, although Conservatives in England have taken a rather lukewarm attitude, several comprehensive schools have been set up, the cause of which has been espoused by the Labour and Liberal parties. The comprehensive schools have been justified on the ideology of democratic egalitarianism, and in part have represented a protest against the early selective practices of the English secondary schools. The inspiration for these educational ideas and practices has been the American comprehensive pattern. Yet, a careful look at the British arrangement reveals that within the comprehensive school there is a tripartite differentiation, which in many respects is similar to the official secondary school pattern. For example, because of parental and student aspirations and expectations concerning success in the General Certificate of Education examinations, the comprehensive school must compete favourably with the secondary Grammar School. In effect, such factors contribute to the dilution of the comprehensive school idea as envisaged by its proponents.

(e) Continuities and Discontinuities

Never before in the history of the world has there been such an educational diffusion as today. Improvements in transport have annihilated distance and made it possible for scholars to go abroad and import some elements of the educational system. This situation is remarkable in view of the great progress made in recent years in the development of methods and techniques for the conscious and intentional transmission of knowledge and ideas between educational systems. Nowadays it is not sufficient to take into account only historical background as a determinant of differences and similarities between systems. One must also consider contemporary events through which

nations bring influence to bear on each other, and among them the large number of official and unofficial programmes of educational exchange for the purpose of technical assistance, cultural relations and scientific cooperation. These programmes may consist of fellowships, scholarships, visiting professorships, teacher exchange, conferences, meetings, seminars, advisory missions, visits by delegations, etc. It will be appropriate to mention here the link established between the University of Aberdeen and Malaya in 1965 with the intention of making some contribution to aid development. By this scheme some senior lecturers from certain departments will go on secondment for periods of about six months; and it is expected that cooperation between the two universities will develop in other ways. In addition, they may also incorporate extensive projects for the exchange of documents, publications, and audio-visual aids. Not of least significance are the many official sets of relationships between Ministries of Education, and the great increase in recent years in the number and membership of international non-governmental organizations in a wide range of educational fields.

As one travels across the face of the earth one finds "cultural continuity" as long as people are behaving and speaking in more or less the same manner, or at least in ways which are mutually intelligible; but when one encounters completely different ways of life, then there is a state of "cultural discontinuity". Continuity or discontinuity is largely a matter of how far a particular system, consisting of interacting and interdependent parts, extends before it is replaced by other systems. The extent of continuity may vary greatly in the different aspects of international relations. There may be a high degree of cultural continuity between two nations on account of strong ethnic similarities. The Malaysian education system shows diversity within overall unity -- the existence of Malay, Chinese, Tamil and English schools

strongly influenced by history and ethnic linkage with home countries illustrates this. This is unavoidable as Malaysia is multi-racial and polyglot and each racial group wants to uphold and maintain its culture which is best transmitted through education. Certain aspects of culture, such as language, are clearly very much more important than others in determining the extent of continuity. The whole purpose of any cultural cooperation lies in improving the degree of cultural continuity between different peoples in such a way that they will gain the maximum advantage from the interchange of ideas and knowledge. This advantage must be viewed not only in terms of mutual understanding between them, but also of their ability to cooperate for practical purposes, and to exchange ideas of artistic and scientific interest.

But it is obvious that systems do not consist simply of ideas and ways of life. They consist of people who have the physical ability, unless stopped by frontiers or political reasons, to move to parts of the world where other cultural or political systems prevail. The question then arises as to how an individual fares when he moves into a system other than his own. What, in fact, are the practicable possibilities of mobility from one system to another?

In the field of education, the present day position is that there are relatively clearly definable educational systems which are more or less identifiable with the different states and territories of the world. Within some states, as in U.S.A. or U.K., there may be several separately identifiable systems. Likewise, there may be a considerable degree of continuity in the sense used here between the systems of different states; but for historical, political and administrative reasons it is usual to find important discontinuities between different systems.

There are, of course, many ways in which discontinuities between educational systems can be diminished without the element of personal travel entering the picture. Much can be achieved through books and audio-visual aids. But in the long run, the human element in the form of the personal traveller is by far the most important factor. Without going too far into the analysis of educational systems, it is possible to identify the various human components from which they are constituted. Basically, such a system consists of a teacher-pupil relationship. But there are usually other participants, such as administrators, research workers, text book writers and a whole range of technical specialists who may not be actively engaged in teaching. And it must also be considered to include other interested parties such as parents, politicians and church members. In countries with universal education, virtually the whole population, for at least part of its life, must be involved in the educational system. The point of interest here is not only in the analysis of systems as such, but in the examination of motives and consequences of interchange among the various systems, and the possibilities of mobility between them open to the participants.

The problems of educational interchange can be viewed from two very different perspectives. One of these consists in the historical viewpoint, in so far as peoples who have had long standing relations in a general way with each other are also likely to have special educational relations. Their systems may resemble each other, and the content of education may include a great deal of teaching about each other's language and history. Moreover, education, especially at its higher levels, is a field of human activity in which there is a long standing tradition of internationalism. Education, travel and contacts between scholars of different nations are very far from being modern phenomena.



But there is another perspective that has developed more recently. There is an increasing realisation, which has accompanied the world-wide development of institutional education, that few of the problems encountered are restricted to a single nation, and that the experience of one school system can prove invaluable in the growth of another. Herein, of course, can be found one of the main reasons for increased interest in comparative education. The viewpoint thus established has acquired particular importance in the light of emphasis now placed on programmes of technical assistance. With education recognized as a major factor in economic development, the problem is no less than one of establishing in the space of a few years modern educational systems based on the principle of literacy, among people whose education up to the present has been wholly or partly related to a non-literate tradition.

There is no doubt that education has become a subject of international significance in quite a different sense from any previously understood. There is now a need not only for an understanding of different systems, but also for the creation of a more effective organic relationship between the various nations of the world in the field of education, whereby one can learn from the experience of the other. Comparison of systems, whether descriptive, explanatory or dynamic, is not enough. The methods and techniques of interchange between systems have become in themselves a matter of importance.

Starting from the concepts of continuity and discontinuity, it is possible to identify at least five stages in the relations between systems. At one extreme there is the stage of intelligibility, where a minimum degree of continuity renders mutual understanding possible. At the other extreme, there is a maximum degree of continuity which permits an almost complete

mobility of participants between the systems.

The five stages mentioned above can be identified as follows:

- (1) Recognition of ethnic similarity and a common historical tradition.
- (2) Comparison of systems, whereby the institutions of one are rendered intelligible in the terms of the other.
- (3) Organized interchange of information and ideas.
- (4) Provision for partial mobility between systems.
- (5) Complete mobility of participants between the systems.

These stages can be found in all types of cultural relations but in each specialised area of which education is one, there are particular indications to be taken into account. Firstly, at their most rudimentary level, international educational relations are based upon historical tradition. Certain peoples have ethnic similarities to each other, and may educate their children in much the same way. Similarities may be due to migration, colonisation or political or administrative influence. It is generally understood, in a commonsense way, that educational systems having such a relationship must tend to resemble each other, and that interchange between the systems is thereby facilitated.

Next, the student of comparative education enters the scene and attempts to identify the components of one educational system in terms of the components of another. Here initial similarities facilitate his task. Dissimilarities complicate it. The organized study of education leads to the conclusion that it cannot be isolated from the study of social development in general. Therefore comparison tends to broaden its range of interest, so as

to encompass society as a whole, rather than certain of its institutions. Conscious efforts are made to exchange information and ideas. Scholarships are awarded for study abroad, visiting professorships are organized. Libraries make exchange agreements, e.g., the British Council and USIS libraries in Malaysia. Joint meetings and seminars are held. National educational associations begin to affiliate with each other to create international organisations.

Limited arrangements are made for mobility between systems. Agreements are concluded concerning the recognition of diplomas. Research institutions exchange workers and results. Foreign teachers are assured of conditions of employment which will give them a degree of security which is satisfactory in terms of their own systems. Joint commissions examine the contents of textbooks, and in particular those elements which have a bearing on international understanding.

Beyond this lies a fifth stage which can rarely be attained nowadays, except perhaps where there is political fusion between states. In practice it is very difficult for teachers and pupils to participate fully in educational systems other than their own on the same basis as the citizens of the country. Moreover, complete mobility between systems is rendered difficult today not simply by cultural factors, but by the interpretations of the standards of recognition of degrees and diplomas. Even where there is a high degree of mobility between systems where questions of study are concerned, the position is very different when it comes to practising a profession on the strength of qualifications acquired. In most countries there are legal and administrative measures which present obstacles to employment abroad.

Underlying this situation there still prevails the perennial problem of supranationality. In education, as in all other matters of international

relationships as found in the conferences of UNESCO and the International Bureau of Education. The setting up of international standards having legal authority is likewise restricted to the conventions and recommendations agreed by these organs. This reflects upon the possibilities of mobility between systems as much as upon any other aspect of educational cooperation.

(f) Change towards demand

In most systems there has been a tendency to raise the school leaving age so as to give the "late developers" a chance to awaken to the realities and needs of the society. This arrangement would postpone secondary selection, it would provide a diagnostic period for better educational and vocational guidance, and it would be more democratic. This experiment has been introduced only in France but it has only reached an estimated 40-50 per cent of the elementary school students. There has also been a change in the expansion of the curriculum to include modern subjects like science, foreign languages and vocational or practical subjects. Nevertheless, the traditional distinction between the liberal and vocational curriculum has not been eliminated. Such academic secondary schools as the English Grammar school have incorporated science, foreign languages, and history into their erstwhile classical curriculum; however, they have remained academic in their orientation, and they provide very little, if any, training in vocational preparation. Even in the Soviet Union, where since the Revolution there have been concerted efforts to break down the liberal-practical dichotomy in education and all the social accoutrements associated with it, the whole argument behind Khrushchev's attempted reorganisation in 1958-1959 was based on the conviction that this separation still prevailed. It would be true to say that the Soviet Union has come closer to bridging this gap than any other of the countries I have

mentioned, including the United States.

A professed major function of the systems of education under study has been to make the curriculum of the schools an important contributory factor to the social and economic development of the society -- to relate the curriculum to the needs of an expanding economy. This relationship, referred to as "functional education" has been interpreted to mean that the school programme should emphasize knowledge and skills that have direct bearing upon the national productive effort. In order to attain this goal, the tendency has been to strengthen technical education by expanding the offerings in technical and scientific subjects and by seeking to make technical-vocational courses and schools equivalent to the traditionally academically oriented ones. As described earlier, the Soviet Union represents a rather extreme case of how this aim of functional education may be implemented. On the other hand, Greece presents us with the opposite extreme -- i.e., a system that may be said to be dysfunctional in that it is not geared towards meeting the demands of an emerging industrial society. The need for technical knowledge and skills has become pressing in the agricultural as well as the industrial sectors of the economy. Yet, education in Greece continues to be dominated by the classical literary tradition. The same problem was acute in India and the whole educational system needed a complete overhaul -- if that does not sound a bit drastic. In Greece and India many graduates seek employment in the already crowded clerical occupations in business and government, in spite of the fact that industrial, agricultural and mining enterprises are in dire need of technically trained personnel. As a result, there is both unemployment and underemployment among the graduates of such schools. These deficiencies have been diagnosed and reforms are taking place, but in a tradition-bound society change takes place slowly and cautiously.

(g) Educational Obsolescence

In a dynamic society no system can afford to stand still, and particularly is this true in the field of education. If it is to meet the needs of the economy and aspirations of the society, it must move with the times. It is both a force and a product and as such has to be flexible, versatile and yet purposeful and functional. No engine is perfect, nor any system of social organization either. Perfection is not the standard but tolerable performance is, and performance that of realistically attainable alternatives.

It is one of the most striking failings of our educational system that it seems to be unable to readjust its ways of doing things to meet changing requirements. Scientific and technological advances have altered the educational requirements of society. More trained people - people trained in the skills required by scientific and technological innovation - and a deepened capacity for scientific research, are widely recognized as prime requisites for economic progress. In response to these needs there has come to be an acceptance of the notion that educational systems are concerned not only with transmitting a cultural tradition and pushing forward the frontiers of knowledge, but also with producing the professional and technical 'know-how' required by a dynamic society.

"Education to be effective must take the social scene into account, react to it, participate in it, and help to mould and shape society." - Hansen.

In point of fact, education frequently falls short of this goal, failing to realize its full potential as an energizing force for social reconstruction and modernisation. When society's requirements run ahead of educational practice and productivity, when education serves social needs now extinct or passing, it is called dysfunctional, irrelevant to current demands. Today,

in the modernising world, there is widespread feeling that too much education is irrelevant, out of touch and out of tune with modern life, dysfunctional in terms of the services it is currently being called upon to render. Evidence of this discontent with education is not hard to find. Country after country has undertaken education reforms, assembled outside and inside experts to draw new plans for education, and budgeted heavily to have up-to-date educational systems. Educational change receives high priority almost everywhere, indicating a widely prevalent feeling that education is not carrying its share of the development burden.

Education is always dysfunctional in relation to some unrealized expectation, goal or target. In a free society expectations, goals and targets are determined by the consumers of education, who demand that it be adequate for their purpose. Goals change from society to society and from time to time. Education that today is criticised as inadequate for newly free and independent nations was probably regarded as adequate by the colonial powers that governed them prior to independence. Political and social conditions change with independence and if education also does not change it becomes dysfunctional and of little use.

In one sense then, education may be judged to be dysfunctional wherever its results fail to measure up to what the society or the recipients of education expect its results to be. If, for example, the aim of education is to make the educated man employable and he remains unemployed, his education will probably be regarded as dysfunctional, even though the fault may not rest exclusively with education. Actually, the judgment of whether education is functional or dysfunctional is seldom simple, for education generally has multiple aims — some of which are individual, some of which are social.

Often the expectations or aims of some individuals may be in poor accord with the expectations of the broader society. When this is the case, what is functional for some individuals may be considered dysfunctional for the society at large.

Let us turn for a moment from the concept of dysfunction in education to that of function. Functional education among the developing nations has acquired an increasingly specific set of meanings, not always the same from country to country, but with large areas of agreement in common. These meanings increasingly find their philosophical frame of reference in social reconstruction that ties education to social purposes and human well being. This philosophic direction imposes upon education a concern for economic systems that sustain life at adequate levels of physical energy and health, for political systems that are protective, rather than exploitive, of human rights, and for social, cultural, and religious systems that enrich and expand the scope of human expression. Such a position means that education is concerned with jobs, widening opportunities, free political institutions, and social and cultural values. Education that contributes towards these ends, or enhances the possibility of their attainment, may properly be called functional.

It would be appropriate if we further examine the concept dysfunctional. The Indian educational system has produced a burden of arts graduates who find no demand for their skills. Education may be dysfunctional in many ways. When Ghandi called Indians away from Western oriented primary schools, formal in operation and foreign in concept, he asked for basic schools related to the everyday activities of village children. The spinning wheel expressed his conviction that in its earliest stages education should be relevant to the



everyday activities of village children. The spinning wheel was his symbol in education as well as in other social crusades. It should decide how they employ their time, it should help to sustain their families and to build their futures. Not everyone agreed with Ghandi about the dysfunctional nature of Westernized primary schools. Such schools did open the door to middle and secondary schools, to the university and to white collar jobs in the government and elsewhere. A parent who wanted his children to get white collar employment, to join the country's new elites, viewed the primary school as quite functional, even though his own children might be among those who failed in the race for educational survival. Those students who advertised their credentials as "Failed B.A." know that they are still among the favoured few.

The mixed Indian reaction to Ghandi's programme of basic education illustrates how educational may be functional or dysfunctional, depending upon one's goals and aspirations. Ghandi, seeing the village as a valued way of life, wanted to preserve and enrich it. He saw it threatened by irrelevant education that not only brought foreign values to the village, but also induced young people to leave for the cities where their presence created more social ills. On the other hand, certain elite groups in India valued the prestige brought by Western oriented education and hoped their children would achieve upward mobility and escape the village. For these groups, in the light of their own interests and expectations, the education that Ghandi viewed as functional threatened to be dysfunctional. In a democratic society, expressing diverse points of view, there is a need both for some consensus about the larger goals of education and for alternative programmes that make it possible to accommodate a variety of specialised educational needs and individual aspirations.

Let us now examine what are the main causes of dysfunctional education or

educational obsolescence. As a community moves from a primitive to a modern orientation, it moves, in a sense, from the need to know to the need to teach. The traditional community, without a school, is itself an informal school in which children learn with ease to become adults by seeing, participating in, and absorbing the life around them. They experience education without schools. They learn what they need to know, and that quite easily and effectively. If, later on, such a community acquires a formal school, it is apt to be quite irrelevant to the life of the community, largely because informal education satisfies the need for knowing.

As a community becomes more developed, greater specialisation is apt to create more demand for formal education, in short, greater demands to teach. The need to know the things that everyone in primitive communities agreed had to be known gives way to the need to teach that which not all agree must be known. While the demand for formal schooling increases as development progresses, community sanction for what is to be known, present in the traditional community, is apt to be lacking. During this stage of development, as in Ghandi's India, education may be dysfunctional for most of the children, and at the same time functional for a few of the children.

The demand for universal or compulsory education can render old educational systems dysfunctional. Schools that were geared to serve an elite of the few are not well suited to the needs of the many. Simply to multiply the numbers of traditional schools may only compound the problem. Yet this is the temptation of the developing countries since the pressure to expand educational opportunity has become so great. Most educational officials simply do not have the time or resources to reassess their position and alter education to meet new demands. Increasingly, however, developing countries are undertaking long-range educational planning, appraising where they are, where they should

be going, and then formulating specific programmes to get there.

Perhaps the greatest single cause of dysfunctional education is that modernizing nations are simply expecting more of education than at any given stage it can deliver, demanding that it be an instrument of social and economic development, a strong agent for bringing about desired changes. The pace at which aspirations for development are moving makes the educational lag painfully visible. Education must gear itself for rapid change and become functional in giving shape to the future.

Inherent in dysfunctional education are many dangers. One of the most tragic is wastage. The village child entering a primary school whose programme is not adapted to his needs is likely to drop out before having become functionally literate. The investment in him in terms of money, buildings, and teachers is largely wasted. Wasted, too, are his human potentialities and talents, which, only minimally developed, often do not enable him to create a more satisfactory life for himself. His dropping out of school does not imply that it is solely due to the dysfunctional nature of the school. The total community situation frequently discourages his continuing: the need for children to work in the homes and fields, the lack of reinforcement in the home of what the school is attempting to teach, and the failure to see education as a genuine alternative opening up new paths for children. But, in fairness, it should be said that the community may not reinforce the school because the school has not demonstrated its usefulness to community life and concerns.

Another consequence of dysfunctional education is that it may produce large numbers of people whose education does not fit them for available jobs and who cannot be absorbed into the economy, even though specialised jobs in

other sectors of the economy may go begging. Too many other factors are involved in determining the level of manpower planning and utilisation. Still, a functional educational system can do much to discourage the excessive number of graduates with unneeded skills and encourage the preparation of more graduates to enter areas of needed skills. India, despite very high illiteracy, has a large proportion of its arts graduates unemployed. This is a drain on the country's scarce resources.

One of the most serious consequences of dysfunctional education is the frustration that results from the inability of educated people to find satisfying employment. This kind of social dynamite is of real concern to many developing nations and their political leaders. The fear of having within the population a large number of unemployed, disgruntled, educated young people has led many leaders to doubt, at least privately, the wisdom of extending educational opportunities beyond the ability of the country to absorb the educated. But the currently strong and growing demand for more education cannot be ignored by political leaders in free societies. And because it cannot, intelligent educational planning assumes an urgent and high priority.

(h) Changes in U.S.A.

The changes that have occurred in the U.S. in the past ten years are very impressive and manifest the realisation of functional education. Mathematics and science courses have been thoroughly overhauled, and the modernisation of courses in other subjects is well under way. Instead of being required to sit passively while knowledge is poured into them, students are increasingly being encouraged to learn by discovery and otherwise become actively involved, and interested in learning. Schools are not only trying to meet the demands

of society, but are also trying to adapt education to the particular needs of each child. Compensatory education for culturally disadvantaged children, job training for unemployed youths, retraining for workers displaced by automation -- these are the powerful engines of social change to ensure that all will share in the increasing bounty of the U.S. economic system.

In general, we might say that in varying degrees educational change has characterised most past and present societies. At the same time, however, the forces of tradition have acted as countervailing influences. Even societies that have undergone a revolution paradoxically have not managed to "free" themselves completely from traditional institutions, beliefs, and values. In contemporary societies, modernization has been a motivating force and has brought about major changes -- anticipated and unanticipated -- in educational ideas and practices, as well as in the total life of a country. Education has become an integral part in the movement towards modernity, and it has always been assumed that it contributes to the creation of better human beings and better societies.

## 5. THE EDUCATIONAL SYSTEM IN MALAYSIA

### (a) Economic Problems:

Great strides have been made in a number of fields of economic and social development. The country enjoys a relatively high standard of living and an atmosphere of social harmony in a multi-racial plural society. Nevertheless, there are many economic and social problems and it is to this end that our resources should be directed. When resources are limited, as they are in Malaysia, an effort to plan for a higher level of living than might otherwise be attained demands a prudent balance in investment in different sectors. The First Malaysian Plan seeks to attack these problems through a carefully conceived and vigorously executed effort at planned social and economic development. The main socio-economic problems facing the nation at present are:-

1. A heavy dependence on the production of rubber and tin for the export markets. The price of rubber is falling steadily, and the known reserves of tin are being depleted rapidly.
2. A high rate of population increase, which poses a challenging problem of finding productive employment for each year's new entrants into the labour market and imposes a social cost, in that resources which might have been used to increase levels of warfare must instead be devoted to supporting the growing population at the existing standard of living.
3. The existence of dual economy and uneven distribution of income.
4. A relatively low level of human resource development, which results in shortages of many of the skills needed to carry out development.

(b) Past Developments in Education

The history of Malaya's education is one of the most extraordinarily rapid development. This is sometimes overlooked by those who, rightly, are all too conscious of how much remains to be done. But any close comparison of 1967 with that of only a quarter of a century ago, or even less, would reveal the immensity of past achievements.

Secular education began in Malaya under the stimulus of British missionaries and administrators, a century and a half ago. The first school was established in Penang in 1816 by the Church of England with financial assistance from the East India Company. The medium of instruction was English and was attended by children of all races. As the British educational policy was ambivalent in character, the government provided the Malays with compulsory free primary education in the Malay medium aimed at making "the farmer a better farmer and the fisherman a better fisherman than his father".

The Government did not feel obliged at first to give education to Chinese and Indian children in their own languages or dialects as they feared that to do so would merely strengthen the barriers of race and encourage the growth of foreign loyalties among them. They were, however, free to establish their own vernacular schools. At the same time the Chinese, with their traditional respect for education, were quick to establish Chinese-medium schools which after 1911 dispensed with the outmoded traditional pattern of classical Chinese education and took the Modern Schools of China as their model. In 1923 the Government decided to give small grants in aid to the Chinese to encourage the education of Chinese children in their own dialects. In 1902 it was also decided to provide facilities for Tamil vernacular education as a means of encouraging Indian estate labourers to stay on in their jobs in Malaya. Hence,

what was at first considered politically and socially undesirable was now encouraged for economic reasons. Here, then, was the beginning of the present day pattern.

Before World War II there were few schools that could not take more pupils than were enrolled. An amazing change of attitude towards education occurred during the Japanese occupation. Families of all races became eager to have their children educated. The burden on the disrupted and partially damaged schools was greatly increased by a shortage of qualified teachers, and by the needs of older children whose education had been interrupted by the war. Before the war about 263,000 children had been in school throughout the Malay Peninsula; in January 1946 there were approximately 266,000 children; by March 309,000, and the number has been increasing very rapidly. According to the 1947 census, 62 per cent of the population of 15 years of age and over was illiterate.

In February 1948 the constitutional change from Malayan Union to Federation established a new responsibility for education. The Federation Agreement assigned to the Federal Government responsibility for a common policy and a common system of administration for primary, secondary and trade school education. This division still stands.

An educational crisis began to be evident as the post-war rise in enrolments and costs gained momentum. There were extensive considerations of policies and principles to be followed by a central Advisory Committee on Education, established in 1949; a study team on Chinese Education; a committee on Malay Education; and by a special committee appointed to recommend legislation. National educational policy was crystallised late 1952 with the passage of a comprehensive Federal Ordinance. It set, as an eventual goal, free



compulsory six-year primary education for children from 6+ to 12+ and the establishment of National Primary Schools. The National Schools would be open to children of all races, with the medium of instruction either of the official languages, at the option of the people in the area. In Malay medium schools, English would be taught to every pupil from the beginning of the first year; in English medium schools, Malay would be taught from the beginning of the third year. All National Schools would be required to provide facilities for the teaching of Tamil or Chinese when parents of 15 or more children of the same linguistic standard asked for it.

With the enactment of the Education Ordinance 1952, the Federal Government committed itself to enlightened but admittedly ambitious goals which were frankly recognized as possible of attainment only in the course of decades. The technical difficulties in implementing the Ordinance became increasingly clear within a year. Enacted at a time of national prosperity, the cost implications had been considered only in vague and general terms, though it was plainly evident that the programme carried a potential financial commitment several times as large as the then current education costs. With the decline in world rubber and tin prices, new economic situations and needs developed which have necessitated careful review of the outlook for education.

(c) Progress During 1961-1965:

The period 1961-65 was one of transition, with a number of changes being introduced to adapt the system of education to meet the needs of a rapidly developing independent nation. Fees in Primary schools in Malaya were abolished. Most of the partially assisted primary and secondary schools remaining outside the national system of education were brought into conformity

with it. The school leaving age was increased from 12 to 14 years and a reorganization of the secondary school system was effected through the introduction of the comprehensive system of education. At the same time, a decision was taken to establish upper secondary vocational schools, which will in future incorporate the educational facilities formerly provided in Sckalah<sub>2</sub> Lanjutan Kampong. The teacher training programme was integrated and streamlined to cope with the ever increasing teacher requirements. A system of guidance counselling was introduced in lower secondary schools, while Malay-medium secondary education was consolidated and the government's National Language policy was implemented.

The main efforts in school education were to consolidate primary education and expand secondary educational facilities. An additional 5,890 classrooms were constructed in primary schools and 3,120 classrooms in secondary schools to enable their respective enrolments to increase from 979,350 to 1,231,740 and from 98,960 to 275,360 pupils between 1960 and 1965. In 1955 pupils in assisted primary schools were 719,282, in assisted secondary schools 59,818, and in 1963 they were 1,147,856 and 155,143, respectively.

Starting from 1965 there is no entrance examination for admission to secondary schools, and universal education is being extended to a total of nine years. A comprehensive educational system has been introduced for the first three years of the secondary level, where the curriculum includes subjects of a practical or pre-vocational nature. A scheme of further education offers facilities to young people and employed persons. An intensified rural adult education programme was launched in 1961 as an integral part of the national and rural development programme. It includes not only literacy, but also the teaching of other skills. The objective is to achieve functional literacy for all before 1976. The programme involves the teaching of home economics and

the use of radius and village libraries.

Expansion programmes were also carried out at the Teacher Training Colleges, Technical Colleges, and in the University of Malaya.

For the future, plans are being worked out to link secondary education more closely to economic development and to extend the comprehensive educational system to the upper secondary level. A higher education Planning Committee has been appointed to make recommendations about future developments of this type of education. With a view to continue the qualitative improvements in education, an educational planning and research division and an advisory committee on the teaching of basic science have been established. The University of Malaya has established facilities for post-graduate training as well as educational research work.

The Higher Education Planning Committee has endorsed the establishment of the Penang University College in view of the shortage of facilities available in the existing higher educational institutions in the country. This has resulted in a large number of Malaysians going abroad to the United Kingdom, Australia, etc., to pursue higher education, and causing a severe strain on our balance of payments. It would be a useful exercise if the Higher Education Planning Committee could carry out a sort of cost-benefit exercise to find out whether it is cheaper to send students abroad for higher studies or to provide the same facilities at home. In times of scarcity, particularly when resources have alternative uses, we must use our scarce resources in those directions which would give us the maximum yield. Priorities must be based on objective valid criteria.

(d) Expenditure for Education:

Public education has become a primary function of government in Malaysia and already occupies a position of considerable magnitude and high priority in the budget. In Malaya the government's expenditure on education has increased from £16 million in 1947, £95 million in 1953, to £230 million in 1963, which represents nearly a quarter of the local recurrent expenditure budget of £970 million. This is further expected to rise sharply because education is now widely regarded as equipment for a livelihood, and ever-larger numbers of families demand places for their children in primary school, make sacrifices to keep their girls as well as their boys in school, and want secondary and technical, post-secondary or university education for their young people. Costs are also likely to increase due to modernisation of vernacular schools; financial support to Chinese schools; mounting demand for English education which costs the government at least twice as much per pupil as vernacular education (a pupil year in Malay and Indian schools costs the government about £100); and the rapid rise in primary school age population. Expansion of teacher-training colleges, post-secondary schools, university expansions, etc., all add to the cost. The prospects for off-setting economies are limited. The estimated cost of implementing the educational programme as outlined in the National Plan is shown below:

## MALAYSIA: DEVELOPMENT EXPENDITURE FOR EDUCATION, 1966 - 1970 (£ millions)

<u>LEVEL OF EDUCATION</u>	<u>MALAYA</u>	<u>SABAH</u>	<u>SARAWAK</u>	<u>MALAYSIA</u>
Primary	54.6	7.8	12.3	74.7
Secondary	188.7	14.2	29.2	232.1
Technical	30.8	2.9	2.8	36.5
University	30.0	-	-	30.0
Teacher Training	28.5	2.3	1.1	31.9
Other Education and Training	<u>35.4</u>	<u>-</u>	<u>0.2</u>	<u>35.6</u>
TOTAL:	<u>368.0</u>	<u>27.2</u>	<u>45.6</u>	<u>440.8</u>

So development and recurrent expenditure for education will absorb about 5% of GNP by 1970. This level of expenditure compares favourably with even some of the more advanced countries (see section on Role of Education in Economic Development).

(e) National Need and Private Aspiration:

The educational process, whether in Malaysia or elsewhere, has no single aim. There are many different objectives and their relative significance and importance varies according to one's standpoint in society. Pupils, parents teachers and the state may all be looking for different benefits from an education system.

In most societies, the traditional functions of education include:-

- (a) Development of the intellectual, physical and moral potential of the child and the formation of his or her character.
- (b) Socialisation of the young through the transmission of the cultures, ideas, values, behaviour patterns, world view, etc., of the society into which they are born.
- (c) Encouragement of economically useful aptitudes and skills in the rising generation.

In young countries like Malaysia which want to modernise themselves at an accelerating pace, governments take a special interest in the potential of education as a means of achieving broader political, social and economic objectives. They often regard education not only as good in itself, but as a tool for 'social engineering' to change the existing fabric of society. In particular, they look to education to promote a sense of national unity in

their country and to develop modern attitudes and skills in its people. National unity is the first objective in Malaysia as the frequent speeches of government ministers attacking racialism show. The Education Ordinance summarises the post-independence education policy as follows:-

"The education policy of the Federation is to establish a national system of education, acceptable to the people as a whole, which will satisfy their needs and promote their cultural, social, economic and political development as a nation, with the intention of making the Malay language the national language of the country whilst preserving and sustaining the growth of the language and culture of people other than Malays living in the country."

The educational policy is thus liberal and progressive. The role of the educational system in providing the skills essential for realizing the National Development plans is also of great importance to the government. Largely for these reasons, one has found an increasingly interventionist attitude towards education on the part of Malaysia's present government.

It seems natural and right that in a poor country at an early stage of its development and devoting a high proportion of its national income and government revenue to education, the expansion of the system should be determined quite as much by social priorities as by individual hopes and aspirations.

(f) Manpower Situation in Malaysia:

In terms of employment, Malaysia today is a nation of contrast. In Sabah labour shortages have been accentuated with the curtailment of the inflow of unskilled Indonesian workers and skilled artisans from Hong Kong and Taiwan.

A significant volume of economic activity has thus been forgone as a result of shortages of both unskilled and skilled workmen. In addition, unusually large increases in wage rates of skilled construction workers resulting from the shortage of trained manpower have contributed to inflationary tendencies in the construction industry.

On the other hand, in Malaya job seekers continue to outnumber available opportunities to a certain extent and under-employment remains a problem. Through persistent efforts at economic development during the last five years Malaya has been generally successful in providing jobs for the mature work force. The unemployment rate for men over 25 years of age has been held to under 3% of the number seeking employment.

Youth unemployment, however, remains high. Of the young men between the ages of 15 and 19 who are seeking work, about 16% are believed unemployed in Malaya as a whole. In the major towns, the unemployment rate is 27% as compared with about 14% in the rural areas. It is estimated that about 30% of unemployed males in this age group remained unemployed for more than one year and that 80% have never had a job. Many of the latter are presumed to be fairly recent school-leavers still living with their parents. Among young men aged 20 to 24, the unemployment rate is lower, averaging 10% in the large towns and around 6% in the rural areas. However, total unemployment at 6% of the male and female labour force has remained at a somewhat more satisfactory level and compares not unfavourably with other nations in Malaysia's stage of development.

In order to reduce significantly the overall rate of unemployment, the economy will have to grow rapidly. To accomplish this it will be necessary to break a number of skill bottlenecks which have impeded development to date.

For instance, in Malaya, nearly 30% of jobs in the private sector which require more than a secondary school education are either vacant or filled by non-Malaysians. Most, if not all, of these represent jobs for which qualified Malaysians are not available. Similarly, in the public sector, recruitment during 1964 succeeded in filling only 70% of the 3,500 vacancies in government departments. And in the schools, an estimated 5,000 teaching positions are reported either unfilled or filled with untrained under-qualified teachers.

The shortage of qualified manpower has had other effects which are less measurable, but perhaps even more costly. Agricultural diversification and productivity gains have been deferred because of lack of research specialists and trained extension personnel. Locally financed industrial expansion has proceeded less rapidly than it might have, because the small businessman lacked adequate access to expert assistance on financing production and marketing problems. Some new industries have not yet been established because the staff to undertake engineering or economic feasibility studies were not available. In these and many other ways the shortage of specialised know-how in science, technology, business and management has been and remains one of the most important limiting factors on the expansion of private investment and employment. It is quite clear that if the ambitious plans for the economic and social development of the country are to be carried through, even larger numbers of skilled and educated people will be required at the upper levels in order to plan and staff the new projects and services.

(g) Need for Planning:

It is obvious from what has been said earlier that it is essential to plan objectively so that the supply of skills corresponds closely to demand. From the national standpoint in Malaysia it is urgent to increase the numbers



of educated and trained Malaysians. Of the many economic problems facing the nation at present (see under 'Economic Problems'), the major one is the relatively low level of human resource development which results in shortages of many of the skills needed to carry out development. Apart from the problem of mobilising financial resources for public and private investment, Malaysian economic and social development faces one other serious constraint which deserves particular attention. This is the serious shortage of trained and skilled manpower which exists in many areas of economic activity and over a wide range of skills. As we have seen in the earlier section (Role of Education in Economic Development) that a country's rate of economic development is determined not only by its material resources and the size of its internal market, but also by its "brain-power", i.e., by its success in developing and in utilising effectively the intellectual capacities of its population. Wastage of these human capabilities, whether through unemployment or failure to develop sufficiently the intellectual potential of individuals is a drag on development as well as a major social problem. It is thus a fundamental objective of the First Malaysian Plan (1966-1970) to ensure that the nation's human resources are developed and employed in such a manner as to secure their greatest possible contribution to national economic development. Unless the educational system is geared to meet the development needs of the economy, there will be a misallocation of an important economic resource, which will slow down the rate of economic and social advance. While widespread basic education is necessary, a modern society requires people of varied educational attainments and skills. As the economy develops, the quality and experience of the labour force assume an increasing importance.

Then to provide employment for those seeking it, while developing the know-how needed for accelerated growth is the manpower objective of the First

Malaysian Plan. In this endeavour the nation is not starting anew but is building on the solid foundation laid by previous decisions, particularly the decision to undertake rapid expansion of educational and industrial development programmes. The government has also initiated manpower planning operations designed to anticipate the needs of expanding industry for the various types of trained workers. Ideally, the number of students completing education at different levels should correspond to the demand for manpower at those levels. In order to ensure that the education system meets manpower needs, educational development has to be coordinated with manpower planning. Inche Khir Johani, the Minister of Education and Chairman of the Higher Education Planning Committee, said at the foundation stone laying ceremony of the Penang University College:

"the courses of study to be offered at this college will have to be considered in the light of national needs for the various categories of high-level manpower so that our country will have a balanced human resource development. There should not be under-production, and what is more important, overproduction of graduates in certain fields of discipline."

The first step towards coordinating educational development with manpower planning is already being taken. The Higher Education Planning Committee is attempting not only to estimate the manpower demand during the next twenty years, but also to plan the educational facilities needed to meet the demand. To complement the task of the Higher Education Planning Committee, a manpower survey was carried out in 1965 to assess the resources currently available. Also, in recognition of the importance of manpower planning for economic development, a Manpower Planning Department has been recently established in

the Economic Planning Unit. Its task will be to assess and keep under constant review the manpower requirements of the economy.

(h) Difficulties of Planning:

The task of the planning authorities to make a quantitative estimate of manpower needs of the administration and economy and to translate these into workable targets from the educational, which in future is to be planned largely with the economic and social requirements of the country in mind, is not easy. Accurate assessments of what future manpower needs will be are not easy to make, even in an advanced country having available sophisticated planning machinery and techniques and reasonably accurate and detailed statistical information. In Malaysia, as in many other countries, the science of manpower planning is still in its infancy and until recently nobody was able to give the Ministry of Education authoritative and detailed account as to what output of educated people at what levels is needed from the education system, and how soon. It has to be recognized that the task the planners are setting themselves is extremely complex and that many of their assumptions will be quite arbitrary. First of all, they are predicting what will be the rate of development of the Malaysian economy for several years ahead - a hazardous exercise. Secondly, they must find some means of translating the economic targets into requirements for skilled manpower of different kinds. Thirdly, they must equate these manpower requirements in some way with different types of educational qualification (does a primary teacher need School Certificate or a University degree, for example). It will be obvious that the scope for error is simply enormous, and it is therefore wise to set targets in rather broad terms initially and to review them regularly as experience grows.

(i) Need for Control:

Effective educational and manpower planning does, of course, presuppose ultimate government control over the different parts of the educational system. To this end, the Malaysian Government has taken powers to supervise and control more closely the independently founded primary and secondary schools, and it is also taking a more active interest in policy towards the University, the Technical College, etc., particularly in regard to their courses and curriculum. As regards the rights of universities and colleges to decide what they will teach, it is hard to avoid the conclusion that in the final resort he who pays the piper must call the tune. The higher education institutions of Malaysia are becoming more fully committed to achievement of the national objectives of the country than perhaps they have been in the past. This is as it should be, for it would be intolerable for autonomous educational institutions at the higher levels to decide independently of the government what Malaysia's output of trained people in different specialisations should be. What is going to be needed is a readiness to concentrate on courses with a structure and content most relevant to Malaysia's needs; and acceptance of less 'lush' conditions of life for students and a heavier teaching load for staff-- as recently suggested by the Minister of Education.

Educational and manpower plans must also, of course, take account not only of the needs, or demand for skills, as calculated by some reasonably objective method of assessment. They must also take into consideration political realities and popular expectations, and it is quite possible for these to be out of line with the true needs. In Malaysia as elsewhere there is tremendous popular demand for educational opportunities at all levels, particularly the lower ones. Materialism was in the past, and still remains, the basis of

Malaysian's enthusiasm for schooling since education has been the most direct path to well-paid jobs. Unfortunately, popular expectations in this respect, being based on past experience, are frequently out of touch with present realities. In Malaysia, as in much of the ex-colonial countries, it seems only yesterday that those with a completed primary education were members of the elite and commanded the best jobs then available to Malaysians. This is no longer so. Today (to generalise rather wildly) it is the school certificate holders who form the elite and the boys and girls with nine years' schooling cannot be sure of wage employment unless they take a period of further training first. Tomorrow, so to speak, or the day after, it will be necessary to have a degree to obtain the best jobs, and even some of the school certificate holders may have difficulty in getting jobs.

In fact, the latest manpower forecasts already anticipate a situation where there may be a surplus of educated people, particularly at School Certificate level. It is obvious that school certificate holders will find it progressively more difficult to find well-paid employment and their expectations about the kind of job they can hope to obtain will have to be revised constantly downwards.

Looking to the future, therefore, one might conclude that Malaysia will have to exercise care to ensure that in her desperate hurry to produce more educated people in the next ten years or so, she does not permanently expand the capacity of the education system to produce too many (bearing in mind the cost of their education and the available jobs) educated people in a decade. There must be balance between education and the economy and it is evident that in relation to the level of the economy the present educational deficit could turn into a surplus sooner than expected.

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